ENVISION STOCKTON
2040 GENERAL PLAN UPDATE

Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements Draft EIR

for the City of Stockton | Public Review | June 2018

PLACEWORKS

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1. Introduction

Pursuant to California Environmental Quality Act (CEQA) Guidelines, Chapter 14 California Code of Regulations, Section 15378(a), the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (UMPS) is considered a "project" subject to environmental review, as its implementation is "an action [undertaken by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." This Draft Environmental Impact Report (Draft EIR) provides an assessment of the potential environmental consequences of approval and implementation of the 2040 General Plan Update and UMPS, herein referred to as "proposed project." Additionally, this Draft EIR identifies mitigation measures and alternatives to the proposed project that would avoid or reduce significant impacts. This Draft EIR compares the development of the proposed project with the existing baseline condition, described in detail in each section of Chapter 4.0, Environmental Analysis. The City of Stockton (City) is the lead agency for the proposed project. This assessment is intended to inform the City's decision-makers, other responsible agencies, and the public-at-large of the nature of the proposed project and its effect on the environment.

1.1 PROPOSED ACTION

The proposed action analyzed by this Draft EIR is the implementation of the Envision Stockton 2040 General Plan Update (General Plan) and Utility Master Plan Supplements (UMPS). The proposed General Plan would replace the existing 2035 General Plan, which was adopted comprehensively in 2007. The General Plan is the principal policy document that guides future conservation and development in Stockton. The proposed General Plan not only provides concepts for long-term planning through 2040, it also provides overall direction to the day-to-day actions of the City, its elected officials, and staff. The proposed 2040 General Plan Update is described in detail in Chapter 3, Project Description, of this Draft EIR.

The proposed General Plan includes regulations in the form of goals, policies, and actions that are intended to achieve the community's vision for Stockton. The policies and actions are to be used by the City to guide everyday decision-making and to ensure progress toward the attainment of the goals outlined in the plan.

The proposed UMPS identify needed infrastructure improvements to serve future development. Specifically, the proposed UMPS evaluate and identify needed infrastructure to provide water, wastewater, and stormwater service. These facilities are sized for the amount of development anticipated under the General Plan in its 2040 horizon year, including from already approved and pending development projects. The proposed UMPS also present approximate cost information for new infrastructure improvements.

1.2 ENVIRONMENTAL REVIEW PROCESS

1.2.1 DRAFT EIR

Pursuant to CEQA Section 21080(d) and CEQA Guidelines Section 15063, the City determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with CEQA Section 21080.4, the City circulated the Notice of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research (OPR) State Clearinghouse (SCH) and interested agencies and persons on May 24, 2017 for a 30-day review period (State Clearinghouse #2017052062). A public Scoping Meeting was held on June 8, 2017 at 5:00 p.m. at the Jack Silva Conference Room at the City of Stockton Permit Center. On August 23, 2017, the NOP was subsequently reissued to revise a figure in the project description that shows the extent of proposed urban to agriculture/open space changes, which began a second 30-day review period. The NOP and scoping process solicited comments from responsible and trustee agencies, as well as interested parties regarding the scope of the Draft EIR. Appendix A of this Draft EIR contains both NOPs, as well as the comments received by the City in response to the NOPs.

The scope of this EIR was established by the City of Stockton through the EIR scoping process and includes an analysis of the proposed project's impacts on the following issue areas:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology, Soils, Seismicity, and Mineral Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation and Traffic
- Utilities and Service Systems
- CEQA- Required Assessment Conclusions:
  - Impacts Found Not To Be Significant
  - Significant Unavoidable Impacts
  - Growth-Inducing Impacts
  - Significant Irreversible Changes

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period. During the comment period, the public is invited to provide written comments via mail or e-mail on the Draft EIR to the City of Stockton Community Development Department. Written comments should be submitted to:

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202
Phone: (209) 937-8266
Email: David.Stagnaro@stocktonca.gov with "Envision Stockton EIR" as the subject line.

1.2.2 FINAL EIR

Upon completion of the 45-day review period for the Draft EIR, the City will review all written comments received and prepare written responses to each comment on the adequacy of the Draft EIR. A Final EIR will then be prepared, which contains all of the comments received, responses to comments raising environmental issues, and any changes to the Draft EIR. The Final EIR will then be presented to the City of Stockton for certification as the environmental document for the proposed project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearing before the City.

All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to certification of the EIR. The City Council will make findings regarding the extent and nature of the impacts as presented in the EIR. The EIR will need to be certified as having been prepared in compliance with CEQA by the City Council prior to making a decision to approve or deny the proposed project. Public input is encouraged at all public hearings before the City Council or Planning Commission.

After the City Council certifies the EIR, it may then consider action on the proposed project. If the project is approved, the City Council will adopt and incorporate into the project all feasible mitigation measures identified in the EIR and may also require other feasible mitigation measures.

In some cases, the City Council may find that certain mitigation measures are outside the jurisdiction of the City to implement, or that no feasible mitigation measures have been identified for a given significant impact. In that case, the City Council would have to adopt a statement of overriding considerations that determines that the economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable, significant effects on the environment.

1.2.3 MITIGATION MONITORING

CEQA Section 21081.6 requires that the lead agency adopt a Mitigation Monitoring and Reporting Program for any project for which it has made findings pursuant to CEQA Section 21081 or adopted a Negative Declaration pursuant to CEQA Section 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration. The Mitigation Monitoring and Reporting Program for the proposed project will be completed as part of the environmental review process.

1.3 PROGRAM LEVEL EIR

This Draft EIR is a program-level EIR that analyzes the adoption and implementation of the proposed project. CEQA and the CEQA Guidelines allow lead agencies to prepare a number of types of EIRs. Different types of EIRs are used for varying situations and intended uses. As described in the CEQA Guidelines Section 15161, the most common type of EIR is a *project* EIR, which examines the environmental impacts of a specific development project. As described in the CEQA Guidelines Section

15168, *program* EIRs are appropriate when a project consists of a series of actions related to the issuance of rules, regulations, and other planning criteria.

In this case, the proposed project that is the subject of this EIR consists of long-term plans that will be implemented over a 23-year development horizon (from 2017 to 2040) as policy documents guiding future development activities and City actions. No specific development projects are proposed as part of the project. Therefore, this EIR is a program-level EIR that analyzes the potential significant environmental effects of the adoption and implementation of the proposed project.

Some program EIRs (for Specific Plans, for example) are able to address future site-specific development projects within scope of the effects examined in the program EIR, such that additional environmental review may not be required for those future projects. When a program EIR is relied on for a subsequent future development project, the lead agency must incorporate feasible mitigation measures and alternatives developed in the program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]).

However, as stated above, this program EIR is not project-specific, and does not evaluate the impacts of individual projects that may be proposed in the future. All future development projects in Stockton that qualify as a "project" under CEQA are subject to compliance with CEQA, which may require additional, project-specific environmental analysis. Under a program level EIR approach, in order to identify whether additional analysis would be necessary when a future development project is proposed, the City, acting as the lead agency, will need to determine the following:

- Whether the planned characteristics of the project are substantially different from those defined in the programmatic EIR;
- Whether the project would require additional mitigation measures; or
- Whether specific impacts were not evaluated in sufficient detail in the programmatic EIR.

If any of these conditions apply and the subsequent activity would have effects that are not within the scope of the program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, a Mitigated Negative Declaration, or an EIR unless the activity qualifies for an exemption from the CEQA process.

For all subsequent environmental review documents, within or outside of the scope of the General Plan, this program EIR will serve as the first-tier environmental analysis, which may serve to streamline future environmental review of subsequent projects.

1.4 STREAMLINED ENVIRONMENTAL REVIEW

1.4.1 TIERING PROCESS

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects. CEQA and

the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the program EIR and by incorporating those analyses by reference.

Section 15168(d) of the State CEQA Guidelines provides for simplifying the preparation of environmental documents by incorporating by reference analyses and discussions. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

By tiering from the General Plan EIR, the environmental analysis for a future project would rely on the General Plan EIR for the following:

- A discussion of general background and setting information for environmental topic areas;
- Overall growth-related issues;
- Issues that were evaluated in sufficient detail in the General Plan EIR for which there is no significant new information or change in circumstances that would require further analysis;
- Assessment of cumulative impacts; and
- Mitigation measures adopted and incorporated into the General Plan.

As previously stated, an Initial Study could be prepared for future projects to evaluate the potential environmental impacts of the future projects with respect to the General Plan EIR to determine what level of additional environmental review, if any, is appropriate.

1.4.2 INFILL PROJECTS

1.4.2.1 INFILL PROJECT STREAMLINING

Senate Bill (SB) 226 (2011) revised the Public Resources Code to allow for streamlining in the environmental review process for certain infill projects. In response to SB 226, the CEQA Guidelines were revised to include Section 15183.3, Appendix M, and Appendix N. The streamlining allowed by SB 226 allows for a full exemption from CEQA or for a more narrowed, project-specific CEQA document.

To be eligible, an infill project must:

- Be located in an urban area on a previously developed site or a site that adjoins existing qualified urban uses on at least 75 percent of its perimeter.
- Satisfy the performance standards in CEQA Guidelines Appendix M.
- Be consistent with the General Plan land use designation, density, building intensity, and applicable policies specified for the project area in either the sustainable communities' strategy or an alternative planning strategy, as defined in CEQA Guidelines Section 18183.3(b)(3).

Streamlining allows for CEQA to not apply to an infill project's effect in the following circumstances:

- If the effect was addressed as a significant impact in a previous program-level EIR (even if that significant impact was not reduced to a less-than-significant level).
- If the effect was not addressed, or if the infill project's impact would be more severe than was analyzed in the previous EIR, the lead agency can make a finding that uniformly applicable development standards and policies would mitigate the effect.

If it is determined that additional environmental review is required for the infill project, such review can be focused on the effects that have not been evaluated in the previous EIR and that would not be mitigated by uniformly applicable development standards and policies.

The proposed General Plan would allow development in already urbanized areas. Therefore, some development allowed under the proposed project may be eligible for streamlining under SB 226.

1.4.2.2 INFILL PROJECT EXEMPTIONS

Section 15332 of the CEQA Guidelines describes infill projects that are categorically exempt from the provisions of CEQA. To be exempt, infill projects must:

- Be consistent with the applicable General Plan designation and all applicable General Plan policies, as well as with the applicable zoning designation and regulations.
- Occur within the city limits on a project site of no more than 5 acres substantially surrounded by urban uses.
- Have no value as habitat for endangered, rare, or threatened species.
- Not result in any significant effects relating to traffic, noise, air quality, or water quality.
- Be able to be adequately served by all required utilities and public services.

Because of the urban characteristics in some areas where development allowed by the proposed General Plan could occur, future projects in Stockton may be eligible for categorical exemptions under Section 15332 of the CEQA Guidelines.

2. Report Summary

This chapter presents an overview of the proposed Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (UMPS), herein referred to as the project or proposed project. This report summary also provides a summary of the alternatives to the proposed project, identifies issues to be resolved, areas of concern, and conclusions of the analysis contained in Chapter 4.0, Environmental Evaluation, of this Draft Environmental Impact Report (Draft EIR). For a complete description of the proposed project, see Chapter 3, Project Description. For a complete discussion of alternatives to the proposed project, see Chapter 5, Alternatives to the Proposed Project.

This Draft EIR assesses the environmental effects associated with the implementation of the proposed project. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An EIR is a public document designed to provide the public and local and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making.

This Draft EIR has been prepared pursuant to the requirements of CEQA[1] and the CEQA Guidelines[2] to determine if approval of the identified discretionary actions and related subsequent development could have a significant effect on the environment (i.e., a significant impact). The City of Stockton, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel and review of all technical consultant reports. Information for this Draft EIR was obtained from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, hazards and hazardous materials, hydrology and water quality, noise, and transportation and circulation).

2.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with adoption and implementation of the proposed project, as well as anticipated future discretionary actions and approvals.

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.

[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

The main purposes of this document as established by CEQA are:

- To disclose to decision-makers and the public the significant environmental effects of proposed activities;
- To identify ways to avoid or reduce environmental damage;
- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures;
- To disclose to the public reasons for agency approval of projects with significant environmental effects;
- To foster interagency coordination in the review of projects; and
- To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in the statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. An EIR is intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided or mitigated.

2.1.1 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- Chapter 1: Introduction. This chapter provides an overview describing the Draft EIR document.
- Chapter 2: Report Summary. This chapter summarizes the environmental consequences that would result from implementation of the proposed project, the alternatives to the proposed project, the recommended mitigation measures, and indicates the level of significance of environmental impacts with and without mitigation.
- Chapter 3: Project Description. This chapter describes the proposed project in detail, including its characteristics, objectives, and structural and technical elements.
- Chapter 4: Environmental Evaluation. This chapter is divided into 15 subchapters. Each subchapter corresponds to the environmental resource categories identified in CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist. This chapter provides a description of the physical environmental conditions in the EIR Study Area as they existed at the time the Notice of Preparation was published, as well as an analysis of the potential environmental impacts of the proposed project and recommended mitigation measures, if required, to reduce their significance.

The environmental setting included in each subchapter provides baseline physical conditions from which the City of Stockton, acting as the lead agency, determines the significance of environmental impacts resulting from the proposed project. Each subchapter also includes a description of the thresholds used to determine if a significant impact would occur and the methodology to identify and evaluate the potential impacts of the proposed project, as appropriate.

- Chapter 5: Alternatives to the Proposed Project. This chapter includes an evaluation of three alternatives to the proposed project, which are the CEQA-required "No Project" Alternative, the Corridors Focus Alternative, and the Infill Focus Alternative.
- Chapter 6: CEQA-Required Assessment Conclusions. This chapter includes a discussion of growth inducement, significant unavoidable effects, and significant irreversible changes as a result of adoption and implementation of the proposed project.
- Chapter 7: Report Preparation. This chapter identifies the preparers of the Draft EIR.

2.1.2 TYPE AND PURPOSE

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

> *Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.*

Because of the long-term planning horizon of the proposed project and the permitting, planning, and development actions that are related both geographically and as logical parts in the chain of contemplated actions for implementation, this Draft EIR has been prepared as a program EIR for the proposed project, pursuant to Section 15168 of the CEQA Guidelines.

Once a program EIR has been certified, subsequent activities within the program must be evaluated to determine whether additional CEQA review needs to be prepared. However, if the program EIR addresses the program's effects as specifically and comprehensively as possible, subsequent activities could be found to be within the program EIR scope, and additional environmental review may not be required (CEQA Guidelines Section 15168[c]). When a program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects that are not within the scope of a program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, a Mitigated Negative Declaration, or an EIR. For these subsequent environmental review documents, this program EIR will serve as the first-tier environmental analysis.

2.2 SUMMARY OF THE PROPOSED PROJECT

Upon adoption by the City of Stockton City Council, the Envision Stockton 2040 General Plan Update (proposed General Plan) would serve as the principal policy document to guide future conservation and development in the City of Stockton. The proposed General Plan includes goals, policies, and actions that

have been designed to implement the City's and community's vision for Stockton. The policies and actions are intended to be used by the City to guide day-to-day decision-making so there would be continuing progress toward attainment of the proposed goals. The proposed General Plan is further detailed in Chapter 3, Project Description, of this Draft EIR.

The proposed Stockton Utility Master Plan Supplements (proposed UMPS) identify needed infrastructure improvements to serve future development. Specifically, the proposed UMPS evaluate and identify needed infrastructure to provide water, wastewater, and stormwater service. These facilities are sized for the amount of development anticipated under the General Plan in its 2040 horizon year, including from approved and pending development projects. The proposed UMPS also present approximate cost information for new infrastructure improvements.

2.3 SUMMARY OF PROJECT ALTERNATIVES

This Draft EIR analyzes alternatives to the proposed project that are designed to reduce the significant environmental impacts of the proposed project and feasibly attain some of the proposed project objectives. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Identification of the environmentally superior alternative involves weighing and balancing all of the environmental resource areas by the City. The following alternatives to the proposed project were considered and analyzed in detail:

- No Project Alternative (existing 2035 General Plan)
- Corridors Focus Alternative
- Infill Focus Alternative

Chapter 5, Alternatives to the Proposed Project, of this Draft EIR, includes a complete discussion of these alternatives.

2.4 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the City of Stockton, as lead agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the proposed project;
- Whether the benefits of the proposed project override those environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance;
- Whether the proposed land use changes are compatible with the character of the existing area;
- Whether the identified mitigation measures should be adopted or modified;
- Whether there are other mitigation measures that should be applied to the proposed project besides those mitigation measures identified in the Draft EIR; and

- Whether there are any alternatives to the proposed project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

2.5 AREAS OF CONCERN

The City of Stockton issued a Notice of Preparation (NOP) for the EIR on May 24, 2017 (State Clearinghouse #2017052062) and held a scoping meeting on June 8, 2017 to receive scoping comments. On August 23, 2017, the NOP was subsequently reissued to revise a figure in the project description that shows the extent of proposed urban to agriculture/open space changes, which began a second 30-day review period. During the 30-day scoping periods for this EIR, responsible agencies and interested members of the public were invited to submit comments as to the scope and content of the EIR. The NOP and Recirculated NOP, as well as the comments received on each NOP and at the scoping meeting, are contained in Appendix A of this Draft EIR. The comments received focused primarily on the following issues:

- Air Quality: Operation and construction and health impacts due to an increase in toxic air contaminants
- Cultural and Tribal Cultural Resources: Tribal cultural consultation
- Hazards and Hazardous Materials: Compliance with standards included in the 2016 Stockton Metropolitan Airport Land Use Compatibility Plan and the 2009 San Joaquin County Airport Land Use Compatibility Plan
- Hydrology and Water Quality: Potential flood hazards, water quality standards, waste discharge requirements, increased runoff, and stormwater discharge
- Land Use: Consistency with the Delta Plan
- Public Services: Impacts to public service providers
- Utilities and Service Systems: Impacts to existing utility infrastructure and facilities, wastewater treatment
- Transportation and Circulation: Cumulative transportation impacts

2.6 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed project has the potential to generate significant environmental impacts in a number of areas. As shown in Table 2-1, some significant impacts would be reduced to a less-than-significant level if the mitigation measures identified in this Draft EIR are adopted and implemented. However, pursuant to Section 15126.2(b) of the CEQA Guidelines, which requires that an EIR describe any significant impacts

that cannot be avoided, even with the implementation of feasible mitigation measures, as shown in Table 2-1, significant unavoidable impacts were identified in the areas of agricultural and forestry resources, air quality, greenhouse gas emissions, noise, population and housing, and transportation and traffic. For a complete summary of the significant and unavoidable impacts, please see Chapter 6, CEQA-Required Assessment Conclusions, of this Draft EIR.

Table 2-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Sections 4.1 through 4.15. Table 2-1 is arranged in four columns: 1) environmental impact; 2) significance without mitigation; 3) mitigation measures; and 4) significance with mitigation. For a complete description of potential impacts, please refer to the specific discussions in Sections 4.1 through 4.15.

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AESTHETICS			
AES-1: Implementation of the proposed project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	N/A
AES-2: Implementation of the proposed project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.	LTS	N/A	N/A
AES-3: Implementation of the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.	LTS	N/A	N/A
AES-4: Implementation of the proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	N/A	N/A
AGRICULTURAL AND FORESTRY RESOURCES			
AG-1: Although the proposed General Plan includes policies and actions that would reduce and partially offset the conversion of farmland, it designates approximately 16,160 acres of farmlands of concern under CEQA for non-agricultural uses.	SU	N/A	SU
AG-2: The proposed General Plan designates 2,464 acres of lands with active Williamson Act contracts for non-agricultural uses.	SU	N/A	SU
AG-3: Implementation of the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.	No Impact	N/A	N/A
AG-4: Implementation of the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.	LTS	N/A	N/A
AG-5: Implementation of the proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmlands of concern under CEQA to non-agricultural use or conversion of forest land to non-forest use.	LTS	N/A	N/A

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

REPORT SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AIR QUALITY			
AQ-1: Implementation of the proposed General Plan would result in the generation of substantial long-term criteria air pollutant emissions that would exceed the SJVAPCD regional significance thresholds and would therefore not be considered consistent with the existing AQMPs.	S	AQ-1: Implement Mitigation Measure AQ-3 to further reduce long-term criteria air pollutant emissions.	SU
AQ-2: Construction activities associated with implementation of the proposed General Plan and UMPS could exceed the SJVAPCD regional significance thresholds.	S	AQ-2: Prior to issuance of any construction permits for development projects subject to California Environmental Quality Act (CEQA) review (i.e., non-exempt projects), development project applicants shall prepare and submit to the City of Stockton Planning and Engineering Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. The prepared evaluation for projects that meet the SJVAPCD Small Projects Analysis Level (SPAL) screening criteria shall at minimum, identify the primary sources of construction emissions and include a discussion of the applicable SJVAPCD rules and regulations and SPAL screening criteria to support a less than significant conclusion. For projects that do not meet the SPAL screening criteria, project-related construction emissions shall be quantified. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Stockton Planning and Engineering Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning and Engineering Division. Mitigation measures to reduce construction-related emissions could include, but are not limited to:	SU

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		▪ Using construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site, which shall be available for City review upon request. ▪ Ensuring construction equipment is properly serviced and maintained to the manufacturer's standards. ▪ Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible. ▪ Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g., five-minute maximum). ▪ Preparation and implementation of a fugitive dust control plan that may include the following measures: • Disturbed areas (including storage piles) that are not being actively utilized for construction purposes shall be effectively stabilized using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover (e.g., revegetated). • On-site unpaved roads and offsite unpaved access roads shall be effectively stabilized using water or chemical stabilizer/suppressant. • Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking. • Material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained when materials are transported offsite. • Operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use	

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

REPORT SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		of blower devices is expressly forbidden.) • Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent. • Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area. • Adhere to Regulation VIII's 20 percent opacity limitation, as applicable. ▪ Enter into a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD. The VERA shall identify the amount of emissions to be reduced, in addition to the amount of funds to be paid by the project applicant to the SJVAPCD to implement emission reduction projects required for the project.	
AQ-3: Operation of development projects allowed under the proposed General Plan would generate emissions that would exceed the SJVAPCD regional significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$.	S	AQ-3: Prior to discretionary approval by the City of Stockton for development projects subject to California Environmental Quality Act (CEQA) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project operation phase-related air quality impacts to the City of Stockton Planning and Engineering Division for review and approval. The evaluation shall be prepared in conformance with San Joaquin Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SJVAPCD-adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Stockton Planning and Engineering Division shall require that applicants for	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the conditions of approval. Possible mitigation measures to reduce long-term emissions can include, but are not limited to the following: ▪ For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions. ▪ Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use. ▪ Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with Section 2485 of 13 CCR Chapter 10. ▪ Provide changing/shower facilities as specified, at minimum, or greater than in the guidelines in Section A5.106.4.3 of the CALGreen Code (Nonresidential Voluntary Measures). ▪ Provide bicycle parking facilities equivalent to or greater than as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code. ▪ Provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles equivalent to or greater than Section A5.106.5.1 of the CALGreen Code (Nonresidential Voluntary Measures). ▪ Provide facilities to support electric charging stations per Section A5.106.5.3 (Nonresidential Voluntary Measures) and Section A5.106.8.2 (Residential Voluntary Measures) of the CALGreen Code. ▪ Applicant-provided appliances shall be Energy Star-certified appliances or appliances of equivalent energy efficiency (e.g., dishwashers, refrigerators, clothes washers, and dryers).	

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Installation of Energy Star-certified or equivalent appliances shall be verified by Building & Safety during plan check. ▪ Applicants for future development projects along existing and planned transit routes shall coordinate with the City Stockton and San Joaquin Regional Transit District to ensure that bus pad and shelter improvements are incorporated, as appropriate. ▪ Applicants for future development projects shall enter into a Voluntary Emissions Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD). The VERA shall identify the amount of emissions to be reduced, in addition to the amount of funds to be paid by the project applicant to the SJVAPCD to implement emission reduction projects required for the project.	
AQ-4: Development allowed under the proposed General Plan and UMPS could result in short- and long-term emissions that could cause or contribute to a violation of the AAQS.	S	AQ-4a: Implement Mitigation Measures AQ-2 and AQ-3 to further reduce construction and operation-related criteria air pollutant emissions. AQ-4b: Prior to discretionary approval, applicants for development projects that are subject to the California Environmental Quality Act (CEQA) shall assess their projects to the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Rule 9510 Applicability Thresholds as follows: ▪ 50 residential units; ▪ 2,000 square feet of commercial space; ▪ 25,000 square feet of light industrial space; ▪ 100,000 square feet of heavy industrial space; ▪ 20,000 square feet of medical office space; ▪ 39,000 square feet of general office space; ▪ 9,000 square feet of education space; ▪ 10,000 square feet of government space; ▪ 20,000 square feet of recreational space; or ▪ 9,000 square feet of space not identified above. Applicants for development projects subject to CEQA that do not meet the SJVAPCD Rule 9510 Applicability Thresholds shall assess whether project-related construction and operational emissions	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		exceed the SJVAPCD 100 pounds per day ambient air quality screening threshold. Applicants for development projects that exceed this ambient air quality screening threshold shall prepare or have prepared an ambient air quality analysis, consistent with the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), to assess whether the subject development project would cause or contribute to a violation of any California Ambient Air Quality Standard or National Ambient Air Quality Standard. The ambient air quality analysis shall identify measures to reduce impacts as necessary. Recommended measures may include those identified in Mitigation Measures AQ-2 and AQ-3. The related recommendations of the ambient air quality analysis shall be incorporated into all construction management and design plans and which shall be submitted to the City and verified by the City's Planning and Engineering Division.	
AQ-5: Implementation of the proposed General Plan could expose sensitive receptors to substantial toxic air contaminant concentrations from non-permitted sources.	S	AQ-5: Prior to discretionary project approval, applicants for industrial or warehousing land uses in addition to commercial land uses that would generate substantial diesel truck travel (i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day based on the California Air Resources Board recommendations for siting new sensitive land uses), shall contact the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Stockton in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. If preparation of an HRA is required, all HRAs shall be submitted to the City of Stockton and the SJVAPCD for evaluation. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the SJVAPCD. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06) or the risk thresholds in effect at the time a project is considered, or that the appropriate noncancer hazard index exceeds 1.0 or the thresholds as determined by the SJVAPCD at the time a project is considered, the applicant will be required to identify and demonstrate that measures are capable	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. Measures to reduce risk impacts may include but are not limited to: ▪ Restricting idling on-site beyond Air Toxic Control Measures idling restrictions, as feasible. ▪ Electrifying warehousing docks. ▪ Requiring use of newer equipment and/or vehicles. ▪ Restricting offsite truck travel through the creation of truck routes. Measures identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project.	
AQ-6: Operation of new industrial land uses accommodated under the proposed General Plan has the potential to create objectionable odors that could affect a substantial number of people.	S	AQ-6: Prior to project approval, if it is determined during project-level environmental review that a project has the potential to emit nuisance odors beyond the property line, an odor management plan shall be prepared and submitted by the project applicant prior to project approval to ensure compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4102. The following facilities that are within the buffer distances specified from sensitive receptors (in parentheses) have the potential to generate substantial odors: ▪ Wastewater Treatment Plan (2 miles) ▪ Sanitary Landfill (1 mile) ▪ Transfer Station (1 mile) ▪ Composting Facility (1 mile) ▪ Petroleum Refinery (2 miles) ▪ Asphalt Batch Plan (1 mile) ▪ Chemical Manufacturing (1 mile) ▪ Fiberglass Manufacturing (1 mile) ▪ Painting/Coating Operations (1 mile) ▪ Food Processing Facility (1 mile) ▪ Feed Lot/ Dairy (1 mile) ▪ Rendering Plant (1 mile)	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		The Odor Management Plan prepared for these facilities shall identify control technologies that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. Control technologies may include but are not limited to scrubbers (e.g., air pollution control devices) at an industrial facility. Control technologies identified in the odor management plan shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.	
BIOLOGICAL RESOURCES			
BIO-1: Implementation of the proposed project would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species.	LTS	N/A	N/A
BIO-2: Implementation of the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community.	LTS	N/A	N/A
BIO-3: Implementation of the proposed project would not have a substantial adverse effect on federally protected wetlands.	LTS	N/A	N/A
BIO-4: Implementation of the proposed project would not interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	N/A	N/A
BIO-5: Implementation of the proposed project would not conflict with any local policies or ordinances protecting biological resources.	LTS	N/A	N/A
BIO-6: Implementation of the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.	LTS	N/A	N/A
CULTURAL AND TRIBAL CULTURAL RESOURCES			
CULT-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of an historical resource.	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
CULT-2: Implementation of the proposed project would not cause a substantial adverse change in the significance of an archaeological resource.	LTS	N/A	N/A
CULT-3: Implementation of the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LTS	N/A	N/A
CULT-4: Implementation of the proposed project would not disturb any human remains.	LTS	N/A	N/A
CULT-5: Implementation of the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource.	LTS	N/A	N/A
GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES			
GEO-1: Implementation of the proposed project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides.	LTS	N/A	N/A
GEO-2: Implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil.	LTS	N/A	N/A
GEO-3: Implementation of the proposed project would not result in a significant impact related to development on unstable geologic units or soils or result in lateral spreading, subsidence, liquefaction, or collapse.	LTS	N/A	N/A
GEO-4: Implementation of the proposed project would not create substantial risks to property as a result of its location on expansive soil, as defined by Section 1803.5.3 of the California Building Code.	LTS	N/A	N/A
GEO-5: Implementation of the proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	N/A	N/A
GEO-6: Implementation of the proposed project would a) result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or b) result in	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.			
GREENHOUSE GAS EMISSIONS			
GHG-1: Implementation of the proposed General Plan would result in a substantial increase in GHG emissions.	S	GHG-1: Within 24 months of adoption of the proposed General Plan, the City of Stockton shall proceed to adoption hearings for an update to its Climate Action Plan (CAP). The CAP shall provide: ▪ GHG inventories of existing and 2030 GHG levels; ▪ Targets for 2030 from land uses under the City's jurisdiction based on the goals of SB 32; and ▪ Tools and strategies for reducing GHG emissions in accordance with the 2030 goals of the CAP. The City shall consider the following GHG reduction measures in its CAP Update: ▪ Reevaluate the City's current green building requirements (Stockton Municipal Code Chapter 15.72, Green Building Standards) every five years to consider additional requirements for substantial new residential and non-residential development to ensure that new development achieves a performance objective consistent with the best performing (top 25 percent) of city green building measures in the state. ▪ Require financing and/or installing energy-saving retrofits on existing structures as potential mitigation measures for discretionary projects that have significant GHG impacts as part of the CEQA process. ▪ Utilize transfer of development rights and other mechanisms, such as an infill mitigation bank, to enhance the viability of development in the Greater Downtown. ▪ Establish a goal for 15 percent of existing development to install solar panels over carports. ▪ Establish a goal to achieve 10 percent of non-residential electricity and 5 percent of residential electricity entirely by solar. ▪ Offer incentives for contractors that use electric equipment when bidding on City contracts.	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		▪ Limit non-essential idling of large construction equipment to no more than 3 minutes. In addition, to implement the CAP, the City shall develop key ordinances, programs, and policies required to promote voluntary, incentive- based measures in the CAP, establish the planning framework for the performance-based development review process, and support and implement the local mandatory GHG reduction measures. These implementation tasks include: ▪ Update the community GHG inventory to monitor emissions trends every five years. ▪ In 2030, develop a plan for post-2030 actions. ▪ Appoint an Implementation Coordinator to oversee the successful implementation of all selected GHG reduction strategies. The primary function of the Implementation Coordinator will be to create a streamlined approach to manage implementation of the CAP. The Implementation Coordinator will also coordinate periodic community outreach to leverage community involvement, interest, and perspectives.	
GHG-2: Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS	N/A	N/A
HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	N/A	N/A
HAZ-2: Implementation of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	N/A	N/A
HAZ-3: Implementation of the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼-mile of an existing or proposed school.	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
HAZ-4: Implementation of the proposed project would not create a significant hazard to the public or the environment as a result of being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	LTS	N/A	N/A
HAZ-5: Implementation of the proposed project would not result in a safety hazard for people residing or working within the airport land use plan area.	LTS	N/A	N/A
HAZ-6: Implementation of the proposed project would not be within the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the project area.	No Impact	N/A	N/A
HAZ-7: Implementation of the proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	LTS	N/A	N/A
HAZ-8: Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.	LTS	N/A	N/A
HYDROLOGY AND WATER QUALITY			
HYDRO-1: Implementation of the proposed project would not violate any water quality standards or discharge requirements.	LTS	N/A	N/A
HYDRO-2.1: Implementation of the proposed project would not substantially deplete groundwater supplies.	LTS	N/A	N/A
HYDRO-2.2: Implementation of the proposed project would not substantially interfere with groundwater recharge.	LTS	N/A	N/A
HYDRO-3: Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.	LTS	N/A	N/A
HYDRO-4: Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
HYDRO-5: Development allowed under the proposed General Plan could result in existing and planned stormwater drain infrastructure to be undersized or otherwise inadequate, which could lead to flooding and polluted runoff.	S	HYDRO-5: Complete a citywide storm drainage master plan, including hydrologic and hydraulic models for existing land use conditions and for the land uses anticipated in 2040 under the proposed General Plan. The master plan should identify the future stormwater infrastructure needs and develop a current stormwater capital improvement plan. As part of this process, require new development to complete stormwater plans covering drainage, flood control, and storm water quality/permitting. Use the master plan and project-level stormwater plans to assess future development, and require that future development construct the required on- and off-site infrastructure.	LTS
HYDRO-6: Implementation of the proposed project would not otherwise substantially degrade water quality.	LTS	N/A	N/A
HYDRO-7: Implementation of the proposed project would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	LTS	N/A	N/A
HYDRO-8: Implementation of the proposed project would not place within a 100-year flood hazard area structures which would impede or redirect flood flows.	LTS	N/A	N/A
HYDRO-9: Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	LTS	N/A	N/A
HYDRO-10: Implementation of the proposed project would not cause substantial flood hazards arising from seiche, tsunami, or mudflow.	LTS	N/A	N/A
LAND USE AND PLANNING			
LU-1: Implementation of the proposed project would not physically divide an established community.	LTS	N/A	N/A
LU-2: Implementation of the proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	N/A	N/A

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Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
LU-3: Implementation of the proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan.	LTS	N/A	N/A
NOISE			
NOISE-1: The proposed project would not expose people to or generate noise levels in excess of standards established in the General Plan or the Municipal Code, and/or the applicable standards of other agencies.	LTS	N/A	N/A
NOISE-2: The proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels.	LTS	N/A	N/A
NOISE-3: Increased traffic from projected development allowed by the proposed General Plan would result in a significant increase in traffic noise levels compared to existing conditions along the following roadway segments: 1. SR-99 between Farmington Road and Mariposa Road 2. SR-4 west of I-5 3. Eight Mile Road between Mokelumne Drive and Trinity Parkway 4. Eight Mile Road between West Lane and SP Railroad 5. Eight Mile Road between SR-99 and west of Bear Creek 6. March Lane between West Land and Bianchi 7. French Camp Road between McDougald and E.W.S Wood 8. California Street between Park and Weber 9. California Street between Weber and Crosstown Freeway 10. Airport Way between Main and Market 11. Airport Way between Ninth and Tenth 12. Airport Way between Sperry and CE Dixon St 13. Mariposa Road between Stagecoach and SR-99 14. B Street between Ralph Avenue and Arch Airport	S	N/A	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
NOISE-4: The proposed project would cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	LTS	N/A	N/A
NOISE-5: The proposed project would not expose people residing or working in the vicinity of the project area to excessive aircraft noise levels from a public airport or public use airport.	LTS	N/A	N/A
NOISE-6: The proposed project would not expose people residing or working in the project area to excessive noise levels from a private airstrip.	LTS	N/A	N/A
POPULATION AND HOUSING			
POP-1: The proposed General Plan and UMPS would induce substantial employment growth within the EIR Study Area.	S	N/A	SU
POP-2: Implementation of the proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.	LTS	N/A	N/A
POP-3: Implementation of the proposed project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	LTS	N/A	N/A
PUBLIC SERVICES AND RECREATION			
PS-1: Implementation of the proposed project would not result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.	LTS	N/A	N/A
PS-2: Implementation of the proposed project would not result in the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.	LTS	N/A	N/A

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PS-3: Implementation of the proposed project would not result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	LTS	N/A	N/A
PS-4: Implementation of the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur, or be accelerated.	LTS	N/A	N/A
PS-5: Implementation of the proposed project would not include recreational facilities and or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	N/A	N/A
PS-6: Implementation of the proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	LTS	N/A	N/A
PS-7: Implementation of the proposed project would not result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	LTS	N/A	N/A
TRANSPORTATION AND TRAFFIC			
TRAF-1: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of local roadways and freeway segments. As shown in Table 4-14.2 and discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.	S	TRAF-1a: The City shall implement the following to reduce the severity of potential LOS impacts on the following City roadway segments: ▪ **March Lane at UPRR.** The adopted 2035 General Plan identifies an eight-lane cross section for this roadway from North El Dorado Street to State Route 99. The proposed General Plan envisions a six-lane cross-section through 2040. With an eight-lane cross-section, the roadway would operate within the established LOS policy. Therefore, to mitigate the impact, the City shall reserve sufficient right-of-way to accommodate an eight-lane cross-	SU

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		section, plus associated turn pockets at intersections. Construction of an eight-lane cross-section would result in an acceptable level of service for vehicles, but could preclude the provision of facilities that would encourage higher levels of transit ridership, walking and bicycling along the corridor. Prior to the construction of additional roadway improvements along the March Lane corridor, the City shall conduct a focused complete streets study to analyze and evaluate peak hour and daily operations of March Lane between I-5 and State Route 99 to identify the cross-section required to accommodate existing and planned growth. The complete streets study shall consider the potential mode shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the corridor. Should the complete streets study show that corridor operations would fall within the established level of service standard for the six-lane cross-section, an implementation program of the identified bicycle, pedestrian, and transit improvements shall be required. Alternatively, the mitigation measure is to provide an eight-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level. ▪ **March Lane between West Lane and Bianchi Road.** The adopted 2035 General Plan identifies an eight-lane cross section for this roadway from North El Dorado Street to State Route 99. The proposed General Plan envisions a six-lane cross-section through 2040. With an eight-lane cross-section, the roadway would operate within the established LOS policy. Therefore, to mitigate the impact, the City shall reserve sufficient right-of-way to accommodate an eight-lane cross-section, plus associated turn pockets at intersections. Prior to the construction of additional roadway improvements along the March Lane corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of March Lane between I-5 and State Route 99 to identify the cross-section required to accommodate existing and planned growth. The analysis shall consider the potential mode	

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		shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the corridor. Should corridor operations fall within the established level of service standard with a six-lane cross-section, the study shall identify bicycle, pedestrian, and transit enhancements that are necessary to serve the corridor. Otherwise, the mitigation measure is to provide an eight-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level. ▪ **Dr. Martin Luther King Jr. Boulevard between I-5 and Airport Way**. This section of Dr. Martin Luther King Jr. Boulevard is built out to its ultimate capacity and no further improvements are planned. Provision of parallel capacity in the area would provide alternative travel choices within this area of South Stockton, but is not expected to result in LOS D operations in the Cumulative with Proposed Plan condition. Therefore, this impact would remain *significant and unavoidable*. ▪ **8th Street between Pock Lane and D Street**. This roadway section currently provides one travel lane in each direction with on-street parking within a 60-foot curb-to-curb right-of-way. There is sufficient right-of-way to modify the roadway cross-section to maintain on-street parking (8 feet), provide bicycle lanes (6 feet), one travel lane in each direction (10 feet), and a center two-way left-turn lane (12-feet). With modifications within the existing right-of-way, vehicular capacity could increase, reducing the impact to a less-than-significant level. Therefore, to mitigate the impact, the City shall conduct a detailed engineering study of 8th Street between El Dorado Street and Mariposa Road to identify roadway improvements that can be implemented within the existing right-of-way to improve travel for all modes, especially considering the potential for a grade-separated crossing of the railroad tracks, which would provide an additional east-west connection in South Stockton. Implementation of this mitigation measure would reduce this impact to *a less-than-significant* level. ▪ **Arch Airport Road between SR 99 and Quantas Lane**. This section of Arch-Airport Road is built out to its ultimate capacity and no	

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		further improvements are planned. Provision of parallel capacity in the area would provide alternative travel choices within this area of South Stockton, but is not expected to result in LOS D operations in the Cumulative with Proposed Plan condition. Therefore, this impact would remain *significant and unavoidable*. ▪ **California Street between Harding Way and Park Street.** Prior to the construction of roadway improvements along the California Street corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of California Street from north of Harding Way to south of Park Street. The evaluation shall consider the effect of providing exclusive bicycle facilities on peak hour and daily operations along the corridor. The study shall also evaluate parallel roadway facilities that could potentially see an increase in vehicle traffic with a lane reduction on California Street. Should the study indicate vehicle operations would fall below the level of service standard for the facility, even considering potential traffic shifts to other roadways (and the secondary impact of those shifts), and the potential mode shift to non-auto travel modes, the mitigation measure is to retain the existing vehicle capacity and explore other alternatives for providing bicycle facilities through the corridor. Should the analysis indicate vehicle levels of service would remain within the City's standard for the roadway facility, the mitigation measure is to construct exclusive bicycle facilities within the existing cross-section. Implementation of this mitigation measure would reduce this impact to a *less-than-significant* level. ▪ **B Street between Dr. Martin Luther King Jr. Boulevard and 4th Street**. The City shall reserve sufficient right-of-way to accommodate a four-lane cross-section, plus associated turn pockets at intersections. Prior to the construction of additional roadway improvements along the B Street corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of B Street between Dr. Martin Luther King Jr.	

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Boulevard and Arch-Airport Road to identify the cross-section required to accommodate existing and planned growth. The analysis shall consider the potential mode shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the corridor. Should corridor operations fall within the established level of service standard with a two-lane cross-section, the study shall identify bicycle, pedestrian, and transit enhancements that are necessary to serve the corridor. Otherwise, the mitigation measure is to provide a four-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level. TRAF-1b: The City shall implement the following to reduce the severity of potential LOS impacts on the following freeway segment: ▪ **State Route 99 between Farmington Road and Fremont Street**. The Cumulative with Proposed Plan transportation analysis considers the widening of State Route 99 through Stockton to its ultimate planned width. No additional improvements have been identified. Implementation of the proposed General Plan and its associated policies are expected to provide alternative travel choices to Stockton residents and workers, shifting travel patterns and modes. However, deficient operations are expected to occur on State Route 99, and this impact would remain *significant and unavoidable*.	
TRAF-2: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of regional roadways and freeway segments. As discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.	S	TRAF-2: The City of Stockton shall continue to participate in planning efforts for regional transportation facilities.	SU
TRAF-3: Implementation of the proposed Plan would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	LTS	N/A	N/A

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

REPORT SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TRAF-4: Implementation of the proposed Plan would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A
TRAF-5: Implementation of the proposed Plan would not result in inadequate emergency vehicle access.	LTS	N/A	N/A
TRAF-6: Implementation of the proposed Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	LTS	N/A	N/A
UTILITIES AND SERVICE SYSTEMS			
UTIL-1: Implementation of the proposed project would have sufficient water supplies available to serve the proposed project from existing entitlements and resources, and would not require new or expanded entitlements.	LTS	N/A	N/A
UTIL-2: Implementation of the proposed project would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A
UTIL-3: Implementation of the proposed project would not exceed wastewater treatment requirements of the CVRWQCB.	LTS	N/A	N/A
UTIL-4: Implementation of the proposed project would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A
UTIL-5: The City of Stockton Municipal Utilities Department, which would serve the project, has sufficient wastewater treatment capacity to serve the project as well as existing developments in its service area.	LTS	N/A	N/A
UTIL-6: Implementation of the proposed project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	N/A	N/A

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
UTIL-7: Implementation of the proposed project would be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	LTS	N/A	N/A
UTIL-8: Implementation of the proposed project would comply with federal, State, and local statutes and regulations related to solid waste.	LTS	N/A	N/A
UTIL-9: Implementation of the proposed project would not result in a substantial increase in natural gas and electrical service demands that would require new energy supply facilities and transmission infrastructure or capacity-enhancing alterations to existing facilities, the construction of which would cause significant environmental effects.	LTS	N/A	N/A

LTS = Less than Significant, S = Significant, SU = Significant and Unavoidable

REPORT SUMMARY

3. Project Description

This Environmental Impact Report (EIR) provides an assessment of the proposed Envision Stockton 2040 General Plan Update, published as a Draft for Public Review concurrently with this Draft EIR on June 26, 2018. The proposed General Plan replaces the City's existing 2035 General Plan, which was adopted in December 2007. The proposed General Plan is intended to guide development and conservation in the city through 2040.

The City's Housing Element was updated in April 2016 and is incorporated into the proposed General Plan by reference. The Housing Element has already undergone separate environmental review as part of its adoption process and is not analyzed as part of this EIR.[1]

This EIR also assesses the proposed Stockton Utility Master Plan Supplements (UMPS). The UMPS will consist of separate documents that will identify needed improvements to water, wastewater, and storm drainage facilities to serve anticipated development under the updated General Plan.

This chapter of the EIR describes the proposed General Plan and UMPS and the processes that created them. Major differences between the existing (2007) Plan and the proposed General Plan are also highlighted in this chapter.

3.1 OVERVIEW

The overall purpose of the proposed General Plan is to create a policy framework that articulates a vision for the city's long-term physical form and development, while preserving and enhancing the quality of life for Stockton's residents. The proposed General Plan contains the following chapters:

- Land Use
- Transportation
- Safety
- Community Health

The proposed UMPS are separate documents that depict conceptual pipeline alignments, storage, treatment, and pumping facilities needed to provide water, wastewater, and stormwater service for anticipated development under the updated General Plan.

In compliance with the California Environmental Quality Act (CEQA), this EIR describes the potential environmental impacts associated with the adoption and implementation of the Envision Stockton 2040 General Plan Update and UMPS. Section 15125 of the CEQA Guidelines establishes that the physical

[1] City of Stockton, 2016. *Initial Study/Negative Declaration for the City of Stockton 2015-2023 Housing Element*, February 8.

environmental conditions at the time of the issuance of the Notice of Preparation (NOP) constitute the baseline conditions by which it is determined whether an impact is significant. The NOP for the General Plan Update and UMPS EIR was published on May 24, 2017 (State Clearinghouse #2017052062). On August 23, 2017, the NOP was subsequently reissued to revise a figure in the project description that shows the extent of proposed urban to agriculture/open space changes. The City of Stockton Planning and Engineering Division is the Lead Agency for the environmental review of the proposed project.

3.2 LOCATION AND SETTING

Stockton is located east of the San Francisco Bay Area near the center of San Joaquin County and serves as the County seat; nearby cities include Manteca, Lathrop, Tracy, and Lodi. North-south regional access is provided via Interstate 5 and State Route 99; east-west regional access is provided through State Route 4. The Stockton Municipal Airport, located just south of the city limit, provides commercial passenger service to limited destinations, along with air cargo service and other operations. Figure 3-1 shows Stockton's regional location.

Stockton is located along the San Joaquin River among the many waterways that make up the eastern Sacramento-San Joaquin Delta. The city houses one of two inland sea ports in California, which provides an important commerce gateway to the Central Valley and the rich agricultural lands of the northern San Joaquin Valley.

Stockton was settled in 1845 by Charles Weber, who named the city in honor of Commodore Robert Stockton and his actions during the 1846 Mexican-American War. The settlement quickly transformed into a growing commercial empire after the 1848 discovery of gold near the American River, east of Sacramento, and the City of Stockton was officially incorporated in 1850.

Historically, Stockton's major economic endeavors have revolved around agriculture and shipping, including ship building. In September 1996, Stockton's Naval Reserve Center on Rough and Ready Island was closed and was subsequently transferred to the Port of Stockton. The facility had served as a major communications outpost for Pacific submarine activities during the Cold War. The base is currently being redeveloped as a commercial property.

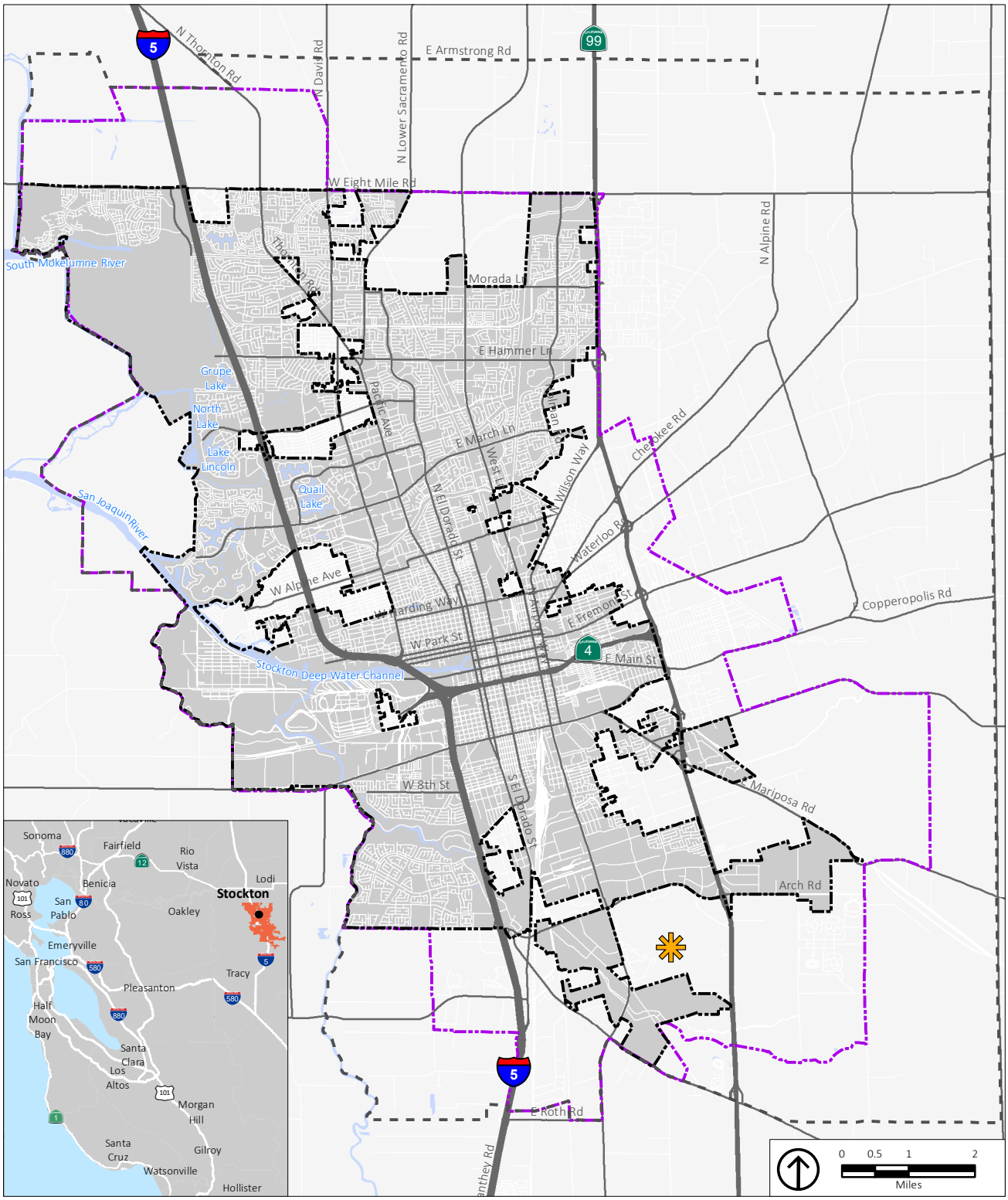
As of 2017, the population of Stockton is approximately 320,600 people, there are about 100,300 homes, and the average household size is 3.23 people per household.[2] The median age of Stockton residents in 2015 was 31 years, which is younger than the overall statewide median average of 36 years.[3]

As of 2015, approximately 44 percent of Stockton's population identified themselves as white, 21 percent as Asian, 12 percent as black or African American, 1 percent as American Indian, and 1 percent as Hawaiian or other Pacific Islander. Approximately 42 percent identified themselves as being of Hispanic origin and 8 percent reported being two or more races.[4]

[2] State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*.

[3] US Census Bureau. *2011-2015 American Community Survey 5-Year Estimates*.

[4] US Census Bureau. *2011-2015 American Community Survey 5-Year Estimates.*



Source: City of Stockton, 2016; Placeworks, 2017.

General Plan Planning Area
City Limit
Sphere of Influence/ EIR Study Area
Airport

Figure 3-1
Regional Location

3.3 PROJECT AREA

The State of California encourages cities to look beyond their borders when undertaking the sort of comprehensive planning required of a General Plan. For this reason, the General Plan delineates three areas known as the Urban Service Area Boundary (USAB), Sphere of Influence (SOI), and General Plan Planning Area, all of which are larger than the city limit. The General Plan also delineates the Greater Downtown and Downtown Core areas, and proposes policies and land use standards that are specific to these geographic regions. These five planning boundaries are shown in Figure 3-2 and described below. The City only has jurisdiction over land that is within the city limit. However, it is probable that some of the land within the SOI will be annexed by the City of Stockton within the horizon of the proposed General Plan, and would therefore be under Stockton's jurisdiction in the future. Therefore, this EIR focuses on the analysis of potential changes within the SOI (i.e., the "EIR Study Area").

3.3.1 CITY LIMIT

The city limit encloses an area of about 65 square miles. The City of Stockton has primary authority over land use and other governmental actions within this area.

3.3.2 DOWNTOWN CORE

The Downtown Core area is bounded by Park Street, the railroad tracks west of S. Airport Way, Highway 4, and Interstate 5; it totals about 1 square mile.

3.3.3 GREATER DOWNTOWN

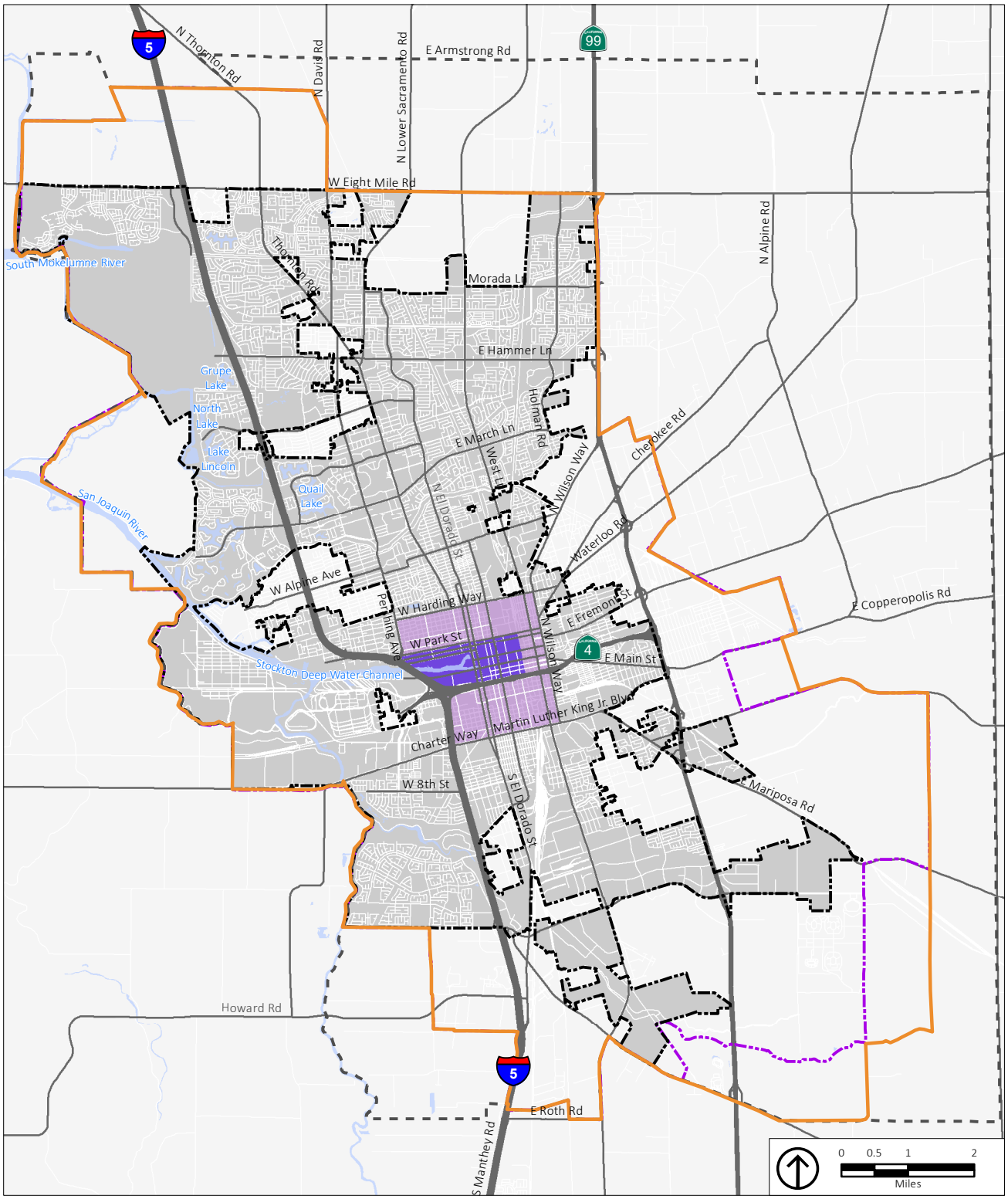
The Greater Downtown area is bounded by Harding Way, Charter Way/Martin Luther King Jr. Boulevard, Pershing Avenue, and Wilson Way; it totals almost 4 square miles.

3.3.4 URBAN SERVICE AREA BOUNDARY

The USAB includes areas where City services and facilities will be available for extension upon annexation and where future urban development must be in conformance with City Council-adopted master utility and circulation plans. Areas outside the USAB are primarily designated for agricultural and open space uses. The proposed USAB is approximately 120 square miles in size. As shown on Figure 3-1, the USAB follows the SOI boundary in many locations, but extends into portions of the larger Planning Area in areas southeast of the SOI.

3.3.5 SPHERE OF INFLUENCE

The SOI is a boundary that identifies land that the City may annex in the future, and for which urban services, if available, could be provided. Under State law, the SOI is established by the San Joaquin County Local Agency Formation Commission (LAFCO) with input from the City, and its purpose is to identify areas where urban development can be best accommodated in an orderly and efficient manner. The SOI may



Source: City of Stockton, 2016; Placeworks, 2017.

City Limit
Downtown Core
Greater Downtown
Urban Service Area Boundary
Sphere of Influence/ EIR Study Area
General Plan Planning Area

PLACEWORKS

Figure 3-2
Planning Boundaries

need to be updated after adoption of the General Plan to reflect the updated land use plan. The current SOI is 115 square miles in size.

3.3.6 GENERAL PLAN PLANNING AREA

The existing and proposed Stockton General Plans identify a Planning Area, which, at approximately 191 square miles, is larger than the SOI and USAB. While the Planning Area does not give the City any regulatory power over the land, it signals to the County and to other nearby local and regional authorities that Stockton recognizes that development within this area may have an impact on the future of the city.

3.4 PROPOSED GENERAL PLAN DESCRIPTION

The proposed General Plan would be the principal policy and planning document for guiding future conservation, enhancement, and development in the city. It would represent the basic policy direction of the Stockton City Council on community values, ideals, and aspirations through 2040. The General Plan addresses all aspects of development including land use, transportation, housing, economic development, public facilities and infrastructure, and open spaces, among other topics.

California Government Code Section 65300 requires that the General Plan be comprehensive, internally consistent, and long-term. Although required to address the issues specified in State law, the General Plan may be organized in a way that best suits the city. The plan must be clearly written, available to all those concerned with the community's development, and easy to administer.

The proposed General Plan meets these requirements. The General Plan articulates a vision for the city's long-term physical form and development. It also brings a deliberate overall direction to the day-to-day decisions of the City Council, its commissions, and City staff. In particular, the General Plan would serve six related purposes:

- Policy Determination. The General Plan would define a set of policies that govern the future physical development of the community.
- Policy Implementation. The General Plan would provide a framework for the comparison and evaluation of specific projects.
- Communication. The General Plan would provide a communication forum among the City, community members, and key stakeholders about a shared vision for the future of the city.
- Guidance. The General Plan would provide a coherent, unified structure for the Planning Commission to make decisions under its authority and to advise the City Council on development issues, and to allow the City to provide advice and recommendations to County and State government.
- Education. The document, and the process of creating and revising it, would provide a forum for the City to educate itself and others on the problems and opportunities of the city.
- Action Plan. The General Plan Action Plan would include specific actions that the City will take in order to meet its planning goals. These actions would constitute a work program for the City Council, City commissions, and City staff over the life of the General Plan.

In order to be used in the ways described above, the General Plan contains the following characteristics and information:

- Defines a realistic vision of what the City intends to accomplish in the long term.
- Serves as a comprehensive guide for making decisions about land use, community character, economic development, circulation, open space, the environment, and public health and safety.
- Contains a general level of information to allow for flexibility of future conditions and ideas and is designed to allow amendment in the future.
- Charts the course of coordinated development and conservation that will preserve the character and heritage of Stockton.
- Serves as the City's "constitution" for land use and community development. The General Plan provides the legal foundation for all zoning, subdivision, and public facilities ordinances, decisions, and projects, all of which must be consistent with the General Plan.
- Offers a clear and easy-to-understand format that encourages public debate and understanding.

3.4.1 GENERAL PLAN OBJECTIVES

The proposed General Plan is based on a vision to promote investment in the Downtown and historically underserved areas, preserve and enhance neighborhood character, and improve community health and safety. The following vision statement is included in the proposed General Plan and outlines its objectives:

> *The Stockton community celebrates the city's cultural, lifestyle, and ethnic diversity and is proud of our tradition of looking out for each other in Stockton's many distinct neighborhoods. The community's vision for the future of Stockton is rooted in the people – honoring our history, strengthening the sense of belonging we enjoy today, and improving the safety and prosperity of all who live, work, and spend time in our city.*
>
> *To that end, the General Plan envisions Stockton in 2040 as a regional destination attracting residents and visitors to cultural events, arts, entertainment, well-maintained parks, and a variety of dining options covering a wide range of ethnic cuisines. Residents and visitors alike will feel safe enjoying these attractions at all times of day and night throughout the city. Historic buildings and architecture will inspire artists, makers, and entrepreneurs that live and work in the Downtown, drawing people from near and far who seek this vibrant and creative energy. Places like the arena, ballpark, marina, Hotel Stockton, Waterfront Hotel, and Weber Point Events Center will be hubs of bustling activity that infuse the surrounding area with restaurant and shop patrons.*
>
> *The entire Stockton community, including South Stockton, will have opportunities to maintain active and healthy lifestyles, and all areas of the city will provide easy access to medical facilities and fresh, affordable, and healthy food, including from grocery stores, community gardens, and farmers markets. Safe and interconnected bicycle and pedestrian facilities will provide real alternatives to car commutes along beautiful complete streets and access to active recreation throughout the city and beyond. Stockton's urban forest will continue to expand and thrive, inspiring residents to enjoy outdoor activities and integrating nature into the urban fabric.*

Residents of all backgrounds will have access to housing at all affordability levels and job opportunities with wages that are competitive with the rest of the region and state. Small businesses serving individual neighborhoods and places like the Downtown and Miracle Mile will thrive, while large-scale retail will continue to generate sales from the surrounding region. Major employers will locate in Stockton, attracted to its central location, pleasant climate, and airport, port, freeway, and transit access. Expanded flight service at the airport will fuel business and employment growth in South Stockton in particular, leading to public investments and new job opportunities that infuse the surrounding neighborhoods with positive change.

Stockton will be a leader in sustainability, with City incentives for energy conservation and green building. Stockton will also foster innovation by continuing to host colleges and universities - including a new California State University (CSU) Stockton campus - that cultivate an inquisitive and youthful energy that permeates the city. Students will find quality jobs in their career paths without having to leave Stockton, choosing to stay because of the affordable cost of living, range of housing options, convenient services, and wide variety of things to do outside of work.

The edges of Stockton will be discrete and clear, agriculture will continue to thrive outside the urbanized city, and Stockton residents will enjoy scenic views of agricultural land. Development and redevelopment of vacant, underutilized, and blighted areas will be prioritized over development that extends into agricultural areas, strengthening the city's core and preserving the open space that surrounds it.

3.4.2 GENERAL PLAN UPDATE PROCESS

The process to update the existing 2035 General Plan began in March 2016 and is scheduled to be completed with the adoption of the General Plan by the City Council in 2018.

The proposed General Plan was developed with extensive community input. Widely-publicized community workshops were held to inform community members about the update and to invite feedback on the process. To help guide the work of the consultant team and City staff, a General Plan Subcommittee was formed, composed of three members of the Stockton Planning Commission. Two City Council study sessions, three Planning Commission study sessions, eight community workshops, and numerous other meetings targeting various stakeholders have been held during the planning process, all of which were open to the public and included extensive public comment periods. In addition, one study session each with the City Council and Planning Commission and two more community workshops are planned after publication of this Draft EIR to review the Draft General Plan, UMPS, and EIR, and five more Planning Commission and City Council meetings are planned for final review and adoption. The City also hosted a number of other community outreach meetings with community groups throughout the General Plan process. This input and direction from the public was then incorporated into the General Plan by City staff and the General Plan consultant team.

The City of Stockton created a General Plan website at www.stocktonca.gov/envisionstockton to enhance and inform the public process. The website provides maps, documents, and meeting information related to the General Plan Update, and links to an external online discussion forum in which members of the public can post and discuss comments about Stockton and the General Plan.

The process to update the General Plan included the phases discussed below.

3.4.2.1 EXISTING CONDITIONS

The first phase of the General Plan Update process was devoted to researching and documenting baseline environmental conditions in Stockton. This effort resulted in a series of technical memoranda covering the following topics: land use, market analysis, community character, transportation, community services, hazards, and cultural resources. These memoranda informed the visioning phase and the development of land use alternatives as well as provide the foundation of baseline conditions for this EIR.

3.4.2.2 VISIONING

The visioning phase involved a public process to craft a vision statement that reflects a shared community aspiration for Stockton in the year 2040. This vision statement, presented in Section 3.4.1 above, serves as guidance for the General Plan. This task included three community workshops, one of which was focused on youth and young adults in Stockton, as well as a Planning Commission study session. At these meetings, staff and the consultant team presented information from the existing conditions analysis, and participants shared and discussed issues and opportunities in Stockton that ultimately formed the framework for the vision statement.

3.4.2.3 LAND USE ALTERNATIVES

At the outset of this phase, the City hosted a mobile workshop on a double-decker bus. Participants toured various parts of Stockton where previous input had suggested the need for change, with the upper level affording a view from up high to see a different perspective than is typically seen via car, bicycle, or walking. Based on the suggestions from the mobile workshop, combined with the input from the visioning phase, City staff and the consultant team crafted three distinct scenarios – Existing General Plan, Corridors Focus, and Infill Focus – each of which described a different way that Stockton could evolve over the next 25 years. The land use scenarios were then compared to help the community decide which scenario, or combination of components from the scenarios, offers the most benefit. Over the course of two community workshops, a Planning Commission study session, and a City Council study Session, a "preferred scenario" was selected, which became the land use map that is included in the proposed General Plan. This proposed land use map would guide the nature, pattern, and location of land development and conservation in the city.

3.4.2.4 GOALS AND POLICIES

Following the land use alternatives phase, City staff and the consultant team drafted goals that parallel the vision statement and support the concepts in the preferred land use scenario. These draft goals were presented to the community at two open house events, where community members suggested specific policies to carry out those goals. Planning Commissioners and City Councilmembers then reviewed and added to the community's policy direction during one study session for each entity. City staff and the consultant team then identified a draft set of actions that implement the goals and policies and comprise the General Plan Action Plan. These draft actions were developed based on a combination of policies and implementation measures from the existing 2035 General Plan, input from the community and decision-

makers throughout the process, consideration of relevant State and local laws, and best practices in the planning profession.

3.4.2.5 DRAFT GENERAL PLAN

Concurrent with the publication of this Draft EIR, the City published a draft version of the General Plan for public review and comment. The Draft General Plan incorporates the vision statement, preferred scenario, and goals, policies, and actions developed through the prior phases, integrated with feedback collected during community participation processes.

3.4.2.6 PUBLIC REVIEW AND ADOPTION

The remaining tasks of the General Plan Update process will include the review and adoption of final documents and the certification of the EIR. This phase includes the 45-day public review period of the EIR, followed by revision of the Draft EIR based on the public comments received, and completion of the Final EIR. In addition, a series of City Council and Planning Commission hearings will be held to consider certification and adoption of the Final EIR and General Plan.

3.4.3 MAJOR COMPONENTS OF THE GENERAL PLAN

This section provides a summary of the major components of the proposed General Plan.

3.4.3.1 GENERAL PLAN CONTENTS AND ORGANIZATION

The proposed General Plan includes an introductory chapter, a chapter describing the planning framework, four separate chapters that establish goals and policies for each given set of topics, and an Action Plan that outlines specific measures, procedures, programs, or techniques that will implement the policies. The chapters cover all of the topics required by California State Government Code Section 65302 as well as topics of particular interest to Stockton. A brief explanation of each General Plan chapter is provided below.

- Land Use. This section meets the requirements of the State-required Land Use Element. It designates all lands within Stockton's Planning Area for specific uses such as housing, retail, industrial, or agricultural uses. The Land Use Chapter also provides development regulations for each land use designation and overall land use policies for the City, including the connection between land use and transportation and utilities infrastructure. This chapter also incorporates the State-required Open Space and Conservation Element topics, as well as other topics important to the community, including economic development and community design.
- Transportation. This chapter satisfies the State law requirement that the Transportation Element specify the general location and extent of existing and proposed major streets and other transportation facilities. This chapter is correlated with the Land Use chapter to provide adequate pedestrian, bicycle, motor vehicle, transit, air, and water transportation to serve both new and existing land uses.

- **Safety.** This chapter serves as the State-required Safety Element. It provides information about risks in Stockton due to natural and human-made hazards, and contains goals, policies, and actions designed to protect the community and its property from hazards. It specifically addresses risks associated with geologic and seismic hazards, flooding and storm drainage, wildland fires, and hazardous materials and waste. Based on clear community input to prioritize public safety from criminal activity, this chapter also includes policies and actions to deter crime and support law enforcement and community protection efforts.
- **Community Health.** The Community Health Chapter addresses the State-required Environmental Justice and Noise Element topics, as well as Air Quality, which is a required general plan topic regionally per the San Joaquin Valley Air Pollution Control District. This chapter also addresses public services and utilities, as well as the community-identified priorities of public health, recreation, youth and education, the local economy, and climate change and adaptation.

3.4.3.2 GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Each topical section of the proposed General Plan contains background information and a series of goals and policies. A goal is a description of the general desired result that the City seeks to create through the implementation of the General Plan. Each goal is supported by multiple policies. A policy is a specific statement that guides decision-making and directs on-going efforts to achieve the goal. Policies establish the standards that would be used by City staff and the Planning Commission in their review of land development projects and in decision-making about City actions.

Each policy is implemented by at least one action in the Action Plan. General Plan actions include measures, procedures, programs, or techniques that would implement the policies. Taken together, the actions in the General Plan Action Plan would constitute a "to-do list" for the City of Stockton.

3.4.3.3 GENERAL PLAN LAND USE DESIGNATIONS

The proposed General Plan land use map is shown in Figure 3-3. The General Plan would define various land use designations by their allowable uses and standards of density and intensity. Table 3-1 provides the acreage for each land use designation within the EIR Study Area.

In the proposed General Plan, standards of building intensity for residential uses are stated as the allowable range of dwelling units per gross or net acre. Based on the gross acre calculation, the number of allowable units on a parcel can be

TABLE 3-1 ACREAGE OF LAND USE DESIGNATIONS

Land Use Designation	Acres
Residential Estate	520
Low Density Residential	21,230
Medium Density Residential	2,460
High Density Residential	1,090
Mixed Use	2,760
Administrative Professional	820
Commercial	3,610
Industrial	12,520
Economic and Education Enterprise	3,790
Institutional	7,430
Parks and Recreation	1,690
Open Space/Agriculture	4,070
Total Acres	**61,990**

Note: This table reports land use designations mapped in the proposed General Plan land use map, and excludes unmapped areas, such as rights-of-way (ROW).
Source: PlaceWorks GIS, 2017.

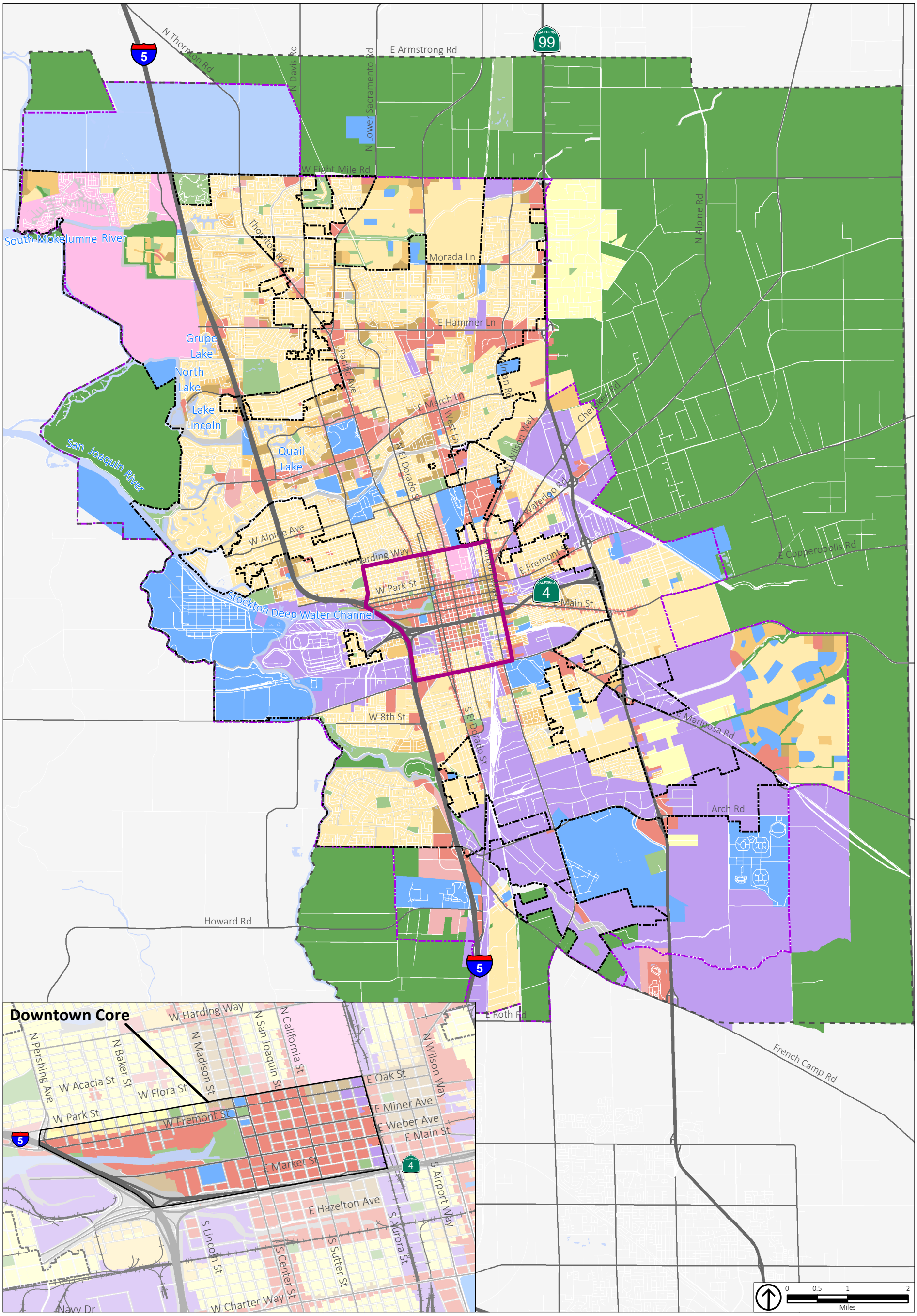
calculated by multiplying the total number of acres by the allowable gross density. The net acre calculation would use a parcel acreage that excludes land devoted to road and infrastructure rights-of-way (ROW). The proposed General Plan establishes the following assumptions about the percentage of land devoted to ROW based on the land use designation:

- Residential Estate: 10 percent
- Low Density Residential: 30 percent
- Medium Density Residential: 25 percent
- High Density Residential: 20 percent

Standards of building intensity for non-residential uses are stated as maximum floor-area ratios (FAR) based on net acreage. FAR is a ratio of the building square footage permitted on a lot to the net square footage of the lot. For example, on a site with 10,000 square feet of net land area, a FAR of 1.0 will allow 10,000 square feet of building floor area to be built. On the same site, a FAR of 2.0 would allow 20,000 square feet of floor area. This could take the form of a two-story building with 100 percent lot coverage, or a four-story building with 50 percent lot coverage. A FAR of 0.4 would allow 4,000 square feet of floor area.

The following sections describe the proposed land use designations for the General Plan.

- Residential Estate. This designation allows for single-family residential units, public and quasi-public uses, second units, and other similar and compatible uses. The maximum density is 0.9 unit per acre based on gross acreage and 1 unit per acre based on net acreage.
- Low Density Residential. This designation allows for single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. The maximum density is 6.1 units per acre based on gross acreage and 8.7 units per acre based on net acreage.
- Medium Density Residential. This designation allows for single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. Based on gross acreage, this designation allows densities ranging from 6.2 to 13.1 units per acre; based on net acreage, it allows 8.8 to 17.4 units per acre. This designation also allows neighborhood-serving retail, commercial service, and mixed uses in appropriate locations that provide residents with easy access to daily services and necessities within their neighborhood, provided that they are compatible with surrounding uses, at a maximum FAR of 0.3.
- High Density Residential. This designation allows for multi-family residential units, apartments, dormitories, group homes, guest homes, public and quasi-public uses, and other similar and compatible uses. This designation also allows neighborhood-serving retail, commercial service, and mixed uses in appropriate locations that provide residents with easy access to daily services and necessities within their neighborhood, provided that they are compatible with surrounding uses. The allowable density and intensity ranges differ based on the geographic area, as follows:
  - *Outside the Greater Downtown:* Based on gross acreage, this designation allows 13.2 to 24 units per acre; based on net acreage, it allows 17.5 to 30 units per acre. The maximum FAR for neighborhood-serving retail uses is 0.3.



Source: City of Stockton, 2017; PlaceWorks, 2017.

- Residential Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use
- Commercial
- Administrative Professional
- Industrial
- Economic and Education Enterprise
- Institutional
- Parks and Recreation
- Open Space/Agriculture
- City Limit
- Sphere of Influence
- General Plan Planning Area
- Greater Downtown Boundary

Figure 3-3
Proposed General Plan Land Use Map

- *Inside the Greater Downtown:* Based on gross acreage, this designation allows 16 to 72 units per acre; based on net acreage, it allows 20 to 90 units per acre. The maximum FAR for neighborhood-serving retail uses is 3.0.
- *Inside the Downtown Core:* Based on gross acreage, this designation allows 16 to 108.8 units per acre; based on net acreage, it allows 20 to 136 units per acre. The maximum FAR for neighborhood-serving retail uses is 5.0.

- Mixed Use. This designation allows for a mixture of compatible land uses including residential, administrative and professional offices, retail and service uses, industrial, and public and quasi-public facilities to be determined through a master development plan adopted concurrently with the designation of the property as Mixed Use. The master development plan will determine development standards in accordance with the requirements of the Stockton Development Code. The minimum development size is 100 acres, and the maximum FAR is 0.5. Based on gross acreage, this designation allows 13.2 to 24 units per acre; based on net acreage, it allows 17.5 to 30 units per acre.
- Administrative Professional. This designation allows for business, medical, and professional offices; residential uses; public and quasi-public uses; and other similar and compatible uses. This designation also allows ancillary retail uses that provide office workers and residents in the immediate area with convenient access to daily services and necessities near their work, provided those retail and service uses can operate compatibly with surrounding uses. This designation is appropriate on the borders of residential areas. The maximum FAR and allowable residential density ranges differ based on the geographic area, as follows:
  - *Outside the Greater Downtown:* The maximum FAR is 0.5. Based on gross acreage, this designation allows 13.2 to 24 units per acre; based on net acreage, it allows 17.5 to 30 units per acre.
  - *Inside the Greater Downtown:* The maximum FAR is 3.0. Based on gross acreage, this designation allows 16 to 72 units per acre; based on net acreage, it allows 20 to 90 units per acre.
  - *Inside the Downtown Core:* The maximum FAR is 5.0. Based on gross acreage, this designation allows 16 to 108.8 units per acre; based on net acreage, it allows 20 to 136 units per acre.
- Commercial. This designation allows for a wide variety of retail, service, and commercial recreational uses; business, medical, and professional offices; residential uses; public and quasi-public uses; and other similar and compatible uses. Community or regional commercial centers as well as freestanding commercial establishments are permitted. In addition, limited industrial uses are allowed, provided that they are indoors and compatible with surrounding uses. The maximum FAR and allowable residential density ranges differ based on the geographic area, as follows:
  - *Outside the Greater Downtown:* The maximum FAR is 0.3. Based on gross acreage, this designation allows 13.2 to 24 units per acre; based on net acreage, it allows 17.5 to 30 units per acre.
  - *Inside the Greater Downtown:* The maximum FAR is 3.0. Based on gross acreage, this designation allows 16 to 72 units per acre; based on net acreage, it allows 20 to 90 units per acre.
  - *Inside the Downtown Core:* The maximum FAR is 5.0. Based on gross acreage, this designation allows 16 to 108.8 units per acre; based on net acreage, it allows 20 to 136 units per acre.

- Industrial. This designation allows for a wide variety of industrial uses, including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, Retail Sales, service businesses, public and quasi-public uses, and other similar and compatible uses. Residential uses are prohibited. The maximum FAR for industrial uses is 0.6.
- Economic and Education Enterprise. Development in this designation is intended to support the City's economic development goals by attracting new businesses, industries, and/or educational institutions that provide high-quality jobs to the local workforce. By bringing major job-generators to Stockton, this designation supports the City's Economic Development Strategic Plan and State Executive Orders regarding greenhouse gas (GHG) reduction, Senate Bill (SB) 32, and the San Joaquin Sustainable Communities Strategy. Businesses envisioned for this designation include those within a Core Business Cluster industry, as specified in the City's Economic Development Strategic Plan, that provide a significant number of jobs offering wages averaging above Area Median Income, and that cannot be reasonably accommodated elsewhere within the city limit.

  In support of a major job-generator, this designation promotes linked transportation and housing options so that future employees can live close to their jobs and commute using transportation modes that support the City's vehicle miles traveled (VMT) reduction goals. Businesses that reduce VMT by providing vanpool programs, car share services, and active transportation alternatives are encouraged. The designation also allows proximate housing stock that supports the job-generator, including single-family, multi-family, and/or mixed-use dwellings at various levels of affordability, with housing costs that generally correspond to the income levels of the jobs generated by the project. The City will negotiate with applicants to develop community benefit through development agreements that identify desired community amenities in the area of development, and will ensure that development mitigates its environmental impacts as feasible, pursuant to the California Environmental Quality Act (CEQA). The maximum anticipated FAR is 0.6 and the maximum anticipated density is 24 dwelling units per gross acre; however, the designation allows variation from these standards with City approval to achieve the economic development goals and complete communities described above. Development proponents are encouraged to propose creative and innovative master plans to further the City's economic development goals consistent with the policies outlined above.
- Institutional. This designation allows for public and quasi-public uses such as schools, libraries, colleges, water treatment facilities, airports, some governmental offices, federal installations, and other similar and compatible uses. The maximum FAR for institutional uses is 0.5 outside the Downtown area and 5.0 within the Downtown area.
- Parks and Recreation. This designation allows for City and County parks, golf courses, marinas, community centers, public and quasi-public uses, and other similar and compatible uses. The maximum FAR for parks and recreation uses is 0.2.
- Open Space/Agriculture. This designation allows for agriculture, parks, single-family residential units, farm worker housing, wetlands, wildlife reserves, and other similar and compatible uses and structures related to the primary use of the property for preservation of natural resources or agriculture. Lands under this designation are intended to remain unincorporated and under the jurisdiction of San Joaquin County. The minimum parcel size is 40 acres, maximum density is 1 dwelling unit per parcel, and maximum FAR is 0.01.

3.4.4 MAJOR CHANGES FROM THE EXISTING GENERAL PLAN

The proposed General Plan represents a substantial change in the policy framework for future development in Stockton compared to the existing 2007 General Plan. At a macro scale, the fundamental change is from one that concentrates growth in "outfill" areas located at the periphery of the city to one that emphasizes new construction and redevelopment in existing "infill" neighborhoods. This change is reflected in the land use map and associated maps depicting the transportation and utilities networks required to serve future development, and in the goals, policies, and actions throughout the General Plan.

The proposed General Plan also substantially reduces the volume of the previous General Plan by eliminating redundant and conflicting goals, policies, and actions, instead focusing on the concepts and policy direction that reflect the voice of the many Stockton community members that participated in the General Plan Update process, such as ensuring access for all of Stockton's neighborhoods to healthy food, affordable housing, and quality medical care, and using development and design to create a landscape that helps to deter crime. Meanwhile, the proposed General Plan introduces new policy direction to reflect updates in State law, such as the requirement to address the topic of environmental justice. By focusing on a compact set of goals, policies, and actions, the proposed General Plan would be more user-friendly to decision-makers, City staff, and the public.

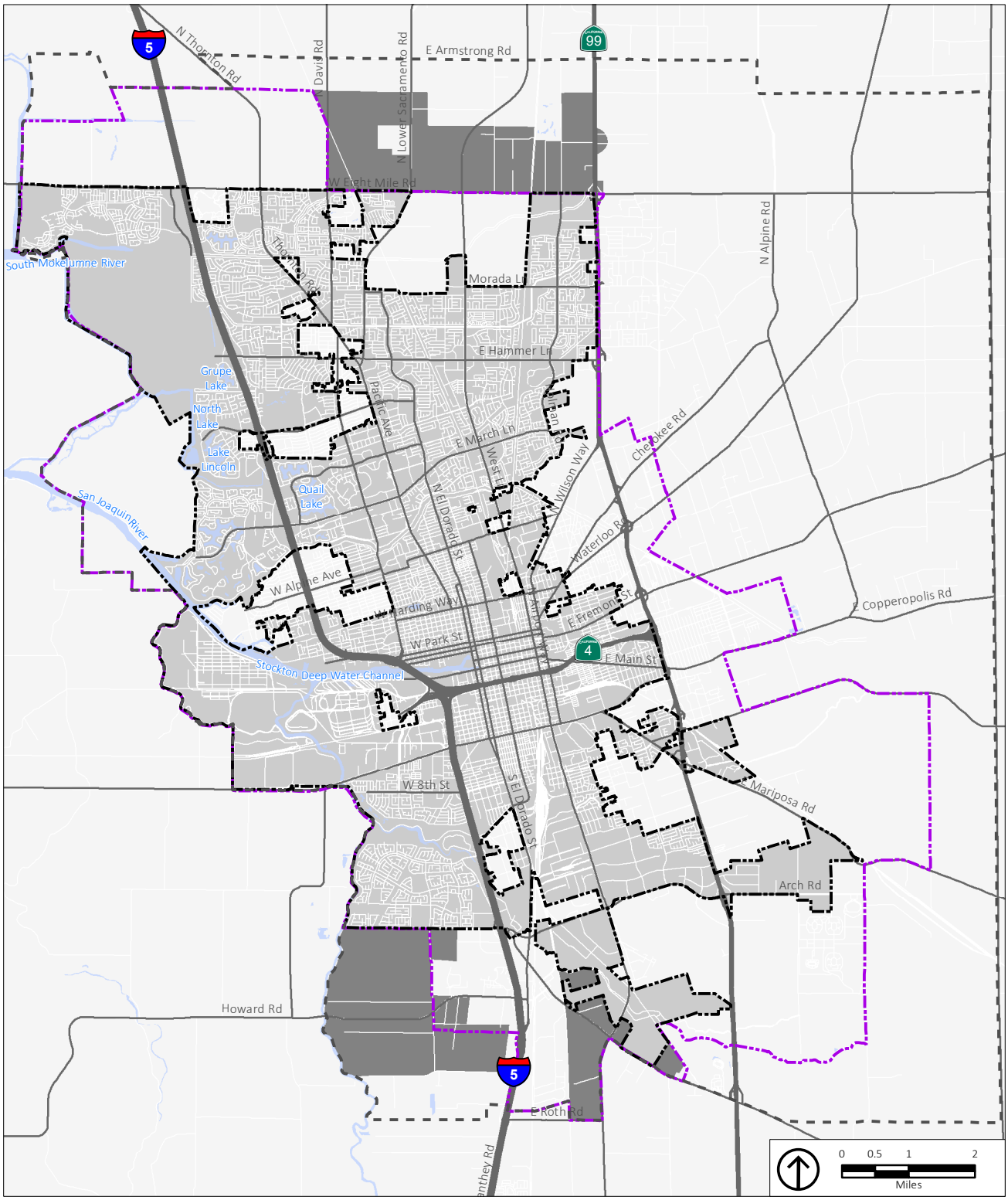
The sections below describe in more detail the proposed land use changes from the existing 2007 General Plan land use map. These sections are provided for informational purposes only. *This EIR does not evaluate the changes in the General Plan relative to the existing 2035 General Plan, but rather evaluates the impacts of the proposed General Plan relative to existing conditions,* as required by CEQA Guidelines Section 15126.2. This EIR does not assume that any previously-approved projects that are not yet constructed will be "re-opened" for substantial changes in buildout expectations. Also, for many areas in Stockton, especially where development is well-established, the current land use designations established by the 2007 General Plan will remain unchanged.

3.4.4.1 CITY PERIPHERY

The existing 2035 General Plan designates substantial areas at the northern and southern edges of the city outside the city limit for urban development through the "Village" designation. The Village designation is considered a "holding" category. While very low-density residential uses are allowed by the designation, with a specific plan or master development plan, higher-intensity land uses could be developed, including residential, administrative professional, commercial, mixed use, institutional, parks and recreation, and open space.

As shown in Figure 3-4, the proposed revisions to the General Plan land use map would shrink the possible future footprint of the city by changing areas currently designated Village to Open Space/Agriculture. The area proposed to change from Village to Open Space/Agriculture totals approximately 6,900 acres.[5]

[5] A substantial portion of this acreage is located outside of the SOI/EIR Study Area, but within the General Plan Planning Area.



Source: City of Stockton, 2016; Placeworks, 2017.

Proposed Urban to Open Space Land Use Changes
City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Figure 3-4

Proposed Urban to Open Space Land Use Changes

The remainder of the area currently designated Village would change to a new Economic and Education Enterprise designation north of Eight Mile Road, which provides opportunity for an economic development catalyst project. See Section 3.4.3.3 for the full description of this new designation.

3.4.4.2 CITY CORE

Within the Downtown Core of Stockton, the proposed General Plan includes higher-intensity mixed uses and more high-density residential uses compared to the existing 2035 General Plan. Along the waterfront, future development could build from the naturally-beautiful setting and regional attractions that already exist to promote a live/work/play environment. Meanwhile, designations in the Port area would change from Commercial to Industrial to better align with current uses. Outside of the Downtown Core, industrial designations along major corridors would shift to the outer parts of the city to promote more walkable, bikeable, and connected commercial and mixed-use corridors. In South Stockton, the Commercial and Administrative Professional designations would be expanded/added along S. Airport Way and near Weston Ranch to provide more opportunities for the development of grocery stores and medical clinics.

3.4.4.3 REVISED LAND USE DESIGNATIONS

As described in Section 3.4.4.1 above, the proposed General Plan land use map would change areas currently designated Village to Open Space/Agriculture and Economic and Education Enterprise. Through these and other changes to the land use map, the Village designation would no longer be applied anywhere on the land use map, so this designation would be eliminated altogether.

The Stockton community and decision-makers envision a more vibrant Downtown with a higher-intensity mix of uses than exists today. To that end, the General Plan proposes to increase the allowed density of residential development in the Downtown as described below:

- Within the Downtown Core, the maximum residential density based on net acreage would increase from 87 units per acre to 136 units per acre.
- Within the Greater Downtown, the maximum residential density based on net acreage would increase from 29 units per acre to 90 units per acre.

All other residential density maximums that are currently 29 units per acre would increase to 30 units per acre to respond to recent policy changes from the California Department of Housing and Community Development (HCD).

In addition, the existing 2035 General Plan does not include any minimum density requirements. Therefore, the minimum densities outlined in Section 3.4.3.3 above are also new requirements proposed in the General Plan.

Finally, as described above, the City has added a new Economic and Education Enterprise designation, which is defined in Section 3.4.3.3.

3.5 GENERAL PLAN DEVELOPMENT PROJECTIONS

This EIR evaluates the projected development that could occur under the proposed General Plan through its horizon year of 2040, consistent with CEQA requirements that an EIR evaluate the "reasonably foreseeable" direct and indirect impacts of a proposed project.

The "full buildout" of the proposed General Plan, discussed below in Section 3.5.3, Full Buildout Methodology, would be the development of every parcel with the maximum amount of development allowed under the General Plan. Combined with approved and pending development in Stockton, the full buildout of the General Plan would result in almost three times more new housing units and over 24 times more new non-residential development in Stockton in 2040 than expected based on land use demand projections. Therefore, it is extremely unlikely that the full buildout would occur by the year 2040.

Moreover, by or before 2040, it is probable that Stockton will have adopted another update to the General Plan, in keeping with past decisions in the California courts, which dictate that local jurisdictions should update General Plans regularly.[6] Therefore, development after 2040 is expected to take place under a revised General Plan, rather than under the proposed General Plan. Consistent with CEQA statutes, this Draft EIR considers the "reasonably foreseeable" effects of adopting the proposed General Plan, which would result from development allowed between the adoption of the document and its horizon year of 2040. For the purposes of this EIR, this is termed the "horizon-year projection." The horizon-year projection is based on an estimate of the amount of development that would occur by 2040.

Based on the methodology described in this section and as shown in Table 3-2, the horizon-year development projection for the proposed General Plan, including approved and pending development projects, includes the following:

- 40,900 new dwelling units, including:
  - 26,300 new single-family units
  - 14,600 new multi-family units
- 132,200 new residents[7]
- 13.8 million square feet of new commercial and office space
- 35.6 million square feet of new industrial space

3.5.1 KEY POINTS ABOUT DEVELOPMENT PROJECTIONS

This section provides a detailed explanation of the process used to estimate the horizon-year projection. By way of introduction, it is important to understand several overall points about the estimation process and its meaning:

[6] *Citizens of Goleta Valley v. Board of Supervisors (1990)* 52 Cal.3d 553, 572, 276 Cal.Rptr. 410, 801 P.2d 1161.

[7] Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.*

TABLE 3-2 2040 HORIZON-YEAR GROWTH PROJECTIONS

	Existing Development (2017)	Growth in 2040 from Proposed General Plan	Growth from Approved and Pending Projects	Total 2040 Horizon-Year Growth Projection
Dwelling Units	100,300[a]	12,100	28,800	141,200
Residents	320,600[a]	39,100[c]	93,100[c]	452,800
Commercial Space (square feet)	30.3 million[b]	8.7 million	5.1 million	44.2 million[d]
Industrial Space (square feet)	52.2 million[b]	2 million	33.6 million	87.8 million

a. State of California, Department of Finance, 2017. E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.
b. Based on the City of Stockton's land use database, which tracks ground floor area. The ground floor area was multiplied by the number of floors on each parcel to estimate total square footage of the use.
c. Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.*
d. Existing plus growth does not add up due to rounding.
Source: PlaceWorks, 2017.

- As described below in Section 3.5.4.2, the horizon-year projection assumes that certain areas with development potential are likely to develop by 2040, while others are not. For example, the horizon-year projection assumes that a higher percentage of the commercial development potential in the Downtown will happen than in other parts of the city due to the proposed General Plan policies and actions that promote Downtown development.
- As described below, the horizon-year projection was estimated based on the best available information. Since this projection covers a relatively long timeframe of more than 20 years, it is likely that there will be deviations from the development projections. However, deviations from the horizon-year projection are not in themselves a basis for finding inadequacy of the proposed General Plan or this EIR, since these projections represent Stockton's best estimate of "reasonably foreseeable" development under the General Plan.
- The horizon-year projection is used as a basis for the environmental assessment, but it does not restrict or specify the actual physical location of future development that will be permitted under the proposed General Plan. Even if an area is not identified as having quantifiable new development by 2040 in this EIR, it can still accommodate new development in keeping with the General Plan's policies and land use designations. Conversely, geographic areas or potential development projects for which development is assumed in this EIR are not in any way "pre-cleared" for development or privileged for special consideration by City staff or the City Council; development in those areas still requires normal review under CEQA and under regular City policies that are spelled out in the proposed General Plan, the Stockton Development Code, and other City regulations.

3.5.2 EXISTING DEVELOPMENT POTENTIAL

There is a significant amount of vacant land in Stockton that could be developed under the existing 2035 General Plan. Some of these vacant areas have been approved for development, but the projects have not yet been constructed. Others have pending development applications that are currently under review.

These approved and pending projects provide a significant amount of development potential, and they are included in the 2040 development projection that is evaluated in this EIR.

Other vacant or underutilized areas in the city have no pending or approved development applications, but are designated for a residential, commercial, or industrial use, so there is still the potential for future development. These vacant and underutilized areas could be developed even if the proposed General Plan is not adopted.

3.5.3 FULL BUILDOUT METHODOLOGY

Determining the full buildout is the first step towards projecting horizon-year development. This section describes the methods used to calculate the full buildout potential of the proposed General Plan. As noted above, full buildout is the development of every parcel with the maximum amount of development allowed under the General Plan.

The full buildout was estimated based on the four-step process described below, including:

1. Identify vacant and underutilized parcels where new development could occur.
2. Prepare existing land use data for locations that could be redeveloped.
3. Estimate buildout of the vacant and underutilized parcels.
4. Assume no change on parcels that are fully developed.

The results of the full buildout analysis are as follows:

- 119,700 new dwelling units, including:
  - 43,800 new single-family units
  - 75,900 new multi-family units
- 386,700 new residents[8]
- 50.9 million square feet of new commercial and office space
- 242.4 million square feet of new industrial space

3.5.3.1 IDENTIFY VACANT AND UNDERUTILIZED PARCELS

While many of the parcels in Stockton are either vacant or underutilized, other parcels have existing development that is not likely to change. These vacant and underutilized parcels are the only locations where buildout is considered to be potentially different from existing conditions.

Data from the San Joaquin County Assessor's Office was used to identify vacant and underutilized parcels. The County Assessor has identified almost 7,000 acres as vacant within the SOI. There are other infill development opportunities on parcels that are considered underutilized because they haven't been developed to their full potential under current zoning, such as locations where only a portion of a parcel is developed.

[8] Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.*

To identify underutilized properties, the improvement-to-land (I/L) ratio for each parcel was calculated based on County Assessor data. The I/L ratio is the relationship of a property's improvement value to its land value. For example, a lot worth $100,000 that is improved with a building worth $40,000 would have an I/L ratio of 0.4. In this analysis, properties with an I/L ratio below 1.0 were considered underutilized.

3.5.3.2 PREPARE EXISTING LAND USE DATA

For underutilized parcels with existing development, it was necessary to identify the amount of existing development to determine the net new amount of development allowed by the proposed General Plan.

The information in the City's land use database provided the existing amount of residential, commercial, and industrial development on each parcel. This process was completed with the following processes and assumptions:

- Residential Development: The land use database provided the number of units existing on each parcel. Data from the San Joaquin County Assessor's Office indicated whether the residential use included single family, attached, or other type of unit, which was used to determine whether the units are single- or multi-family.
- Non-Residential Development: The land use database provided ground floor area of non-residential uses. The ground floor area was multiplied by the number of floors on each parcel to estimate total square footage of the use. Data from the San Joaquin County Assessor's Office was used to determine the use type (e.g., commercial, industrial).

3.5.3.3 ESTIMATE BUILDOUT

For each vacant and underutilized parcel, the potential buildout was estimated using the following formulas. See Section 3.4.3.3 for the density and FAR factors in the proposed General Plan.[9] In addition, to determine the net new development under buildout on underutilized parcels, the existing development was subtracted from the total potential buildout.

- Residential: Acres x maximum units per gross acre
- Non-Residential: Acres x 43,560 (square feet per acre) x maximum FAR

Buildout projections for approved and pending projects are based on the approved or proposed project information.

3.5.3.4 ASSUME NO CHANGE ON FULLY DEVELOPED PARCELS

For parcels that were not identified as vacant or underutilized, it was assumed that there would be no additional development and that the buildout would therefore be the same as existing development.

[9] For the Economic and Education Enterprise designation, it was assumed that 75 percent of the land area would be used for industrial purposes, while 25 percent of the land area would be used for supportive residential uses.

3.5.4 HORIZON-YEAR PROJECTIONS METHODOLOGY

This section describes the methods used to calculate the 2040 horizon-year development projection.

3.5.4.1 DETERMINE PROBABLE PLANNING PERIOD DEVELOPMENT

A market study[10] conducted at the outset of the General Plan Update was consulted to determine the amount of new development that is likely to occur in Stockton by 2040, or "planning period development." The market study considers housing, population, and job growth forecasts from the California Department of Transportation (Caltrans), the San Joaquin Council of Governments (SJCOG), and the Center for Business Policy Research (CBPR) at the University of the Pacific to identify forecasts for future demands for new residential, retail, office, and industrial space in Stockton. The resulting land use demand forecast for Stockton in 2040 is as follows:

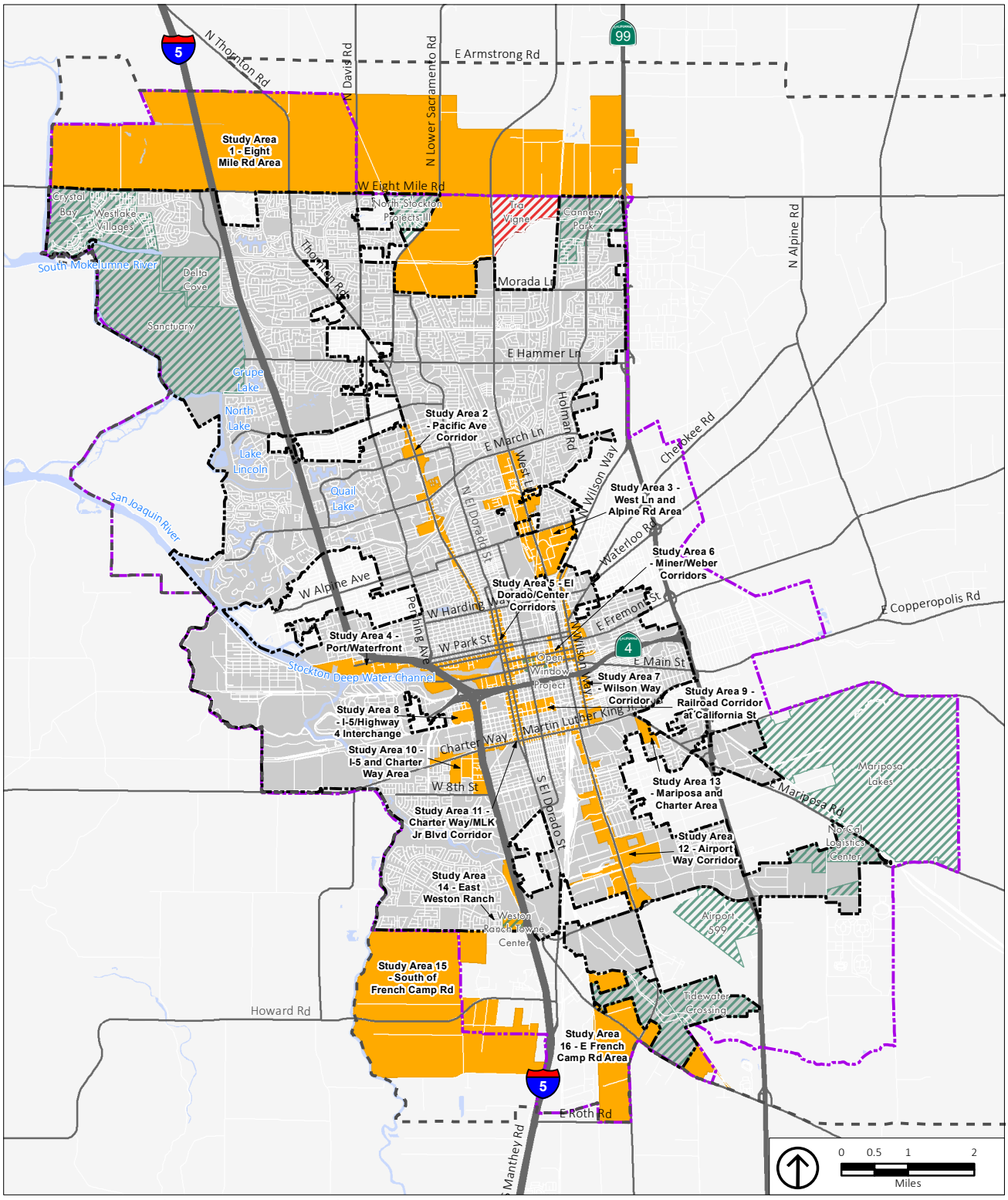
- Residential: Between 19,800 and 41,000 new housing units, including between 13,800 and 28,700 new single-family units and between 5,900 and 12,300 new multi-family units. The low-growth scenario is based on Caltrans data and the high-growth scenario is based on SJCOG and CBPR data.
- Retail: Between 3.3 and 4.8 million square feet of new retail development. These estimates are based in part on the residential forecast, so the low- and high-growth numbers are affected by the Caltrans, SJCOG, and CBPR data described for the residential forecast above.
- Office: Approximately 7.1 million square feet of new office development. This estimate is based on an employment forecast from SJCOG and CBPR.
- Industrial: Approximately 6.2 million square feet of new industrial development. This estimate is based on an employment forecast from SJCOG and CBPR.

3.5.4.2 DISTRIBUTE PLANNING PERIOD DEVELOPMENT

Once the planning period development was projected, potential development was then distributed throughout the EIR study area. The planning period development was primarily distributed in two types of locations, which are shown in Figure 3-5:

- Land Use Alternatives Study Areas: During the land use alternatives phase, the community identified areas in need of a positive change. Based on that input, City staff and the consultant team mapped 16 study areas. As shown in Table 3-3, for each study area, it was assumed that a certain percentage of the full development potential would occur by 2040 for each land use type. This assumption was based on community input from the General Plan Update process, proximity to other uses, proposed General Plan policies, and consultation among City staff and the consultant team.

[10] City of Stockton, 2016. *Existing Conditions Technical Memorandum: Market Analysis*, pages 67 to 76, July 20.



Source: City of Stockton, 2016; Placeworks, 2017.

Study Areas
Major Development Projects
Active/Pending Applications
Approved Projects
City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Figure 3-5
Study Areas and Approved/Pending Projects

TABLE 3-3 2040 DEVELOPMENT BY STUDY AREA

Study Area #/Name	Net New Single-Family Units (Full Buildout)	Percent Applied to 2040	Net New Single-Family Units (2040)	Net New Multi-Family Units (Full Buildout)	Percent Applied to 2040	Net New Multi-Family Units (2040)	Net New Commercial Square Feet (Full Buildout)	Percent Applied to 2040	Net New Commercial Square Feet (2040)	Net New Industrial Square Feet (Full Buildout)	Percent Applied to 2040	Net New Industrial Square Feet (2040)
1. Eight Mile Rd	3,940	35%	1,380	25,350	5%	1,200	197,000	20%	39,000	74,095,000	0%	0
2. Pacific Ave Corridor	0	0%	0	440	25%	110	188,000	50%	94,000	0	0%	0
3. West Ln and Alpine Rd	80	100%	80	2,720	25%	680	1,294,000	25%	323,000	0	0%	0
4. Port/Waterfront	20	100%	20	2,210	80%	1,770	6,800,000	30%	2,040,000	2,323,000	25%	581,000
5. El Dorado/Center Corridors	0	0%	0	1,500	80%	1,200	4,367,000	30%	1,310,000	0	0%	0
6. Miner/Weber Corridors[a]	0	0%	0	1,560	80%	1,250	2,926,000	50%	1,463,000	0	0%	0
7. Wilson Way Corridor	0	0%	0	940	25%	230	1,213,000	50%	607,000	0	0%	0
8. I-5/Highway 4 Interchange	0	0%	0	820	80%	660	777,000	50%	389,000	0	0%	0
9. Railroad Corridor at California St	0	0%	0	1,680	80%	1,340	5,197,000	25%	1,299,000	0	0%	0
10. I-5 and Charter Way	90	100%	90	980	10%	100	535,000	25%	134,000	98,000	85%	84,000
11. Charter Wy/MLK Jr Blvd Corridor	0	0%	0	790	50%	400	1,619,000	20%	324,000	0	0%	0
12. Airport Way Corridor	0	0%	0	430	25%	110	274,000	75%	205,000	5,475,000	25%	1,369,000
13. Mariposa and Charter	0	0%	0	570	0%	0	324,000	25%	81,000	0	0%	0
14. East Weston Ranch[b]	0	0%	0	610	0%	0	574,000	75%	431,000	0	0%	0
15. South of French Camp Rd	0	0%	0	0	0%	0	0	0%	0	0	0%	0
16. E French Camp Rd	0	0%	0	0	0%	0	0	0%	0	0	0%	0
Outside of Study Areas[c]	16,360	9%	1,500	29,810	0%	0	19,487,000	0%	0	126,805,000	0%	0
Grand Total[d]	**20,480**		**3,060**	**70,400**		**9,040**	**45,773,000**		**8,739,000**	**208,796,000**		**2,033,000**

a. Excludes Open Window approved project.
b. Excludes Weston Ranch Town Center approved project.
c. Excludes approved/pending projects.
d. Numbers do not always add up due to rounding.
Source: PlaceWorks, 2017.

- **Approved and Pending Development Projects.** As noted above in Section 3.5.2, there is significant development potential available in approved development projects that have not yet been constructed. Such projects can continue to be developed regardless of whether the City adopts the proposed General Plan. The development allowed in those approved projects, as well as development proposed in pending development projects, is included in the horizon-year projection, and was considered as part of the process to distribute the planning period development. Given the significant amount of development potential in those projects, the horizon-year projection includes more non-residential development than forecasted by the market study described above. The approved and pending development that was considered in this EIR is shown in Table 3-4.

TABLE 3-4 NET NEW APPROVED AND PENDING DEVELOPMENT

	Single-Family Units	Multi-Family Units	Commercial Square Feet	Industrial Square Feet
Approved Within City Limit				
Westlake Villages	2,600	0	0	0
Delta Cove	1,200	400	31,000	0
North Stockton Projects III	2,200	0	0	0
Cannery Park	1,000	200	1,079,000	1,442,000
Nor Cal Logistics Center	0	0	0	6,280,000
Crystal Bay	1,000	400	0	0
Sanctuary	5,500	1,600	692,000	0
Tidewater Crossing	0	0	186,000	11,625,000
Open Window[a]	0	1,400	0	57,000
Weston Ranch Town Center	0	0	481,000	0
Approved/Pending Outside City Limit, Inside SOI				
Mariposa Lakes	9,000	1,600	1,010,000	11,980,000
Airpark 599	0	0	1,679,000	2,200,000
Tra Vigne[b]	1,200	0	0	0

a. The Master Development Plan for Open Window is approved for 1,034 units, with an option to expand the capacity to 1,400 units if the General Plan Update increases the maximum densities in the Downtown, which is proposed as part of the General Plan Update.
b. Pending; not approved.
Source: City of Stockton and PlaceWorks, 2017.

As part of this step, the 2008 Settlement Agreement between the City, State, and Sierra Club, which was signed in response to litigation over the 2007 adoption of the City's General Plan, was consulted. The Settlement Agreement requires the City to plan for 4,400 housing units in the Greater Downtown and an additional 14,000 units within the city limit as it existed in 2008. Therefore, the 2040 development was

distributed to ensure that these targets were met. See Section 4.10, Land Use and Planning, for more information on the Settlement Agreement.

3.6 EVALUATION OF THE GENERAL PLAN AND ITS HORIZON-YEAR PROJECTION

All of the analyses in this EIR are based on a consistent interpretation of the proposed General Plan land use map and policies, and the type and amount of growth that the General Plan would allow. The various analyses in this EIR require two different types of data inputs: some analyses require spatial inputs only and some require both quantitative and spatial inputs. In each case, the required analysis is determined by the standard of significance used for the impact discussion.

- Analyses that require a quantitative estimate of growth include traffic generation, air pollution emissions, greenhouse gas emissions, noise generation, population growth, and impacts on public services and utilities and recreation. Impacts in these areas are generated by an increase in the number of people living and working in Stockton, which generates consequent increases in traffic, noise, emissions, and use of services. Therefore, a reliable analysis depends on a reasonable, quantitative estimate of new population and employment. For these analyses, the horizon-year projection (i.e., the projected amount of development that could occur under the proposed General Plan through its horizon year of 2040) was considered "reasonably foreseeable" and was used in the analysis.
- Analyses that are based on spatial location only include aesthetics, agriculture, exposure to localized air pollution and noise, biological resources, cultural resources, geology, hazards and safety, hydrology and water quality, and land use. These analyses must consider whether the proposed General Plan would allow *any* development in a geographic area, such as a fire hazard severity zone or an area with prime agricultural soils, which could trigger potential impacts. For these analyses, the question is not *how much* development the General Plan would allow, but *where* that development could potentially be located. Therefore, all potential development allowed by the land use map of the proposed General Plan was evaluated to assess impacts in these topics (i.e., full buildout of the proposed General Plan).

3.7 PROPOSED STOCKTON UTILITY MASTER PLAN SUPPLEMENTS DESCRIPTION

The proposed Stockton UMPS identify needed infrastructure improvements to serve future development. Specifically, the UMPS evaluate and identify the following types of infrastructure improvement needs:

- Water storage
- Water pumping facilities
- Water distribution pipelines
- Sewer collection systems
- Wastewater treatment facilities

- Stormwater detention storage
- Stormwater pumping facilities

These facilities are sized for the amount of development included in the 2040 development projection, including approved and pending development projects. The proposed UMPS also present approximate cost information for new infrastructure improvements.

3.8 INTENDED USE OF THE EIR AND PROPOSED PROJECT

This EIR is intended to review potential environmental impacts associated with the adoption and implementation of the proposed General Plan and UMPS, and determine corresponding mitigation measures, as necessary. This EIR is a program-level EIR and does not evaluate the impacts of specific, individual developments that may be allowed under the proposed General Plan. Each specific future project will require separate environmental review, as required by CEQA, to secure the necessary discretionary development permits. Therefore, while subsequent environmental review may be tiered off this EIR, this EIR is not intended to address impacts of individual projects. Subsequent projects will be reviewed by the City for consistency with the General Plan, UMPS, and this EIR, and subsequent project-level environmental review will be conducted as required by CEQA. Projects successive to this EIR include, but are not limited to, the following:

- Updates to the City's Municipal Service Review.
- Approval and funding of major public projects and capital improvements.
- Issuance of permits and other approvals necessary for implementation of the proposed General Plan and UMPS.
- Amendments to Stockton's SOI.
- Annexation of land into the city limit.
- Property rezoning consistent with the proposed General Plan.
- Development plan approvals, such as tentative maps, variances, conditional use permits, and other land use permits.
- Permit issuances and other approvals necessary for public and private development projects.
- Development agreement processes and approvals.

4. Environmental Evaluation

This chapter of the Draft EIR consists of 15 sections that evaluate the direct, indirect, and cumulative environmental impacts from adoption and implementation of the proposed project. In accordance with Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, of the CEQA Guidelines as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478)], the potential environmental effects of the proposed project are analyzed for potential significant impacts in the following 15 environmental issue areas, which are organized with the listed abbreviations:

- Aesthetics (AES)
- Agricultural and Forestry Resources (AG)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural and Tribal Cultural Resources (CULT)
- Geology, Soils, Seismicity, and Mineral Resources (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYDRO)
- Land Use and Planning (LU)
- Noise (NOISE)
- Population and Housing (POP)
- Public Services and Recreation (PS)
- Transportation and Traffic (TRANS)
- Utilities and Service Systems (UTIL)

FORMAT OF THE ENVIRONMENTAL EVALUATION

Each section in Chapter 4, Environmental Evaluation, generally follows a consistent format, including the following subsections:

- Regulatory Framework gives an overview of the federal, State, and local laws and regulations applicable to each environmental review topic. Because the proposed project includes a comprehensive update to the City's General Plan, the existing Stockton General Plan (which would be replaced by the proposed project) is not discussed in the regulatory framework.
- Existing Conditions offers a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared, and an overview of federal, State, regional, and local laws and regulations relevant to each environmental issue.
- Standards of Significance refer to the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed project to determine whether the impact is significant. These thresholds are based primarily on the CEQA Guidelines, and also may reflect established health standards, ecological tolerance standards, public service capacity standards, or guidelines established by agencies or experts.

- Impact Discussion gives an overview of the potential impacts of the proposed project and explains why impacts are found to be significant or less than significant prior to mitigation. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

STANDARDS OF SIGNIFICANCE

As noted above, significance criteria are identified before the impact discussion subsection, under the subsection, "Standards of Significance." For each impact identified, a level of significance is determined using the following classifications:

- *Significant (S)* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- *Less-than-significant (LTS)* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or can mitigated below such thresholds.
- *No impact* describes circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If one or more mitigation measure(s) would reduce the impact to a less-than-significant level successfully, this is stated in the EIR. *Significant and unavoidable (SU)* impacts are described where mitigation measures would not diminish these effects to less-than-significant levels. The identification of a program-level significant and unavoidable impact does not preclude the finding of less-than-significant impacts for subsequent projects that comply with the applicable regulations and meet applicable thresholds of significance.

ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed when a project's incremental effect is cumulatively considerable. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great detail as that necessary for the proposed project alone. Section 15355 of the CEQA Guidelines defines cumulative impacts to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of the proposed project when added to effects of past projects, other current projects and probable future projects in the vicinity.

CEQA Guidelines Section 15130 (b)(1) states that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

1. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or
2. A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impacts analyses in this EIR use method No. 2. The proposed project consists of the Envision Stockton 2040 General Plan Update and UMPS. Consistent with Section 15130(b)(1)(B) of the CEQA Guidelines, this EIR analyzes the environmental impacts of projected development that will occur under the proposed General Plan through its horizon year of 2040. As a result, this EIR addresses the cumulative impacts of development within the City of Stockton and the region surrounding it, as appropriate. In most cases, the potential for cumulative impacts is contiguous with the Sphere of Influence (SOI). Potential cumulative impacts that have the potential for impacts beyond the SOI (e.g., traffic, air quality, noise) have been addressed through cumulative growth in the SOI and region. Regional growth outside Stockton has accounted for traffic, air quality, and noise impacts through use of the regional traffic model, which uses regional growth projections to calculate future traffic volumes. A summary of the extent of cumulative impacts is identified below:

- Aesthetics – contiguous with the SOI.
- Agricultural and Forestry Resources – contiguous with the SOI but considers regional resources.
- Air Quality – based on the regional boundaries of the San Joaquin Valley Air Basin.
- Biological Resources – contiguous with the SOI but considers regional habitat loss in the Central Valley region based on the range of the protected species.
- Cultural and Tribal Cultural Resources – contiguous with the SOI.
- Geology, Soils, Seismicity, and Mineral Resources – contiguous with the SOI.
- Greenhouse Gas Emissions – based on the regional boundaries of the San Joaquin Valley Air Basin.
- Hazards and Hazardous Materials – contiguous with the SOI.
- Hydrology and Water Quality – hydrology and water quality impacts contiguous with the San Joaquin Delta, Upper Calaveras, and Rock Creek-French Camp Slough Subbasins of the San Joaquin Groundwater Basin; flood impacts contiguous with the SOI.
- Land Use and Planning – contiguous with the SOI but considers regional land use planning based on the San Joaquin Council of Governments (SJCOG).
- Noise – contiguous with the SOI.
- Population and Housing – contiguous with the SOI.
- Public Services and Recreation – contiguous with the service area boundaries of the service providers evaluated in this section.
- Transportation and Traffic – considers regional transportation improvements identified in the regional traffic model.
- Utilities and Service Systems –contiguous with the service area boundaries of the utility providers evaluated in this section.

ENVIRONMENTAL EVALUATION

4.1 AESTHETICS

This section describes the regulatory framework and existing conditions in the EIR Study Area related to its aesthetic character. The following evaluation is based on a spatial analysis and examines the potential impacts to aesthetics associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). The total area of cumulative impacts related to aesthetics would be contiguous with the Sphere of Influence (SOI) boundary.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

State Regulations

State Scenic Highway Program

State Scenic Highways are designated by the California Department of Transportation (Caltrans) to promote the protection and enhancement of the natural scenic beauty of California's highways and adjacent corridors. California's Scenic Highway Program was created by the Legislature in 1963. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 *et seq*. As discussed in Section 4.1.1.2 below, there are no roadways in the EIR Study Area that the State has designated as a Scenic Highway.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission and is updated every three years. The most current version went into effect in January 2017. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, outdoor lighting standards, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The City of Stockton has adopted all sections of the CBC Title 24, Part 2, according to Chapter 15.08, Building Code, of the Stockton Municipal Code.

CALGreen

California Green Building Standards Code of the CCR, Title 24, Part 11, known as CALGreen, establishes building standards aimed at enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact and by encouraging sustainable construction practices. Specifically, Section 5.106.8, Light Pollution Reduction, establishes backlight, uplight, and glare ratings to minimize the effects of light pollution for nonresidential development. The City of Stockton has adopted all sections of CCR Title 24, Part 11, according to Chapter 15.72, Green Building Standards, of the Stockton Municipal Code.

San Joaquin County General Plan 2035

The San Joaquin County General Plan addresses scenic resources in Part 3.4, Natural and Cultural Resources Element, and cites views of the Delta, agriculturally rich valley floor, and panoramic views of the Coastal Ranges and the Sierra as the primary scenic resources in the San Joaquin Valley. The County's Natural and Cultural Resources Element also maps scenic roadways in San Joaquin County, which include Interstate 5 (I-5), State Route (SR-) 4, and SR-99.[1] In addition, the San Joaquin County General Plan includes the following Land Use (LU) and Natural and Cultural Resources (NCR) policies specific to the aesthetic character of the area:

- Policy LU-3.10 Visual Access. The County shall encourage new development to maintain views of hillsides, creeks, and other distinctive natural areas by regulating building orientation, height, and bulk.
- Policy NCR-7.1 Scenic Roadways. The County shall protect the visual character of designated scenic roadways.
- Policy NCR-7.2 Views from Public Lands and Roadways. The County shall ensure that views of waterways, hilltops, and oak groves from public land and public roadways are protected and public access is provided to them whenever possible.
- Policy NCR-7.4 Visually Complementary Development. The County shall require new development adjacent to scenic resources to be sited and designed to visually complement those resources, except in MR-Z designated areas.
- Policy NCR-7.6 Preservation of Ridgelines and Hill Tops. The County shall ensure that ridgelines and major hill tops remain undeveloped.
- Policy NCR-7.7 Reducing Light Pollution. The County shall encourage project designs, lighting configurations, and operational practices that reduce light pollution and preserve views of the night sky.

Local Regulations

Stockton Municipal Code

Title 16, Development Code

Title 16, Development Code, of the Stockton Municipal Code implements the City's General Plan by classifying and regulating the uses of land and structures within the city; by protecting and promoting the public health, safety, and general welfare; and by preserving and enhancing the aesthetic quality of the city. The following provisions of the Development Code help minimize the visual impacts of new development projects in Stockton.

[1] San Joaquin County General Plan, 2016. Part 3.4, Natural and Cultural Resources Element, pages 3.4-11 to 3.4-13, December.

Section 16.32.070, Light and Glare

This section of the Development Code establishes standards to prevent spillover illumination or glare onto adjoining properties and prohibit interference with the normal operation or enjoyment of adjacent property. Per this section, exterior lights shall be made up of a light source, reflector, and shielding devices so that, acting together, the light beam is controlled and not directed across a property line or upward into the sky; bare bulbs are not allowed. In addition, lighting fixtures used to illuminate an outdoor advertising display must be mounted on the top of the advertising structure and be directed downward.

Chapter 16.36, General Development Standards

This chapter of the Development Code sets forth standards to address the details of site planning and project design to ensure that all development produces an environment of stable and desirable character that is harmonious with existing and future development, and protects the use and enjoyment of neighboring properties, consistent with the General Plan. Section 16.36.040, Agriculture Preservation, includes provisions that minimize the potential intrusion of urban development near agricultural uses in order to ensure the preservation and protection of agricultural operations. Section 16.36.060, Development Considerations, includes standards for all development projects intended to ensure high quality site planning and architectural design. Section 16.36.060(B) requires exterior lighting to be energy efficient, stationary, shielded, and directed away from adjoining properties and public rights-of-way, in compliance with Section 16.32.070. Section 16.36.090, Height Measurement and Height Limit Exceptions, establishes maximum height standards for development within the city.

Chapter 16.120, Design Review

This section of the Development Code establishes procedures for the City's discretionary and nondiscretionary design review of development in order to encourage development that is compatible and harmonious with the design and use of surrounding properties and with the city in general. The types of projects that are subject to the City's design review process include residential, commercial, business park and industrial, and signage.[2] The design review authority charged with reviewing proposed development projects varies depending on the type of project. Nondiscretionary projects are reviewed by the Planning Director, and discretionary projects can be reviewed by the City Council, Planning Commission, or Planning Director as assigned.[3] The designated design review authority reviews project features such as building design, landscaping, site planning, and signage to ensure consistency with the City's Citywide Design Guidelines (Design Guidelines), discussed separately below. The required findings for design review are as follows:

- The proposed development is consistent with all applicable provisions of the Development Code and other applicable City ordinances;

[2] Stockton Municipal Code, Title 16, Development Code, Division 5, Land Use/Development Procedures, Chapter 16.120, Design Review, Section 16.120.020, Applicability.

[3] Stockton Municipal Code, Title 16, Development Code, Division 5, Land Use/Development Procedures, Chapter 16.120, Design Review, Section 16.120.040, Applicable Review Authority.

- The general design considerations, including the character, quality, and scale of design are consistent with the purpose/intent of Chapter 16.120 and the Design Guidelines and other design guidelines that may be adopted by the City;
- The architectural design of structures and their materials and colors are visually compatible with surrounding development. Design elements (e.g., awnings, exterior lighting, screening of equipment, and signs) have been incorporated into the project to further ensure its compatibility with the character and uses of adjacent development, and/or between the different types of uses in a mixed use development;
- The location and configuration of structures are compatible with their sites and with surrounding sites and structures and do not unnecessarily block views from other structures or dominate their surroundings;
- The general landscape design, including the color, coverage, location, size, texture, and type of plant materials, provisions for irrigation, planned maintenance, and protection of landscape elements have been considered to ensure visual relief, to complement structures, and to provide an attractive environment;
- The design and layout of the project will not interfere with the use and enjoyment of neighboring existing or future development and will not result in vehicular or pedestrian hazards;
- The building design and related site plans, including on-site parking and loading, have been designed and integrated to ensure the intended use will best serve the potential users or patrons of the site; and
- Special requirements or standards have been adequately incorporated, when applicable, into the building and/or site design (e.g., American Disabilities Act regulations, historic preservation, mitigation measures, open space, and utilities).

Citywide Design Guidelines

The Design Guidelines, adopted in 2004, serve as a reference point for the City's expectations for quality development and provide guidance for the designated review authority during the design review process. The Design Guidelines provide minimum design criteria for the achievement of functional and attractive developments that fit within the context of their surroundings and do not clash with neighboring buildings. In general, the Design Guidelines are intended to ensure that new or modified development preserves or improves the positive characteristics of the city's image while avoiding negative impacts. The Design Guidelines are organized into seven chapters and includes objectives and design standards for each type of development project that is subject to design review.

4.1.1.2 EXISTING CONDITIONS

Visual Character

Located near the center of the San Joaquin Valley, Stockton is characterized by a mixture of residential, commercial, industrial, and civic land uses. Areas within the current city limit are characterized by distinct residential neighborhoods, neighborhood commercial and regional shopping centers, various types of

office uses, a mix of heavy and light industrial uses, and a wide range of public and institutional buildings and facilities. The periphery of the city is largely characterized by agricultural and rural areas. Notable visual features in Stockton include the Port of Stockton and Stockton Deep Water Ship Channel, County Fairgrounds, Stockton Metropolitan Airport, University of the Pacific, Weber Points Events Center, and Magnolia Historic District. The Delta of the San Joaquin and Sacramento Rivers is located to the west of the city. The Delta is an area of 750 square miles where several Sierra Nevada rivers meet the Pacific Ocean bays; the largest of these rivers are the San Joaquin and Sacramento Rivers. Downstream of Stockton, the rivers split to become a multitude of interlaced channels. I-5 and SR-99 bisect the city, bringing visitors, workers, and shoppers, and connecting to the nearby communities in the Central Valley.

Scenic Corridors and Vistas

A scenic corridor is considered an enclosed area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or a series of points along a linear transportation route. Public view corridors are areas in which short-range, medium-range, and long-range views are available from publicly accessible viewpoints, such as from city streets. Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, open water).

The city is bounded by open space, agricultural fields, and urban development. The existing and proposed General Plans do not designate scenic vistas. However, the proposed General Plan identifies open space, agricultural fields, and riparian areas, particularly along the San Joaquin River and the Calaveras River, as significant visual features. Given the relatively flat topography of the city, views within the core of the city are generally limited to the built environment. Views along the periphery can be more expansive with fewer developed features blocking views of surrounding open space, agricultural fields, and riparian areas.

Scenic Highways and Roads

A scenic road is defined as a highway, road, drive, or street that provides opportunities for the enjoyment of natural and human-made scenic resources, in addition to its transportation function. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. The aesthetic values of scenic routes can be protected and enhanced by regulations governing the development of property and the placement of outdoor advertising. The existing and proposed General Plans do not designate any scenic roads or highways in the EIR Study Area. In addition, according to the California Department of Transportation (Caltrans) Scenic Highway Program, there are no State-designated or eligible scenic routes located within Stockton.[4] However, as discussed in Section 4.1.1.1 above, the San Joaquin County General Plan designates scenic roadways and highways in San Joaquin County, including portions of I-5 and Eight Mile Road that traverse the EIR Study Area.[5]

[4] California Department of Transportation, California Scenic Highway Mapping System, San Joaquin County, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed July 19, 2017.

[5] San Joaquin County General Plan, 2016. Part 3.4, Natural and Cultural Resources Element, pages 3.4-11 to 3.4-13, December.

Light and Glare

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass or spillover to adjacent sensitive receptors (e.g., residential development), sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Light pollution in most of the city is restricted primarily to street lighting along major arterial streets, I-5, SR-99, SR-4, and to nighttime illumination of commercial buildings, shopping centers, and industrial buildings. Light spillage from residential areas, particularly older neighborhoods, is mostly well screened by trees.

4.1.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3 IMPACT DISCUSSION

This section discusses potential aesthetic impacts of the proposed General Plan and UMPS. The impact discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

AES-1 Implementation of the proposed project would not have a substantial adverse effect on a scenic vista.

As described above in Section 4.1.1.2, public views of scenic corridors are considered those views as seen along a linear transportation route and public views of scenic vistas are views of specific scenic features. Scenic vistas are generally interpreted as long-range views, while scenic corridors are comprised of short-, middle-, and long-range views. The existing and proposed General Plans do not designate official scenic vistas; however, open space, agricultural fields, and riparian areas, particularly along the San Joaquin River and the Calaveras River, are identified as significant visual features. The core area of the city is largely built out and given the relatively flat topography of the city, views within the core of the city are generally limited to the built environment. The periphery of the city is largely characterized by agricultural and rural residential in nature. Therefore, for the purposes of this analysis, long-range views of open space and agricultural fields along the periphery of the city and riparian areas along the San Joaquin River and the Calaveras River are considered scenic vistas.

As discussed in Chapter 3, the proposed General Plan emphasizes new and redevelopment in existing "infill" neighborhoods located within the Downtown core and other areas internal to the current city limit. The development patterns in these areas are substantially built-out; therefore, potential future development allowed under the proposed General Plan would not be expected to significantly alter scenic viewsheds in these areas. Similarly, potential future development along the waterfront and Port Area, which is fed by the San Joaquin River, would be located on redevelopment sites or vacant/underutilized parcels. Therefore, potential future development under the proposed General Plan would not be expected to significantly alter long-range views of riparian areas along the San Joaquin River.

At the periphery of the city, where there is a significant amount of development that has already been approved on lands that are currently open space or agriculture, future development could adversely affect scenic vistas, including views of open space, agricultural fields, and riparian areas.

However, the proposed General Plan includes the policies and actions that would protect scenic views. Specifically:

- Action LU-1.3.C directs the City to require the incorporation of scenic views, including open space features like waterways, wetlands, natural landscapes, and parks, into design of the built environment, ensuring that scenic views would be maintained in new development at the periphery of the city.
- Action LU-5.1.B directs the City to protect, preserve, and improve riparian corridors and incorporate them in the City's parks, trails, and open space system, thus maintaining riparian areas as publicly-accessible community assets.
- Policy LU-5.3 directs the City to define discrete and clear city edges that preserve agriculture, open space, and scenic views, and is implemented by Actions LU-5.3.A and LU-5.3.B, which direct the use of landscaping and other attractive edging instead of soundwalls and similar utilitarian edges of development at interfaces with rural landscapes, and to develop a plan for a greenbelt or community separator around the city. This policy and these actions will protect scenic views from soundwalls and other unattractive edges of development and from future development through a greenbelt.
- Action LU-6.1.F directs the City to evaluate and implement adjustments to the Public Facilities Fee structure to encourage development in areas where infrastructure is already present and ensure that non-infill development pays its fair share of anticipated citywide capital facilities and operational costs, which helps to discourage development outside of already developed areas.

Furthermore, development allowed under the proposed General Plan would be required to comply with Section 16.36.040 of the Stockton Municipal Code, which includes provisions that minimize the potential intrusion of urban development near agricultural uses in order to ensure the preservation and protection of agricultural operations, and Chapter 16.120, which requires development projects to undergo the City's design review process that requires findings that structures do not block views or dominate their surroundings and that the project's design and layout won't interfere with the use and enjoyment of neighboring development. In addition, all future development would be subject to the maximum height standards per Section 16.36.090 of the Municipal Code. Accordingly, consistency with these regulations and the aforementioned proposed Land Use policies and actions would ensure that future development under the proposed project would result in a *less-than-significant* impact to scenic vistas.

Significance Without Mitigation: Less than significant.

AES-2 Implementation of the proposed project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

A scenic road is defined as a highway, road, drive, or street that provides opportunities for the enjoyment of natural and human-made scenic resources, in addition to its transportation function. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. As discussed above, there are no designated State Scenic Highways in Stockton. Therefore, implementation of the proposed General Plan and UMPS would have no impact on scenic resources within a State Scenic Highway.

As discussed above, the San Joaquin County General Plan designates portions of I-5 and Eight Mile Road that traverse the EIR Study Area as scenic roadways. Development allowed under the proposed General Plan and UMPS along these roadways could degrade the scenic values that prompted the County to designate these corridors as scenic roadways. However, much of the area along these roadways is already developed, and for the portions that are not developed, they would be subject to the proposed General Plan Land Use policies and actions and Stockton Municipal Code sections that protect scenic views described in Threshold AES-1 above. In addition, proposed General Plan Action LU-1.3B encourages the City to work with transportation agency partners and private property owners to improve maintenance, code enforcement, screening, and landscaping of viewsheds along major transportation routes including rails corridors, Highway 99, Highway 4, and Interstate 5.

Because there are no State-designated scenic highways in the EIR Study Area, and because development along roadways designated as scenic by the County would be subject to proposed General Plan policies and actions and Stockton Municipal Code sections that protect scenic views, the impact related to scenic highways would be *less than significant.*

Significance Without Mitigation: Less than significant.

AES-3 Implementation of the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

Scenic resources that contribute to the city's visual quality are varied and include watercourses, existing open space, agricultural fields, and riparian areas. Other notable visual features include the Port of Stockton and Stockton Deep Water Ship Channel, County Fairgrounds, Stockton Metropolitan Airport, University of the Pacific, Weber Points Events Center, and Magnolia Historic District. The Delta of the San Joaquin and Sacramento Rivers, located to the west of the city, also contribute to the visual quality of the area. Potential future development would have the potential to degrade the visual quality of these scenic resources.

However, the proposed General Plan includes policies and actions that would serve to minimize potential impacts to visual character of the EIR Study Area. Specifically:

- Policy LU-1.2 and its two supporting actions promote public art projects in the city, which improve the visual character of the urban environment.
- Policy LU-1.3 and its three supporting actions work to improve the visual quality of the urban environment at key gateways and along travel corridors by creating a gateway district program to coordinate the design of public and private investment in a cohesive and attractive way; improving maintenance, code enforcement, screening, and landscaping of viewsheds along major transportation routes; and requiring the incorporation of scenic views into the design of the built environment.
- Policy LU-3.1 and its six supporting actions ensure that the external features of new development are compatible with surrounding buildings, spaces, and cultural and historic resources, thus protecting the degradation of a neighborhood's visual quality from new, conflicting development design. The supporting actions focus on historic resource preservation and reuse as well as the maintenance and upkeep of the Citywide Design Guidelines.
- Policies LU-3.2 and LU-3.3 also help to protect the visual quality and character of existing neighborhoods by retaining narrower roadways to preserve street trees and mature landscaping, maintaining and expanding public parks and open space areas, and periodically reviewing the City's Development Impact Fee requirements to reflect the City's priorities for parks, community centers, and libraries.
- Policy LU-5.1 and its three supporting actions integrate nature into the city and thus improve the visual quality of the urban landscape. These actions direct the City to require new and redevelopment to provide open spaces that create gateways and social focal points; protect riparian areas; and require native landscaping, which helps to preserve the visual integrity of the landscape.

In addition, the proposed policies and actions discussed under Threshold AES-1 would help to protect the visual quality of scenic views in the EIR Study Area.

Furthermore, potential future development under the proposed General Plan would be subject to the City's design review process in accordance with Chapter 16.120 of the Stockton Municipal Code, which has established a set of required findings to ensure quality design. Such development would also be required to comply with applicable design standards outlined in the City's adopted Design Guidelines that aim to preserve Stockton's visual quality and require the architectural design of new development projects be visually compatible with surrounding development. Finally, all future development would be subject to the development standards outlined in Chapter 16.36 of the Stockton Municipal Code, which sets forth standards to ensure that all development produces an environment of stable and desirable character that is harmonious with existing and future development. Accordingly, consistency with these regulations and the aforementioned proposed policies and actions would ensure that future development under the proposed project would not degrade the visual quality of the scenic resources, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

AES-4 Implementation of the proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Nighttime illumination and glare impacts are the effects of a project's exterior lighting upon adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies.

Currently, the city contains many existing sources of nighttime illumination. These include street lighting along major arterial streets, Interstate-5, State Route-99, State Route-4, and nighttime illumination of commercial buildings, shopping centers, and industrial buildings. As discussed in Chapter 3, the proposed General Plan emphasizes new and redevelopment in areas that are already urbanized. Light spillage from residential areas, particularly older neighborhoods, is mostly well screened by trees. However, potential future development could result in the installation of street lighting or other lighting to support development, which could substantially increase lighting and glare levels in the EIR Study Area.

Exterior lighting provided on and around development allowed under the proposed General Plan and UMPS would be required to comply with City standards for outdoor lighting that are intended to reduce light pollution and glare per Sections 16.32.070 and 16.36.060(B) of the Stockton Municipal Code, which require exterior lighting to be energy efficient, stationary, shielded and directed away from adjoining properties and public rights-of-way. Accordingly, consistency with these regulations would ensure that impacts associated with light and glare would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.2 AGRICULTURAL AND FORESTRY RESOURCES

This section describes the regulatory framework and existing conditions in the EIR Study Area related to agricultural and forestry resources, and evaluates the potential impacts associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). The following evaluation is based on a spatial analysis and examines the effects of the location of potential development on agricultural and forestry resources. Cumulative impacts would be contiguous with the Sphere of Influence (SOI) boundary, but also consider regional resources.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 REGULATORY FRAMEWORK

State Regulations

Farmland Mapping and Monitoring Program

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the State's natural, cultural, and historical resources. Within it, the State Department of Conservation (DOC) provides technical services and information to promote informed land use decisions and sound management of the State's natural resources. DOC manages the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. Every two years, FMMP publishes a field report for each county in the state. The most recent field report for San Joaquin County was published in 2014. The field report categorizes land by agricultural production potential, according to the following classifications:

- Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance is similar to Prime Farmland, but with minor shortcomings, such as steeper slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland consists of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.
- Farmland of Local Importance includes all farmable land within San Joaquin County not meeting the definitions of "prime farmland," "farmland of statewide importance," and "unique farmland." This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock or dairy facilities, aquaculture, poultry facilities, and dry grazing. It also includes lands previously designated by soil characteristics as "prime farmland," "farmland of statewide importance," and "unique farmland" that has since become idle.

- Grazing Land is the land on which the existing vegetation is suited to the grazing of livestock.
- Confined Animal Agriculture lands include poultry facilities, feedlots, dairy facilities, and fish farms. In some counties, confined animal agriculture is a component of the farmland of local importance category.
- Nonagricultural and Natural Vegetation includes heavily wooded, rocky, or barren areas riparian and wetland areas; grassland areas that do not qualify for grazing land due to their size or land management restrictions; small water bodies; and recreational water ski lakes. Constructed wetlands are also included in this category.
- Semi-Agricultural and Rural Commercial Land includes farmstead, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.
- Vacant or Disturbed Land includes open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.
- Rural Residential Land includes residential areas of one to five structures per 10 acres.
- Urban and Built-Up Land is occupied by structures with a building density of at least one unit per 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential structures, industrial structures, commercial structures, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment structures, and water control structures.
- Water is used to describe perennial water bodies with an extent of at least 40 acres.

Williamson Act

The California Land Conservation Act of 1965, better known as the Williamson Act, conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by local governments under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum ten-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

Nonrenewal status is applied to Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases.

Public Resources Code Section 12220(g)

This section of the Public Resources Code defines “forest land” for the purposes of CEQA. According to the Code, “forest land” is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water-quality, recreation, and other public benefits.

Government Code Section 51104(g)

This section of the Government Codes defines "Timber," "Timberland," and "Timberland Production Zone" for the purposes of CEQA and "Timberland Preserve Zone," which may be used in city and county General Plans.

- **"Timber"** means trees of any species maintained for eventual harvest for forest production purposes, whether planted or of natural growth, standing or down, on privately or publicly owned land, including Christmas trees, but does not mean nursery stock.
- **"Timberland"** means privately owned land, or land acquired for State forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.
- **"Timberland Production Zone"** or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "Timberland Preserve Zone" means "Timberland Production Zone."

Regional Regulations

Delta Plan

The Delta Plan, adopted by the Delta Stewardship Council on May 16, 2013, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristics of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority included in the Delta Reform Act, enacted as part of Senate Bill X7. These policies include a requirement for Delta Plan consistency findings for "covered actions," which include the proposed General Plan. The Delta Plan covers the Legal Delta (shown on Figure 4.9-2, *Sacramento-San Joaquin Delta*, of this EIR) and Suisun Marsh, an area west of the central part of the Legal Delta.

San Joaquin County General Plan 2035

The San Joaquin County General Plan is a comprehensive long-range guide for land use in the unincorporated portions of the county, including land outside of Stockton's city limit but within the EIR Study Area. The current San Joaquin County 2035 General Plan was adopted on May 10, 2016. The County's General Plan includes the following Land Use (LU) policies that relate to agricultural resources:

- **Policy LU-1.7 Farmland Preservation.** The County shall consider information from the State Farmland Mapping and Monitoring Program when designating future growth areas in order to preserve prime farmland and limit the premature conversion of agricultural lands.
- **Policy LU-2.10 Soils Information.** The County shall consider the soils information from the Farmland Mapping and Monitoring Program during review of proposed new development projects.

- Policy LU-2.15 Agricultural Conversions. When reviewing proposed General Plan amendments to change a land use diagram or zoning reclassification to change from an agricultural use to non-agricultural use, the County shall consider the following:
  - potential for the project to create development pressure on surrounding agricultural lands;
  - potential for the premature conversion of prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and confined animal agriculture;
  - potential for impacts on surrounding farming operations and practices;
  - provision of infrastructure and services to the new use and the potential impact of service demands or on the surrounding area; and
  - protection of habitat restoration opportunities.
- Policy LU-2.16 Agriculture-Urban Reserve Designation. The County shall require a General Plan amendment to permit urban development on lands the County designates Agriculture-Urban Reserve.
- Policy LU-7.1 Protect Agricultural Land. The County shall protect agricultural land needed for the continuation of viable commercial agricultural production and other agricultural enterprises.
- Policy LU-7.2 Agricultural Support Uses. The County shall require new agricultural support development and non-farm activities to be compatible with surrounding agricultural operations. New developments shall be required to demonstrate that they are locating in an agricultural area because of unique site area requirements, operational characteristics, resource orientation, or because it is providing a service to the surrounding agricultural area. The operational characteristics of the use may not have a detrimental impact on the operation or use of surrounding agricultural properties. Developments must be sited to avoid any disruption to the surrounding agricultural operations.
- Policy LU-7.3 Small Parcel Size Viability. The County shall not allow further fragmentation of land designated for agricultural use, except for the purpose of separating existing dwellings on a lot, provided the Development Title regulations are met.
- Policy LU-7.4 Lot Line Adjustments and Density. The County shall not apply the density requirements of agricultural designations to lot line adjustments if the dwelling unit density for the affected parcels is not increased as a result of the Lot Line Adjustment.
- Policy LU-7.5 Right to Farm. The County shall strive to protect agricultural land against nuisance complaints from nonagricultural land uses though the implementation of the San Joaquin County Right to Farm ordinance and, if necessary, other appropriate regulatory and land use planning mechanisms.
- Policy LU-7.6 Illegal Dumping. The County shall work with property owners, waste collection providers, and law enforcement to find solutions to illegal dumping on agricultural properties, such as offering free trash drop-off days and increased penalties for illegal dumping.
- Policy LU-7.7 Agricultural Buffer. The County shall ensure non-agricultural land uses at the edge of agricultural areas incorporate adequate buffers (e.g., fences and setbacks) to limit conflicts with adjoining agricultural operations.
- Policy LU-7.8 Farm-Related Housing. The County shall support the development of farm-related housing which facilitates efficient agricultural operations in agricultural areas. The County shall allow

the development of farm employee housing and farm labor camps in areas designated General Agriculture (A/G) where there is a demonstrated need for such housing.

Stockton Municipal Code

Section 16.36.040 of the Stockton Municipal Code is the Right-to-Farm Ordinance, which sets forth regulations regarding agricultural preservation and the "right to farm." The purpose of this Code section is to preserve and protect agricultural resources and activities by limiting the circumstances under which an agricultural operation may be considered a nuisance. This section also includes deed restriction and disclosure requirements to ensure that all developers and homebuyers are notified of the right to farm of nearby properties.

Section 16.72.245 of the Stockton Municipal Code protects heritage trees, which are defined as any *Quercus lobata* (Valley Oak), *Quercus agrifolia* (Coast Live Oak), and *Quercus wislizenii* (Interior Live Oak) located on public or private property within the city limit, and which has a trunk diameter of 16 inches or more, measured at 24 inches above actual grade. When such trees have multiple trunks, the combined total trunk diameter shall be used for all trunks measuring 6 inches or greater measured at 24 inches above actual grade. Removal of such trees is only allowed under a permit from the Stockton Community Development Department.

4.2.1.2 EXISTING CONDITIONS

Important Farmland

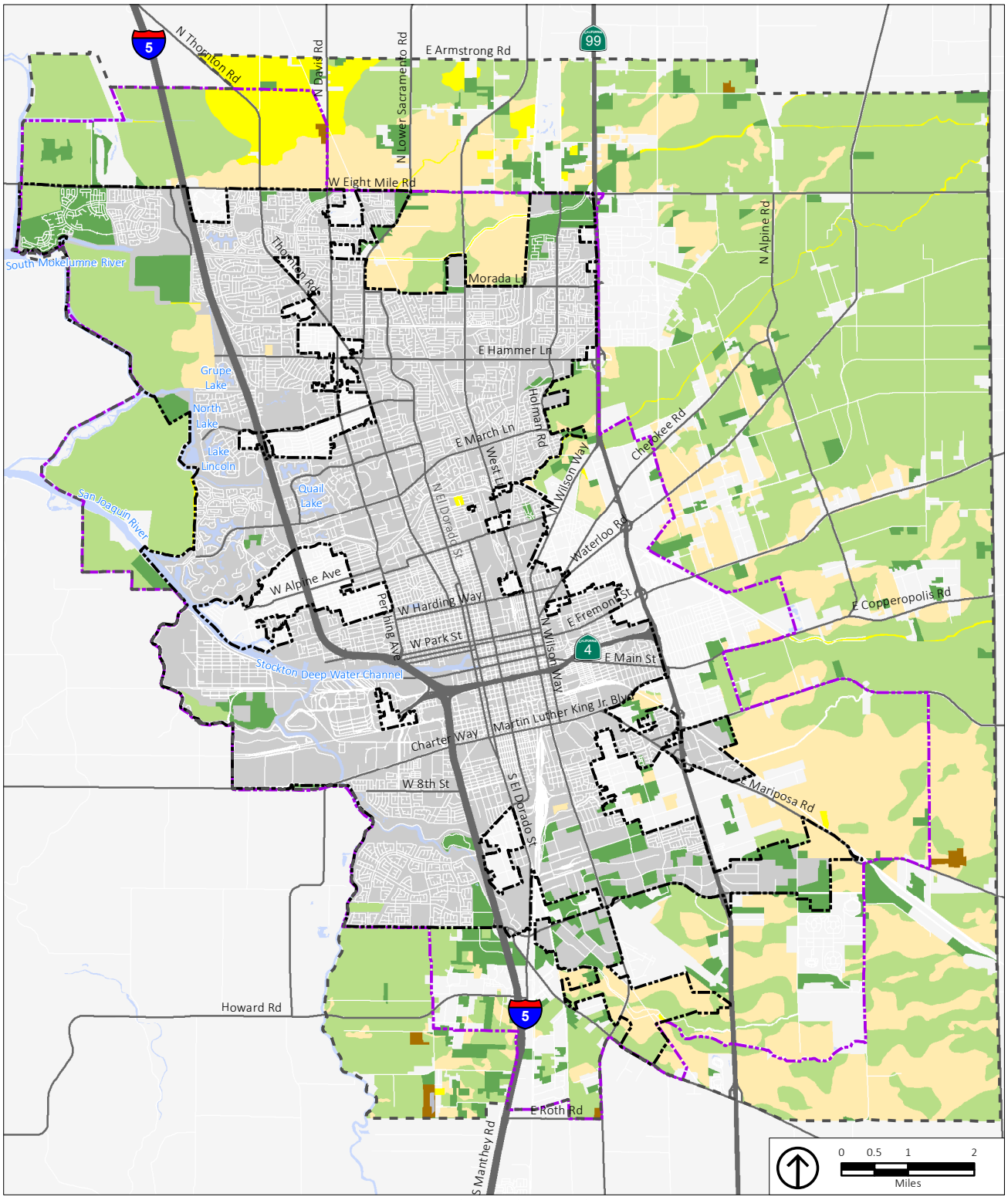
There is a significant amount of agricultural land outside of the Stockton city limit but within the EIR Study Area. The EIR Study Area includes prime farmland, farmland of statewide importance, and unique farmland, which are identified in CEQA as "farmlands of concern." The majority of agricultural land within the EIR Study Area is classified as prime farmland and farmland of statewide importance. Table 4.2-1 lists the number of acres within the EIR Study Area in each classification. As shown in Figure 4.2-1, most of the prime farmland is located on the northern and southern outskirts of the EIR Study Area. The only significant block of unique farmland is located in the northern portion of the EIR Study Area north of Eight Mile Road. The productivity of the soil is highly variable, resulting in a mix of mainly prime farmland and farmland of statewide importance in the northern and southern regions of the EIR Study Area.

TABLE 4.2-1 AGRICULTURAL LANDS WITHIN THE EIR STUDY AREA

Classification	City Limit (Acres)	SOI (Acres)
Prime Farmland	2,120	10,680
Farmland of Statewide Importance	1,080	7,890
Unique Farmland	40	1,030
Farmland of Local Importance	2,740	4,500
Confined Animal Agriculture	–	40
Total	**5,980**	**24,130**

Note: Numbers may not always add up due to rounding.
Source: Department of Conservation, Farmland Mapping and Monitoring Program GIS data, 2014.

AGRICULTURAL AND FORESTRY RESOURCES



Source: Department of Conservation, 2015; City of Stockton; PlaceWorks, 2017.

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Confined Animal Agriculture
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.2-1
Important Farmlands

Williamson Act Contracts

The Williamson Act is the most widely used agricultural easement program within the EIR Study Area, San Joaquin County, and the State of California. As shown in Figure 4.2-2, approximately 2,086 acres of prime farmland and 1,440 acres of non-prime farmland are subject to active Williamson Act contracts in the EIR Study Area. There are also Williamson Act contracts in nonrenewal status within the EIR Study Area. Approximately 1 acre of prime farmland and 39 acres of non-prime farmland have Williamson Act contracts that are in non-renewal status in the EIR Study Area.

Forest Land and Timberland

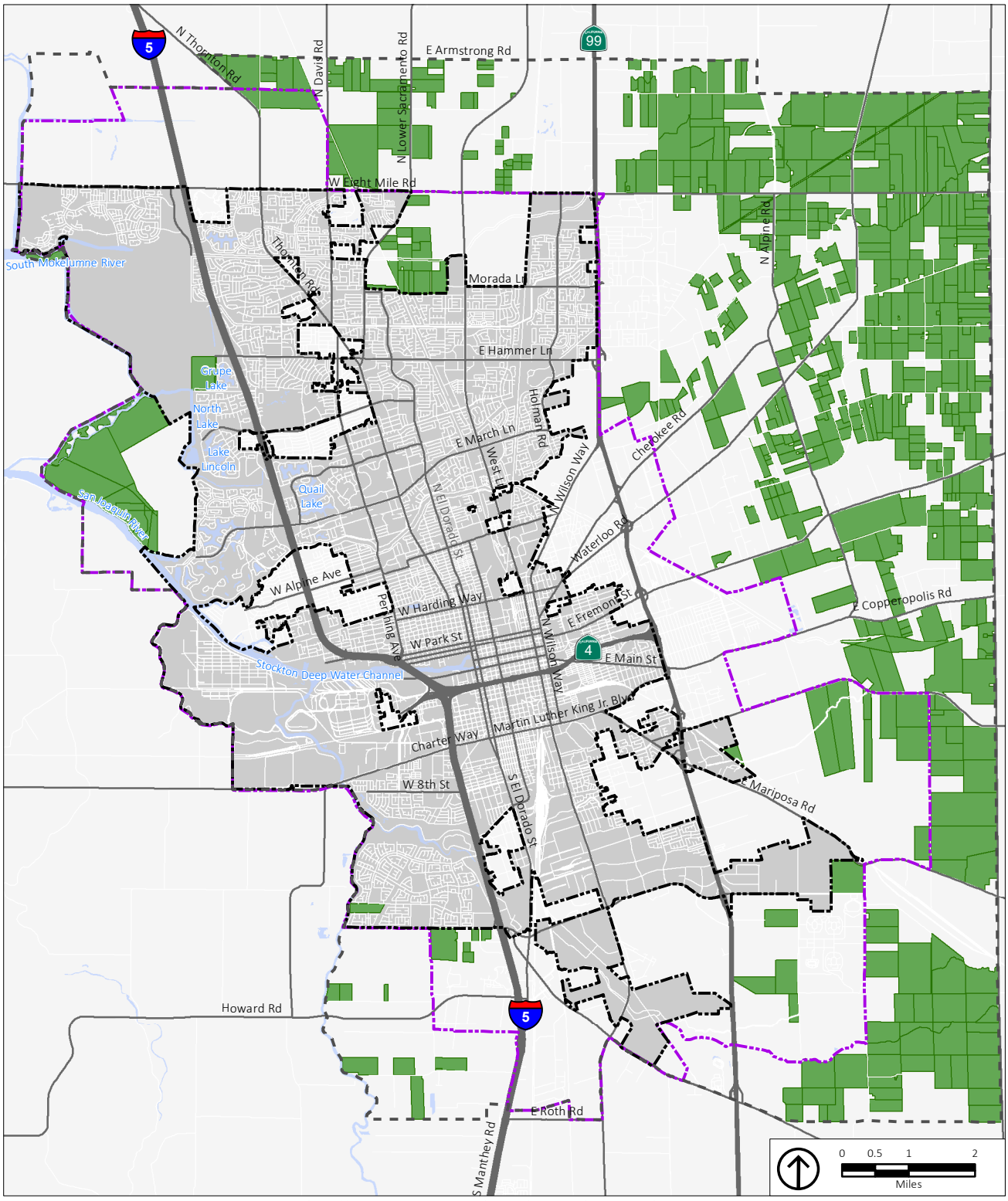
Isolated woodlands that could fall under the definition of forest land per California Public Resource Code Section 12220(g) are scattered throughout mainly the northern half of the EIR Study Area, according to the most recently available 2001 mapping data from the California Department of Forestry and Fire Protection (CAL FIRE). These woodlands are shown in Figure 4.2-3 and are primarily located on low-lying vacant and agricultural lands. Based on a review of aerial photography, some of the woodlands shown in the eastern portion of the EIR Study Area have been developed or cleared for future development since the 2001 data was mapped. Aerial photography reviews also indicate that concentrated woodland areas in the north are associated with farming (e.g., orchards), and the scattered forest towards the center of the city are due to the canopies of suburban neighborhoods. Scattered forest in the CAL FIRE data also shows greater concentrations of woodlands beyond the EIR Study Area, to the north and east.

4.2.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact to agricultural and forestry resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (farmlands of concern under CEQA), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmlands of concern under CEQA to non-agricultural use or conversion of forest land to non-forest use.

AGRICULTURAL AND FORESTRY RESOURCES

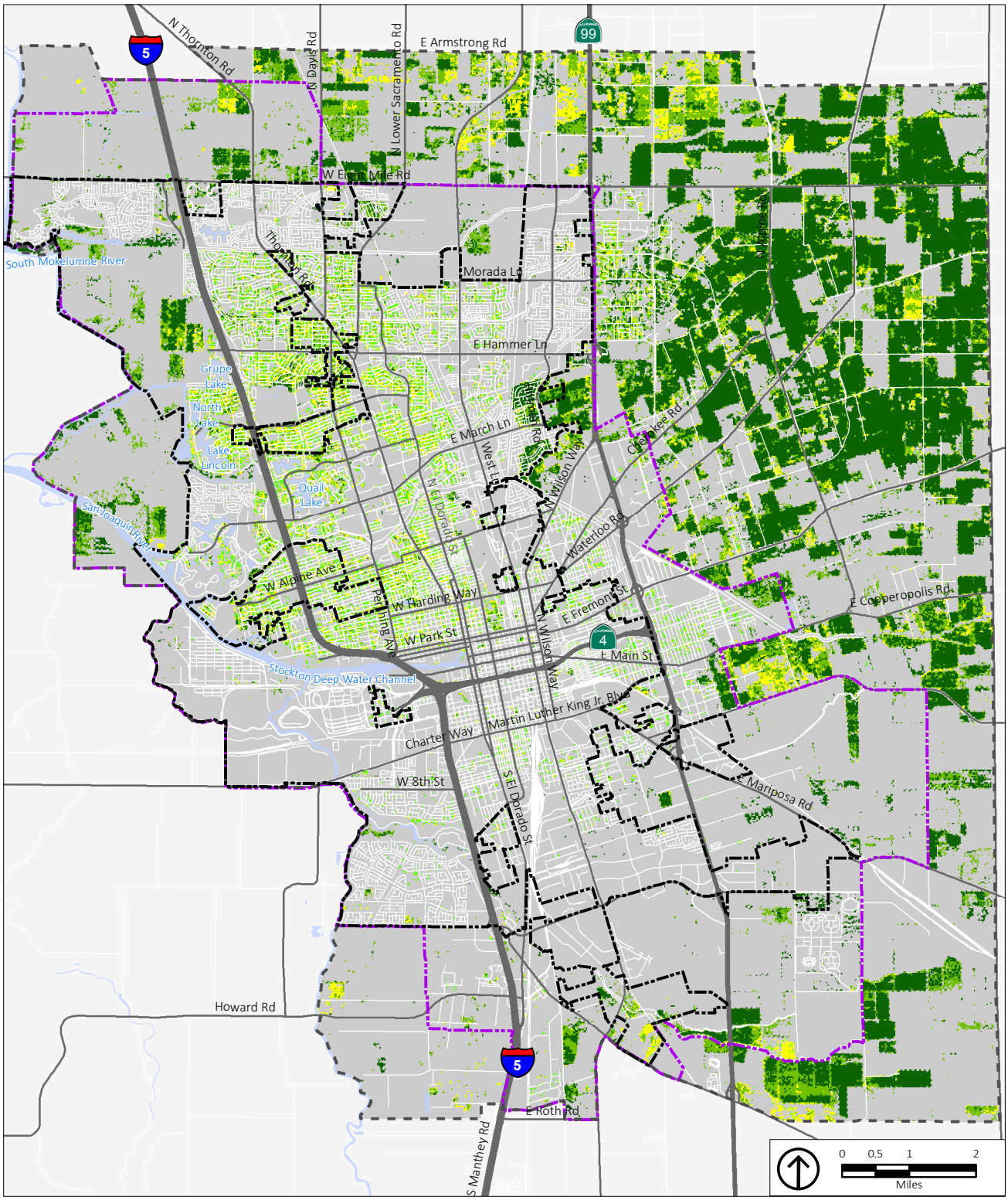


Source: San Joaquin County Assessor's Office, 2017; City of Stockton; PlaceWorks, 2017.

- Williamson Act Parcels
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.2-2
Williamson Act Parcels

AGRICULTURAL AND FORESTRY RESOURCES



Source: City of Stockton; PlaceWorks, 2016.

Percent of Tree Canopy
- 0 - 10%
- 10 - 25%
- 25 - 40%
- 40 - 60%
- 60 -100%

- City Limit
- General Plan Planning Area
- Sphere of Influence/ EIR Study Area

PLACEWORKS

Figure 4.2-3
Forests and Timberland

4.2.3 IMPACT DISCUSSION

This section discusses potential agricultural and forestry resource impacts of the proposed General Plan and UMPS. The impact discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

AG-1 Implementation of the proposed project would convert farmlands of concern under CEQA to non-agricultural use.

As shown in Table 4.2-1, the EIR Study Area contains 10,680 acres of Prime Farmland, 7,890 acres of Farmland of Statewide Importance, and 1,030 acres of Unique Farmland.[1] Implementation of the proposed General Plan and UMPS would have a significant impact if it would result in the conversion of these lands to non-agricultural use.

The proposed General Plan designates approximately 16,160 acres of farmlands of concern under CEQA for non-agricultural uses (i.e., any designation except Open Space/Agriculture).[2] As shown in Figure 4.2-4, the largest areas that would be converted to non-agricultural use from development allowed under the proposed General Plan are as follows:

- The northwest region of the EIR Study Area, where farmlands of concern could be converted to a non-agricultural use through the Economic and Education Enterprise designation. Farmland of concern will also be converted by the previously-approved Sanctuary and Crystal Bay projects.
- The northern portion of the EIR Study Area, south of Eight Mile Road, where the pending Tra Vigne project and the area directly west of it, which the proposed General Plan designates for a mix of residential, commercial, and public uses, would convert farmland of concern if developed.
- Along the Calaveras River in the eastern portion of the EIR Study Area, where the proposed General Plan would allow low density residential and industrial development on farmlands of concern.
- The southeast portion of the EIR Study Area, where the already approved Mariposa Lakes, Airport 599, and Tidewater Crossing projects, combined with industrial and institutional designations under the proposed General Plan, could convert farmland.
- To the west of the San Joaquin River on the western edge of the EIR Study Area, where land would be designated for institutional uses in the proposed General Plan.

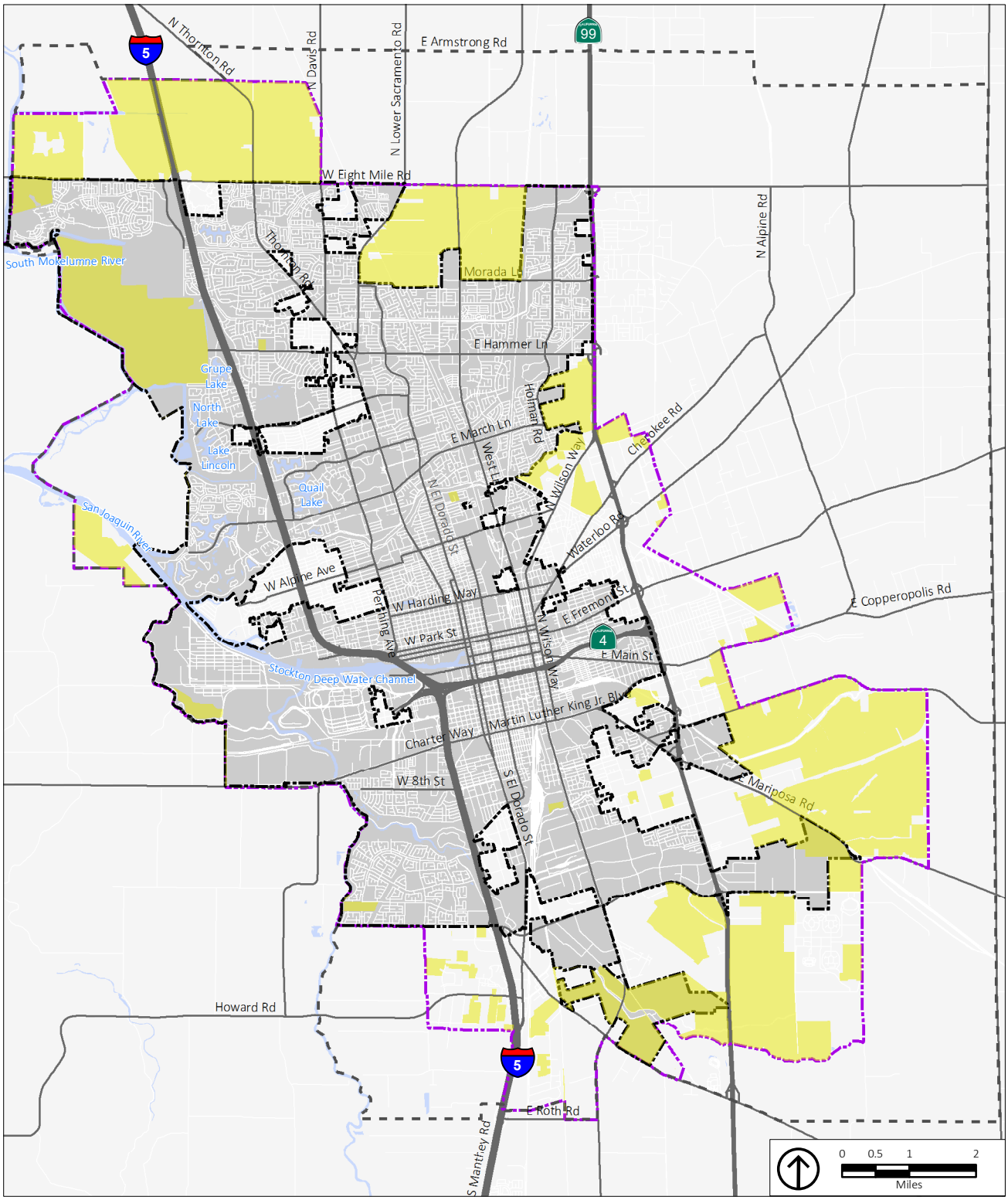
The proposed General Plan includes following policies and actions that aim to concentrate growth and protect agricultural lands outside of the city from conversion to non-agricultural use:

- Policy LU-5.2: Protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources from encroachment or destruction by incompatible development.

[1] Department of Conservation, Farmland Mapping and Monitoring Program (FMMP), 2015. GIS calculation done by PlaceWorks.

[2] GIS comparison done by PlaceWorks, 2017.

AGRICULTURAL AND FORESTRY RESOURCES



Source: City of Stockton; PlaceWorks, 2016.

- Potential Farmland Conversion
- City Limit
- General Plan Planning Area
- Sphere of Influence/ EIR Study Area

Figure 4.2-4

Potential Farmland Conversion

- Policy LU-5.3: Define discrete and clear city edges that preserve agriculture, open space, and scenic views.
- Action LU-5.3.B: Coordinate with San Joaquin County to develop a plan for a greenbelt or community separator around the city.
- Action LU-5.3.C: Maintain the City's agricultural conservation program that requires either dedication of an agricultural conservation easement at a 1:1 ratio or payment of an in-lieu agricultural mitigation fee for the conversion of prime farmland, farmland of statewide importance, or unique farmland, as defined by the State of Farmland Monitoring and Mapping Program.
- Action LU-6.2.B: Do not approve future annexations or City utility connections unless they are consistent with the overall goals and policies of the General Plan and do not adversely impact the City's fiscal viability, environmental resources, infrastructure and services, and quality of life.

Although the proposed General Plan contains a strategy to protect agricultural lands beyond the city edges from conversion to non-agricultural use, the conversion of 16,160 acres of farmlands of concern under CEQA to non-agricultural uses would be a *significant* impact.

Impact AG-1: Although the proposed General Plan includes policies and actions that would reduce and partially offset the conversion of farmland, it designates approximately 16,160 acres of farmlands of concern under CEQA for non-agricultural uses.

Because these farmland areas are located near existing urbanized areas, they may not be viable for agricultural operations due to conflicts with nearby urbanized areas. The only way to mitigate this impact would be to prohibit any development on farmland of concern. CEQA does not require that the project be changed in order to avoid an impact, and no additional mitigation is available, resulting in a *significant and unavoidable* impact.

Significance Without Mitigation: Significant and unavoidable.

AG-2 Implementation of the proposed project would conflict with an existing Williamson Act contract.

Approximately 2,086 acres of prime farmland and 1,440 acres of non-prime farmland have active Williamson Act contracts in the EIR Study Area.[3] These areas are shown in Figure 4.2-2. Some of these parcels are designated for agricultural and open space use under the proposed General Plan, which would avoid a conflict with Williamson Act contracts on these sites.

In addition, as shown in Figure 4.2-2, some parcels in the EIR Study Area have Williamson Act contracts that are in non-renewal status: approximately 1 acre of prime farmland and 39 acres of non-prime farmland have Williamson Act contracts that are in non-renewal status.[4] Nonrenewal status is applied to

[3] Department of Conservation, Farmland Mapping and Monitoring Program (FMMP), 2015. GIS calculation done by PlaceWorks.

[4] San Joaquin County Assessor data, 2017. GIS calculation done by PlaceWorks.

Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases. The proposed General Plan includes non-agricultural designations for some of the parcels under non-renewal Williamson Act contracts, but it is assumed that new development under the proposed General Plan land use designations would not occur until the end of the non-renewal period, consistent with Williamson Act restrictions.

To assess the potential impacts of the proposed General Plan, the following discussion focuses on parcels that are under active Williamson Act contracts and are designated for non-agricultural land uses (i.e., any designation except Open Space/Agriculture) under the proposed General Plan.

There are two areas in which Williamson Act parcels are compatible with the proposed land use designations. Both areas are along the western edge of the EIR Study Area. The first and larger area is located just north of the San Joaquin River and is compatible with the proposed Open Space/ Agriculture land use. The other Williamson Act parcel lies just south of French Camp Road and is also proposed for Open Space/Agriculture.

Additional active Williamson Act contracts exist within the EIR Study Area that are designated for non-agricultural uses by the proposed General Plan. These areas total 2,464 acres, and are described below:

- In the northern region of the EIR Study Area, north of Eight Mile Road, two parcels would be designated Economic and Education Enterprise, and south of Eight Mile Road, 48 parcels would be designated Low Density Residential, Medium Density Residential, High Density Residential, Institutional, and Parks and Recreation.
- In the southeast region of the EIR Study Area, east of the Stockton Municipal Airport, five parcels would be designated Industrial.
- In the southwest region of the EIR Study Area, there are three incompatible uses for five parcels near French Camp Road, with proposed Low Density Residential, Administrative Professional, and Commercial land use designations.
- Other incompatible uses are within already approved development projects, including Sanctuary and Mariposa Lakes.

Development allowed under the proposed General Plan on all of these sites would require a determination of compatibility and would be expected to conflict with Williamson Act compatibility requirements.

In summary, future development allowed by the proposed non-agricultural land use designations on 2,464 acres would be incompatible with agricultural uses on Williamson Act lands, and proposed land use designations would conflict with Uniform Rule requirements applicable to Williamson Act contracts. This would be a *significant* impact.

Impact AG-2: The proposed General Plan designates 2,464 acres of lands with active Williamson Act contracts for non-agricultural uses.

Because these parcels with Williamson Act contracts are located near existing urbanized areas, they may not be viable for agricultural operations due to conflicts with nearby urbanized areas. As discussed under Impact AG-1, above, no additional mitigation is available, resulting in a *significant and unavoidable* impact.

Significance Without Mitigation: Significant and unavoidable.

AG-3 Implementation of the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

The Title 16, Development Code, of the Stockton Municipal Code does not identify a zoning district for forest or timberland. Therefore, the proposed General Plan would not conflict with or rezone existing zoning for forest or timberland and there would be *no impact*.

Significance Without Mitigation: No impact.

AG-4 Implementation of the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.

As shown in Figure 4.2-4, according to 2001 mapping data from CAL FIRE, forest and timberland areas exist in certain portions of the EIR Study Area. CAL FIRE data also shows greater concentrations of woodlands beyond the EIR Study Area, to the east and north. The majority of these areas are located in suburban areas that are developed, meaning that the forested areas shown in the map is the urban and suburban canopy. In the northwestern portion of the EIR Study Area, Figure 4.2-4 shows the existence of tree density scattered on low-lying parcels designated for residential and industrial uses under the proposed General Plan. Since the time that the 2001 data was compiled, some of these areas have been developed or cleared for future development.

Although the proposed General Plan would allow development on some areas that contain woodlands, it would also protect contiguous woodland areas with a greater density of trees outside the EIR Study Area from development by developing a plan for a greenbelt or community separator around the city in coordination with the County, per proposed Action LU-5.3.B. In addition, the proposed General Plan includes the following policies and actions to minimize the loss of forest land:

- Action LU-1.3.C directs the City to require the incorporation of scenic views, including open space features like waterways, wetlands, natural landscapes, and parks, into design of the built environment, ensuring that forested areas would be maintained in new development.
- Policy LU-5.1 directs the City to integrate nature into the city and maintain Stockton's urban forest. Supporting actions require projects to provide open space; protect, preserve, and improve riparian corridors; and require that landscape plans incorporate native plants. This policy and these actions support preservation and protection of forested open space and riparian areas.

In addition, as discussed in Section 4.2.1.1, Stockton Municipal Code Section 16.72.245 protects heritage trees. Heritage trees are any valley oak, coast live oak, or interior live oak of the size specified in the Code.

Any projects proposed under the General Plan that would involve the removal of such a tree would be required to apply for a Heritage Oak Tree Removal Permit, and could only remove such tree after issuance of the permit.

With implementation of the proposed General Plan policies and actions and existing tree protection measures in the Stockton Municipal Code, the impact related to the loss of forest land would be *less than significant*.

Significance Without Mitigation: Less than significant.

AG-5 Implementation of the proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmlands of concern under CEQA to non-agricultural use or conversion of forest land to non-forest use.

The land use map in the proposed General Plan was generally developed to arrange new designations to place compatible uses adjacent to existing uses. Nevertheless, the proposed General Plan would allow development that could result in potentially incompatible urban uses next to farms or ranches, creating circumstances that impair the productivity and profitability of agricultural operation, and could eventually lead farmers to take their land out of production. For example, complaints from new residents about noise, dust, and chemical use from agricultural operations, and concerns of farmers and ranchers about increased vandalism, traffic, access difficulties, and the introduction of domestic animals, can lower productivity. Adjacent urban development may also drive up land values, increasing the property tax burden for farmland not protected by Williamson Act contracts.

Because the forest lands in the EIR Study Area are likely urban canopies and not actively used for timber harvesting operations, it is unlikely that adjacent urban development would be incompatible with the forest land uses and result in the conversion of forest lands.

As described in the discussion for Threshold AG-1 above, the proposed General Plan includes policies and actions that aim to protect agricultural lands outside of the city from conversion to non-agricultural use, including from incompatible uses.

Furthermore, as discussed in Section 4.2.1.1, the Stockton Municipal Code contains a "Right-to-Farm Ordinance," under which the City notifies property buyers to accept inconveniences or discomforts resulting from nearby agricultural activities, thereby protecting agricultural operations from nuisance complaints.

With implementation of the proposed General Plan policies and actions discussed above, as well as the City's Right-to-Farm Ordinance, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

AGRICULTURAL AND FORESTRY RESOURCES

4.3 AIR QUALITY

This section evaluates the potential for the proposed General Plan Update and Utility Master Plan Supplements (UMPS) to impact air quality in a local and regional context. This quantitative evaluation is based on the methodology recommended by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling for the proposed General Plan is included in Appendix B of this Draft EIR. Transportation-sector impacts are based on trip generation and vehicle miles traveled (VMT) provided by Fehr and Peers (see Appendix C). Cumulative impacts related to air quality are based on the regional boundaries of the San Joaquin Valley Air Basin (SJVAB).

4.3.1 ENVIRONMENTAL SETTING

4.3.1.3 REGULATORY FRAMEWORK

Federal, state, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the EIR Study Area is subject to the rules and regulations imposed by SJVAPCD, California Air Resource Board (CARB), and the United States Environmental Protection Agency (US EPA). The regulatory framework that is potentially applicable to the proposed General Plan and UMPS is summarized below.

Federal and State Regulations

Ambient air quality standards have been adopted at federal and State levels for criteria air pollutants. In addition, both the federal and State governments regulate the release of toxic air contaminants (TACs). The City of Stockton is in the SJVAB and is subject to the rules and regulations imposed by the SJVAPCD, the national Ambient Air Quality Standards (AAQS) adopted by the US EPA, and the California AAQS adopted by CARB. Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed General Plan and UMPS are summarized below.

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollutants. The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people

already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 4.3-1. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- **Assembly Bill (AB) 1493:** Pavley Fuel Efficiency Standards
- **Title 20 California Code of Regulations (CCR):** Appliance Energy Efficiency Standards
- **Title 24, Part 6, CCR:** Building Energy Efficiency Standards
- **Title 24, Part 11, CCR:** Green Building Standards Code

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal CAA (42 US Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

TABLE 4.3-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Ozone (O_3)[c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20.0 ppm	35.0 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Particulate Matter (PM_{10})[d]	Annual Arithmetic Mean	20.0 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50.0 µg/m^3	150.0 µg/m^3	
Respirable Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12.0 µg/m^3	12.0 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35.0 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo[f] =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

TABLE 4.3-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydro-carbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
a. California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b. National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
d. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
e. On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual arithmetic mean standards were revoked.
Source: California Air Resources Board, 2015, Ambient Air Quality Standards, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate

matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Each of the primary and secondary criteria air pollutants and its known health effects is described below.

- Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.[1] The SJVAB is designated under the California and National AAQS as being in attainment of CO criteria levels.[2]
- Volatile Organic Compounds (VOCs) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O_3, the SJVAPCD has established a significance threshold for this pollutant.
- Nitrogen Oxides (NOx) are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and is more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO_2 concentrations and increased

[1] United States Environmental Protection Agency (EPA). Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed September 12, 2017.

[2] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

visits to emergency departments and hospital admissions for respiratory issues, especially asthma.[3] The SJVAB is designated an attainment area for NO_2 under the National and California AAQS.[4]

- Sulfur Dioxide (SO2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.[5] The SJVAB is designated attainment under the California and National AAQS.[6]
- Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. EPA scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Diesel particulate matter (DPM) is classified by the CARB as a carcinogen. Particulate matter can also cause environmental effects such as visibility impairment,[7] environmental damage,[8] and aesthetic

[3] United States Environmental Protection Agency (EPA). Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed September 12, 2017.

[4] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

[5] United States Environmental Protection Agency (EPA). Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants, accessed , September 12, 2017.

[6] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

[7] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[8] Particulate matter can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

damage.[9,10] The SJVAB is a nonattainment area for PM_{10} under the California AAQS and nonattainment for $PM_{2.5}$ under the California and National AAQS.11

- **Ozone (O^3)** is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation, including forest trees and plants during the growing season.[12] The SJVAB is designated severe nonattainment under the California AAQS (1-hour and 8-hour) and extreme nonattainment under the National AAQS (8-hour).[13]
- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from on-road motor vehicle gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. Once taken into the body, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ.[14] The SJVAB is designated in attainment of the California and National AAQS for

[9] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[10] United States Environmental Protection Agency (EPA). Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants, accessed September 12, 2017.

[11] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

[12] United States Environmental Protection Agency (EPA). Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants, accessed September 12, 2017.

[13] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

[14] United States Environmental Protection Agency (EPA). Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed September 12, 2017.

lead.[15] Because emissions of lead are found only in projects that are permitted by SJVAPCD, lead is not an air quality of concern for the proposed General Plan and UMPS.

Toxic Air Contaminants

At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[16] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

Regional Regulations

San Joaquin Valley Air Pollution Control District

The primary role of SJVAPCD is to develop plans and implement control measures in the SJVAB to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. SJVAPCD also provides uniform procedures for assessing potential air quality impacts of proposed projects and for preparing the air quality section of environmental documents.[17]

Air Quality Planning

The US EPA requires states that have areas that do not meet the National AAQS to prepare and submit air quality plans showing how the National AAQS will be met. If the states cannot show how the National AAQS will be met, then the states must show progress toward meeting the National AAQS. These plans are referred to as the State Implementation Plans (SIP). California's adopted *2007 State Strategy* was submitted to the US EPA as a revision to its SIP in November 2007.[18] In addition, CARB requires regions that do not meet California AAQS for ozone to submit clean air plans (CAPs) that describe measures to attain the standard or show progress toward attainment. To ensure federal CAA compliance, SJVAPCD is currently developing plans for meeting new National AAQS for ozone and $PM_{2.5}$ and the California AAQS

[15] California Air Resources Board (CARB), 2015. Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed September 12, 2017. San Joaquin Valley Air Pollution Control District, 2017. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm, accessed September 12, 2017.

[16] California Air Resources Board (CARB), 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

[17] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, accessed September 12, 2017.

[18] Note that the Plan was adopted by CARB on September 27, 2007; California Air Resources Board. 2007. Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan.

for PM_{10} in the SJVAB (for California CAA compliance).[19] The following describes the air plans prepared by the SJVAPCD, which are incorporated by reference per CEQA Guidelines Section 15150.

1-Hour Ozone Plan

Although US EPA revoked its 1979 1-hour ozone standard in June 2005, many planning requirements remain in place. The SJVAPCD's most recent 1-hour ozone plan, the *2013 Plan for the Revoked 1-hour Ozone Standard*, demonstrated attainment of the 1-hour ozone standard by 2017. However, on July 18, 2016, the EPA published in the Federal Register a final action determining that SJVAB has attained the 1-hour ozone NAAQS based on the 2012 to 2014 three-year period, allowing nonattainment penalties to be lifted under federal CAA Section 179b.[20]

8-Hour Ozone Plan

The SJVAPCD's Governing Board adopted the *2007 Ozone Plan* on April 30, 2007. The Plan projects that the San Joaquin Valley will achieve the EPA's 1997 8-hour ozone standard for all areas of the SJVAB no later than 2023. CARB approved the plan on June 14, 2007. US EPA approved the 2007 Ozone Plan effective April 30, 2012. SJVAPCD adopted the *2016 Ozone Plan* to address the federal 2008 8-hour ozone standard, which must be attained by end of 2031.[21,22]

PM_{10} Plan

Based on PM_{10} measurements from 2003 to 2006, US EPA found that the SJVAB has reached federal PM_{10} standards. On September 21, 2007, the SJVAPCD's Governing Board adopted the 2007 PM_{10} Maintenance Plan and Request for Redesignation. This Plan demonstrates that the San Joaquin Valley will continue to meet the PM_{10} standard. US EPA approved the document and on September 25, 2008, the SJVAB was redesignated to attainment/maintenance.[23]

$PM_{2.5}$ Plan

The SJVAPCD adopted the 2012 $PM_{2.5}$ Plan on December 20, 2012. This Plan was approved by CARB on January 24, 2013. This Plan will assure that the San Joaquin Valley will attain the 2006 $PM_{2.5}$ National AAQS. The Plan uses control measures to reduce NO_X, which also leads to fine particulate formation in the atmosphere. The Plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of regulations for various SJVAB industries and the general public through new rules and

[19] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2012. 2012 $PM_{2.5}$ Plan, December 20.

[20] San Joaquin Valley Air Pollution Control District (SJVAPCD). Ozone Plans. http://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm, accessed September 12, 2017.

[21] San Joaquin Valley Air Pollution Control District (SJVAPCD). Ozone Plans. http://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm, accessed September 12, 2017.

[22] San Joaquin Valley Air Pollution Control District. 2016 Plan for the 2008 8-Hour Ozone Standard, http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016.htm, accessed September 12, 2017.

[23] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

amendments. The Plan estimates that the SJVAB will reach the $PM_{2.5}$ standard by 2019.[24] In addition, SJVAPCD also adopted the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard on April 16, 2015 to achieve attainment for the US EPA 1997 annual and 24-hour $PM_{2.5}$ standards by the end of 2020. Furthermore, SJVAPCD adopted the 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard on September 15, 2016, which requests a new attainment deadline of 2025.[25]

All of the above-referenced plans include measures (i.e., federal, State, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions in the SJVAB. Transportation control measures are part of these plans.

Applicable SJVAPCD Rules and Regulations

Assembly Bill 170, Reyes

AB 170 was adopted by State lawmakers in 2003, creating Government Code Section 65302.1, which requires cities and counties in the San Joaquin Valley to amend their general plans to include data, analysis, and comprehensive goals, policies, and feasible implementation strategies designed to improve air quality. The elements to be amended include, but are not limited to, those elements dealing with land use, circulation, housing, conservation, and open space. Section 65302.1.c identifies four areas of air quality discussion required in these amendments:

- A report describing local air quality conditions, attainment status, and State and federal air quality and transportation plans;
- A summary of local, district, State, and federal policies, programs, and regulations to improve air quality;
- A comprehensive set of goals, policies, and objectives to improve air quality;
- Feasible implementation measures designed to achieve these goals.

SJVAPCD Indirect Source Review

On December 15, 2005, SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursors (i.e., VOC and NO_X) and PM_{10} emissions from new land use development projects.[26] Specifically, Rule 9510 targets the indirect emissions from vehicles and construction equipment associated with these projects and applies to both construction and operational-related impacts. The rule applies to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which upon full buildout would include any one of the following:

[24] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

[25] San Joaquin Valley Air Pollution Control District (SJVAPCD). Particulate Matter Plans, http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm, accessed September 12, 2017.

[26] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2005. Final Staff Report: Rule 9510 – Indirect Source Review (ISR), Rule 3180 – Administrative Fees for Indirect Source Review, December 15, http://www.valleyair.org/ISR/Documents/Rule_9510_StaffReport.pdf.

- 50 residential units.
- 2,000 square feet of commercial space.
- 25,000 square feet of light industrial space.
- 100,000 square feet of heavy industrial space.
- 20,000 square feet of medical office space.
- 39,000 square feet of general office space.
- 9,000 square feet of educational space.
- 10,000 square feet of government space.
- 20,000 square feet of recreational space.
- 9,000 square feet of space not identified above.
- Transportation/transit projects with construction exhaust emissions of 2 or more tons of NO_x or 2 or more tons of PM_{10}.
- Residential projects on contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, regardless of the number of tract maps, and has the capability of accommodating more than 50 residential units.
- Nonresidential projects on contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, and has the capability of accommodating development projects that emit 2 or more tons per year of NO_X or PM_{10} during project operations.

The rule requires all subject, nonexempt projects[27] to mitigate both construction and operational period emissions by (1) applying feasible SJVAPCD-approved mitigation measures, or (2) paying any applicable fees to support programs that reduce emissions. Off-site emissions reduction fees (off-site fees) are required for projects that do not achieve the required emissions reductions through on-site emission reduction measures. Phased projects can defer payment of fees in accordance with an Off-Site Emissions Reduction Fee Deferral Schedule (FDS) approved by the SJVAPCD.

To determine how an individual project would satisfy Rule 9510, each project would submit an air quality impact assessment (AIA) to the SJVAPCD as early as possible, but no later than prior to the project's final discretionary approval, to identify the project's baseline unmitigated emissions inventory for indirect sources: on-site exhaust emissions from construction activities and operational activities from mobile and area sources of emissions (excludes fugitive dust and permitted sources).[28] Rule 9510 requires the following reductions, which are levels that the SJVAPCD has identified as necessary, based on their air quality management plans, to reach attainment for ozone and particulate matter:

[27] Development projects that have a mitigated baseline below 2 tons per year of NO_X and 2 tons per year of PM_{10} are exempt.

[28] Stationary sources of air pollutant emissions are covered separately under SJVAPCD's Rule 2201, New and Modified Stationary Source Review.

- Construction Equipment Emissions. The exhaust emissions for construction equipment greater than 50 horsepower (hp) used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by CARB:
  - 20 percent of the total NO_X emissions
  - 45 percent of the total PM_{10} exhaust emissions

  Mitigation measures may include those that reduce construction emissions on-site by using less polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer, lower emitting equipment.

- Operational Emissions.
  - *NO_x Emissions.* Applicants shall reduce 33.3 percent of the project's operational baseline NO_X emissions over a period of 10 years as quantified in the approved AIA.
  - *PM_{10} Emissions.* Applicants shall reduce of 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years as quantified in the approved AIA.

  These requirements can be met through any combination of on-site emission reduction measures. In the event that a project cannot achieve the above standards through imposition of mitigation measures, then the project would be required to pay the applicable off-site fees. These fees are used to fund various incentive programs that cover the purchase of new equipment, engine retrofit, and education and outreach.

New and Modified Stationary Source Review

SJVAPCD adopted Rule 2201, *New and Modified Stationary Source Review*, to control emissions from new stationary sources and all modifications to existing stationary sources which are subject to SJVAPCD's permit requirements (i.e., "permit projects" for which the SJVAPCD is the lead agency). Permit projects that exceed the Source Performance Standards are required to install Best Available Control Technology (BACT) to control emissions to the maximum extent practicable.

Fugitive PM_{10} Prohibitions

SJVAPCD controls fugitive PM_{10} through Regulation VIII, *Fugitive PM10 Prohibitions*. The purpose of this regulation is to reduce ambient concentrations of PM_{10} and $PM_{2.5}$ by requiring actions to prevent, reduce, or mitigate anthropogenic (human caused) fugitive dust emissions.

- Regulation VIII, Rule 8021 applies to any construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.
- Regulation VIII, Rule 8031 applies to the outdoor handling, storage, and transport of any bulk material.
- Regulation VIII, Rule 8041 applies to sites where carryout or trackout has occurred or may occur on paved roads or the paved shoulders of public roads.
- Regulation VIII, Rule 8051 applies to any open area having 0.5 acre or more within urban areas or 3.0 acres or more within rural areas, and contains at least 1,000 square feet of disturbed surface area.

- Regulation VIII, Rule 8061 applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.
- Regulation VIII, Rule 8071 applies to any unpaved vehicle/equipment traffic area.
- Regulation VIII, Rule 8081 applies to off-field agricultural sources.

Sources regulated are required to provide Dust Control Plans that meet the regulation requirements. Under Rule 8021, a Dust Control Plan is required for any residential project that will include 10 or more acres of disturbed surface area, a nonresidential project with 5 or more acres of disturbed surface area, or a project that relocates 2,500 cubic yards per day of bulk materials for at least three days. The Dust Control Plan is required to be submitted to SJVAPCD prior to the start of any construction activity. The Dust Control Plan must also describe fugitive dust control measure to be implemented before, during, and after any dust-generating activity. For sites smaller than those listed above, the project is still required to notify SJVAPCD a minimum of 48 hours prior to commencing earthmoving activities.

Nuisance Odors

SJVAPCD controls nuisance odors through implementation of Rule 4102, *Nuisance*. Pursuant to this rule, "a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property."

Employer Based Trip Reduction Program

SJVAPCD has implemented Rule 9410, Employer Based Trip Reduction. The purpose of this rule is to reduce VMT from private vehicles used by employees to commute to and from their worksites to in turn reduce emissions of NO_x, VOC, and particulate matter (PM_{10} and $PM_{2.5}$). The rule applies to employers with at least 100 employees. Employers are required to implement an Employer Trip Reduction Implementation Plan (ETRIP) for each worksite with 100 or more eligible employees to meet applicable targets specified in the rule. Employers are required to facilitate the participation of the development of ETRIPs by providing information to its employees explaining the requirements and applicability of this rule. Employers are required to prepare and submit an ETRIP for each worksite to the District. The ETRIP must be updated annually. Under this rule, employers shall collect information on the modes of transportation used for each eligible employee's commutes both to and from work for every day of the commute verification period, as defined by using either the mandatory commute verification method or a representative survey method. Annual reporting includes the results of the commute verification for the previous calendar year along with the measures implemented as outlined in the ETRIP and, if necessary, any updates to the ETRIP.

4.3.1.4 EXISTING CONDITIONS

San Joaquin Valley Air Basin

The EIR Study Area is located in the central portion of the SJVAB. SJVAB consists of eight counties: Fresno, Kern (western and central), Kings, Tulare, Madera, Merced, San Joaquin, and Stanislaus. Air pollution from significant activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The SJVAB is approximately 250 miles long and an average of 35 miles wide. It is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley.[29]

Climate

The SJVAB is in a Mediterranean climate zone and is influenced by a subtropical high-pressure cell most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees Fahrenheit (°F) in the valley.

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500 to 3,000 feet).

Winter-time high pressure events can often last many weeks, with surface temperatures often lowering to 30°F. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet.[30]

Wind Patterns

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing and transporting it to other locations.

Especially in summer, winds in the valley most frequently blow from the northwest. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the

[29] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

[30] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

valley. Marine air can flow into the basin from the San Joaquin River Delta and over Altamont Pass and Pacheco Pass, where it can flow along the axis of the valley, over the Tehachapi pass, into the Southeast Desert Air Basin. This wind pattern contributes to transporting pollutants from the Sacramento Valley and the Bay Area into the SJVAB. Approximately 27 percent of the total emissions in the northern portion, 11 percent of total emissions in the central region, and 7 percent of total emission in the south valley of the SJVAB are attributed to air pollution transported from these two areas.[31] The Coastal Range is a barrier to air movement to the west and the high Sierra Nevada range is a significant barrier to the east (the highest peaks in the southern Sierra Nevada reach almost halfway through the Earth's atmosphere). Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. A secondary but significant summer wind pattern is from the southeast and can be associated with nighttime drainage winds, prefrontal conditions, and summer monsoons.

Two significant diurnal wind cycles that occur frequently in the valley are the sea breeze and mountain-valley upslope and drainage flows. The sea breeze can accentuate the northwest wind flow, especially on summer afternoons. Nighttime drainage flows can accentuate the southeast movement of air down the valley. In the mountains during periods of weak synoptic scale winds, winds tend to be upslope during the day and downslope at night. Nighttime and drainage flows are especially pronounced during the winter when flow from the easterly direction is enhanced by nighttime cooling in the Sierra Nevada. Eddies can form in the valley wind flow and can recirculate a polluted air mass for an extended period.[32]

Temperature

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances (such as volatile organic compounds) and nitrogen dioxide under the influence of sunlight. Ozone concentrations are very dependent on the amount of solar radiation, especially during late spring, summer, and early fall. Ozone levels typically peak in the afternoon. After the sun goes down, the chemical reaction between nitrous oxide and ozone begins to dominate. This reaction tends to scavenge and remove the ozone in the metropolitan areas through the early morning hours, resulting in the lowest ozone levels, possibly reaching zero at sunrise in areas with high nitrogen oxides emissions. At sunrise, nitrogen oxides tend to peak, partly due to low levels of ozone at this time and also due to the morning commuter vehicle emissions of nitrogen oxides.

Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. However, extremely hot temperatures can "lift" or "break" the inversion layer. Typically, if the inversion layer does not lift to allow the buildup of contaminants to be dispersed, the ozone levels will peak in the late afternoon. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants are dispersed or transported out of the SJVAB.

[31] San Joaquin Valley Air Pollution Control District (SJVAPCD). Frequently Asked Questions, http://www.valleyair.org/general_info/frequently_asked_questions.htm#What%20is%20being%20done%20to%20improve%20air%20quality%20in%20the%20San%20Joaquin%20Valley, accessed September 12, 2017.

[32] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

Ozone levels are low during winter periods when there is much less sunlight to drive the photochemical reaction.[33]

Precipitation, Humidity, and Fog

Precipitation and fog may reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog can block the required solar radiation. Wet fogs can cleanse the air during winter as moisture collects on particles and deposits them on the ground. Atmospheric moisture can also increase pollution levels. In fogs with less water content, the moisture acts to form secondary ammonium nitrate particulate matter. This ammonium nitrate is part of the valley's $PM_{2.5}$ and PM_{10} problem. The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the SJVAB floor. This creates strong low-level temperature inversions and very stable air conditions, which can lead to tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10}.[34]

Inversions

The vertical dispersion of air pollutants in the San Joaquin Valley can be limited by persistent temperature inversions. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. The height of the base of the inversion is known as the "mixing height." This is the level to which pollutants can mix vertically. Mixing of air is minimized above and below the inversion base. The inversion base represents an abrupt density change where little air movement occurs.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.[35]

Attainment Status

The air quality management plans (AQMP) prepared by SJVAPCD provide the framework for SJVAB to achieve attainment of the State and federal AAQS through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

[33] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

[34] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

[35] San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

At the federal level, the SJVAPCD is designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM_{10} and CO, and nonattainment for $PM_{2.5}$. At the State level, the SJVAB is designated nonattainment for the 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards. Although the federal 1-hour ozone standard was revoked in 2005, the SJVAB attained the federal 1-hour ozone in 2016 allowing for penalties that were still in place to be lifted under federal CCA Section 179b.[36] The attainment status for the SJVAB with respect to various pollutants of concern is displayed in Table 4.3-2.

TABLE 4.3-2 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN JOAQUIN VALLEY AREA AIR BASIN

Pollutant	Federal	State
Ozone – 1-hour	Revoked in 2005[a]	Nonattainment/Severe
Ozone – 8-hour	Nonattainment/Extreme[b]	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment[c]	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment[d]	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_2)	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

a. Effective June 15, 2005, the US EPA revoked the federal 1-hour ozone standard, including associated designations and classifications. On July 18, 2016, US EPA determined the SJVAB to be in attainment.
b. Though the SJVAB was initially classified as serious nonattainment for the 1997 8-hour ozone standard, US EPA approved reclassification of SJVAB to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
c. The US EPA redesignated the SJVAB to attainment and approved the PM_{10} Maintenance Plan on September 25, 2008.
d. The USEPA designated the SJVAB as nonattainment on November 13, 2009 (effective December 14, 2009).
Source: San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. 2017. http://www.valleyair.org/aqinfo/attainment.htm; California Air Resources Board. 2015, December. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

Existing Ambient Air Quality

CARB, in cooperation with SJVAPCD, monitors air quality throughout the SJVAB. The Stockton – Hazelton Street Monitoring Station within the EIR Study Area monitors O_3, CO, NO_2, PM_{10}, and $PM_{2.5}$. Data from this station is summarized in Table 4.3-3. In general, the ambient air quality measurements from this station

[36] San Joaquin Valley Air Pollution Control District (SJVAPCD). Ozone Plans. http://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm, accessed September 12, 2017.

TABLE 4.3-3 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	2012	2013	2014	2015	2016
Ozone (O_3)[a]					
State 1-Hour ≥ 0.09 ppm	1	0	0	0	2
State 8-hour ≥ 0.07 ppm	6	0	5	3	2
Federal 8-Hour > 0.075 ppm[b]	2	0	1	1	2
Maximum 1-Hour Conc. (ppm)	0.097	0.080	0.090	0.094	0.102
Maximum 8-Hour Conc. (ppm)	0.083	0.067	0.077	0.078	0.078
Carbon Monoxide (CO)[a]					
State 8-Hour > 9.0 ppm	0	*	*	*	*
Federal 8-Hour ≥ 9.0 ppm	0	*	*	*	*
Maximum 8-Hour Conc. (ppm)	1.78	*	*	*	*
Nitrogen Dioxide (NO_2)[a]					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.078	0.0624	0.0669	0.058	0.0641
Sulfur Dioxide (SO_2)					
State 1-Hour ≥ 0.04 ppm	*	*	*	*	*
Max. 1-Hour Conc. (ppm)	*	*	*	*	*
Coarse Particulates (PM_{10})[a]					
State 24-Hour > 50 µg/m^3	3	10	3	4	5
Federal 24-Hour > 150 µg/m^3	0	0	0	0	0
Maximum 24-Hour Conc. (µg/ m^3)	69.4	90.1	90.0	54.1	65.9
Fine Particulates ($PM_{2.5}$)[a]					
Federal 24-Hour > 35 µg/m^3	6	27	16	12	4
Maximum 24-Hour Conc. (µg/m^3)	60.4	66.5	56.8	58.8	43.7

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data/not available
a. Data obtained from the Stockton – Hazelton Street Monitoring Station within the EIR Study Area.
b. On October 1, 2015 the US EPA adopted a new 8-hour national AAQS for ozone of 0.070 ppm (70 ppb).
Source: California Air Resources Board, 2015, Air Pollution Data Monitoring Cards (2012, 2013, 2014, 2015, and 2016), http://www.arb.ca.gov/adam/index.html.

are representative of the air quality in the EIR Study Area. The topographical features and meteorological conditions specific to the region and to the EIR Study Area are variables that can have an effect on the level of air quality as recorded at the aforementioned monitoring station.

As shown in the table, the area regularly exceeds the California and National AAQs for O_3. In addition, the area regularly exceeds the National $PM_{2.5}$ AAQS and the California PM_{10} AAQS. The area has not exceeded the CO or NO_2 standards in the last five years.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive receptors to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

4.3.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant effect on the environment with respect to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

4.3.2.3 SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT THRESHOLDS

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, this analysis also evaluates the project's air quality impacts pursuant to SJVAPCD's recommended guidelines and thresholds of significance, as discussed further below.

The SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) and recently adopted the latest version on March 19, 2015.[37] The current GAMAQI represents the latest guidance for addressing air quality impacts in the SJVAB. Changes to the GAMAQI are primarily

[37] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2015. Guidance for Assessing and Mitigating Air Quality Impacts, available at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

administrative in nature to update air basin information, attainment status, and general guidance to reflect updated conditions. The following thresholds of significance from the SJVAPCD's GAMAQI are used to determine whether a proposed project would result in a significant air quality impact.

Regional Significance Thresholds

SJVACD has identified regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SJVAB. Specifically, these thresholds gauge whether a project would significantly contribute to a nonattainment designation based on the mass emissions generated. Mass emissions from a project are not correlated with concentrations of air pollutants. Table 4.3-4 lists SJVAPCD's regional significance thresholds. It should be noted that SJVAPCD Rule 9510 and Regulation VIII may not reduce project-specific construction and operational emissions to below the SJVAPCD thresholds.

TABLE 4.3-4 SJVAPCD REGIONAL CRITERIA AIR POLLUTANTS SIGNIFICANCE THRESHOLDS

Pollutant	Construction and Operational Phase Significance Thresholds (Tons/Year)
Carbon Monoxide (CO)	100
Nitrous Oxide (NO_X)	10
Volatile Organic Compounds (VOC)	10
Sulfur Oxides (SO_X)	27
Coarse Particulate Matter (PM_{10})	15
Fine Particulate Matter ($PM_{2.5}$)	15

Source: San Joaquin Valley Air Pollution Control District. 2015. *Guidance for Assessing and Mitigating Air Quality Impact,* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

Ambient Air Quality Analysis

The need to perform air quality dispersion modeling for typical urban development projects is determined on a case-by-case basis, depending on project size. SJVAPCD applies the following guidance in determining whether an ambient air quality analysis should be conducted for development projects. Compliance with Rule 9510 frequently reduces project-specific emissions to less than significant levels. However, for large construction projects, additional mitigation may be required. SJVAPCD recommends that an ambient air quality analysis be performed for all pollutants when on-site emissions of any criteria pollutant from construction activities would equal or exceed any applicable threshold of significance for criteria pollutants, or 100 pounds per day of any criteria pollutant, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures. Similarly, SJVAPCD also recommends that an ambient air quality analysis be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

However, air dispersion modeling is not applicable at a program level. Consequently, for the purpose of this program-level EIR, emissions of any criteria air pollutant that would exceed the applicable threshold of significance identified in Table 4.3-4 is considered to result in elevated concentrations of air pollutants that have the potential to exceed the AAQS. It should be noted that CO hotspot monitoring was previously required under the GAMAQI. However, emissions from motor vehicles, by far the largest source of CO emissions, have been declining since 1985 despite increases in VMT due to the introduction of new automotive emission controls and fleet turnover. Consequently, no CO hotspots have been reported in the SJVAB even at the most congested intersections.

Consistency with the Applicable Air Quality Plan

SJVAPCD has prepared plans to attain federal and State AAQS. The significance thresholds in Table 4.3-4 are based on SJVAPCD's New Source Review (NSR) offset requirements for stationary sources. Emission reductions achieved through implementation of District offset requirements are a major component of SJVAPCD's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants (see Table 4.3-4) would be determined to "not conflict or obstruct implementation of the District's air quality plan." Because dispersion modeling is not applicable for a program EIR, projects with emissions that exceed these values are considered to have the potential to exceed the AAQS, resulting in a potentially significant impact.

Odors

Odor impacts associated with a proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors. There are two general scenarios where a project could expose people to substantial odors:

- Odor Generator. Projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate.
- Odor Receiver. Residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis. As shown in Table 4.3-5, the SJVAPCD has identified buffer distances for common types of facilities that have been known to produce odors in the SJVAB. The degree of odors could be significant and may be based on a review of SJVAPCD's complaint records.

For a project locating near an existing source of odors, in *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA), the California Supreme Court ruled that CEQA generally does not require an evaluation of impacts of the environment on a project unless a project will exacerbate an existing environmental hazard. As shown in Table 4.3-5, sensitive receptors such as residential, commercial, office, and institutional uses (such as the hospital land uses) would not be the

TABLE 4.3-5 SJVAPCD SCREENING LEVELS FOR POTENTIAL ODOR SOURCES

Land Use/Type of Operation	Screening Distance
Wastewater Treatment Plan	2 miles
Sanitary Landfill	1 miles
Transfer Station	1 miles
Composting Facility	1 miles
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 miles
Chemical Manufacturing	1 miles
Fiberglass Manufacturing	1 miles
Painting/Coating Operations	1 miles
Food Processing Facility	1 miles
Feed Lot/ Dairy	1 miles
Rendering Plant	1 miles

Source: San Joaquin Valley Air Pollution Control District. 2012a, April. Draft Guidance for Assessing and Mitigating Air Quality Impacts - 2012. http://www.valleyair.org/workshops/postings/2012/4-25-12GAMAQI/draft_GAMAQI_2012_April11.pdf.

types of land uses that are associated with generating substantial odors and would not be anticipated to exacerbate existing odor impacts. Thus, evaluation of this scenario is not considered for purposes of this analysis.

Health Risk

From a health risk perspective, there are two types of land use projects that have the potential to cause long-term public health risk impacts.

- Type A Projects. Land use projects that will place new toxic sources in the vicinity of existing receptors. Examples of Type A projects include gasoline dispensing facilities, asphalt batch plants, warehouse distribution centers, new freeways or high traffic roads, and other stationary sources that emit toxic substances.

- Type B Projects. Land use projects that will place new receptors in the vicinity of existing toxics sources. Examples of Type B projects includes residential, commercial, and institutional developments proposed in the vicinity of existing toxic emission sources such as stationary sources, freeways or high traffic roads, rail yards, and warehouse distribution centers.

Whenever a project would require use of chemical compounds that have been identified in SJVAPCD's Rule 2201, placed on CARB's air toxics list pursuant to Assembly Bill 1807 (AB 1807), Toxic Air Contaminant Identification and Control Act (1983), or placed on the US EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is warranted. In addition, if a project would place sensitive land uses proximate to major sources of TACs (roadways with over 50,000 vehicles per day or major stationary sources), a health risk assessment may also be warranted. Table 4.3-6 lists the SJVAPCD's TAC incremental risk thresholds for operation of a project or placement of sensitive land uses proximate to major sources of air pollution. As stated, under the *CBIA* ruling, while CEQA is generally not required to analyze impacts of the environment on a project, where a project will exacerbate an existing environmental hazard, CEQA requires an analysis of the worsened condition on future project residents and the public at large. However, projects that do not generate emissions that exceed the values in Table 4.3-6 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses (such as the hospital land uses) do not use substantial quantities of TACs and typically do not exacerbate existing hazards. Thus, for purposes of this analysis, evaluation of the Type B Projects scenario impacts is not included in the impacts discussion below.

TABLE 4.3-6 SJVAPCD TOXIC AIR CONTAMINANTS INCREMENTAL RISK THRESHOLDS

Cancer Risk[a]	≥ 10 in 1 million
Hazard Index[b]	≥ 1.0

a. For the Maximum Exposed Individuals (MEI).
b. Ground-level concentrations of noncarcinogenic TACs for the MEI.
Source: San Joaquin Valley Air Pollution Control District. 2015, March. *Guidance for Assessing and Mitigating Air Quality Impacts.* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

Cumulative Impacts

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of federal and State AAQS is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Pursuant to the SJVAPCD's guidance, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable federal or State AAQS.

4.3.3 IMPACT DISCUSSION

4.3.3.3 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed General Plan and UMPS. SJVAPCD has published the GAMAQI that provides local governments with guidance for analyzing and mitigating air quality impacts and was used in this analysis. The EIR Study Area's criteria air pollutant emissions inventory includes the following sectors:

- Transportation. Transportation emissions forecasts were modeled using CARB's EMFAC2014-PL, version 1.0.7.[38] Model runs were based on daily per-capita VMT data provided by Fehr & Peers (see Appendix C) and 2017 (existing) and 2040 emission rates. The VMT provided includes the full trip length for land uses in the EIR Study Area (origin-destination approach) and a 50 percent reduction in the trip length for external-internal/internal-external trips. The emissions forecast includes the GHG emissions reductions from federal and State regulations included in EMFAC2014-PL, including the Pavley I fuel efficiency standards, the California Advanced Clean Car Standards, and on-road diesel fleet rules.
- Area Sources. OFFROAD2007 was used to estimate emissions from landscaping equipment, light commercial equipment, agricultural equipment, and construction equipment in the EIR Study Area. Emissions from pleasure craft are excluded from the inventory because there is no data on the number of crafts and annual usage. OFFROAD2007 is a database of equipment use and associated emissions for each county compiled by CARB. Annual emissions were compiled using OFFROAD2007 for the County of San Joaquin for year 2017. In order to determine the percentage of emissions attributable to the City of Stockton, landscaping and light commercial equipment is estimated based on population (Landscaping)[39] and employment (Light Commercial Equipment)[40] for the City of Stockton as a percentage of San Joaquin County. Forecasts for landscaping and light commercial

[38] California Air Resources Board (CARB), 2014. EMFAC2014-PL.

[39] U.S. Census Bureau. 2011-2015 American Community Survey 5-Year Estimates. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed September 18, 2017.

[40] U.S. Census Bureau. 2010. Longitudinal Employer-Household Dynamics. http://lehd.ces.census.gov/, accessed September 18, 2017.

equipment are adjusted for increases in population and employment in the EIR Study Area. Agricultural equipment is estimated based on acreage for the EIR Study Area as a percentage of agricultural land in the County of San Joaquin. The change in emissions is based on the net change in agricultural land in the EIR Study Area in 2040.[41] Daily emissions from agricultural equipment are multiplied by 347 days to account for weekends/off days. Construction equipment use is estimated based on building permit data for the City of Stockton and County of San Joaquin from data compiled by the U.S. Census.[42] Daily off-road construction emissions are multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays. For construction emissions, modeling assumes similar annual construction exhaust emissions to current levels. Area sources exclude emissions from fireplaces and consumer products in the EIR Study Area. Area and stationary sources are based on the California Emissions Estimator Model (CalEEMod) defaults for emissions generated from use of consumer products and cleaning supplies.[43]

- Energy. Criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.) are based on natural gas usage data provided by Pacific Gas & Electric (PG&E). Natural gas use is based on a three-year average (2014 through 2016) to account for fluctuation in annual use as a result of natural variations in climate. The inventory was adjusted for the additional population and employment in the EIR Study Area and areas beyond these borders. Forecasts are adjusted for increases in population and employment in the EIR Study Area. Emission factors from natural gas are based on emission factors provided in the California Emissions Estimator Model, Version 2016.3.1.[44]

AQ-1 Implementation of the proposed project would be inconsistent with the SJVAPCD air quality management plans.

CEQA requires that projects be evaluated for consistency with the AQMPs. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMPs. It fulfills the CEQA goal of informing decision makers of the environmental effects of a project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals of the AQMPs. The regional emissions inventory for the SJVAB is compiled by SJVAPCD and San Joaquin Council of Governments (SJCOG). Regional population, housing, and employment projections developed by SJCOG are based, in part, on the local jurisdictions' general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic

[41] Acreage based on lands designated as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. EIR Study Area acreage from Section 5.2, Agriculture and Forestry Resources, of the Draft EIR. County acreage based on the California Department of Conservation data: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls, accessed September 18, 2017.

[42] U.S. Census Bureau. https://www.census.gov/construction/bps/, accessed September 18, 2017.

[43] California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.1. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

[44] California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.1. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

trends are incorporated into the 2014–2040 Regional Transportation Plan/Sustainable Communities Strategy, compiled by SJCOG to determine priority transportation projects within the SJCOG region. Projects that are consistent with the local general plan are considered consistent with the air quality–related regional plan. Typically, only new or amended general plan elements, specific plans, and major projects that have the potential to affect the regional population and employment forecasts need to undergo a consistency review.

SJVAPCD is tasked with implementing programs and regulations required by the CAA and the California CAA. SJVAPCD has prepared several plans to attain the National AAQS and California AAQS. Emission reductions achieved through implementation of SJVAPCD's NSR offset requirements are a major component of SJVAPCD's air quality plans. The established thresholds of significance for criteria pollutant emissions are based on SJVAPCD offset requirements for stationary sources. Therefore, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "not conflict or obstruct implementation of the District's air quality plan."

A wide variety of control measures are included in the regional air quality plans, such as reducing or offsetting emissions from construction and operations associated with land use developments. Future development projects allowed under the proposed General Plan and UMPS would be required to adhere to the SJVAPCD control measures, as outlined in the air quality plans and implemented through SJVAPCD rules and regulations. However, as discussed in Impact POP-1, while the anticipated population growth under the proposed General Plan at the 2040 horizon year is below the SJCOG projected growth, the projected employment growth would exceed SJCOG projections. In addition, overall, as identified in Table 4.3-7, implementation of the proposed General Plan would generate a substantial increase in long-term criteria air pollutants that would exceed the SJVAPCD's significance thresholds. Because dispersion modeling is not applicable for a program EIR as specific development land uses are not yet known, projects with emissions that exceed these values are considered to have the potential to exceed the AAQS. The SJVAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS and nonattainment for PM_{10} under the California AAQS. Consequently, emissions generated by development projects in addition to existing sources within the EIR Study Area are considered to cumulatively contribute to the nonattainment designations of the SJVAB. Development allowed under the proposed land use plan would therefore contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMPs.

Summary

While the proposed General Plan and UMPS would result in a substantial increase in long-term criteria pollutant emissions compared to existing conditions, it would support a more sustainable development pattern for the EIR Study Area. Because the proposed General Plan goals, policies, and actions would support a more sustainable development pattern in accommodating future growth for the EIR Study Area, they would contribute to minimizing long-term emissions of criteria air pollutants. They would do this by promoting infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, which would help reduce mobile-source air pollutant emissions. Relevant goals, policies, and actions in the proposed General Plan include:

- Goal LU-1: Become more of a regional destination that attracts visitors and invites residents to enjoy a diverse array of events and arts, entertainment, and dining options.
- Policy LU-1.1: Encourage retail businesses in mixed-use developments along regional transportation routes and in areas that serve local residents.
- Action LU-1.1.A: Require renovated and new mixed-use projects to be planned and designed to contribute to the corridor's identity through appropriate public spaces, gateways, streetscapes, pedestrian walkways, setbacks, edge treatments, and other design features.
- Action LU-1.1.B: Evaluate the City's parking policies, and amend the Development Code to provide more flexibility as appropriate to facilitate mixed-use redevelopment.
- Action LU-1.1.C: Continue to study and consider repealing the "Big Box Ordinance" that was adopted in 2007, and if big-box stores are allowed in the future, require applicants to fund an analysis of economic and blight-inducement impacts of the proposed development on retail businesses in the market area, employment, City revenues and services, and any other relevant economic considerations.
- Goal LU-2: Strengthen the Downtown to reinforce it as the region's center for government, business, finance, arts, entertainment, and dining.
- Policy LU-2.4: Encourage more resident- and visitor-serving restaurants, retail, and consumer services to locate in the Downtown.
- Action LU-2.4A: Implement strategies to promote new Downtown restaurant, retail, and consumer service businesses that primarily serve the needs of Downtown residents, but also add value for visitors, such as by:
  - Reducing permit requirements;
  - Allowing for reduced or shared parking;
  - Providing incentives; and
  - Facilitating planning and permitting for building renovations.
- Action LU-2.4B: Partner with the Downtown Stockton Alliance to market the Downtown to existing Stockton businesses that would benefit from relocating to a centralized location.
- Action LU-2.4C: Partner with the Downtown Stockton Alliance to market the Downtown to attract businesses that complement the Downtown's multi-modal connectivity by appealing to the needs of travelers and providing shopping and recreation opportunities for visitors and commuters alike.
- Action LU-2.5A: Improve transit, bicycle, and pedestrian connectivity between the Downtown and local colleges and universities.
- Action LU-2.5.B: Study the possible one-way to two-way conversions of streets in the Downtown (e.g., El Dorado/Center, Park/Oak, and Main/Market) in order to improve pedestrian and bicycle safety, slow traffic speeds, and support local businesses.
- Action LU-2.5.C: Continue to develop an active transportation plan for Downtown Stockton, and implement complete streets projects to improve bicycle and pedestrian safety that are identified in the plan.

- Goal LU-6: Provide for orderly, well-planned, and balanced development.
- Policy LU-6.2: Prioritize development and redevelopment of vacant, underutilized, and blighted infill areas.
- Action LU-6.2.A: Develop and implement an infill incentive program that encourages infill development through expedited permitting, changes in fee structures, prioritizing infrastructure improvements in infill areas, and/or other strategies.
- Policy LU-3.2: Ensure that land use decisions balance travel origins and destinations in as close proximity as possible.
- Action LU-3.2.A: When reviewing proposed land use activities, take steps to maintain a reasonable balance between potential job generation and local workforce availability with a goal of one job for each employed resident.
- Action LU-3.2.B: When reviewing proposed land use activities, take steps to maintain a reasonable proximity and balance (i.e., magnitude) between job generating uses, housing opportunities, and resident services and amenities.
- Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel.
- Policy TR-1.1: Ensure that roadways safely and efficiently accommodate all modes and users, including private, commercial, and transit vehicles, as well as bicycles and pedestrians and vehicles for disabled travelers.
- Action TR-1.1.A: Direct truck traffic to designated truck routes that facilitate efficient goods movement and minimize risk to areas with concentrations of sensitive receptors and vulnerable road users, like pedestrians and bicyclists.
- Action TR-1.1.B: Maintain and periodically update a schedule for synchronizing traffic signals along arterial streets and freeway interchanges to facilitate the safe and efficient movement of people and goods and to provide signal priority for transit vehicles at intersections.
- Action TR-1.1.C: Require roadways in new development areas to be designed with multiple points of access and to address barriers, including waterways and railroads, in order to maximize connectivity for all modes of transportation.
- Action TR-1.1.D: Update existing Precise Road Plans to reflect the 2040 General Plan, including changes in land use and level of service requirements, and a shift in priority from vehicular travel to travel by all modes through complete streets.
- Action TR-1.1.E: Work with local school districts to enhance pedestrian crossings near schools, encourage activities like a walking school bus, and create educational programs that teach students bicycle safety.
- Policy TR-1.2: Enhance the use and convenience of rail service for both passenger and freight movement.
- Action TR-1.2.A: Actively support and pursue access to high-speed rail.

- Action TR-1.2.B: Support the San Joaquin Regional Transportation District's Regional Bus Service, Altamont Commuter Express (ACE), and AMTRAK's San Joaquin intercity rail service, and pursue and support other regional transit programs and projects, such as:
  - ACE plans to bypass existing bottlenecks (e.g., the Union Pacific railyards in South Stockton);
  - Connecting to the BART system;
  - Extending ACE service south to Merced; and
  - Proposing rail between Stockton and Sacramento along the California Traction and other rail corridors.
- Action TR-1.2.C: Provide grade separations at railroad crossings on arterial streets where feasible to ensure public safety and minimize traffic delay. (TC-6.1)
- Policy TR-1.3: Facilitate expanded port and airport operations, service, and development as travel and goods movement assets to the community and sources of employment growth.
- Action TR-1.3.A: Protect the Airport and related aviation facilities from encroachment by ensuring that all future development within the Airport Influence Area (AIA) is consistent with the policies adopted by the San Joaquin County Airport Land Use Commission (ALUC), except in cases where the City Council concludes that project approval would provide for the orderly development of the Airport and the areas surrounding it while protecting the public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards.
- Action TR-1.3.B: Where substantial development already exists within the AIA and is incompatible with ALUC policies, only allow additional infill development of similar land uses if projects meet all of the following criteria to be an infill project:
  - The project site is bounded on at least three sides by uses similar to those proposed.
  - The proposed project would not extend the perimeter of the area developed with incompatible uses.
  - The proposed project does not otherwise increase the intensity and/or incompatibility of use through use permits, density transfers, or other strategies.
- Action TR-1.3.C: Within the AIA, require that new development or an expansion of an existing use that requires a building permit file an avigation easement with the City.
- Goal TR-2: Offer active transportation opportunities for the entire community.
- Policy TR-2.1: Develop safe and interconnected bicycle and pedestrian facilities, including along "complete" streets that target multiple travel modes.
- Action TR-2.1.A: Require safe and secure bicycle parking facilities to be provided at major activity centers such as public facilities, employment sites, and shopping and office centers, along with showers and lockers for major employment sites.
- Action TR-2.1.B: Maintain and implement the City of Stockton Bicycle Master Plan.
- Policy TR-2.2: Connect housing and employment development in areas with good transit access.
- Action TR-2.2.A: Require major new development to incorporate design features to promote safe and comfortable access to transit, such as a circulation network that facilitates efficient and connected bus

travel, clear pedestrian and bicycle routes connecting origins and destinations to transit stops, sheltered bus stops, park-and-ride facilities, and highly visible transit information and maps.

- Action TR-2.2.B: Obtain input from local and regional transit operators on major new development projects to ensure projects are designed to support transit and provide adequate transit service and access.
- Action TR-2.2.C: Request that public transit service providers expand routes and increase frequency and operational hours consistent with current short- and long-range transit planning, as financially feasible.
- Policy TR-2.3: Utilize natural features and routes with lower traffic volumes and speeds to encourage residents to walk and wheel more frequently.
- Action TR-2.3.A: Develop and maintain bikeways on separate rights-of-way (e.g., Calaveras River path, East Bay Municipal Utility District easement path, French Camp Slough, and Shima Tract Levee).
- Action TR-2.3.B: Require dedication of adequate right-of-way for bicycle use in new arterial and collector streets, and where feasible, in street improvement projects.
- Goal TR-3: Design transportation infrastructure to help reduce pollution and vehicle travel.
- Policy TR-3.1: Avoid widening existing roadways in an effort to preclude inducement of additional vehicle traffic.
- Action TR-3.1.A: Limit street widths to the minimum necessary to adequately carry the volume of anticipated traffic, while allowing for safe bicycle and pedestrian facilities, emergency access, and large vehicle access.
- Action TR-3.1.B: Where feasible and appropriate, reduce the width of existing streets using bulbouts, medians, pedestrian islands, shade tree landscaping, and similar methods, while not jeopardizing emergency response.
- Action TR-3.1.C: Preserve right-of-way for transit and bicycle uses when designing new roadways and improving existing roadways.
- Policy TR-3.2: Require new development and transportation projects to reduce travel demand, support electric vehicle charging, and accommodate multi-passenger autonomous vehicle travel as much as feasible.
- Action TR-3.2.A: Amend the parking requirements in the Development Code to encourage shared parking, require preferential parking for rideshare vehicles, and allow reduced parking requirements to support transit, bicycling, and walking.
- Action TR-3.2.B: Require commercial, retail, office, industrial, and multi-family residential development to provide charging stations and prioritized parking for electric and alternative fuel vehicles.
- Action TR-3.2.C: Respond to the implications and opportunities associated with connected vehicles and autonomous vehicles by monitoring technological advances and adjusting roadway infrastructure and parking standards to accommodate autonomous vehicle technology and parking needs.

AIR QUALITY

In addition to the land use and transportation goals, policies, and actions listed above, the proposed General Plan also includes the following goal, policies, and actions that specifically address air quality.

- Goal SAF-4: Improve local air quality.
- Policy SAF-4.1: Reduce air impacts from mobile and stationary sources of air pollution.
- Action SAF-4.1A: Require the construction and operation of new development to implement best practices that reduce air pollutant emissions, including:
  - Use of low-emission and well-maintained construction equipment, with idling time limits.
  - Development and implementation of a dust control plan during construction.
  - Installation of electrical service connections at loading docks, where appropriate.
  - Installation of Energy Star-certified appliances.
  - Entering into Voluntary Emissions Reduction Agreements with the San Joaquin Valley Air Pollution Control District.
- Action SAF-4.1.B: Use the results of the Health Risk Assessments required by the California Air Toxics "Hot Spots" Act to establish appropriate land use buffer zones around any new sources of toxic air pollutants that pose substantial health risks.
- Action SAF-4.1C: Require the use of electric-powered construction and landscaping equipment as conditions of project approval when appropriate.
- Action SAF-4.1D: Limit heavy-duty off-road equipment idling time to meet the California Air Resources Board's idling regulations for on-road trucks.
- Policy SAF-4.2: Encourage major employers to participate in a transportation demand management program (TDM) that reduces vehicle trips through approaches such as carpooling, vanpooling, shuttles, car-sharing, bike-sharing, end-of-trip facilities like showers and bicycle parking, subscription bus service, transit subsidies, preferential parking, and telecommuting.
- Policy SAF-4.3: Coordinate with the San Joaquin Valley Air Pollution Control District to promote public awareness on air quality issues and consistency in air quality impacts analyses.
- Action SAF-4.3.A: Distribute educational materials from the San Joaquin Valley Air Pollution Control District on the City's website and at its Permit Center.
- Action SAF-4.3.B: Coordinate review of development project applications with the San Joaquin Valley Air Pollution Control District to ensure that air quality impacts are consistently identified and mitigated during CEQA review.

The land use and transportation-related goals, policies, and actions presented above would promote active transit (e.g., Goals TR-1 and TR-2 and their associated policies and actions) and support a reduction in vehicle trips and average vehicle trip distances, which would contribute in reducing overall vehicle trips and VMT. Furthermore, Action TR-3.2.B would support the expansion of the electric vehicle charging network, which would promote usage of electric vehicles. However, despite furthering the regional transportation and planning objectives, as stated, development allowed under the proposed General Plan would represent a substantial increase in emissions compared to existing conditions and would exceed

SJVAPCD's regional operational significance thresholds (see Impact AQ-3). As a result, the proposed General Plan could potentially exceed the assumptions in the AQMPs and would not be considered consistent with the AQMPs. Therefore, impacts are considered *significant*.

Significance Without Mitigation: Significant.

Impact AQ-1: Implementation of the proposed General Plan would result in the generation of substantial long-term criteria air pollutant emissions that would exceed the SJVAPCD regional significance thresholds and would therefore not be considered consistent with the existing AQMPs.

Mitigation Measure AQ-1: Implement Mitigation Measure AQ-3 to further reduce long-term criteria air pollutant emissions.

Significance With Mitigation: The various goals, policies, and actions of the proposed General Plan outlined above, in addition to applicable SJVAPCD rules and regulations and Mitigation Measure AQ-1, would contribute to reducing long-term criteria air pollutant emissions to the extent feasible. However, due to the magnitude and intensity of development accommodated by the proposed General Plan, as well as regional air quality influences beyond the control of the City of Stockton, Impact AQ-1 would remain *significant and avoidable*.

AQ-2 Implementation of the proposed project would generate short-term emissions that could exceed SJVAPCD's regional significance thresholds.

Construction activities associated with development allowed under the proposed General Plan and UMPS would occur through 2040 and cause short-term emissions of criteria air pollutants. Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions within the SJVAB. The primary source of NO_x, CO, and SO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving.

Construction activities associated with development allowed under the proposed General Plan and UMPS are anticipated to occur sporadically over an approximately 23-year period or longer. Implementation would be comprised of multiple smaller projects, each having its own construction timeline and activities. Development of multiple properties could occur at the same time. However, there is no defined development schedule for these future projects at this time. Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Some of the future individual projects accommodated under the proposed General Plan may not generate construction air pollutants emissions that exceed the SVJAPCD regional significance thresholds. Additionally, some of these projects may also meet the SJVACPD

Small Projects Analysis Level (SPAL) screening criteria.[45] Per the SJVAPCD GAMAQI, projects that meet the SPAL screening criteria may be determined to have a less than significant construction-related regional air quality impact if they include a sufficient discussion of the applicable SVJAPCD rules and regulations supporting such a determination. However, due to the scale of development activity associated with the proposed General Plan and UMPS, emissions would likely exceed the SJVAPCD regional significance thresholds and therefore, in accordance with the SJVAPCD methodology, would cumulatively contribute to the nonattainment designations of the SJVAB. The SJVAB is currently designated nonattainment for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Emissions of VOC and NO_X are precursors to the formation of O_3. In addition, NO_X is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, the proposed project would cumulatively contribute to the existing nonattainment designations of the SJVAB for O_3 and particulate matter (PM_{10} and $PM_{2.5}$).

As part of the development process, individual, site-specific projects accommodated under the proposed General Plan that meet the criteria of SJVAPCD Rule 9510 would be required to prepare a detailed air quality impact assessment (AIA). To the extent applicable under Rule 9510 for each such individual development, SJVAPCD would require calculation of the construction emissions from the development. The purpose of the AIA is to confirm a development's construction exhaust emissions, and therefore be able to identify appropriate mitigation, either through implementation of specific mitigation measures (e.g., use of construction equipment with Tier 4-rated engines) or payment of applicable off-site fees. As stated, under Rule 9510, each project that is subject to this Rule would be required to reduce construction exhaust emissions by 20 percent for NO_x or pay offset mitigation fees for emissions that do not achieve the mitigation requirements. In addition to Rule 9510, future individual projects would also be subject to other regulatory measures such as SJVAPCD Rules 4101 and 4601 and CARB's Airborne Toxic Control Measures. Furthermore, the proposed General Plan includes Action SAF-4.1.C, which requires use of electric-powered construction equipment when appropriate. Nevertheless, while adherence to existing and proposed regulations may reduce short-term emissions, the likely scale and extent of construction activities associated with the proposed General Plan and UMPS would likely continue to exceed the SJVAPCD thresholds for some projects. Therefore, construction-related regional air quality impacts associated with implementation of the proposed project are deemed *significant*.

Significance Without Mitigation: Significant.

Impact AQ-2: Construction activities associated with implementation of the proposed General Plan and UMPS could exceed the SJVAPCD regional significance thresholds.

> Mitigation Measure AQ-2: Prior to issuance of any construction permits for development projects subject to California Environmental Quality Act (CEQA) review (i.e., non-exempt projects), development project applicants shall prepare and submit to the City of Stockton Planning and Engineering Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. The prepared evaluation for projects that meet the SJVAPCD Small Projects Analysis Level (SPAL) screening criteria shall at

[45] San Joaquin Valley Air Pollution Control District. 2012, June. Small Project Analysis Level (SPAL). http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf, accessed November 29, 2017

minimum identify the primary sources of construction emissions and include a discussion of the applicable SJVAPCD rules and regulations and SPAL screening criteria to support a less than significant conclusion.

For projects that do not meet the SPAL screening criteria, project-related construction emissions shall be quantified. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Stockton Planning and Engineering Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning and Engineering Division. Mitigation measures to reduce construction-related emissions could include, but are not limited to:

- Using construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site, which shall be available for City review upon request.
- Ensuring construction equipment is properly serviced and maintained to the manufacturer's standards.
- Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible.
- Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g., five-minute maximum).
- Preparation and implementation of a fugitive dust control plan that may include the following measures:
    - Disturbed areas (including storage piles) that are not being actively utilized for construction purposes shall be effectively stabilized using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover (e.g., revegetated).
    - On-site unpaved roads and offsite unpaved access roads shall be effectively stabilized using water or chemical stabilizer/suppressant.
    - Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking.
    - Material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained when materials are transported offsite.
    - Operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly

prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)

- Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area.
- Adhere to Regulation VIII's 20 percent opacity limitation, as applicable.

- Enter into a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD. The VERA shall identify the amount of emissions to be reduced, in addition to the amount of funds to be paid by the project applicant to the SJVAPCD to implement emission reduction projects required for the project.

Significance With Mitigation: Implementation of the proposed project would occur over a period of 23 years or longer. Construction activities associated with development allowed under the proposed General Plan and UMPS could generate short-term emissions that exceed the SJVAPCD's significance thresholds during this time and cumulatively contribute to the nonattainment designations of the SJVAB. Implementation of Mitigation Measure AQ-2, in addition to applicable regulatory measures (e.g., SJVAPCD Rules 9510 and Regulation VIII) and the proposed Action SAF-4.1.A related to reducing construction-related emissions, would reduce criteria air pollutant emissions from construction-related activities to the extent feasible and may result in reducing construction-related regional air quality impacts of subsequent individual projects to less than significant. However, due to the programmatic nature of the proposed project, construction time frames and equipment for individual site-specific projects are not available and there is a potential for multiple developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measure AQ-2, Impact AQ-2 would remain *significant and unavoidable*.

AQ-3 Implementation of the proposed project would generate long-term criteria air pollutant emissions that would exceed SJVAPCD's regional significance thresholds.

For the purpose of the following analysis, it is important to note that, per the requirements of CEQA, this analysis is based on a comparison of the land use diagram in the proposed General Plan to existing, on-

the-ground land uses and not to the current City of Stockton General Plan land use diagram, and it accounts for regional air quality influences that are beyond the control of the City of Stockton.

It is also important to note that the proposed General Plan is a regulatory document that sets up the framework for growth and development and does not directly result in development. Before development can occur, it is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

The proposed General Plan guides growth and development within the EIR Study Area by designating land uses in the proposed land use diagram and through implementation of its goals, policies, and actions. New development would increase air pollutant emissions in the EIR Study Area and contribute to the overall emissions inventory in the SJVAB. A discussion of health impacts associated with air pollutant emissions generated by operational activities is included in the *Air Pollutants of Concern* discussion in Section 4.3.1, *Environmental Setting*.

Implementation of the proposed General Plan would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Mobile-source criteria air pollutant emissions are based on the traffic analysis conducted by Fehr and Peers (see Appendix C). The emissions inventory for the EIR Study Area under the proposed General Plan is shown in Table 4.3-7. As shown in the table, implementation of the proposed General Plan would result in an increase in criteria air pollutant emissions from existing conditions. This increase is based on the difference between existing land uses and land uses associated with development allowed under the proposed General Plan, as well as an estimate of population and employment in the EIR Study Area in the 2040 horizon year.

As shown in Table 4.3-7, development allowed under the proposed General Plan would generate long-term air pollutant emissions that exceed SJVAPCD's regional significance thresholds for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ in 2040. Emissions of VOC and NO_x that exceed the SJVAPCD regional threshold would cumulatively contribute to the O_3 nonattainment designation of the SJVAB. Emissions of NO_x that exceed SJVAB's regional significance thresholds would cumulatively contribute to the O_3 and particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designations of the SJVAB. Emissions of PM_{10} and $PM_{2.5}$ would contribute to the PM_{10} and $PM_{2.5}$ nonattainment designations.

Proposed General Plan goals, policies, and actions could contribute in reducing criteria air pollutant emissions. The Transportation Chapter includes goals, policies, and actions that encompass multi-modal and active transit improvements within the EIR Study Area (e.g,, Goals TR-1 and TR-2). Some of these improvements include requiring new development to incorporate design features that would provide easier access to transit (Action TR-2.2.A), dedication of adequate bicycle and transit right-of-way on arterial and collector streets (Action TR-2.3.B), and developing guidelines for installation of electric vehicle charging stations for new developments (Action TR-3.2.B). Additionally, support of infill and mixed-use development (see Policy LU-1.1 and Policy LU-6.2) would further support balanced development, which would contribute in reducing VMT by increasing use of alternative transit options (i.e., walking, biking, and public transit) and decreasing vehicle trips and the average trip distances traveled. Furthermore, the Safety Chapter includes a policy and action to encourage new employers to participate in a transportation

TABLE 4.3-7 OPERATION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (Tons/Year)					
Year	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing Land Uses – Year 2040						
Transportation[a]	43	206	901	7	126	51
Energy[b]	31	271	153	2	21	21
Area Sources – Landscaping/Light Commercial Equipment[c]	167	88	2,680	<1	11	11
Area Sources – Construction /Agricultural Equipment[c]	56	402	402	1	18	18
Area Sources – Consumer Products[d]	1,067	0	0	0	0	0
Existing Land Uses Total	***1,364***	***967***	***4,136***	***9***	***177***	***102***
Proposed Land Use Plan – Year 2040						
Transportation[a]	67	371	1,354	10	188	76
Energy[b]	47	415	243	3	33	33
Area Sources – Landscaping/Light Commercial Equipment[c]	246	144	4,101	<1	18	18
Area Sources – Construction /Agricultural Equipment[c]	55	395	392	1	18	18
Area Sources – Consumer Products[d]	1654	0	0	0	0	0
Proposed Land Uses Total	***2,069***	***1,324***	***6,090***	***14***	***256***	***144***
Change in Emissions						
Net Change from Existing	705	358	1,953	4	79	43
SJVAPCD Annual Operation Threshold	10	10	100	27	15	15
Exceeds Annual Threshold?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

Note: Numbers may not add up due to rounding.
Sources:
a. Based on on-road VMT provided by Fehr & Peers and modeled using EMFAC2014-PL.
b. Based on natural gas use provided by the PG&E.
c. GHG emissions from off-road equipment use are based on OFFROAD2007.
d. Based on CalEEMod, Version 2016.3.2, methodology utilized to calculate VOC emissions from use of household consumer cleaning products.

demand management program (Policy SAF-4.2 and Action SAF-4.2.A). These goals, policies, and actions would contribute to reducing VMT and in minimizing long-term mobile-source criteria air pollutant emissions.

Similar to construction-related emissions, application of SJVAPCD Rule 9510 to future individual projects would contribute in reducing NO_X and particulate matter emissions. In addition, application of SJVACPD Rule 9410 would contribute in reducing mobile-source emissions. However, while SJVAPCD rules and proposed General Plan goals, policies, and actions may contribute in reducing operation-related regional

air quality impacts of individual projects accommodated under the proposed General Plan to less than significant, due to the magnitude of development allowed, the projected cumulative emissions associated with future development projects would exceed the threshold. Therefore, implementation of the proposed project would significantly contribute to the nonattainment designations of the SJVAB, resulting in a *significant* impact.

Significance Without Mitigation: Significant.

Impact AQ-3: Operation of development projects allowed under the proposed General Plan would generate emissions that would exceed the SJVAPCD regional significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$.

Mitigation Measure AQ-3: Prior to discretionary approval by the City of Stockton for development projects subject to California Environmental Quality Act (CEQA) review (i.e., non-exempt projects), project applicants shall prepare and submit a technical assessment evaluating potential project operation phase-related air quality impacts to the City of Stockton Planning and Engineering Division for review and approval. The evaluation shall be prepared in conformance with San Joaquin Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SJVAPCD-adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Stockton Planning and Engineering Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the conditions of approval. Possible mitigation measures to reduce long-term emissions can include, but are not limited to the following:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with Section 2485 of 13 CCR Chapter 10.
- Provide changing/shower facilities as specified, at minimum, or greater than in the guidelines in Section A5.106.4.3 of the CALGreen Code (Nonresidential Voluntary Measures).
- Provide bicycle parking facilities equivalent to or greater than as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code.
- Provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles equivalent to or greater than Section A5.106.5.1 of the CALGreen Code (Nonresidential Voluntary Measures).

- Provide facilities to support electric charging stations per Section A5.106.5.3 (Nonresidential Voluntary Measures) and Section A5.106.8.2 (Residential Voluntary Measures) of the CALGreen Code.
- Applicant-provided appliances shall be Energy Star-certified appliances or appliances of equivalent energy efficiency (e.g., dishwashers, refrigerators, clothes washers, and dryers). Installation of Energy Star-certified or equivalent appliances shall be verified by Building & Safety during plan check.
- Applicants for future development projects along existing and planned transit routes shall coordinate with the City Stockton and San Joaquin Regional Transit District to ensure that bus pad and shelter improvements are incorporated, as appropriate.
- Applicants for future development projects shall enter into a Voluntary Emissions Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD). The VERA shall identify the amount of emissions to be reduced, in addition to the amount of funds to be paid by the project applicant to the SJVAPCD to implement emission reduction projects required for the project.

Significance With Mitigation: Application of State and SJVAPCD rules and regulations, such as Rules 9510 and 9410, and implementation of the proposed General Plan goals, policies, and actions would contribute in reducing operation-related criteria air pollutants generated from energy, area, and mobile sources to the extent feasible. Incorporation of Mitigation Measure AQ-3 would also contribute in reducing criteria air pollutants. Implementation of the aforementioned rules, goals and policies, and mitigation could contribute in reducing operation-phase regional air quality impacts of future individual projects to a less than significant level. However, Impact AQ-3 would remain *significant and unavoidable* due to the magnitude of the overall land use development associated with the proposed General Plan, combined with regional air quality influences beyond the control of the City of Stockton.

AQ-4 Implementation of the proposed project could cause or contribute to a violation of the ambient air quality standards.

With a 2040 horizon-year, implementation of the proposed General Plan and UMPS would occur over an extended period of time and would be comprised of smaller individual projects with their own construction time frames, construction equipment, and operational characteristics. Due to the broad-plan policy nature of the proposed General Plan, specific details of future land use development projects that would be accommodated are currently unknown. However, construction and operation of future individual development projects allowed under the proposed General Plan and UMPS could potentially result in an exceedance of SJVAPCD's ambient air quality screening threshold of 100 pounds per day. As stated previously, proposed General Plan goals, policies, and actions would generally support a sustainable development pattern in accommodating future growth within the EIR Study Area, which would generally contribute in reducing long-term criteria air pollutant emissions. In addition, application of SJVAPCD Rule 9510 and Regulation VIII would contribute in reducing operation- and construction-related NO_X and particulate matter emissions. Furthermore, Rule 9410 would also contribute in reducing

operation-related mobile-source emissions. However, while individual development projects may not result in generating average daily short- and long-term emissions exceeding the screening threshold of 100 pounds per day or result in exceeding the AAQS, the projected cumulative emissions associated with future development projects accommodated under the proposed General Plan and UMPS would be in exceedance and could result in causing an exceedance of the AAQS. Therefore, impacts to air quality would be *significant*.

Significance Without Mitigation: Significant.

Impact AQ-4: Development allowed under the proposed General Plan and UMPS could result in short- and long-term emissions that could cause or contribute to a violation of the AAQS.

Mitigation Measure AQ-4a: Implement Mitigation Measures AQ-2 and AQ-3 to further reduce construction and operation-related criteria air pollutant emissions.

Mitigation Measure AQ-4b: Prior to discretionary approval, applicants for development projects that are subject to the California Environmental Quality Act (CEQA) shall assess their projects to the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Rule 9510 Applicability Thresholds as follows:

- 50 residential units;
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space;
- 9,000 square feet of education space;
- 10,000 square feet of government space;
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

Applicants for development projects subject to CEQA that do not meet the SJVAPCD Rule 9510 Applicability Thresholds shall assess whether project-related construction and operational emissions exceed the SJVAPCD 100 pounds per day ambient air quality screening threshold. Applicants for development projects that exceed this ambient air quality screening threshold shall prepare or have prepared an ambient air quality analysis, consistent with the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), to assess whether the subject development project would cause or contribute to a violation of any California Ambient Air Quality Standard or National Ambient Air Quality Standard. The ambient air quality analysis shall identify measures to reduce impacts as necessary. Recommended measures may include those identified in Mitigation Measures AQ-2 and AQ-3. The related recommendations of the ambient air quality analysis shall be incorporated into all construction management and design plans and which shall be submitted to the City and verified by the City's Planning and Engineering Division.

Significance With Mitigation: Application of State and SJVAPCD rules and regulations, implementation of the proposed General Plan policies and actions, and incorporation of Mitigation Measures AQ-4a and AQ AQ-4b would reduce construction and operation-related criteria air pollutants to the extent

feasible. However, despite implementation of the proposed plans, policies, and adherence to the mitigation measures, Impact AQ-4 would remain *significant and unavoidable* due to the magnitude of development associated with the proposed General Plan and UMPS, combined with regional air quality influences beyond the control of the City of Stockton.

AQ-5 Implementation of the proposed project could expose sensitive receptors to substantial toxic air contaminant concentrations from non-permitted sources.

Development and operation of new land uses consistent with the land use diagram of the proposed General Plan could generate new sources of criteria air pollutants and TACs in the EIR Study Area from area/stationary sources and mobile sources. The following describes potential localized operational air quality impacts from implementation of the proposed General Plan and UMPS.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The GAMAQI previously required CO hotspot monitoring. However, emissions from motor vehicles, the largest source of CO emissions, have been declining since 1985 despite increases in VMT due to the introduction of new automotive emission controls and fleet turnover. Consequently, no CO hotspots have been reported in the SJVAB even at the most congested intersections. Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.[46]

Anticipated development allowed under the proposed General Plan in the 2040 horizon year would result in approximately 2,091,100 average daily trips, which would be an increase of 547,300 total daily vehicle trips over existing conditions. However, distributing the net total daily vehicle trips throughout the EIR Study and region and by peak hour would result in smaller traffic volumes at the various intersections. Thus, implementation of the proposed General Plan and UMPS is not anticipated to produce the volume of traffic required to generate a CO hotspot. Therefore, implementation of the proposed General Plan and UMPS would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the EIR Study Area, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

[46] Bay Area Air Quality Management District (BAAQMD), 2017. California Environmental Quality Act: Air Quality Guidelines, May.

TACs

Permitted Stationary Sources

Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the existing 2035 General Plan would be expected to release TACs. TAC emissions generated by stationary and point sources of emissions within the SJVAB are regulated and controlled by SJVAPCD. However, emissions of TACs from mobile sources when operating at a property (e.g., truck idling) are regulated by statewide rules and regulations, not by SJVAPCD, and have the potential to generate substantial concentrations of air pollutants.

Land uses that would require a permit from SJVAPCD for emissions of TACs include chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. Emissions of TACs from stationary sources would be controlled by SJVAPCD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under Regulation II. According to SJVAPCD's GAMAQI, Regulation II ensures that stationary source emissions (permitted sources) would be reduced or mitigated below SJVAPCD significance thresholds of ten in one million cancer risk and one for acute risk at the maximally exposed individual. Though these sources would incrementally contribute to the project's inventory individually, they would be mitigated to the standards identified above. In addition to the permitting process, the proposed General Plan includes the following policy and actions under Goal SAF-4:

- Policy SAF-4.1: Reduce air impacts from mobile and stationary sources of air pollution.
- Action SAF-4.1.A: Require the construction and operation of new development to implement best practices that reduce air pollutant emissions, including:
  - Use of low-emission and well-maintained construction equipment, with idling time limits.
  - Development and implementation of a dust control plan during construction.
  - Installation of electrical service connections at loading docks, where appropriate.
  - Installation of Energy Star-certified appliances.
  - Entering into Voluntary Emissions Reduction Agreements with the San Joaquin Valley Air Pollution Control District.
- Action SAF-4.1.B: Use the results of the Health Risk Assessments required by the California Air Toxics "Hot Spots" Act to establish appropriate land use buffer zones around any new sources of toxic air pollutants that pose substantial health risks.

The proposed General Plan policies and actions listed above would contribute in minimizing potential health risk impacts to sensitive receptors. Overall, combined with the standards and permitting processes described above, impacts related to permitted stationary sources of TACs are considered *less than significant*

Significance Without Mitigation: Less than significant.

Non-Permitted Sources

Mobile sources of TACs are not regulated by SJVAPCD. The primary mobile source of TACs within the EIR Study Area is truck idling and use of off-road equipment. New warehousing operations could generate substantial diesel particulate matter emissions from off-road equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of transport refrigeration units (TRUs) for cold storage. New land uses in the EIR Study Area that would be permitted under the proposed General Plan that use trucks, including trucks with TRUs, could generate an increase in diesel particulate matter that would contribute to cancer and noncancer health risk in the SJVAB. Additionally, these types of facilities could also generate particulate matter (PM_{10} and $PM_{2.5}$) that may cause an exceedance or contribute to the continuing exceedance of the federal and State AAQS. These new land uses could be near existing sensitive receptors within and outside the EIR Study Area. As shown in Figure 3-3 in Chapter 3 of this Draft EIR, portions of areas designated Industrial within the EIR Study Area are in close proximity or adjacent to areas designated for residential use. In addition, trucks would travel on regional transportation routes through the SJVAB, contributing to near-roadway diesel particulate matter concentrations. Therefore, health risk impacts from non-permitted sources associated with development of industrial and commercial land uses are considered *significant*.

Significance Without Mitigation: Significant.

Impact AQ-5: Implementation of the proposed General Plan could expose sensitive receptors to substantial toxic air contaminant concentrations from non-permitted sources.

Mitigation Measure AQ-5: Prior to discretionary project approval, applicants for industrial or warehousing land uses in addition to commercial land uses that would generate substantial diesel truck travel (i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day based on the California Air Resources Board recommendations for siting new sensitive land uses), shall contact the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Stockton in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. If preparation of an HRA is required, all HRAs shall be submitted to the City of Stockton and the SJVAPCD for evaluation.

The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the SJVAPCD. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06) or the risk thresholds in effect at the time a project is considered, or that the appropriate noncancer hazard index exceeds 1.0 or the thresholds as determined by the SJVAPCD at the time a project is considered, the applicant will be required to identify and demonstrate that measures are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms.

Measures to reduce risk impacts may include but are not limited to:

- Restricting idling on0site beyond Air Toxic Control Measures idling restrictions, as feasible.
- Electrifying warehousing docks.
- Requiring use of newer equipment and/or vehicles.
- Restricting offsite truck travel through the creation of truck routes.

Measures identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project.

Significance With Mitigation: Development allowed by the proposed General Plan could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Review of development projects by SJVAPCD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) in addition to proposed General Plan actions under Policy SAF-4.1 would ensure that health risks are minimized. Additionally, Mitigation Measure AQ-5 would ensure mobile sources of TACs not covered under SJVAPCD permits are considered during subsequent project-level environmental review by the City of Stockton. Individual development projects would be required to achieve the incremental risk thresholds established by SJVAPCD, and TAC impacts would be *less than significant*.

AQ-6 Implementation of the proposed project has the potential to create objectionable odors that could affect a substantial number of people.

The following discusses potential operation- and construction-related odor impacts associated with implementation of the proposed General Plan and UMPS.

Operation-Related Odors

Development allowed under the proposed General Plan could generate new sources of odors. Odors from the types of land uses that could generate objectionable odors (see Table 4.3-5) are regulated under Regulation IV, Prohibitions, Rule 4102, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

As shown previously in Table 4.3-5, industrial land uses are the primary types of land uses that have the potential to generate objectionable odors. Future environmental review could be required for industrial projects listed in the table to ensure that sensitive land uses are not exposed to nuisance odors. SJVAPCD Rule 4102 requires abatement of any nuisance generating an odor complaint. Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to generate odor-free air. Facilities listed in the table would need to consider measures to reduce odors as part of their CEQA review. Consequently, review of projects using SJVAPCD's odor screening distances is necessary to ensure that odor impacts are minimized. Odor impacts could be *significant* for new projects that have the potential to generate odors within the odor screening distances.

Significance Without Mitigation: Significant.

Impact AQ-6: Operation of new industrial land uses accommodated under the proposed General Plan has the potential to create objectionable odors that could affect a substantial number of people.

Mitigation Measure AQ-6: Prior to project approval, if it is determined during project-level environmental review that a project has the potential to emit nuisance odors beyond the property line, an odor management plan shall be prepared and submitted by the project applicant prior to project approval to ensure compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4102. The following facilities that are within the buffer distances specified from sensitive receptors (in parentheses) have the potential to generate substantial odors:

- Wastewater Treatment Plan (2 miles)
- Sanitary Landfill (1 mile)
- Transfer Station (1 mile)
- Composting Facility (1 mile)
- Petroleum Refinery (2 miles)
- Asphalt Batch Plan (1 mile)
- Chemical Manufacturing (1 mile)
- Fiberglass Manufacturing (1 mile)
- Painting/Coating Operations (1 mile)
- Food Processing Facility (1 mile)
- Feed Lot/ Dairy (1 mile)
- Rendering Plant (1 mile)

The Odor Management Plan prepared for these facilities shall identify control technologies that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. Control technologies may include but are not limited to scrubbers (e.g., air pollution control devices) at an industrial facility. Control technologies identified in the odor management plan shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

Significance With Mitigation: Mitigation Measure AQ-6 would ensure that sources identified by SJVAPCD are mitigated through adherence to an odor control plan and comply with SJVAPCD Rule 4102. Therefore, Impact AQ-6 would be mitigated to a *less-than-significant* level.

Construction-Related Odors

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent in nature. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of the odor-producing materials. Therefore, impacts associated with construction-generated odors are considered *less than significant*.

Significance Without Mitigation: Less than significant.

4.4 BIOLOGICAL RESOURCES

This section describes the regulatory framework and existing conditions in the EIR Study Area related to biological resources, and evaluates the potential impacts to biological resources associated with the proposed General Plan and Utility Master Plan Supplements (UMPS). The following evaluation is based on a spatial analysis and examines the effects of the location of potential development on special-status species, sensitive biological communities, wetlands, migratory species, and policies and plans intended to protect biological resources. Cumulative impacts related to biological resources would be contiguous with the Sphere of Influence (SOI) boundary but also consider potential regional habitat loss in the Central Valley region based on the range of the protected species.

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) are responsible for implementation of the Federal Endangered Species Act (FESA) (16 U.S.C. Section 1531 *et seq.*). The act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and "threatened" species, subspecies, or distinct population segments are likely to become endangered in the near future.

Section 9 of the FESA prohibits the "take" of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

Migratory Bird Treaty Act

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. Wording in the MBTA makes it clear that most actions that

result in taking or possession (permanent or temporary) of a protected species can be a violation of the Act. The word "take" is defined as meaning "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The provisions of the MBTA are nearly absolute; "except as permitted by regulations" is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

Clean Water Act

The federal Clean Water Act (CWA) is the primary federal law regulating water quality. Implementing the CWA is the responsibility of the United States Environmental Protection Agency (US EPA). The US EPA depends on other agencies, such as individual state governments and the United States Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Sections 401 and 404 apply to activities that would impact waters in the United States, such as creeks, ponds, and wetlands.

Section 404

The USACE, the federal agency charged with investigating, developing, and maintaining the country's water and related resources, is responsible under Section 404 of the CWA for regulating the discharge of fill material into waters of the United States and their lateral limits, which are defined in Part 328.3(a) of Title 33 of the Code of Federal Regulations (CFR) and include streams that are tributaries to navigable waters and adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark or the limit of adjacent wetlands. Any permanent extension of the limits of an existing water of the United States, whether natural or human-made, results in a similar extension of USACE jurisdiction.[1]

In general, a USACE permit must be obtained before an individual project can place fill or grade in wetlands or other waters in the United States and mitigation for such actions will be required based on the conditions of the USACE permit. The USACE is required to consult with the USFWS and/or the National Marine Fisheries Service under Section 7 of the FESA if the action being permitted under the CWA could affect federally listed species.

Section 401

Pursuant to Section 401 of the Clean Water Act, projects that require a USACE permit for discharge of dredge or fill material must obtain a water quality certification or waiver that confirms the project complies with State water quality standards, or a no-action determination, before the USACE permit is valid. State water quality is regulated and administered by the State Water Resources Control Board (SWCB). The EIR Study Area is within jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). In order for the applicable RWQCB to issue a 401 certification, a project must demonstrate compliance with CEQA.

[1] Section 33,Code of Federal Regulation Part 328.5.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 *et seq.*) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and State lists, compliance with the FESA satisfies the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only State listed, the project proponent must apply for a take permit under Section 2081(b).

California Environmental Quality Act

CEQA applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

California Fish and Game Code

Under the California Fish and Game Code, the CDFW provides protection from "take" for a variety of species. The CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Sections 1601 to 1606 of the California Fish and Game Code. The California Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Fish and Game Code Section 3503.5 prohibits "take," possession, or destruction of any raptor (e.g., bird of prey species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations of this law include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the California Native Plant Protection Act, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under the CESA but rather under CEQA.

The California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species:[2]

- Rank 1A. Plants presumed extirpated in California and either rare or extinct elsewhere
- Rank 1B. Plants rare, threatened, or endangered in California and elsewhere
- Rank 2A. Plants presumed extirpated in California, but common elsewhere
- Rank 2B. Plants rare, threatened, or endangered in California, but more common elsewhere
- Rank 3. Plants about which more information is needed - a review list
- Rank 4. Plants of limited distribution - a watch list

CNPS threat ranks are as follows:

- X.1-Seriously threatened in California. Over 80 percent of occurrences threatened / high degree and immediacy of threat
- X.2-Moderately threatened in California. 20 to 80 percent occurrences threatened / moderate degree and immediacy of threat
- X.3-Not very threatened in California. Less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants with a Ranking of 1A through 2B may be considered to meet the definition of endangered, rare, or threatened species under Section 15380(d) of CEQA (see above), and impacts to these species may be considered "significant."

In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS Ranking of 3 and 4.

California Natural Communities

Sensitive natural communities are natural community types considered to be rare or of a "high inventory priority" by the CDFW. Although sensitive natural communities have no legal protective status under the FESA or CESA, they are provided some level of consideration under CEQA. Appendix G, Environmental Checklist Form, of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project's impact on any particular sensitive natural community will depend on that natural community's relative abundance and rarity.

[2] California Native Plant Society, 2010. The CNPS Ranking System, http://www.cnps.org/cnps/rareplants/ranking.php, accessed July 27, 2017.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, and/or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality, and degree of past disturbance, and the anticipated impacts to the specific community type.

Porter-Cologne Water Quality Control Act

This act authorizes the RWQCB to regulate the discharge of waste that could affect the quality of the State's waters. Projects that do not require a federal permit may still require review and approval by the RWQCB. The RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB requires the integration of water quality control measures into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

Other Statues, Codes, and Policies Affording Species Protection

The CDFW maintains an administrative list of Species of Special Concern (SSC), defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as federally, but not State-, threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; and/or
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for State threatened or endangered status.

The CDFW's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. The Fisheries Branch is responsible for updates to the Fish SSC document and list. Section 15380 of the CEQA Guidelines clearly indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed under the FESA or CESA, however, SSC have no formal legal status.

Regional Regulations

Delta Plan

The Delta Plan, adopted by the Delta Stewardship Council on May 16, 2013, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and

restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority included in the Delta Reform Act, enacted as part of Senate Bill X7. These policies include a requirement for Delta Plan consistency findings for "covered actions," which include the proposed General Plan. The Delta Plan covers the Legal Delta (shown on Figure 4.9-2, *Sacramento-San Joaquin Delta*, of this EIR) and Suisun Marsh, an area west of the central part of the Legal Delta.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) was adopted in 2001 and provides a framework for promoting the protection and recovery of natural resources, including endangered species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The SJMSCP allows various governments and agencies, including the City of Stockton and San Joaquin County, to receive endangered species permits for activities and projects they conduct, as well as for activities and projects conducted by project applicants under their jurisdiction. Participation in the SJMSCP is voluntary; participants are allowed to conduct permitted activities that may result in the "incidental take" of listed species covered by the SJMSCP. The SJMSCP Plan Area extends across all of San Joaquin County.

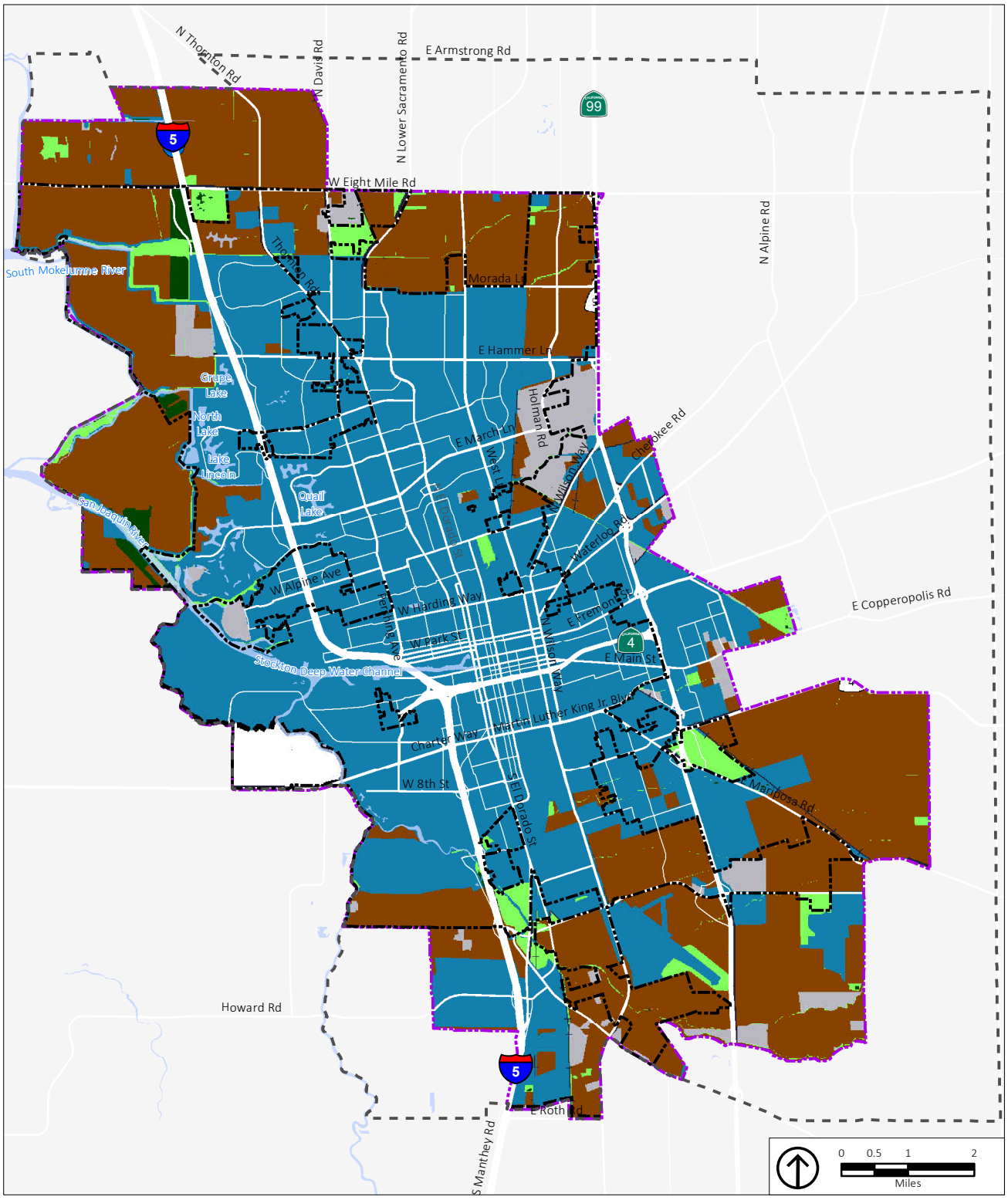
The SJMSCP covers 97 plant, fish, and wildlife species listed under the FESA and CESA. In addition, the SJMSCP lists 52 vegetation types classified in four general categories; Natural Lands, Agricultural Lands, Multi-Purposed Open Space Lands, and Urban Lands.

Project applicants have four options to receive Coverage under the SJMSCP, with approval by the San Joaquin Council of Governments (SJCOG):

- Pay the appropriate fee. A fee is assessed for projects developing Multi-Purposed Open Space Lands, Agricultural Lands, Natural Lands, and Vernal Pools (wetted surfaces and upland grasslands surrounding vernal pools), which are shown on Figure 4.4-1.
- Dedicate habitat lands as a conservation easement or fee title.
- Purchase mitigation bank credits from a mitigation bank approved by SJMSCP.
- Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value.

The SJMSCP establishes preserves in the following habitat categories:

- Water's Edge
- Submerged Aquatic Vegetation
- Flooded Fields
- Row and Field Crop/Riparian
- Riparian
- Wetlands
- Grassland
- Vernal Pool Grassland
- Diablan Sage Scrub
- Blue Oak Conifer
- Oak Woodlands



Source: San Joaquin Council of Governments, 2001; City of Stockton, 2017; PlaceWorks, 2017.

- No Pay Zone
- Multi-Purposed Open Space Lands
- Agriculture Lands
- Natural Lands
- Vernal Pools
- City Limit
- Sphere of Influence\EIR Study Area
- General Plan Planning Area

Figure 4.4-1

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Land Use Categories

Preconstruction Surveys

There are four categories of preconstruction surveys necessary to the implementation of the SJMSCP, as set forth in SJMSCP Section 5.2.2:

- Preconstruction surveys to verify vegetation types affected by the project and to determine if SJMSCP Covered Species are present and, if present, attaching Incidental Take Minimization Measures as conditions of project approval for individual projects. These preconstruction surveys must be conducted in the field when a project is located on suitable habitat for one or more of the SJMSCP Covered Species.
- Preconstruction surveys conducted prior to (or, for some Incidental Take Minimization Measures, during) ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented, as specified in the conditions of project approval.
- Preconstruction surveys to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of Interstate 580 in the Southwest Zone vernal pools and/or wetlands, and if present, ensuring that they are completely avoided.
- Preconstruction surveys for ten plant species in regions ("zones") and/or habitat categories specified above in which SJMSCP reserves are established.

Stockton Municipal Code

Stockton Municipal Code Section 16.72.245 protects heritage trees, which are defined as any *Quercus lobata* (Valley Oak), *Quercus agrifolia* (Coast Live Oak), and *Quercus wislizenii* (Interior Live Oak) tree which is located on public or private property within the city limit, and which has a trunk diameter of 16 inches or more, measured at 24 inches above actual grade. When such trees have multiple trunks, the combined total trunk diameter shall be used for all trunks measuring 6 inches or greater measured at 24 inches above actual grade. Removal of such trees is only allowed under a permit from the Stockton Community Development Department.

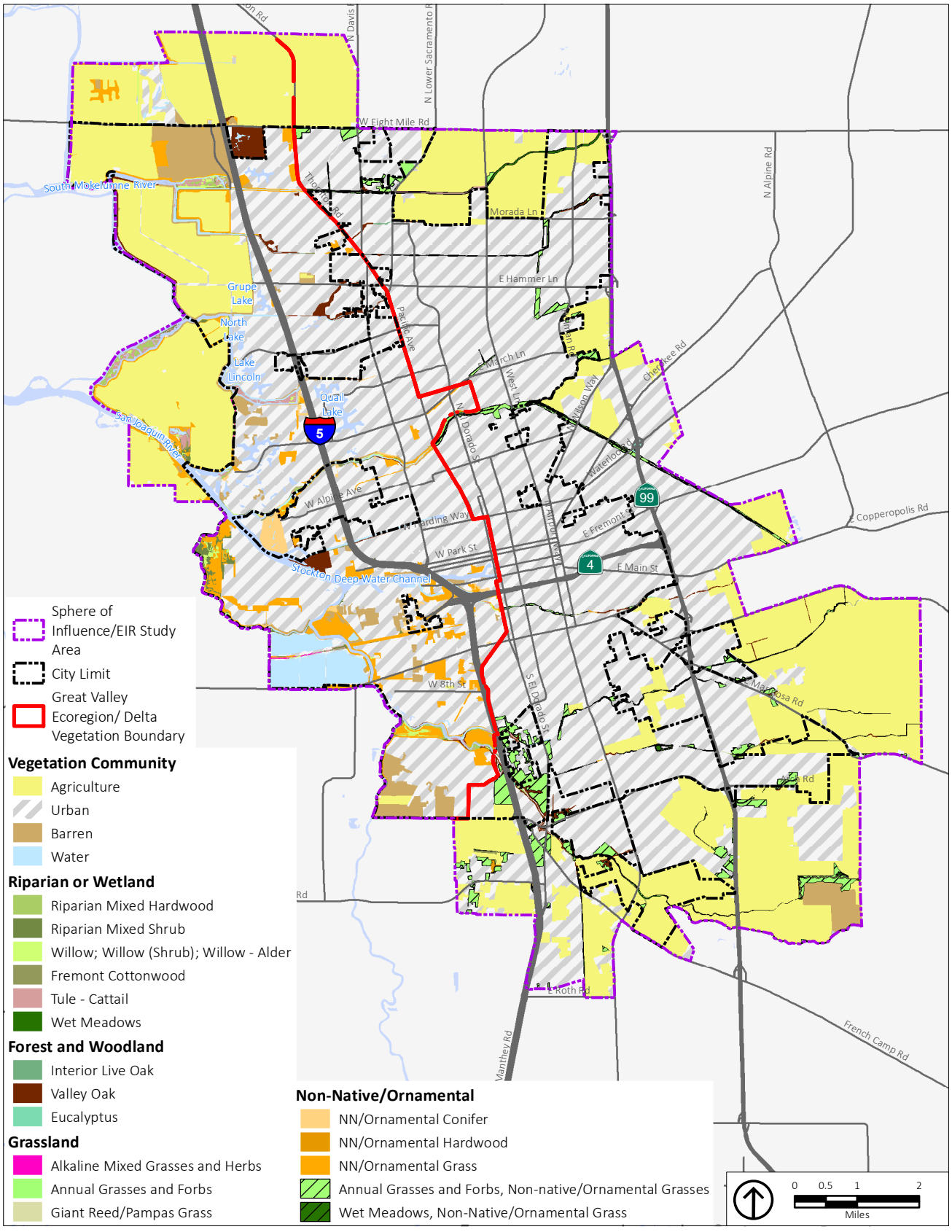
4.4.1.2 EXISTING CONDITIONS

Vegetation Communities

Vegetation communities in the EIR Study Area are shown on Figure 4.4-2, and were compiled from two maps:

- *Delta Vegetation and Land Use* published by the CDFW in 2011.[3] This map covers the Sacramento-San Joaquin Legal Delta which encompasses most of the west half of the EIR Study Area.

[3] California Department of Fish and Wildlife, 2011. Delta Vegetation and Land Use. Biogeographic Information and Observation System (BIOS) Data Layer ds292, https://map.dfg.ca.gov/bios/, accessed August 17, 2017.



Source: CA Department of Fish & Willife, 2016; City of Stockton, 2017; PlaceWorks, 2017.

Figure 4.4-2
Vegetation

*NN= Non-native

- *Vegetation, Great Valley Ecoregion* published in 2016 by California State University, Chico Geographical Information Center and the CDFW.[4] This map covers the balance of the EIR Study Area.

As detailed in Table 4.4-1, about 57 percent of the EIR Study Area is shown as urbanized, 30 percent is agricultural, and 3 percent is water; the remaining 10 percent consists of native, non-native, and ornamental vegetation.

The following descriptions of vegetation communities are from the US Forest Service's 2009 *Vegetation Descriptions, Central Valley Ecological Province*. The descriptions are of vegetation alliances, which are characteristic ranges of species composition, habitat conditions, plant form, and diagnostic species, typically at least one of which is found in the uppermost or dominant stratum of the vegetation layer, and reflecting regional to subregional climate, soil, hydrology, moisture/nutrient factors and disturbance regimes.[5]

Agriculture

Agricultural land is used primarily for the production of food and fiber. High-altitude imagery indicates agricultural activity by distinctive geometric field and road patterns on the landscape and traces produced by mechanized equipment. Agricultural land uses include forest landscapes such as orchards as well as non-forested land uses such as vineyards and field crops. Land used exclusively for livestock pasture may, however, be mapped as annual grassland in those cases in which land uses are not recognizable.

Wetland and Riparian

Riparian Mixed Hardwood

Riparian areas often are a mixture of hardwoods with some shrubs. Such sites have been mapped sparsely at elevations generally below about 4,200 feet. Typical hardwoods species mixtures in the Central Valley include willows (*Salix spp.),* valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*).

Riparian Mixed Shrub

This alliance is a community of shrubs in riparian, seep, and moist meadow sites in which no single species achieves dominance in the mapped area. The riparian mixed shrub alliance usually has a permanent water source at the surface that provides moisture to plants such as shrub willows (*Salix spp*.) or shrubby alders. Shrubs requiring shade or generally moist conditions, such as blackberry or gooseberry species (*Rubus spp., Ribes spp.*) and elderberry (*Sambucus spp*.), may also be included in this mixture.

[4] California State University, Chico Geographical Information Center and California Department of Fish and Wildlife, 2016. Vegetation, Great Valley Ecoregion. Biogeographic Information and Observation System (BIOS) Data Layer ds2632, https://map.dfg.ca.gov/bios/, accessed August 17, 2017.

[5] Federal Geographic Data Committee (FGDC) Vegetation Subcommittee, 2017. Natural Vegetation Classification, http://usnvc.org/data-standard/natural-vegetation-classification/, accessed August 18, 2017.

TABLE 4.4-1 ACREAGES BY VEGETATION COMMUNITY

Vegetation Community	Acres	Percent of EIR Study Area
Agriculture	22,062	30%
Urban	41,870	57%
Barren	1,808	3%
Water	2,409	3%
Riparian or Wetland		
Riparian Mixed Hardwood	104	
Riparian Mixed Shrub	167	
Willow, Willow (shrub), and Willow-Alder	139	
Fremont Cottonwood	90	
Tule – Cattail	214	
Wet Meadows	4	
Subtotal, Riparian or Wetland	*717*	1%
Forest and Woodland (Non-Riparian)		
Interior Live Oak	4	
Valley Oak	556	
Eucalyptus	13	
Subtotal, Forest and Woodland (Non-Riparian)	*573*	1%
Grassland		
Alkaline Mixed Grasses and Herbs	13	
Annual Grasses and Forbs	20	
Giant Reed/Pampas Grass	8	
Subtotal, Grassland	*41*	<1%
Non-Native/Ornamental: Ornamental, Non-Native Vegetation In Developed Areas		
Non-Native/Ornamental Conifer/Hardwood Mixture	419	
Non-Native/Ornamental Hardwood	16	
Non-Native/Ornamental Grass	1,894	
Annual Grasses and Forbs, Non-Native/Ornamental Grasses	1,633	
Wet Meadows, Non-Native/Ornamental Grass	166	
Subtotal, Non-Native/Ornamental	*4,127*	6%
TOTAL	**73,627**	**100%**

Note: Numbers do not always add up due to rounding.
Sources: California Department of Fish and Wildlife, 2011. Delta Vegetation and Land Use. Biogeographic Information and Observation System (BIOS) Data Layer ds292, https://map.dfg.ca.gov/bios/, accessed August 2017.
California State University, Chico Geographical Information Center and California Department of Fish and Wildlife, 2016. Vegetation, Great Valley Ecoregion. Biogeographic Information and Observation System (BIOS) Data Layer ds2632, https://map.dfg.ca.gov/bios/, accessed August 2017.

Willow

The willow alliance is a riparian type consisting of dominant tree willows (*Salix spp*.) in any combination found along permanent streams in this zone. The more common willows include arroyo (*S. lasiolepis*), black (*S. gooddingii*), narrow-leaved (*S. exigua*), pacific (*S. lucida ssp. lasiandra*), and red (*S. laevigata*). Black willow is more likely to dominate sites below about a 1,650-foot elevation in this region. Associated riparian hardwoods include Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*).

Willow (Shrub)

Shrub forms of willow (*Salix spp*.) are mapped as this alliance where they dominate the shrub layer in a riparian, seep, or meadow site. This alliance may include a combination of narrow-leaved willow (*S. exigua*), shining willow (*S. lucida*), and yellow willow (*S. lutea*) in association with other tree willows.

Willow – Alder

This alliance includes any tree species of willow (*Salix spp*.) combined with white or mountain alders (*Alnus rhombifolia, A. incana ssp. tenuifolia*) occurring together in stream or seepage areas where neither is clearly dominant in the riparian mixture. Shrubs such as species of gooseberry and currant (*Ribes spp*.), blackberry and other edible berries (*Rubus spp*.), wild rose (*Rosa spp*.), and poison oak (*Toxicodendron diversilobum*) are likely to be present on these sites.

Fremont Cottonwood

Fremont cottonwood (*Populus fremontii*) occurs adjacent to stream courses within the Central Valley in riparian areas below about 4,800 feet in elevation. This alliance, where the cottonwood is the dominant hardwood, occurs in stringers adjacent to the upland blue oak (*Quercus douglasii*), interior live oak (*Q. wislizenii*), and valley oak (*Q. lobata*) alliances. White alder (*Alnus rhombifolia*) and black willow (*Salix gooddingii*) are occasional tree associates. Understory species which commonly occur include blackberry (*Rubus spp*.), blue elderberry (*Sambucus mexicana*), wild cucumber (*Marah fabaceus*), and poison oak (*Toxicodendron diversilobum*).

Tule – Cattail

Tule marshes may occur near lakes and springs but are rare in the Central Valley. Dominant species include tule (*Scirpus spp.),* cattail (*Typha spp*.), lythrum (*Lythrum hyssopifolia*), and spike rush (*Heleocharis palustris*). Past drainage activities have significantly reduced the total area once covered by these species.

Wet Meadows

Wet meadows occur next to dependable water sources such as springs and seeps. A diverse mixture of herbaceous (i.e., lacking woody stems) species occur in the alliance, including sedges (*Carex spp*.), rushes (*Juncus spp*.), bulrushes (*Scirpus spp.),* perennial bromes (*Bromus spp*.), fescues (*Festuca spp*.), bluegrass (*Poa spp*.), reedgrass (*Calamagrostis spp*.), and herbaceous perennials such as false hellebore (*Veratrum spp*.) and shooting star (*Dodecatheon spp*.).

Forest and Woodland (Non-Riparian)

Interior Live Oak

Interior live oak (*Quercus wislizenii*) is a small- to medium-sized, deeply rooting hardwood that often is found in shaded or moist sites as an erect tree. It grows on drier sites more often in a shrub form. It may be the dominant hardwood on alluvial terraces and rolling hills throughout the Central Valley, in association with species such as Fremont cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), and upland trees such as canyon live oak (*Q. chrysolepis*), California buckeye (*Aesculus californica*), Douglas fir (*Pseudotsuga menziesii*) and gray pine (*P. sabiniana*).

Valley Oak

This alliance is dominated by valley oak (*Quercus lobata*), a deeply rooting hardwood, which formerly occurred in pure stands of large trees with limited woody understory. These stands occurred on valley bottoms and in rolling slopes, generally below a 2,000-foot elevation. The present distribution pattern of valley oak is along major stream courses and on the deep, rich loamy soils of their alluvial deposits.

Eucalyptus

This alliance occurs in pure stands in this zone. Eucalyptus (*Eucalyptus spp*.) groves were usually planted, became naturalized, and subsequently have dominated the valley sites, reproducing naturally through sprouting. Understory species are usually absent as the ground cover is dominated by litterfall from the shredding bark, leaves, flowers, and fruit capsules of these hardwoods. This species occurs at elevations below about 1,600 feet.

Grasslands

Alkaline Mixed Grasses and Herbs

Alkaline and hyper-saline soils occur in dry areas of this zone that accumulate soluble salts and may have moist pockets.

Annual Grasses and Forbs

Annual grasslands are the most commonly encountered type mapped in this zone, generally occurring between urban/agricultural developments and the foothill woodlands. Dominant species in this alliance include western needlegrass (*Achnatherum occidentalis*), cheatgrass (*Bromus spp*.), purple owl's clover (*Castilleja exserta*), filaree (*Erodium spp*.), wild oats (*Avena spp*.), and devil's lettuce (*Amsinckia tesselata*). Annual grasses extend from Redding to Bakersfield throughout the Central Valley. Vernal pools (i.e., small depressions often containing hardpan soil layers) occur throughout the annual grasses and forbs alliance. Species within these vernal pools include downingia (*Downingia cuspidata*), meadowfoam (*Limnanthes douglasii*), goldfields (*Lasthenia chrysostoma*), water starwort (*Callitriche marginata*), popcorn flower

(*Plagiobothrys spp*.), johnnytuck (*Orthocarpus erianthus*), bur medic (*Medicago hispida*), and linanthus (*Linanthus spp*.). There are approximately 500 acres of vernal pools in the EIR Study Area.[6]

Giant Reed/Pampas Grass

This non-native alliance is dominated by invasive species of giant reed (*Arundo donax*) in wetlands or black or white pampas grasses (*Cortaderia jubata, C. selloana*) on moist, disturbed sites. Adjacent agricultural and urban land uses may provide a conduit for the invasion of these species onto public and private lands.

Non-Native/Ornamental

Non-Native/Ornamental Conifer/Hardwood Mixture

Mixtures of ornamental or non-native conifer and hardwood species comprise the dominant species of this alliance. Small amounts of non-native pure stands of hardwood, conifer, shrubs, and grasses may be also associated with this alliance. Mapped areas of this alliance are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, and cemeteries.

Non-Native/Ornamental Hardwood

Ornamental or non-native hardwood species dominate this alliance. Other non-native conifers, shrubs, and grasses may be present in this alliance. Mapped areas of this alliance are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, and cemeteries.

Non-Native/Ornamental Grass

Ornamental or non-native grass species define this alliance. Other non-native conifers, hardwoods, and shrubs may be associated as minor elements. Mapped areas of this alliance are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, and cemeteries.

Sensitive Resources

Sensitive Natural Communities

Sensitive natural communities in or near the EIR Study Area were identified from a search of the California Natural Diversity Database (CNDDB) within nine 7.5-minute topographic quadrangles: Terminous, Lodi South, Waterloo, Holt, Stockton West, Stockton East, Union Island, Lathrop, and Manteca. Three sensitive natural communities are listed: coastal and valley freshwater marsh, great valley oak riparian forest, and valley oak woodland.

Coastal and Valley Freshwater Marsh

This community is dominated by perennial, emergent monocots that grow to 13 to 16 feet tall, often forming completely closed canopies. Typical plants include bulrush (*Scirpus spp.)* and cattail (*Typha spp*.).

[6] San Joaquin County Multi-Species Habitat Conservation and Open Space Plan mapping data.

Emergent plants are rooted in the bed of a water body, and have stems and leaves extending out of the water. This community occurs in quiet sites lacking significant current that are permanently flooded by fresh water, rather than brackish, alkaline, or variable water. Prolonged saturation permits accumulation of deep, peaty soils. This community is most extensive in the upper portion of the Sacramento-San Joaquin River Delta, and common in the Sacramento and San Joaquin Valleys in river oxbows and other areas on the flood plain. Now much of this community is reduced in area through its entire range.[7]

Great Valley Oak Riparian Forest

This community is a medium to tall (rarely to 100 feet) broadleafed, winter-deciduous, closed-canopy riparian forest dominated by valley oak (*Quercus lobata*). Understory plants include scattered Oregon ash (*Fraxinus latifolia*), northern California black walnut (*Juglans hindsii*), and California sycamore (*Platanus racemose*), as well as young valley oak. Woody vines (lianas) are often conspicuous, quickly occupying wind-throw generated light gaps. They also are more scattered throughout the shady understory. This community is restricted to the highest parts of floodplains, most distant from or higher above active river channels and therefore less subject to physical disturbance from flooding, but still receiving annual inputs of silty alluvium and subsurface irrigation. The community was formerly extensive on low-gradient, depositional reaches of the major streams of the Sacramento and northern San Joaquin valleys, and more scattered in the San Joaquin watershed and on the floodplains of the Kings and Kaweah rivers. It is now virtually eliminated by agriculture and firewood harvesting.[8]

Valley Oak Woodland

This community typically forms an open, grassy-understoried savanna rather than a closed woodland. Valley oak (*Quercus lobata*) is usually the only tree present. This winter-deciduous species is California's largest broad-leaved tree, with mature individuals reaching 50 to 105 feet in height. Most stands consist of open-canopy growth form trees and seldom exceed 30 to 40 percent absolute cover. This community occurs on deep, well-drained alluvial soils, usually in valley bottoms.[9]

Special Status Species

Special status plant and animal species were identified from a CNDDB search of 12 quadrangles on August 17, 2017—the nine listed above plus three abutting the east side of the nine-quadrangle area: Linden, Peters, and Avena. Range maps were then consulted to confirm that the EIR Study Area is within the range of each species identified in the CNDDB. Range maps for plant species were obtained from the Calflora website operated by Caflora, a nonprofit organization in Berkeley, California. Any range of a species within the nine 7.5-minute quadrangles overlapping the EIR Study Area was taken to indicate the plant occurs in the study area. Where the Calflora map did not show the range of the species included the Stockton

[7] Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Wildlife, http://www2.bren.ucsb.edu/~fd/gap/data/cnddb/52410.html, accessed August 17, 2017.

[8] Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Wildlife, http://www2.bren.ucsb.edu/~fd/gap/data/cnddb/52410.html, accessed August 17, 2017.

[9] Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Wildlife, http://www2.bren.ucsb.edu/~fd/gap/data/cnddb/52410.html, accessed August 17, 2017.

region, that was confirmed by zooming the map in to a two-minute quadrangle (approximately 2 miles by 2 miles) resolution. Range maps for animal species were obtained from the CDFW.

Occurrence or likely occurrence of special status species in the EIR Study Area was determined using range maps corroborated by listing on the CNDDB. The habitat preferences listed below in Tables 4.4-2 and 4.4-3 were compared to the vegetation communities described above, and at least one vegetation community in the EIR Study Area is similar to each habitat. Therefore, no species listed in the two tables below was determined to be absent from the EIR Study Area due to lack of suitable habitat. At this programmatic level of analysis, a detailed evaluation of potential for occurrence based on each species' habitat preference compared to the vegetation types mapped in the EIR Study Area (i.e., high potential, moderate potential, low potential, or no potential for occurrence) would be impractical.

Wildlife Movement and Migration

The historical Delta provided migration corridors and rearing habitat for many migratory bird and fish species, including the threatened greater sandhill crane, many species of ducks and geese, salmon, sturgeon, and the introduced striped bass. Numerous changes to the Delta have reduced its value as a migration route for fish, including the Central Valley Project and State Water Project pumps; mixing of water from many sources, eliminating chemical signals fishes use to find their spawning waters; and dams and other barriers.[10]

The Calaveras River is one of several rivers in the northern San Joaquin Valley where restoration projects have been undertaken aimed at improving fall-run Chinook salmon and Central Valley steelhead spawning and rearing habitat.[11]

Waters and Wetlands

Waters of the United States include waters that are or have been used, or could be used, in interstate or foreign commerce; interstate waters including interstate wetlands; tributaries of the aforementioned categories of waters; territorial seas; and wetlands adjacent to the aforementioned categories of waters.

Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs.

CDFW's jurisdiction over rivers, streams, and lakes extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

[10] Delta Stewardship Council (DSC), 2013. The Delta Plan, http://deltacouncil.ca.gov/sites/default/files/documents/files/DeltaPlan_2013_CHAPTERS_COMBINED.pdf, accessed August 18, 2017.

[11] Delta Stewardship Council (DSC), 2013. The Delta Plan.

TABLE 4.4-2 SENSITIVE PLANT SPECIES DOCUMENTED IN THE STOCKTON REGION

Common Name *Scientific Name*	Status				Habitat Preference
	Federal	State	CNPS	SJMSCP Covered Species	
alkali milk-vetch *Astragalus tener var. tener*	None	None	1B.2	Yes	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 m.
heartscale *Atriplex cordulata var. cordulata*	None	None	1B.2	Yes	Chenopod scrub, valley and foothill grassland, meadows and seeps. Alkaline flats and scalds in the central valley, sandy soils. 3-275 m.
big tarplant *Blepharizonia plumosa*	None	None	1B.1	No	Valley and foothill grassland. Dry hills & plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 30-505 m.
watershield *Brasenia schreberi*	None	None	2B.3	No	Freshwater marshes and swamps. Aquatic from water bodies both natural and artificial in California. 30-2200 m.
round-leaved filaree *California macrophylla*	None	None	1B.2	No	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1200 m.
bristly sedge *Carex comosa*	None	None	2B.1	Yes	Marshes and swamps, coastal prairie, valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta Island.
palmate-bracted salty bird's-beak *Chloropyron palmatum*	None	None	1B.1	No	Chenopod scrub, valley and foothill grassland. Usually on pescadero silty clay which is alkaline, with distichlis, frankenia, etc. 5-155 m.
slough thistle *Cirsium crassicaule*	None	None	1B.1	yes	Chenopod scrub, marshes and swamps, riparian scrub. Sloughs, riverbanks, and marshy areas. 3-95 m.
recurved larkspur *Delphinium recurvatum*	None	None	1B.2	Yes	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. 3-790 m.
Delta button-celery *Eryngium racemosum*	None	None	1B.1	Yes	Riparian scrub. Seasonally inundated floodplain on clay. 1-335 m.
San Joaquin spearscale *Extriplex joaquinana*	None	None	1B.2	No	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with distichlis spicata, frankenia, etc. 0-840 m.
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	None	None	1B.2	yes	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks & low peat islands in sloughs; can also occur on Riprap and levees. In California, known from the delta watershed. 0-155 m.
Delta tule pea *Lathyrus jepsonii var. jepsonii*	None	None		Yes	Marshes and swamps. In freshwater and brackish marshes. Often found with typha, aster lentus, rosa californica, juncus spp., scirpus, etc. Usually on marsh and slough edges. 0-5 m.
Mason's lilaeopsis *Lilaeopsis masonii*	None	None	1B.1	Yes	Marshes and swamps, riparian scrub.
Delta mudwort *Limosella australis*	None	None	2B.1	Yes	
Sanford's arrowhead *Sagittaria sanfordii*	None	None	1B.2	Yes	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-605 m.
side-flowering skullcap *Scutellaria lateriflora*	None	None	2B.2	Yes	Meadows and seeps, marshes and swamps. Wet meadows and marshes. In the delta, often found on logs. 0-500 m.
Suisun Marsh aster *Symphyotrichum lentum*	None	None	1B.2	No	Marshes and swamps (brackish and freshwater). Most often seen along sloughs with phragmites, scirpus, blackberry, typha, etc. 0-15 m.

TABLE 4.4-2 SENSITIVE PLANT SPECIES DOCUMENTED IN THE STOCKTON REGION

Common Name *Scientific Name*	Status Federal	State	CNPS	SJMSCP Covered Species	Habitat Preference
Wright's trichocoronis *Trichocoronis wrightii var. wrightii*	None	None	2B.1	Yes	Marshes and swamps, riparian forest, meadows and seeps, vernal pools. Mud flats of vernal lakes, drying river beds, alkali meadows. 5-435 m.
saline clover *Trifolium hydrophilum*	None	None	1B.2	No	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1-335 m.
Greene's tuctoria *Tuctoria greenei*	E	R	1B.1	Yes	Vernal pools in open grasslands. 25-1325 m.

Notes: E = Endangered; R = Rare

CNPS Rare Plant Ranks

1A: Plants Presumed Extinct in California and Either Rare or Extinct Elsewhere
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2A: Plants Presumed Extinct in California, But Common Elsewhere
2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3: Plants About Which More Information is Needed - A Review List
4: Plants of Limited Distribution - A Watch List

CNPS Threat Ranks

X.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
X.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
X.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Sources: California Department of Fish and Wildlife, 2017. California Natural Diversity Database.
Calflora (database of wild California plants), August 17, 2017.

TABLE 4.4-3 SPECIAL STATUS ANIMAL SPECIES OCCURRING IN THE STOCKTON REGION

Common Name *Scientific Name*	Status Federal	State	SJMSCP Covered Species	Habitat Preference
Invertebrates				
an andrenid bee (no common name) *Andrena subapasta*	None	None	No	Grassland forbs (flowering plants without woody stems other than grasses)
Crotch bumble bee *Bombus crotchii*	None	None	No	Open grassland and scrub habitats. Nesting occurs underground.
western bumble bee *Bombus occidentalis*	None	None	No	Wide variety of habitats
vernal pool fairy shrimp *Branchinecta lynchi*	T	None	Yes	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
Midvalley fairy shrimp *Branchinecta mesovallensis*	None	None	No	Vernal pools in the Central Valley.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	None	Yes	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus mexicana*).

TABLE 4.4-3 SPECIAL STATUS ANIMAL SPECIES OCCURRING IN THE STOCKTON REGION

Common Name *Scientific Name*	Status Federal	 State	 SJMSCP Covered Species	Habitat Preference
vernal pool tadpole shrimp *Lepidurus packardi*	E	None	Yes	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.
California linderiella (fairy shrimp) *Linderiella occidentalis*	None	None	No	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.
moestan blister beetle *Lytta moesta*	None	None	Yes	No published habitat information.[a] Distribution: Central California.
Fishes				
Delta smelt *Hypomesus transpacificus*	T	E	Yes	Sacramento-San Joaquin delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10 parts per thousand (ppt). Most often at salinities < 2 ppt.
steelhead - Central Valley Distinct Population Segment (DPS) *Oncorhynchus mykiss irideus*	T	None	No	Populations in the Sacramento and San Joaquin rivers and their tributaries.
longfin smelt *Spirinchus thaleichthys*	C	T	Yes	Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.
Amphibians				
California tiger salamander *Ambystoma californiense*	T	T	Yes	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.
Reptiles				
western pond turtle *Emys marmorata*	None	SSC	Yes	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
giant gartersnake *Thamnophis gigas*	T	T	Yes	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.
Birds				
tricolored blackbird *Agelaius tricolor*	None	SSC	Yes	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. Most numerous in Central Valley & vicinity. Largely endemic to California.
burrowing owl *Athene cunicularia*	None	SSC	Yes	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Swainson's hawk *Buteo swainsoni*	None	T	Yes	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.
white-tailed kite *Elanus leucurus*	None	FP	Yes	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.

TABLE 4.4-3 SPECIAL STATUS ANIMAL SPECIES OCCURRING IN THE STOCKTON REGION

Common Name *Scientific Name*	Status: Federal	Status: State	Status: SJMSCP Covered Species	Habitat Preference
loggerhead shrike *Lanius ludovicianus*	None	SSC	Yes	Broken woodlands, savannah, pinyon-juniper, joshua tree, and riparian woodlands, desert oasis, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
California black rail *Laterallus jamaicensis coturniculus*	None	T FP	Yes	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.
song sparrow ("Modesto" population) *Melospiza melodia*	None	SSC	No	Emergent freshwater marshes; riparian willow; thickets; riparian forests of valley oak (*Quercus lobata*); along vegetated irrigation canals and levees; and in recently planted valley oak restoration sites.
yellow-headed blackbird *Xanthocephalus xanthocephalus*	None	SSC	No	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.
Mammals				
pallid bat *Antrozous pallidus*	None	SSC	No	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
San Joaquin Pocket Mouse *Perognathus inornatus*	None	None	Yes	Grassland, oak savanna and arid scrubland in the southern Sacramento valley, Salinas Valley, San Joaquin valley and adjacent foothills, south to the Mojave desert.
riparian brush rabbit *Sylvilagus bachmani riparius*	E	E	Yes	Riparian areas on the San Joaquin river in northern Stanislaus county.[b] Dense thickets of wild rose, willows, and blackberries.
American badger *Taxidea taxus*	None	SSC	Yes	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.

Note: One species listed on the CNDDB for the 12-quadrangle region described in the text, least Bell's vireo, is omitted from this table, as the CDFW range map for the species does not show it occurring in the Stockton region, and the nearest range is on the south border of Monterey County. See California Deparment of Fish and Wildlife (CDFW), 2016. Biogeographic Information and Observation System (BIOS) Data Layer ds900, https://map.dfg.ca.gov/bios/, accessed August 2017.

Status Abbreviations:
E = Endangered
T = Threatened
C = Candidate
USFS-S = US Forest Service- Sensitive
SSC = State Species of Special Concern
FP = California Fully Protected Species

a. California Department of Fish and Wildlife, 2006. Lytta Moesta life history account, , January 9, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0ahUKEwjn45zeyPrVAhUKy2MKHc-BAjgQFgg0MAI&url=https%3A%2F%2Fnrm.dfg.ca.gov%2FFileHandler.ashx%3FDocumentID%3D107593&usg=AFQjCNHDsQ6AZHipO5U0JG_PuyP92hoKIA, accessed August 2017.

b. The range map for this species shows part of the range of this species in the Stockton region in San Joaquin County. See California Deparment of Fish and Wildlife (CDFW), 2013. Range Map: Riparian brush rabbit, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68664, accessed August 2017.

Sources: California Department of Fish and Wildlife (CDFW), 2017. California Natural Diversity Database, August 17.
California Department of Fish and Wildlife (CDFW), 2017. Biogeographic Information and Observation System (BIOS), August 17.
California Department of Fish and Wildlife (CDFW), 2017. California Wildlife Habitat Relationships: Life History and Range, August 17.

The vegetation mapping described above identified 2,409 acres of water and 717 acres of riparian vegetation communities, which total about 3,126 acres, or 4 percent of the EIR Study Area.

Waters and wetlands jurisdictional to regulatory agencies – USACE, CDFW, and Central Valley RWQCB – are delineated using methods different from those used in the vegetation mapping described above, and no attempt is made here to identify jurisdictional waters in the EIR Study Area.

Biological Resource Conservation Areas

The Delta Plan and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan are described above in Section 4.4.1.1.

Local Policies Protecting Biological Resources

Stockton Municipal Code Section 16.72.245, which protects heritage trees, is summarized above in Section 4.4.1.1.

4.4.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations by the CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

4.4.3 IMPACT DISCUSSION

This section discusses potential impacts of the proposed General Plan Update and UMPS on biological resources in the EIR Study Area. The largest overall effect under the proposed General Plan is the potential development of land that is currently undeveloped. There are currently about 56 square miles in

the EIR Study Area developed with residential, commercial, industrial, institutional, public, and mixed land uses. While the proposed General Plan land use map shrinks the potential footprint of urbanization compared to the existing 2035 General Plan, it still provides opportunity for the development of lands that are currently undeveloped, some of which may support biological resources. Full implementation and buildout of the proposed General Plan would cover approximately 88 square miles with urban uses and other development, for a net increase of about 32 square miles from existing conditions.[12]

The impact discussion below is organized by and responds to each of the potential impacts identified in the Standards of Significance.

BIO-1 Implementation of the proposed project would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species.

As described in the introduction to the impact discussion above, implementation of the proposed General Plan would allow for the conversion of land that is currently undeveloped to a developed state. To support that development, implementation of the proposed UMPS would involve infrastructure development in similar areas. Because this development could occur in areas that provide habitat for candidate, sensitive, or special status species, the proposed project could impact those species.

The special status plant and animal species identified below could be impacted by the proposed project; the listing status and habitat preference for each species is described above in Tables 4.3-2 and 4.3-3.

SJMSCP-Covered Species

Development allowed under the proposed General Plan and UMPS could impact the following SJMSCP-covered species:

Plants:
- Alkali milk-vetch (*Astragalus tener var. Tener)*
- heartscale (*Atriplex cordulata var. cordulata)*
- Bristly sedge (*Carex comosa)*
- Slough thistle (*Cirsium crassicaule)*
- Recurved larkspur (*Delphinium recurvatum)*
- Delta button-celery (*Eryngium racemosum)*
- Woolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis)*
- Delta tule pea (*Lathyrus jepsonii var. jepsonii)*
- Mason's lilaeopsis (*Lilaeopsis masonii)*
- Delta mudwort (*Limosella australis)*
- Sanford's arrowhead (*Sagittaria sanfordii)*
- Side-flowering skullcap (*Scutellaria lateriflora)*

[12] The existing and buildout land areas identified here exclude areas not mapped on the proposed General Plan land use map, such as rights-of-way.

- Wright's trichocoronis (*Trichocoronis wrightii var. wrightii)*
- Greene's tuctoria (*Tuctoria greenei)*

Invertebrates:
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)

Fishes:
- Delta smelt (*Hypomesus transpacificus*)
- Longfin smelt (*Spirinchus thaleichthys*)

Amphibians:
- California tiger salamander (*Ambystoma californiense*)

Reptiles:
- Western pond turtle (*Emys marmorata*)
- Giant gartersnake (*Thamnophis gigas*)

Birds:
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- Swainson's hawk (*Buteo swainsoni*)
- White-tailed kite (*Elanus leucurus*)
- Loggerhead shrike (*Lanius ludovicianus*)
- California black rail (*Laterallus jamaicensis coturniculus*)

Mammals:
- San Joaquin pocket mouse (*Perognathus inornatus*)
- Riparian brush rabbit (*Sylvilagus bachmani riparius*)
- American badger (*Taxidea taxus*)

Note that the one federally-listed plant species listed above in Table 4.3-2, Greene's tuctoria, is also an SJMSCP-covered species.

As described in Section 4.4.1.1, applicants for projects that could impact SJMSCP-covered species would be required to conduct preconstruction surveys.[13] Where SJMSCP-covered species are identified, Incidental Take Minimization Measures would be established and implemented for the affected projects. In all cases, project applicants would undertake one of the four options to receive coverage under the SJMSCP: pay the appropriate fee; dedicate habitat lands as conservation easement or fee title; purchase mitigation bank credits from an SJMSCP-approved mitigation bank; or propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value.

[13] The entire SOI is in jurisdictions participating in the SJMSCP – the City of Stockton and San Joaquin County.

Non-SJMSCP-Covered Species

Development allowed under the proposed General Plan and UMPS could impact the following special-status species that are not covered under the SJMSCP:

Plants:
- Big tarplant (*Blepharizonia plumose)*
- Watershield (*Brasenia schreberi)*
- Round-leaved filaree (*California macrophylla)*
- Palmate-bracted salty bird's-beak (*Chloropyron palmatum)*
- San Joaquin spearscale (*Extriplex joaquinana)*
- Suisun Marsh aster (*Symphyotrichum lentum)*
- Saline clover (*Trifolium hydrophilum*)

Invertebrates:
- Andrenid bee (no common name) (*Andrena subapasta)*
- Crotch bumble bee (*Bombus crotchii*)
- Western bumble bee (*Bombus occidentalis*)
- California linderiella (fairy shrimp) (*Linderiella occidentalis*)

Fishes:
- Steelhead - Central Valley Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*)

Birds:
- Song sparrow ("Modesto" population) (*Melospiza melodia*)
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

Mammals:
- Pallid bat (*Antrozous pallidus*)

Overall Impact Finding

Policies and actions to support Goal LU-5 in the proposed General Plan would reduce and mitigate potential impacts to special status species. Specifically:

- Actions LU-5.1.A through LU-5.1.C require projects to provide open space; direct the City to protect, preserve, and improve riparian corridors; and require native and drought-tolerant plants in landscape plans. These actions will minimize conversion of habitat by requiring open space in new development and preservation of riparian corridors, and they will ensure that plants used in landscaping provide habitat for native plants and animals, including special status species.
- Actions LU-5.2.A through LU-5.2.C direct the City to continue to comply with the terms of the SJMSCP; require biological assessments for projects on or within 100 feet of sites that have the potential to contain special-status species or critical or sensitive habitats, and if sensitive biological resources are present, require the project to avoid or mitigate impacts; and require new development to implement best practices to protect biological resources including incidental take minimization measures and

other federal and State requirements and recommendations, that are consistent with the SJMSCP. These actions will ensure that the City continues to protect critical habitat areas through the SJMSCP. When considering development applications, these actions will ensure that any special status species or critical or sensitive habitats are identified for project-specific avoidance or mitigation, and they ensure that construction activity for such development protects sensitive resources throughout the construction period.

- Action LU-5.3.C maintains an agricultural conservation program by which the City will mitigate the loss of agricultural lands, some of which provide habitat to special status species.

In addition, as discussed above, impacts to SJMSCP-covered species will be mitigated via one of four mitigation options outlined in the SJMSCP.

Overall, implementation of the proposed General Plan actions, in combination with the SJMSCP and federal and State laws, would reduce potential impacts to special-status species to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

BIO-2 Implementation of the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community.

As described in the introduction to the impact discussion above, implementation of the proposed General Plan would allow for the conversion of land that is currently undeveloped to a developed state. To support that development, implementation of the proposed UMPS would involve infrastructure development in similar areas. Because this development could occur in areas that provide riparian habitat or other sensitive natural communities, the proposed project could impact those resources.

The following riparian vegetation communities total about 500 acres in the EIR Study Area, as described in Section 4.4.1.2 and shown on Figure 4.4-2 above, and could be impacted by development allowed under the proposed General Plan and UMPS:

- Riparian mixed hardwood: 104 acres
- Riparian mixed shrub: 167 acres
- Willow, willow (shrub), and willow-alder: 139 acres
- Fremont cottonwood: 89 acres

Three sensitive natural communities - coastal and valley freshwater marsh, great valley oak riparian forest, and valley oak woodland - are listed on the CNDDB in or near the EIR Study Area in a nine-quadrangle area, and could be impacted by development allowed under the proposed project. No maps showing those communities are available, and thus the acreage of each community in the EIR Study Area cannot be estimated. For this analysis, great valley oak riparian forest is considered to be included within the riparian mixed hardwood vegetation community, and valley oak woodland is considered to be included in the valley oak vegetation community. No vegetation community corresponds to the coastal and valley freshwater marsh natural community. Thus, great valley oak riparian forest and valley oak woodland are

considered to represent portions of the 104 acres of riparian mixed hardwood and 556 acres of valley oak vegetation communities, respectively.

As discussed in the impact finding for Threshold BIO-1 above, proposed General Plan actions require open space and riparian corridor preservation, use of native plant species in landscaping, compliance with the terms of the SJMSCP, agricultural conservation, biological assessments and associated project-specific avoidance or mitigation, and implementation of best management practices to protect biological resources. All of these actions will support preservation and protection of riparian habitat and sensitive natural resources. In particular, Action LU-5.2.B would require baseline assessments to be prepared by a qualified biologist for any project on or within 100 feet of a site with the potential to contain critical or sensitive habitats, and if such habitat is found, to avoid or mitigate potential impacts.

In addition, as discussed in Section 4.4.1.1, projects that affect waters of the State, which include riparian habitats, would be required to apply for a Streambed Alteration Permit (SAP) from the CDFW. The CDFW, when issuing an SAP, would also specify required measures to mitigate impacts to waters of the State, including any riparian habitats. Implementation of such mitigation measures would be required as a condition of the SAP.

Overall, implementation of the proposed General Plan actions, in combination with federal and State laws, would reduce potential impacts to riparian habitat or other sensitive natural communities to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

BIO-3 Implementation of the proposed project would not have a substantial adverse effect on federally protected wetlands.

Wetlands next to or hydrologically connected to jurisdictional waterways in the EIR Study Area—including the San Joaquin River, Pixley Slough, Bear Creek, Mosher Creek, the Calaveras River, Mormon Slough, Duck Creek, and Littlejohns Creek—are protected under the federal Clean Water Act and are jurisdictional to the USACE. Development allowed under the proposed General Plan and UMPS could impact federally protected wetlands through dredging or filling, or by developing upstream of wetlands and affecting water quality. The area of protected wetlands in the EIR Study Area that could be impacted by implementation of the proposed General Plan and UMPS is unknown.

Each development project considered for approval under the proposed General Plan and UMPS would require a jurisdictional delineation to identify any USACE-jurisdictional wetlands on the project site. Projects for which jurisdictional wetlands are identified onsite would need to apply for a Nationwide Permit (NWP). The USACE, when issuing an NWP, would specify the required mitigation measures for impacts to waters of the United States, including wetlands. Implementation of such mitigation measures would be required as a condition of the NWP, and would reduce potential impacts to federally protected wetlands to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

BIO-4 Implementation of the proposed project would not interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

No wildlife movement corridors are mapped in the EIR Study Area in *Wildlife Corridors – San Joaquin Valley,* prepared by the Information Center for the Environment, University of California, Davis.[14] Only about 2 percent of the EIR Study Area (approximately 1,331 acres) is native habitat (excluding non-native/ornamental vegetation). As shown in Figure 4.4-2, above, native habitat in the EIR Study Area is fragmented and is not arranged in linear or elongated areas that could facilitate wildlife movement.

Waterways in the EIR Study Area – including the San Joaquin River, Pixley Slough, Bear Creek, Mosher Creek, the Calaveras River, Mormon Slough, Duck Creek, and Littlejohns Creek – are or could be used as movement corridors by aquatic animals, including fishes and amphibians. The Calaveras River is one of several rivers in the northern San Joaquin Valley where restoration projects have been undertaken aimed at improving fall-run Chinook salmon and Central Valley steelhead spawning and rearing habitat.[15] Therefore, there is the potential for the proposed project to impact aquatic migratory species. However, Action SAF-2.4.C in the proposed General Plan directs the City to preserve waterways and floodplains for non-urban uses to maintain flood carrying capacity. In addition, impacts to waterways would also be limited by protections under the Clean Water Act, Porter-Cologne Water Quality Control Act, and California Fish and Game Code, as discussed above in Section 4.4.1.1. Mitigation for impacts would be required by regulatory agencies as permit conditions.

Development allowed under the proposed General Plan and UMPS also has the potential to impact migratory bird species. Development projects could cause nest abandonment by migratory birds. Impacts to vegetation used for nesting by migratory birds would include: vegetation removal, intrusion by humans, intrusion by domestic and feral cats and dogs, noise, and emissions of air pollutants, including diesel emissions. However, as discussed in the impact finding for Threshold BIO-1 above, proposed General Plan actions require open space and riparian corridor preservation, use of native plant species in landscaping, compliance with the terms of the SJMSCP, agricultural conservation, biological assessments and associated project-specific avoidance or mitigation, and implementation of best management practices to protect biological resources. All of these actions will minimize impacts to vegetation used for nesting by migratory birds. In particular, Action LU-5.2.B would require baseline assessments to be prepared by a qualified biologist for any project on or within 100 feet of a site with the potential to contain special status species or critical or sensitive habitats, and if such species or habitat are found, to avoid or mitigate potential impacts.

Overall, implementation of the proposed General Plan actions, in combination with federal and State laws, would reduce potential impacts to migratory species to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

[14] University of California, Davis. Information Center for the Environment. 2006. Wildlife Corridors – San Joaquin Valley.
[15] Delta Stewardship Council (DSC). 2013. The Delta Plan.

BIO-5 Implementation of the proposed project would not conflict with any local policies or ordinances protecting biological resources.

As discussed in Section 4.4.1.1, Stockton Municipal Code Section 16.72.245 protects heritage trees. Heritage trees are any valley oak, coast live oak, or interior live oak of the size specified in the Code Any projects proposed under the General Plan that would involve the removal of such a tree would be required to apply for a Heritage Oak Tree Removal Permit, and could only remove such tree after issuance of the permit. Therefore, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

BIO-6 Implementation of the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

The City of Stockton, as a plan participant, has used the SJMSCP to inform the development of the proposed General Plan. In addition, proposed Land Use Action LU-5.2.A directs the City to continue to coordinate with SJCOG and comply with the terms of the SJMSCP.

As discussed above, development allowed under the proposed General Plan and UMPS would require preconstruction surveys of project sites conducted by a qualified biologist before issuance of a grading permit by the City. Furthermore, project applicants that would develop any of the categories of lands subject to SJMSCP fees (i.e., Multi-Purposed Open Space Lands, Agricultural Lands, Natural Lands, and Vernal Pools) would have four options for meeting the fee requirement: payment of fees; dedication of habitat lands as conservation easement or fee title; purchasing mitigation bank credits from an SJMSCP-approved mitigation bank; or proposing an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value.

Implementation of proposed General Plan actions, combined with the survey and mitigation processes for development discussed above, would ensure that the proposed project would not conflict with the SJMSCP, resulting in a *less-than-significant* impact.

Significance Without Mitigation: Less than significant.

4.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section describes the regulatory framework and existing conditions in the EIR Study Area related to cultural resources, and evaluates the potential impacts to cultural resources associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). The following evaluation is based on a spatial analysis and examines the effects of the location of potential development on cultural resources, including historical, archaeological, paleontological, and tribal cultural resources, as well as potential impacts associated with the disturbance of human remains. Cumulative impacts related to cultural resources would be contiguous with the Sphere of Influence (SOI) boundary.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 REGULATORY FRAMEWORK

Federal Regulations

National Historic Preservation Act

Most regulations at the federal level stem from the National Environmental Policy Act (NEPA) and from historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations specifically for federal land-holding agencies and regulations that pertain to all projects that are funded, permitted, or approved by any federal agency and that have the potential to affect cultural resources as specified in Section 106. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (the National Register) which is maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes that traditional practices and beliefs, sites (including right of access), and sacred objects shall be protected and preserved under national policy. This law does not include provisions for compliance.

Native American Graves Protection and Repatriation Act

Native American remains are protected by the Native American Graves and Repatriation Act of 1990 (NAGPRA). NAGPRA protects Native American graves on federal and tribal lands, and recognizes tribal authority over the treatment of unmarked graves. It also prohibits the selling of Native American remains. The law provides guidelines for the return of Native American human remains and cultural objects from any collection (e.g., museum, university, or government) that receives federal funding. Civil and criminal

penalties can be imposed for noncompliance and illegal trafficking (such as knowingly selling or purchasing sacred objects stolen from graves).

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act of 2002 codifies the generally accepted practice of limited vertebrate fossil collection and limited collection of other rare and scientifically significant fossils by qualified researchers. Researchers must obtain a permit from the appropriate State or federal agency and agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and to other researchers.

State Regulations

California Environmental Quality Act (CEQA)

CEQA is codified at Public Resources Code (PRC) Section 21000 et seq., and CEQA Guidelines are codified at Title 14 California Code of Regulations (CCR) Section 15000 et seq. As amended in September 2014, CEQA requires that lead agencies determine whether projects may have a significant effect on the environment, including archaeological, historical, and tribal cultural resources.

This determination applies to those resources that meet significance criteria qualifying them as “unique,” “important,” listed on the California Register of Historical Resources (CRHR), or eligible for listing on the CRHR. The importance of a resource is measured in terms of criteria for inclusion on the CRHR (Title 14 CCR, Section 4852(a)) as listed below.

If the agency determines that a project may have a significant effect on a significant resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA Guidelines (PRC Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

CEQA also affords protection to paleontological resources. Appendix G of the CEQA Guidelines requires consideration of impacts to paleontological resources, stating that, “a project will normally result in a significant impact on the environment if it will...disrupt or adversely affect a paleontological resource or site or unique geologic feature except as part of a scientific study."

California Register of Historical Resources

California State law provides for the protection of cultural resources by requiring evaluations of the significance of archaeological, historic, and tribal cultural resources identified in documents prepared pursuant to CEQA. Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office

(SHPO) maintains the CRHR. Historic properties listed, or formally designated as eligible to be listed, on the National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

A resource may be important if it meets any one of the criteria below, or if it is already listed on the CRHR or a local register of historical resources.

An important archaeological, historical, or tribal cultural resource is one which:

- Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Is associated with the lives of persons important to local, California, or national history.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
- Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the CRHR requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

Assembly Bill 52: Tribal Cultural Resources

With the enactment of AB 52, "tribal cultural resources" are considered a new form of resource recognized in CEQA. Beginning July 1, 2015, lead agencies must initiate "consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project" (CCR Section 21080.3.1). A summary of the tribal consultation for the proposed project is provided in Section 4.5.1.3, Existing Conditions, below.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.

Senate Bill 18: Traditional Tribal Cultural Places

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American

tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended Sections 65040.2, 65092, 65351, 65352, and 65560, and added 65352.3, 653524, and 65562.5 of the Government Code, also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments on how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code Section 65300 *et seq*.) and specific plans (defined in Government Code Section 65450 *et seq*.).

Public Resources Code

Section 5097.5(a) of the Public Resources Code specifies that a person shall not knowingly and willfully excavate upon or remove, destroy, injure, or deface any of the following that are situated on public lands, except with the express permission of the public agency having jurisdiction over the lands:

- Historic or prehistoric ruins
- Burial grounds
- Archaeological or vertebrate paleontological sites, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological, or historical feature

As used in this section, "public lands" means lands owned by or under the jurisdiction of the State, or any city, county, district, authority, or public corporation, or any agency thereof.

California Code of Regulations

The California Code of Regulations (Title 14, Division 3, Chapter 1) address paleontological and archaeological resources on lands administered by the California Department of Parks and Recreation (DPR), as follows:

1. Section 4307: Geological Features - No person shall destroy, disturb, mutilate, or remove earth, sand, gravel, oil, minerals, rocks, paleontological features, or features of caves.
2. Section 4308: Archaeological Features - No person shall remove, injure, disfigure, deface, or destroy any object of archaeological or historical interest or value.

Local Regulations

City of Stockton Municipal Code

The City of Stockton has established provisions in its Municipal Code to protect cultural resources. The sections of the Municipal Code below detail the existing provisions that are most relevant to the proposed General Plan Update and UMPS.

16.36.050, Cultural Resources

If a historical or archaeological resource or human remains may be impacted by a development project requiring a discretionary land use permit, the Secretary of the Cultural Heritage Board (Board) shall be notified, any survey needed to determine the significance of the resource shall be conducted, and the proper environmental documents shall be prepared. In addition:

A. **Historical Resources.** Resources that have been identified as a landmark or part of a historic district in compliance with Chapter 16.220 (Cultural Resources) shall require a certificate of appropriateness (Section 16.220.060) if any exterior changes to the resource are proposed.

B. **Archaeological Resources.** In the event that archaeological resources are discovered during any construction, construction activities shall cease, and the Community Development Department (Department) shall be notified so that the extent and location of discovered materials may be recorded by a qualified archaeologist, and disposition of artifacts may occur in compliance with State and federal law.

C. **Human Remains.** In the event human remains are discovered during any construction, construction activities shall cease, and the County Coroner and Director shall be notified immediately in compliance with CEQA Guidelines 15064.5 (d). A qualified archaeologist shall be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify the most likely descendent of the Native American to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

16.220.070, Landmarks

A. **Criteria for Designation of Landmarks.** In considering an artifact, natural feature, or structure for designation as a landmark, the Board shall apply any or all of the following criteria:

1. **Archaeological Interest.** Its potential for yielding significant information of archaeological interest;
2. **Architectural Craftsmanship.** Its embodiment of elements demonstrating outstanding attention to architectural and/or engineering craftsmanship, design, detail, or materials;
3. **Architectural Style.** Its exemplification of a particular architectural style or way of life important to the city, state, or nation;
4. **Architectural Type.** Its exemplification of the best remaining architectural type in the city;
5. **Historic Event.** Its location as a site of a significant historic event;
6. **Heritage.** Its character, interest, or value as a significant part of the heritage of the city, state, or nation;
7. **Visual Feature.** Its unique location or singular physical characteristic representing an established and familiar visual feature of the city;
8. **Relationship to Another Landmark.** Its relationship to any other landmark, if its preservation is essential to the integrity of that landmark;

9. Significant Person. Its identification with a person(s) who significantly contributed to the culture and development of the city, state, or nation;
10. Work of a Significant Person. Its identification as the creation, design, or work of a person(s) whose effort has significantly influenced the heritage of the city, state, or nation; or
11. Natural Environment. Its integrity as a natural environment that strongly contributes to the well-being of the people of the city, state, or nation.

16.220.080, Historic Preservation District

A. Criteria for Designation of Historic Preservation Districts. In considering the artifacts, natural features, sites, or structures within an area for designation as a Historic Preservation District, the Board shall apply any or all of the following criteria.

The artifact, natural feature, site, or structure:

1. Has substantial value as part of the development, cultural, or heritage characteristics of, or is associated with, the life of a person(s) important in the history of the city, state, or nation;
2. Is associated with an event that has made a substantial contribution to the broad patterns of our history;
3. Is constructed in a distinctive architectural style characteristic of an era of history;
4. Is the work of an architect or designer who has substantially influenced the development of the city, state, or nation;
5. Is part of, or related to, a park, square, or other distinctive area and should be developed or preserved in compliance with a plan based on an aesthetic, architectural, cultural, or historic motif;
6. Contains elements of craftsmanship, design, detail, or materials that represent an important innovation;
7. Embodies distinguishing characteristics of an architectural style or engineering specimen;
8. Owing to its unique location or singular physical characteristic, represents an established feature of the neighborhood, community, or city; or
9. Would help preserve and protect a historic area or place of historic interest in the city, by retaining the structure.

B. Procedures for Designation of Historic Preservation Districts.

4. Board. Upon receipt of the application, a copy shall be submitted to the Board for review and evaluation.
    a. Survey Required. As a part of the evaluation of an application for establishment or change of boundaries of a historic preservation district, the Board shall coordinate an architectural/historical survey of the involved area, including significant artifacts, natural features, sites, or structures, unless a recent survey has been conducted.

i. **Minimum of 50 Years.** For purposes of the architectural/historical survey, artifacts, natural features, sites, or structures, unless of exceptional importance, shall be at least 50 years of age to be considered historic.

ii. **Finding of Significance.** The architectural/historical survey shall also include a factual statement, supporting or opposing a finding that at least 30 percent of the artifacts, natural features, sites, and structures, not including accessory uses, within the involved area are significant. To be significant, the artifact, natural feature, site, or structure shall meet one or more of the criteria identified in subsection A of this section (criteria for designation of historic preservation districts).

16.220.090, Historic Sites

A. **Criteria for Designation of Historic Sites.** In considering an area, neighborhood, property, or site for designation as a historic site, the Board shall apply any or all of the following criteria:

1. **Archaeological Interest.** Its potential for yielding significant information of archaeological interest;
2. **Heritage.** Its character, interest, or value as a significant part of the heritage of the city, state, or nation;
3. **Visual Feature of the City.** Its unique location or singular physical characteristic representing an established and familiar visual feature of the city;
4. **Way of Life.** Its exemplification of a particular way of life important to the city, state, or nation;
5. **Historic Event.** Its location as a site of a significant historic event regardless of its current configuration, development, or use;
6. **Significant Person.** Its identification with a person(s) who significantly contributed to the culture and development of the city, State, or nation; or
7. **Significant Person of a Specific National Origin.** Its identification with a person(s) representative of a specific national origin who has contributed to the culture and development of the city, state, or nation.

16.220.100, Structures of Merit

A. **Criteria for Designation as a Structure of Merit.** The Board may designate any structure not designated as a landmark as a structure of merit if it determines that it is deserving of official recognition as having historic, architectural, archaeological, ecological, cultural, or aesthetic significance based on the following criteria:

1. **Archaeological Interest.** Its potential of yielding significant information of archaeological interest;
2. **Heritage.** Its character, interest, or value as a significant part of the heritage of the city, state, or nation;
3. **Visual Feature of the City.** Its unique location or singular physical characteristic representing an established and familiar visual feature of the city;
4. **Way of Life.** Its exemplification of a particular way of life important to the city, state, or nation;

5. Historic Event. Its location as a site of a significant historic event regardless of its current configuration, development, or use;
6. Significant Person. Its identification with a person(s) who significantly contributed to the culture and development of the city, state, or nation; or
7. Significant Person of a Specific National Origin. Its identification with a person(s) representative of a specific national origin who has contributed to the culture and development of the city, state, or nation.

16.28.060, Magnolia Historic (-MHD) Overlay District

A. Purpose. The Magnolia Historic (-MHD) overlay district is intended to provide for the recognition, preservation, and use of culturally or architecturally significant structures in the Magnolia Historic District. Standards for development and new land uses within the -MHD overlay district are intended to strengthen and preserve neighborhood character, community identity, and the historic character of the district.

B. Applicability. The -MHD overlay district shall be combined with the Commercial Office (CO) zoning district or any residential zoning district established by Section 16.16.020 (zoning districts established) within the boundaries of the Magnolia Historic Preservation District.

4.5.1.2 CULTURAL SETTING

Prehistory

Archeological evidence shows that California was inhabited at least 12,000 years ago and possibly as much as 15,000 years ago.[1] Few early sites have been identified in the Stockton area. This is attributable in part to the probability that older sites have been buried by extensive alluvial deposition.[2] Early habitation in this area has been represented by isolated finds of tools. Information generated by numerous regional site investigations provided D. Fredrickson, an anthropologist, with data used to develop one of the more recent chronologies applicable to this portion of Central California.[3] The following chronology is based largely on Fredrickson's research.

Paleoindian Period (ca. 8,000 to 12,000+ years ago)

This is the time when humans first entered California. Lakeside sites were established with probable emphasis on hunting. Milling technology was lacking. Exchange of goods occurred on a one-to-one basis and was not regularized. Social units consisted of extended families that were largely self-reliant and moved to resources as they became available and were needed.

[1] J. Erlandson, T. Jones, and J. Porcasi, 2007. "One if by land, two if by sea: Who were the first Californians?" in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. Jones and K. Klar, Lanham, MD: AltaMira Press, pages 53 to 62.

[2] Rosenthal, J. G. White, and M. Sutton, 2007. "The Central Valley: A view from the catbird seat," in *California Prehistory: Colonization, Culture, and Complexity*, eds. T. Jones and K. Klar, Lanham, MD: AltaMira Press, pages 147 to 163.

[3] D. Fredrickson, 1974. "Cultural diversity in early central California: A view from the North Coast Ranges," *The Journal of California Anthropology*, 1(1); Morongo Indian Reservation, Banning; D. Fredrickson, 1994, "Archaeological taxonomy in central California reconsidered," in *Toward a New Taxonomic Framework for Central California Archaeology*, ed. R. E. Hughes, University of California, Berkeley: Contributions of the University of California Archaeological Research Facility, Volume 52, pages 91 to 103.

Archaic Period (ca. 1,000 to 8,000 years ago)

Lower Archaic Period (ca. 5,000 to 8,000 years ago) characteristics include lakes drying due to climatic changes. Abundant milling stones suggest emphasis on plants/small seeds for food, and little hunting occurred. Limited exchange took place, and there was a reliance on the use of local materials. Wealth was not emphasized, and the dominant social unit appears to be the extended family.

Middle Archaic Period (ca. 2,500 to 5,000 years ago) characteristics include a change in the climate, which became more benign, and a more diverse economy. Acorn use was introduced as suggested by the presence of mortar and pestle artifacts and hunting was prominent as evidenced by the abundance of dart tip artifacts. Sedentism began along with increased population and expansion.

Upper Archaic Period (ca. 1,000 to 2,500 years ago) characteristics include the growth of social-political complexity with status distinctions based on wealth. Shell beads gained importance and they appear to have served as indicators of both exchange and wealth. Exchange systems became more complex with regularized sustained exchanges occurring between groups. Territorial boundaries were fluid. This period represents some of the oldest archaeology typically found in the Stockton area.

Emergent Period (ca. 200 to 1,000 years ago)

Lower Emergent Period (500 to 1,000 years ago) characteristics include the introduction of the bow and arrow, which largely replaced the dart and atlatl. South coast marine adaptations flourished. Territorial boundaries became well established, and regularized exchange between groups continued with increased goods being exchanged. Increasing evidence found of distinctions in social status linked to wealth.

Upper Emergent Period (200 to 500 years ago) characteristics include the appearance of the clam disk bead money economy. Increasingly more goods were transported farther. There was local specialization with regard to production and the exchange of goods grew. South and central exchange systems were merged.

Ethnography

The lower portion of the northern San Joaquin Valley was inhabited by the northernmost tribes of Yokuts before being overtaken and industrialized by Euro-Americans.[4] Their territory included most of the northern San Joaquin Valley and stopped between the Mokelumne and Calaveras rivers, which divided their land from that of the Plains Miwok. At the core of their land ran the San Joaquin River, which was fed by several other local streams and rivers, including the Fresno, Chowchilla, Merced, Tuolumne, Stanislaus, and Calaveras. This portion of the valley was mostly a wetland, dominated by marshes and pockets of tall grass.

The Northern Valley Yokuts tribe, the Chulamni, had a village, Yatchcumne (or Yachik) near Stockton.[5] Another village, Tauquimne, in the eastern end of the San Joaquin-Sacramento Delta near Bear Creek,

[4] Latta, F., 1977. *Handbook of Yokuts Indians,* Second Edition, Santa Cruz, California: Bear State Books.

[5] Wallace, W., 1978. "Northern Valley Yokuts," in *Handbook of North American Indians Volume 8: California,* ed. William Sturtevant, Washington, D.C.: Smithsonian Institution, pages 462 to 470.

appears in mission records. As cited by Randall Milliken, around 77 Tauquimne people were baptized at Mission San Jose between 1815 and 1825.[6] Early impacts of disease and missionization destroyed much of the Northern Valley Yokuts culture before it could be documented, resulting in a dearth of information about these people.

History

Early exploration and settlement in the Central Valley was pursued by fur trappers, including members of the Hudson Bay Company. The Canadians established French Camp, located to the south of Stockton, and Alex McLeod of the Hudson Bay Company lent his name to several landscape features, such as McLeod Lake.

In 1845, Charles Weber acquired land in Stockton, where he established a settlement. In 1846, the United States went to war with Mexico over territory disputes. Commodore Robert Stockton was responsible for the defense of US interests, and supported the military actions of John C. Fremont and General Stephen Kearny that led to the treaty of Cahuenga. Charles Weber named his new city in honor of the commodore, which was considered an improvement over two of its previous names, Tuleberg, and Mudville.

On January 24, 1848, the discovery of gold near the American River, east of Sacramento, transformed the small settlement of Stockton into a growing commercial center. Captain Weber built the first permanent residence in San Joaquin Valley, on what is now Weber Point.

Stockton was incorporated officially on July 23, 1850, by the County Court, and the first City election was held on the 31st. The City received its charter from the State of California in 1851.

Historically, Stockton's major economic endeavors have revolved around agriculture and shipping, including ship building. In September 1996, Stockton's Naval Reserve Center on Rough and Ready Island was closed. The facility had served as a major communications outpost for Pacific submarine activities in the Cold War. The base is currently being redeveloped as a commercial property.

4.5.1.3 EXISTING CONDITIONS

This section contains information about cultural and paleontological resources within Stockton and the surrounding area, as well as a summary of the tribal consultation conducted for the proposed project. Information in this section was obtained from the California Historical Resources Information System's Central California Information Center in Turlock, the University of California Museum of Paleontology at Berkeley, and the City of Stockton.

Cultural Resources

Stockton has over 1,900 recorded cultural resources ranging from prehistoric habitation sites to mid-20th century developments. Efforts to document the city's cultural resources began more than a century ago with investigations by avocational archaeologist J.A. Barr, who excavated on a dozen mounds in the

[6] Milliken, R., 1995. *A Time of Little Choice: Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*, Ballena Press.

Stockton area. W.E. Schenck used notes from excavations by Elmer Dawson to compile an overview of northern San Joaquin Valley archaeology.[7]

As shown in Figure 4.5-1, there are two historic districts defined by the City. The Magnolia Historic Preservation District is bounded by Harding Way, California Street, Flora Street, and El Dorado Street. It was designated as a Historical District by the Stockton City Council on July 30, 1984. The Doctors' Row Historic Preservation District, bounded by California Street, Acacia Street, Poplar Street, and American Street on the former Stockton Development Center grounds, is now the site of the California State University (CSU) Stanislaus-Stockton Center, which is part of University Park. Doctors' Row was designated as Historical District by the Stockton City Council on May 13, 1985.

In addition, as shown in Figure 4.5-1 and Table 4.5-1, there are four areas designated by the City as historic sites, 13 "structures of merit," and 52 properties designated as historic landmarks (see Section 4.5.1.1, Local Regulations, for more information about these designations). Of the City-designated historic landmarks, 17 properties are listed in the National Register of Historic Places, and two properties are identified as a California Historic Landmark, as shown in Table 4.5-1.

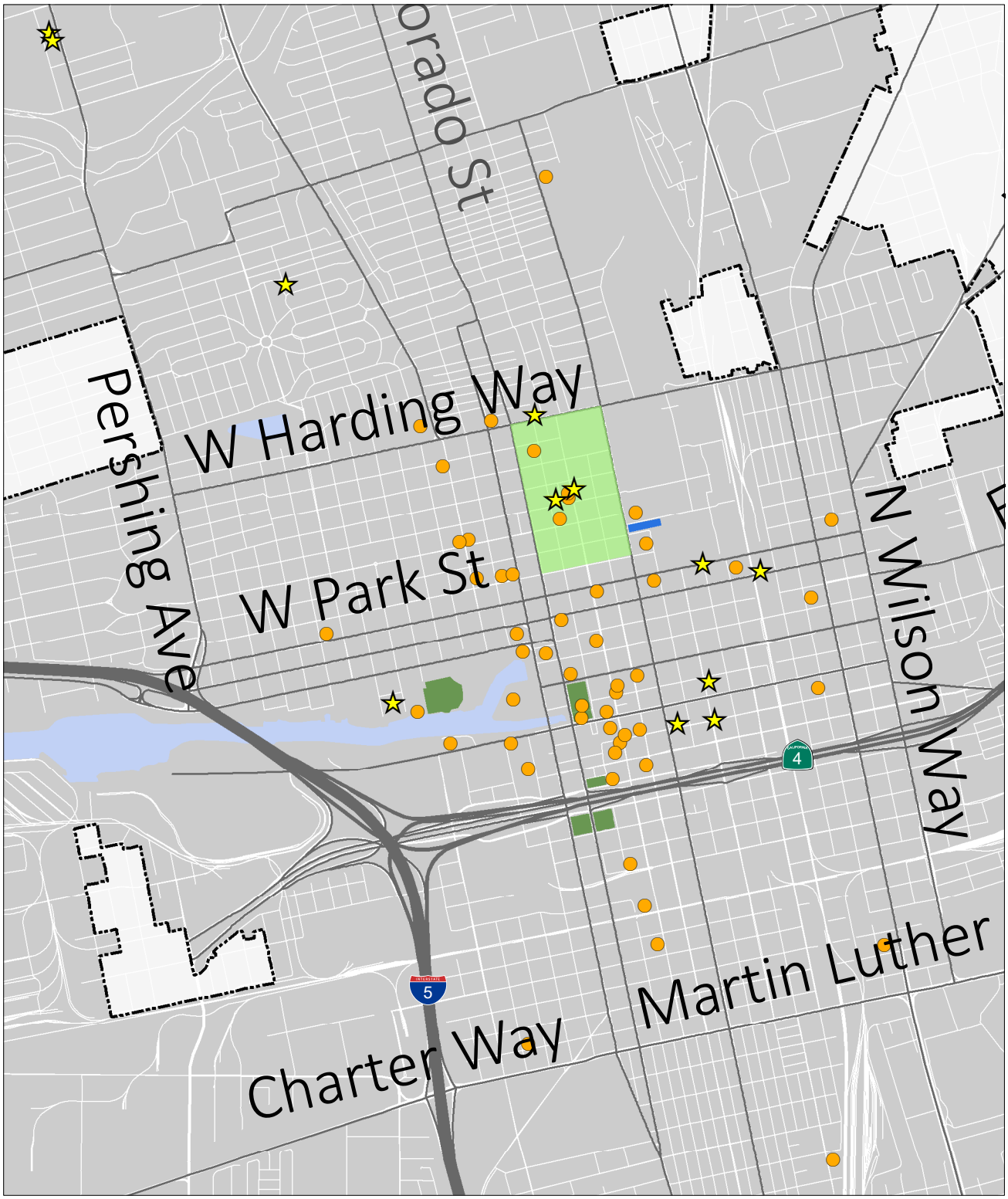
In addition to the City-identified resources, the National Register of Historic Resources lists two other properties, the Elks Building, located at 42 N. Sutter Street, and Cole's Five Cypress Farm, located at 11221 E. Eight Mile Road. Two additional properties, the Oak Lawn Ranch and the Western Pacific railway depot, are listed in the California Register of Historical Resources. There are 362 properties within Stockton considered to have the potential for listing, but that have not been formally listed, in the California Register of Historical Resources.

In 2000, an architectural firm completed a survey of historical buildings in Downtown Stockton, which identified several additional neighborhoods that could be suitable for designation as historic districts.[8] They have not been formally designated by the City, but were considered potentially eligible for listing in the California Register of Historical Resources and the National Register of Historic Places.

Following passage of NHPA in 1966 and CEQA in 1970, mandated cultural resources surveys identified additional archaeological sites and historic buildings in the Stockton area. The California Historic Resources Information System has approximately 100 documented archaeological sites on file that are in Stockton. There has been no systematic survey for archaeological resources in the city to date. As part of environmental review conducted for development projects, approximately 20 to 25 percent of the land within the city limit and SOI has been surveyed for cultural resources; there is the potential that additional, as-yet-unidentified archaeological resources are present.

[7] Schenck, W. and E. Dawson, 1929. "Archaeology of the northern San Joaquin Valley," in *Berkeley: University of California Publications in American Archaeology and Ethnology* 25(4): pages 289 to 413.

[8] Architectural Resource Group, 2000. *Revised Draft Downtown Stockton Historical Resources Survey*, City of Stockton Community Development Department.



Source: City of Stockton; PlaceWorks, 2016.

- Structures of Merit
- Historic Landmarks
- Historic Sites
- Doctors Row Historic Preservation District
- Magnolia Historic Preservation District
- City Limit

Figure 4.5-1
City-Designated Cultural Resources

TABLE 4.5-1 CITY-DESIGNATED CULTURAL RESOURCES

Cultural Resource	Location
Historic Sites	
East Washington Street Chinatown	Generally located along Washington Street between El Dorado and Hunter Streets
Little Manila Historic Site	Generally located in the four block area surrounding the intersection of Lafayette and El Dorado Streets
Miner Channel Commercial Block	Bounded By El Dorado Street, Miner Avenue, Hunter Street, and Weber Avenue
Banner Island Ballpark Historic Site	404 W Fremont Street
Structures of Merit	
Catts House	1130 N San Joaquin Street
Doctor's Residence No. 5	710 N Grant Street
Genkow Building	701 E Main Street
Vessel Merit (no longer extant)	Lost Isle-Deep Water Channel
Friedberger House	2730 Dwight Way
Ebebezer AME Church	132 N. Stanislaus Street
Stockton Ironworks	345 N Harrison Street
Monarch Foundry	1015 E Oak Street
Galgani House	165 E Harding Way
Knox Baxter-Sullivan Mansion	205 E Magnolia Street
Hotel Terry	545 E Main Street
Outrigger Apartments	4415 N Pershing Avenue
Bali Hai Apartments	4305 N Pershing Avenue
Historic Landmarks	
St. Mary's Church	203 Washington Street
Hotel Stockton*	133 Weber Avenue
Sperry Building*	146 Weber Avenue
Superintendent's Home Stockton State Hospital*	California/Acacia Street
Weber Primary School*	55 Flora Street
St. John's Episcopal Church	316 El Dorado Street
Hurrie-Weston Ranch	5 Harding Way
Benjamin Holt Home*	548 Park Street
Newell Home	1107 San Joaquin Street
County Jail Site Cunningham's Castle	San Joaquin and Channel Streets
County Courthouse Site	Block bounded by Weber, Main, San Joaquin, and Hunter Streets

CULTURAL AND TRIBAL CULTURAL RESOURCES

TABLE 4.5-1 CITY-DESIGNATED CULTURAL RESOURCES

Cultural Resource	Location
Santa Fe Depot	735 San Joaquin Street
Weber Point**	Confluence of Stockton Channel and McLeod Lake
Wagner Leather Co. Engine Room	122 Oak Street
Wong Mansion*	345 Clay Street
Engine House No. 3	19 Pilgrim Street
Miner Levee Site	Side of Stockton Channel between Harrison and Lincoln
Edward B. Condy Home	820 Madison Street
El Dorado Elementary School*	1525 Pacific Avenue
Charles E. Owen Home	1119 San Joaquin Street
Stockton Savings & Loan Society Bank*	301 Main Street
Moses Rodgers Home*	921 San Joaquin Street
Luther Burbank School	1130 Pilgrim Street
Nippon Hospital*	25 Commerce Street
California Building*	11 San Joaquin Street
Jewish Community Center	1337 Madison Street
Dunne Home	1335 Hunter Street
Wong House	704 Stockton Street
Tretheway Building*	229 Weber Avenue
Medico-Dental Building	242 Sutter Street
Swett-Moreing Home	143 Acacia Street
Original Temple Israel	821 American Street
Sperry Union Mill Warehouse*	445 Weber Avenue
City Hall and Civic Court	425 El Dorado Street
B&M Building	125 Bridge Place
Commercial & Savings*	343 Main Street
Street Car Barns & Offices	2850 California Street
Federal Building*	401 San Joaquin Street
Genova Bakery	749 Sierra Nevada Street
Dr. Cross House	207 Acacia Street
Sears Robuck Building	620 Aurora Street
The Henery Apartments	121 Sutter Street
Fox California Theatre*	242 Main Street

TABLE 4.5-1 CITY-DESIGNATED CULTURAL RESOURCES

Cultural Resource	Location
St. Agnes School & Convent	640 San Joaquin Street
Stockton Memorial Civic Auditorium	525 Center Street
First Church of Christ Scientist	430 Center Street
Children's Home of Stockton	430 Pilgrim Street
Philomathean Clubhouse*	1000 Hunter Street
Daguhoy Lodge #528	203 Hazelton Avenue
Sikh Temple**	1930 Grant Street
Old Emergency Hospital	220 San Joaquin Street
Central Police and Fire Alarm Station	46 Fremont Street

* Also listed in the National Register of Historic Places.
** Also a California Historic Landmark.

Paleontological Resources

A search of the database of the UC Museum of Paleontology at Berkeley was completed. San Joaquin County contains over 800 documented fossil localities. However, only a handful are within the EIR Study Area, and those are identified as relatively recent. Due to the alluvial nature of the area, this should not be taken to suggest that additional localities are not present.

Outreach to Native American Tribes and Tribal Consultation

In compliance with SB 18, a letter was sent to the Native American Heritage Commission (NAHC) seeking information from the sacred land files, which track Native American cultural resources, and the names of Native American individuals and groups that would be appropriate to contact regarding this project. The NAHC replied with a letter dated June 13, 2016, in which was provided a list of Native American contacts (groups and individuals) who may have information regarding known and recorded sites. The NAHC also provided a list of additional Tribal contacts. On June 28, 2016, the City sent a formal notification of the proposed project to the contacts provided by the NAHC, including Buena Vista Rancheria, California Valley Miwok Tribe, Ohlone Band of Miwok Indians, North Valley Yokuts Tribe, Southern Sierra Miwuk Nation, and Wilton Rancheria.

Pursuant to AB 52, the City received a request from a Tribal group to be notified about projects in the City of Stockton. Specifically, on September 25, 2017, the City received a formal request for consultation from the United Auburn Indian Community. On October 23, 2017, the City met with Marcos Guererro representing Auburn Rancheria to discuss the proposed General Plan and this Draft EIR. Mr. Guererro expressed interest in the proposed policy framework that directs the City to protect cultural resources. The meeting concluded with Mr. Guerrero indicating that he will review the proposed General Plan and Draft EIR and may provide written suggestions for revisions.

4.5.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource as pursuant to CEQA Guidelines Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

4.5.3 IMPACT DISCUSSION

This section discusses potential impacts of the proposed General Plan and UMPS on cultural and paleontological resources in the EIR Study Area. The impact discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

CULT-1 Implementation of the proposed project would not cause a substantial adverse change in the significance of an historical resource.

The types of cultural resources that meet the definition of historical resources under PRC Section 21084.1[9] generally consist of districts, sites, buildings, structures, and objects that are significant for their traditional, cultural, and/or historical associations. Commonly, the two main resource types that are subject to impact, and that may be impacted by development allowed under the proposed General Plan and UMPS, are archaeological deposits and historical architectural resources, as discussed below. Human remains are addressed below under the discussion of Threshold CULT-4.

Archaeological Deposits

Prehistoric and historical archaeological deposits that meet the definition of historical resources under PRC Section 21084.1, or the definition of a Unique Archaeological Resource under CEQA Guidelines Section 15064.5, could be disturbed or destroyed by ground disturbing activities for development allowed under the proposed General Plan and UMPS. Disturbance or destruction would limit the archaeological site's ability to contribute data to our understanding of prehistory and history, and could damage the characteristics that contribute to its cultural importance to local communities.

[9] The CEQA Statute is contained in Sections 21000 et seq. of the PRC.

Over 80 archaeological deposits are already recorded within the EIR Study Area. It is probable that additional unrecorded archaeological resources are present, particularly in areas with alluvial or fill soil conditions.

However, the proposed General Plan contains goals, policies, and actions for the preservation and treatment of archaeological resources. In particular, prior to development, as part of the permitting process, Action LU-5.2.D requires identification and protection of archaeological resources, including through a treatment plan in accordance with the Secretary of the Interior's Standards for Treatment of Archaeological Sites where avoidance is not feasible. In addition, as described in Section 4.5.1.1 (Local Regulations) above, the Stockton Municipal Code requires appropriate evaluation of unanticipated archaeological deposits discovered in the course of ground-disturbance.

The proposed General Plan action described above, combined with the Stockton Municipal Code requirements, would protect historical archaeological deposits in the EIR Study Area by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Implementation of the proposed action identified above, as well as compliance with federal, State, and local laws and regulations, would reduce potential impacts to historical archaeological deposits to a *less-than-significant* level.

Historical Architectural Resources

Historic architectural resources, including buildings, structures, and objects, could experience significant impacts from development allowed under the proposed General Plan and UMPS. The proposed General Plan allows for the development of residential, commercial, business/industrial, transportation, and other related uses that have the potential of impacting historical architectural resources. There are three potential avenues of impact: demolition, inappropriate modification, and inappropriate new construction.

- Demolition would be a significant impact to an historical resource because removal would prevent the resource from conveying its importance.
- Inappropriate modification by using materials, designs, or construction techniques that alter character-defining features of a building or structure would be a significant impact because these activities would damage the historical integrity of the resource.
- Inappropriate new construction can introduce new elements to a neighborhood, such as incompatible architecture or street furniture (e.g., benches, streetlighting, and traffic bollards) that impair the integrity of setting and feeling of the established architectural context (e.g., a historic district).

Goal LU-3 and Policy LU-3.1 of the proposed General Plan aim to protect historic districts and buildings by ensuring that exterior remodels and the siting, scale, and design of new development are compatible with historic resources. To implement this goal and policy, Actions LU-3.1.B and LU-3.1.C direct the City to require historical resources surveys when development is proposed in areas containing buildings 50 years old or older; require historic structures and surrounding features to be maintained, restored, or repaired wherever possible; and to require that any alterations to historical buildings meet the Secretary of the Interior's Standards for Treatment of Historic Properties. Actions LU-3.1.A, LU-3.1.D, and LU-3.1.E also support historic resource preservation by directing the City to implement incentives for the preservation

and reuse of historic buildings, consider land use and zoning changes to facilitate access to grant funding for historic preservation, and maintain and update the City's historical resources inventory.

In addition, as described above under Section 4.5.1.1 (Local Regulations), the Stockton Municipal Code requires that any exterior changes to a resource identified as a landmark or part of a historic district require a certificate of appropriateness, which itself requires that a set of findings of fact related to how the proposed changes support overall historic resources preservation be made.

Implementation of the goal, policy, and actions identified above, as well as compliance with federal and State laws and the Stockton Municipal Code, would reduce potential impacts to historical architectural resources to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

CULT-2 Implementation of the proposed project would not cause a substantial adverse change in the significance of an archaeological resource.

Archaeological deposits that meet the definition of unique archaeological resources under PRC Section 21083.2(g) could be damaged or destroyed by ground disturbing activities associated with development allowed under the proposed General Plan and UMPS.[10] Should this occur, the ability of the deposits to convey their significance, either as containing information important in prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired. In addition to the likely presence of unrecorded Native American archaeological sites, it is highly probable that significant archaeological deposits exist in the EIR Study Area.

However, as described above under the discussion of potential impacts to historical archaeological deposits under Threshold CULT-1, proposed General Plan Action LU-5.2.D requires identification and protection of archaeological resources prior to development, and the Stockton Municipal Code requires appropriate evaluation of unanticipated archaeological deposits discovered in the course of ground-disturbance.

The proposed General Plan action described above, combined with the Stockton Municipal Code requirements, would provide for the protection of archaeological deposits in the EIR Study Area by requiring the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Implementation of the proposed action identified above, as well as compliance with federal, State, and local laws and regulations, would reduce potential impacts to archaeological deposits to a *less-than-significant* level.

[10] If the cultural resource in question is an archaeological site, CEQA Guidelines Section 15064.5(c)(1) requires that the lead agency first determine if the site is a historical resource as defined in CEQA Guidelines Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered through the process that governs the treatment of historical resources. If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then it is treated in accordance with PRC Section 21083.2 (CEQA Guidelines Section 15064.5(c)(3)). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.

Significance Without Mitigation: Less than significant.

CULT-3 Implementation of the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

While few fossil localities have been identified within the EIR Study Area, there are geologic formations that could contain previously unidentified fossils. There could also be fossils of potential scientific significance in other geological formations that are not recorded in the database. It is possible that ground disturbing construction associated with development allowed under the proposed General Plan and UMPS could reach significant depths below the ground surface. Should this occur, damage to, or destruction of, paleontological resources could result, which would prevent the realization of their scientific data potential through documentation and analysis.

However, proposed General Plan Action LU-5.2.D requires identification and protection of paleontological resources, including through a treatment plan in accordance with appropriate standards where avoidance is not feasible. In addition, as described in Section 4.5.1.1 (Local Regulations) above, the Stockton Municipal Code requires appropriate evaluation of unanticipated archaeological deposits discovered in the course of ground-disturbance.

The proposed General Plan action described above, combined with the Stockton Municipal Code requirements, would provide for the protection of paleontological resources in the EIR Study Area by requiring the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of paleontological resources to convey their significance through excavation or preservation. Implementation of the proposed action identified above, as well as compliance with federal, State, and local laws and regulations, would reduce potential impacts to paleontological resources to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

CULT-4 Implementation of the proposed project would not disturb any human remains.

Human remains associated with archaeological sites or within previously unidentified historical cemeteries could be impacted by ground-disturbing activities associated with development allowed under the proposed General Plan and UMPS. Descendant communities may ascribe religious or cultural significance to such remains, and may view their disturbance as an unmitigable impact.

However, proposed General Plan Action LU-5.2.D requires that a records search be done at the Central California Information Center, the University of California Museum of Paleontology at Berkeley, and other appropriate repositories to identify cultural resources in a project site, which would include human remains, and proposed General Plan Action LU-5.2.E directs the City to continue to conduct early consultation with Native American Representatives to identify locations of importance to Native Americans, which would include locations with human remains.

In addition, as described in Section 4.5.1.1 (Local Regulations) above, the Stockton Municipal Code requires that the County Coroner and Community Development Department Director be notified immediately and that construction activities cease in the event that human remains are discovered during construction. A qualified archaeologist must then conduct an evaluation, and if the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will then identify the most likely descendent of the Native American to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

The proposed General Plan actions and existing regulations described above provide for the respectful and dignified treatment of human remains in the EIR Study Area by providing a process for identifying human remains, or those areas that are sensitive for containing such remains; stopping work to avoid damage to identified remains; consulting with appropriate descendant communities; and respectfully treating recovered remains in accordance with State law and the wishes of descendants. Implementation of the proposed General Plan actions, along with compliance with federal, State, and local laws and regulations, would reduce this impact to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

CULT-5 Implementation of the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource.

AB 52 defines a tribal cultural resource as a site, feature, place, or cultural landscape that is geographically defined in terms of size and scope, sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or a local register of historical resources. A resource can also be determined to be a tribal cultural resource if the City of Stockton, acting as the lead agency, and supported by substantial evidence, chooses at its discretion to treat the resource as a tribal cultural resource. Development allowed by the proposed General Plan and UMPS could adversely change the significance of a tribal cultural resource by altering the resource or its surroundings.

However, proposed General Plan Action LU-5.2.E directs the City to continue to conduct early consultation with Native American Representatives to identify locations of importance to Native Americans, including traditional cultural properties, in advance of development. In addition, if future development were to potentially affect a tribal cultural resource; proposed General Plan Action LU-5.2.F would require the developer to contact an appropriate tribal representative to train construction workers on appropriate avoidance and minimization measures. Implementation of these actions, along with compliance with federal, State, and local laws and regulations, would reduce this impact to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

4.6 GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES

This section provides an overview of the regulatory framework and existing geologic conditions within the EIR Study Area. The following evaluation is based on a spatial analysis and examines the potential environmental impacts of implementation of the proposed General Plan Update and Utility Master Plan Supplements (UMPS) as they relate to geology, soils, seismicity, and mineral resources. Cumulative impacts related to geology, soils, seismicity, and mineral resources would be contiguous with the Sphere of Influence (SOI) boundary.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 REGULATORY FRAMEWORK

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures used for human occupancy.[1] The chief purpose of the Act is to prevent the construction of buildings used for human occupancy on top of active faults. The Act addresses the hazard of surface fault rupture. It does not address other earthquake-related hazards, such as ground shaking or seismically-induced landslides or liquefaction.[2]

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to issue appropriate maps.[3] The maps are then distributed to the affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. In general, construction within 50 feet of an active fault zone is prohibited. Stockton is not listed by the California Geological Survey (CGS) as a city affected by an Alquist-Priolo Earthquake Fault Zone.[4]

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was passed in 1990 to address earthquake hazards such as seismically induced liquefaction and landsliding.[5] Under the Act, seismic hazard zones are mapped through the CGS's Seismic Hazards Zonation Program to identify areas prone to earthquake-induced liquefaction, landslides,

[1] Originally known as the *Alquist-Priolo Special Studies Zones Act* until renamed in 1993.

[2] California Geological Survey, 2017. Alquist-Priolo Earthquake Fault Zones, http://www.conservation.ca.gov/cgs/rghm/ap/Pages/main.aspx, accessed August 4, 2017.

[3] Earthquake Fault Zones are regulatory zones around active faults. The zones vary in width, but average about ¼ mile wide. http://www.consrv.ca.gov/cgs/rghm/ap/Pages/main.aspx, accessed August 4, 2017.

[4] California Geological Survey (CGS), 2017. Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010, http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps, accessed August 4, 2017.

[5] California Geological Survey (CGS), Fact Sheet - Seismic Hazards Zonation Program, http://www.conservation.ca.gov/cgs/shzp/Documents/SHZ_FactSheet.pdf, accessed August 7, 2017.

and amplified ground shaking. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property that may result from earthquake-triggered ground failure. More specifically, Section 2691(c) of the Act states: "It is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety."[6] Section 2697(a) of the Act states: "Cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard."[7]

California Building Code

The California Building Code (CBC), known as the California Building Standards Code, is included in Title 24 of the California Code of Regulations. The CBC incorporates the International Building Code, a model building code adopted across the United States.

The CBC is updated every three years, and the current 2016 version took effect January 1, 2017. The City of Stockton adopted the CBC by reference pursuant to Title 15, Chapter 15.40, Section 15.40.010 of the City's Municipal Code.

Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act of 1975 (SMARA) was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA requires the State Geologist to classify land based on the presence of economically important mineral resources. Local governments should consider this information before land with important mineral resources is committed to a use that may be incompatible with mining or extraction. Pursuant to SMARA, the CGS has mapped mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. These zones are summarized below:

- MRZ-1. Areas where adequate information indicates that significant mineral deposits are not present, or where it is judged that it is unlikely that they are present.
- MRZ-2. Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that they are highly likely to be present.
- MRZ-3. Areas containing mineral deposits, the significance of which cannot be deduced from the available data.
- MRZ-4. Areas where the available information is inadequate for assignment into any other MRZ.

Stockton Municipal Code

Section 15.48.050 of the City of Stockton Municipal Code, entitled Construction and Application, includes a requirement that seeks to mitigate hazards associated with erosion, stating that "During construction,

[6] California Public Resource Code (CPRC), Division 2, Chapter 7.8, Section 2691(c).
[7] California Public Resource Code (CPRC), Division 2, Chapter 7.8, Section 2697(a).

construction activities shall be designed and conducted to minimize runoff of sediment and all other pollutants onto public properties, other private properties and into the waters of the United States." Section 15.48.110, entitled Erosion Control Requirements, contains specific provisions for erosion control for those construction projects where a grading permit is not required. Section 15.48.070 includes requirements for a grading permit that apply to most construction projects. Such permits require implementation of erosion control measures, often referred to as Best Management Practices (BMPs).

4.6.1.2 EXISTING CONDITIONS

Geology

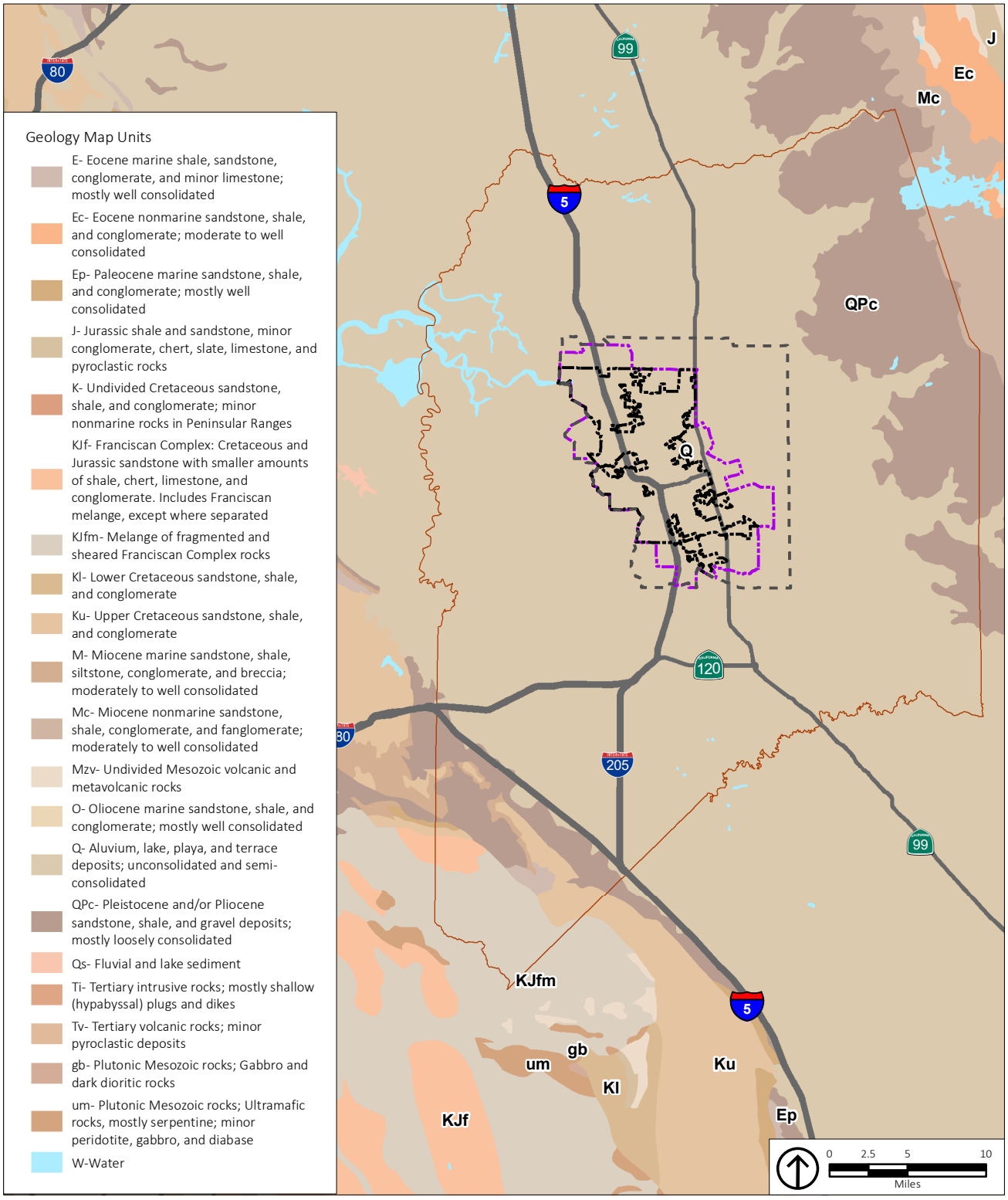
The EIR Study Area is located within the US Geological Survey's (USGS) Lodi, California and Stockton, California 30- by 60-minute (i.e., 1:100,000 scale) topographic map areas.[8,9] The area is typified by low topographic relief, with subtle slopes to the west-northwest in the general direction of the San Joaquin-Sacramento River Delta. Typical elevations in the EIR Study Area range from 0 to 10 feet above mean sea level (amsl), whereas some areas west of the city are below sea level.

The geology of the EIR Study Area has been mapped by a variety of public agencies, including the USGS and the CGS (see Figure 4.6-1). In their 1991 publication concerning the surficial geology of the San Joaquin Valley, the USGS concluded that the EIR Study Area is directly underlain by Quaternary alluvial and lacustrine sedimentary deposits.[10]

The EIR Study Area lies in the west-central part of the Central Valley geomorphic province of California. This province is about 400 miles long and averages 50 miles in width. It has been filled with a nearly 6-mile-thick sequence of marine and non-marine sediments dating from late Jurassic time to the Holocene (roughly 150 million years before present to the present-day). In general, the uppermost strata represent the alluvial, flood plain, and delta plain deposits of two major rivers, the Sacramento River and the San Joaquin River. The San Joaquin River flows northwest through the west-central part of the EIR Study Area.

The sedimentary deposits of the Central Valley were derived from the Coast Ranges to the west and the Sierra Nevada Mountains to the east. Granitic and metamorphic rocks outcrop along the eastern and southeastern flanks of the Valley; sedimentary rocks outcrop along most of the western, southwestern, southern, and southeastern flanks of the Valley; and volcanic rocks outcrop along the northeastern flanks of the Valley. The geomorphic setting includes dissected uplands, alluvial plains and fans, river flood plains and channels, and lake bottoms.

[8] USGS, 1989. Lodi California 30 by 60-Minute Topographic Map, scale 1:100,000.
[9] USGS, 1989. Stockton California 30 by 60-Minute Topographic Map, scale 1:100,000.
[10] USGS, 1991, The Cenozoic Evolution of the San Joaquin Valley, California, by Alan Bartow, Professional Paper 1501.



Source: United States Geological Society, 2017; San Joaquin County, 2017; PlaceWorks, 2017.

City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area
County Limit

Figure 4.6-1
Geology

Soil

The soils near the EIR Study Area have been mapped by the US Department of Agriculture (USDA) Natural Resources Conservation Service (formerly, the Soil Conservation Service), as shown on Figure 4.6-2. The USDA's October 1992 soil survey of San Joaquin County covered the EIR Study Area as well as neighboring communities.[11] The soils beneath the EIR Study Area are generally dominated by following soil types (updated with recent data from the USDA Web Soil Survey website[12]):

- Soils of the Jacktone-Urban Land Complex, commonly on 0- to 2-percent slopes, covering roughly 59 percent of the EIR Study Area
- Soils of the Yellowlark Gravelly Loam, commonly on 2- to 5-percent slopes, covering approximately 28 percent of the EIR Study Area
- Soils of the Galt-Urban land complex, commonly on 0- to 1-percent slopes, and covering roughly 5 percent of the EIR Study Area

The properties of these soil types are as follows:

- Jacktone-Urban Land Complex. Found at elevations of 10 to 40 feet amsl on basin floors or toe slopes. Alluvial origin derived from mixed rock sources. Somewhat poorly drained with high runoff. Typical profile includes:
  - 0 to 34 inches: clay
  - 34 to 37 inches: indurated
  - 37 to 46 inches: stratified sandy loam to clay loam
- Yellowlark Gravelly Loam. Found in fan remnants and shoulders. Originates from alluvium derived from mixed rock sources. Well drained with high runoff. Typical profile includes:
  - 0 to 39 inches: gravelly loam
  - 39 to 47 inches: very gravelly loam
  - 47 to 54 inches: gravelly clay
  - 54 to 59 inches: clay loam
- Galt-Urban Land Complex. Found at elevations of 10 to 30 feet on basin floors or fan remnants. Moderately well drained with high runoff. Typical profile includes clay from 0 to 32 inches.

Regional Faulting, Seismicity, and Related Seismic Hazards

The Working Group on California Earthquake Probabilities, a collaborative effort involving the USGS, the CGS, and the Southern California Earthquake Center, estimates that the 30-year probability of a magnitude 6.7 or greater earthquake striking the nearby San Francisco Bay area is 63 percent.[13] The Hayward Fault, a major earthquake fault in the San Francisco Bay region, lies roughly 40 miles west-southwest of the EIR Study Area. Recent seismological research concluded that the average earthquake

[11] USDA (Soil Conservation Service), 1992, Soil Survey, San Joaquin County, California, by Michael McElhiney, et al.
[12] USDA, 2017, Web Soil Survey, Custom Soil Resource Report for San Joaquin County, California, generated August 7, 2017.
[13] 2007 Working Group CA Earthquake Probabilities, 2008. The Uniform CA Earthquake Rupture Forecast, Ver.2 (UCERF 2).

recurrence interval on this fault is approximately 138 years and the forecasted probability of a large seismic event through the year 2036 is roughly 31 percent. The Greenville Fault lies much closer to the EIR Study Area (i.e., estimated 22 miles), although its forecasted activity is far less than the Hayward Fault. The maximum probable forecasted earthquake on the Greenville Fault is estimated to be magnitude 6.0. However, the largest historic earthquake on this fault was a magnitude 5.8 event that occurred in 1980. That earthquake produced a peak ground acceleration of 0.15g in the community of Brentwood, located approximately 30 miles west of the EIR Study Area.

Comparatively few subsurface faults have been mapped in the northern part of the San Joaquin Valley, and the largest of these subsurface faults is the Stockton Fault. The Stockton Fault is a south-dipping reverse fault that trends east-west across the EIR Study Area, transverse to the regional structure. The fault is not exposed at the surface and its location has been estimated from drilling logs. It appears to have a complex history, and may have experienced as much as 1,100 meters of displacement. It is not, however, a recently active fault, with most of the reported activity occurring in the Oligocene and early Miocene (i.e., approx. 10 to 30 million years before present). Furthermore, the Stockton Fault has not been classified as an "active" fault by the CGS.[14]

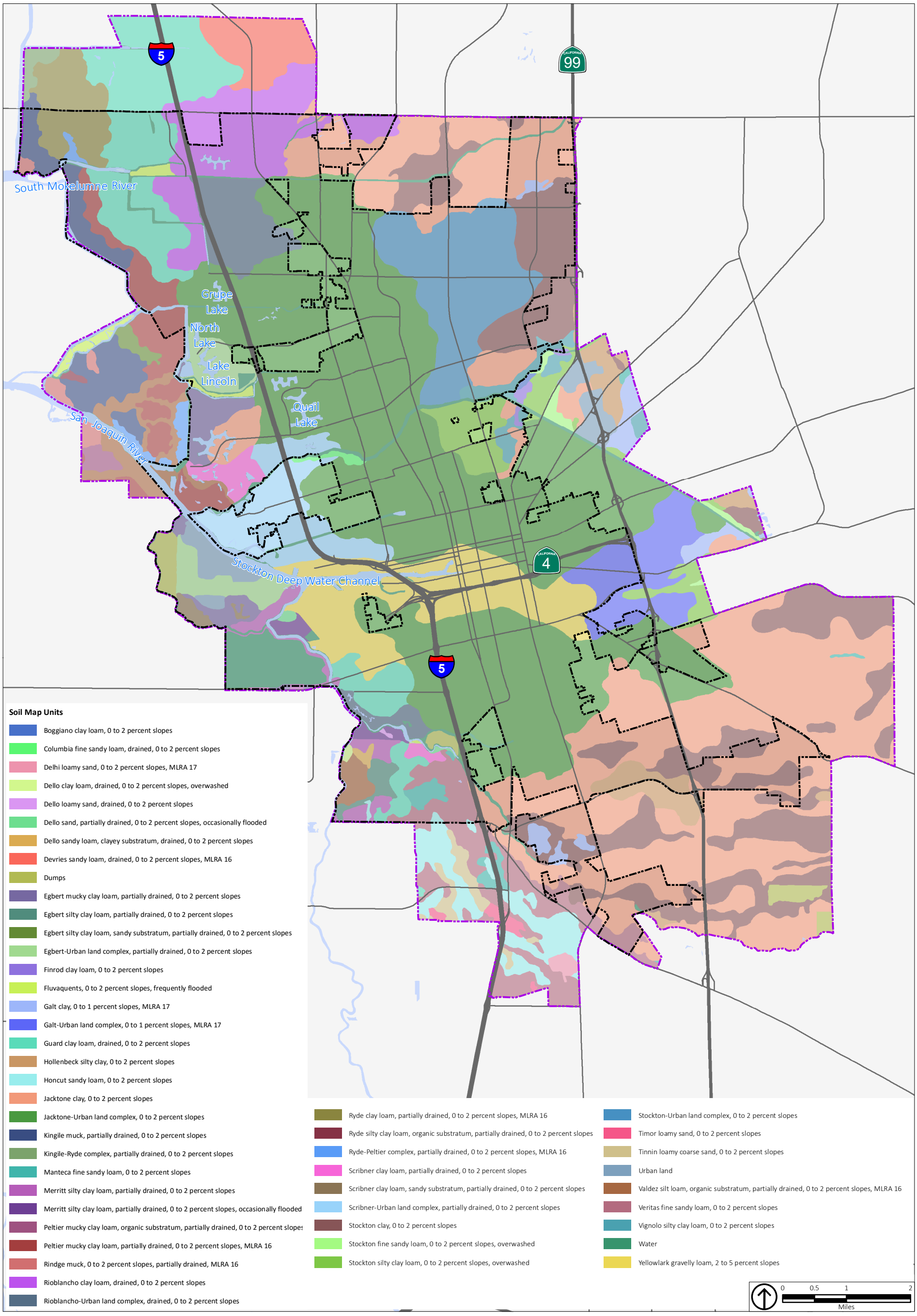
An earthquake of moderate to high magnitude generated within the nearby San Francisco Bay area could cause significant ground shaking in the EIR Study Area. The degree of shaking would depend on the magnitude of the event, the duration of the event, the distance to the zone of rupture (i.e., hypocenter), and local geologic conditions. As noted below, the location of the EIR Study Area well east of major earthquake faults, such as the Greenville, Calaveras, and Hayward Faults, would help mitigate impacts related to ground shaking.

Ground Shaking

The severity of seismic ground shaking depends on many variables, such as earthquake magnitude, hypocenter proximity, local geology (including the properties of unconsolidated sediments), groundwater conditions, and topographic setting. In general, ground-shaking hazards are most pronounced in areas that are underlain by loosely consolidated soil/sediment.

As noted above, the estimated likelihood of a magnitude 6.7 or greater earthquake in greater San Francisco Bay area before 2036 is 63 percent. Individually, the forecasted probabilities are as follows: 31 percent for the Hayward Fault, 7 percent for the Calaveras Fault, and 3 percent for the Greenville Fault, the closest earthquake fault to the EIR Study Area. Earthquakes of this magnitude can create ground accelerations severe enough to cause major damage to structures and foundations not designed to resist the forces generated by earthquakes. Underground utility lines are also susceptible where they lack sufficient flexibility to accommodate the seismic ground motion. The nearest earthquake fault, the Greenville Fault, is roughly 22 miles west-southwest from the EIR Study Area. The EIR Study Area's significant setback from active earthquake faults would help mitigate impacts related to ground shaking.

[14] California Geological Survey (CGS), 2017. Earthquake Fault Zones, Regulatory Maps Portal, http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html, accessed August 8, 2017.



Source: Natural Resources Conservation Service, 2017; San Joaquin County, 2017; PlaceWorks, 2017.

Figure 4.6-2
Soil Types

Landslides

Landslides are gravity-driven movements of earth materials that can include rock, soil, unconsolidated sediment, or combinations of such materials. The rate of landslide movement can vary considerably; some move rapidly, as in a soil or rock avalanche, while other landslides creep or move slowly for long periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are widely acknowledged. Some of the more important contributing factors are:

- Slope Material: Loose, unconsolidated soil and weakly indurated or highly fractured bedrock are more prone to landslides.
- Slope Steepness: Most landslides occur on moderate to steep slopes.
- Structural Geometry: The orientation of planar elements in soil or bedrock and their relationship to the ground surface can affect landslide probability.
- Moisture: Increased moisture, as it may be present in subsurface soil, bedrock pores, or bedrock fractures, can increase the likelihood of a landslide due to decreased internal friction and increased weight of the earth materials.
- Vegetation: Well-established vegetation, and the associated root structures, help promote slope stability.
- Eroded Slopes or Human-Made Cuts: Proximity to eroded faces in soil or bedrock, as well as proximity to cut (i.e., excavated) slope faces can increase landslide potential.
- Seismic Shaking: Strong seismic shaking can trigger landslides in otherwise stable slopes or loosen the slope materials such that they are more prone to landslides in the future.

Due to the gentle topography throughout the EIR Study Area, and lack of steep slopes, the probability of earthquake-induced landslides is very low. Furthermore, the CGS has not mapped any landslide hazard zones in the EIR Study Area or in its immediate vicinity.

Liquefaction

Liquefaction generally occurs in areas where moist, fine-grained, cohesionless sediment or fill materials are subjected to strong, seismically-induced ground shaking. Under certain circumstances, seismic ground shaking can temporarily transform an otherwise solid, granular material to a fluid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may suddenly subside and suffer major structural damage. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors. In dry soils, seismic shaking may cause soil to consolidate rather than flow, a process known as densification. Much like landslide potential discussed above, the CGS (or the USGS) has not mapped any seismically-induced liquefaction hazard zones in the EIR Study Area.

Unstable Geologic Units

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can develop wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils. Expansive soils are typically very fine-grained with a high to very high percentage of clay. The clay minerals present typically include montmorillonite, smectite, and/or bentonite.

Based on a countywide map of expansive soils published by the San Joaquin County Geographical Information Systems Unit, much of the EIR Study Area appears to be underlain by expansive soils.[15] A cursory review of two recent geotechnical investigations in the EIR Study Area suggests that shallow soils locally exhibit moderate shrink-swell potential and that mitigation, such as emplacement of non-expansive fill or special compaction of clay-rich soil, may need to be considered prior to construction. Nevertheless, soil shrink-swell properties often vary from site-to-site, and detailed geotechnical investigations generally provide the most reliable means of identifying and mitigating these soil characteristics.

Mineral Resources

The CGS Mineral Resources Project has been tasked with mapping and classifying mineral resources in the State of California pursuant to SMARA. Mineral resources have been mapped on a 7.5-minute topographic quadrangle map basis, and the most relevant maps for aggregate (i.e., sand and gravel) mineral resources in the EIR Study Area are the Stockton West and Stockton East quadrangles. The areas covered by these two maps have been assigned a "MRZ-1" mineral classification. According to the CGS,[16] this designation signifies the following:

> *Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight.*

Consistent with this classification, the State Division of Mines and Geology (now the CGS) concluded the following in their 1988 report:[17]

> *Areas classified MRZ-1 were judged based on available data, to have little likelihood of containing significant deposits of PCC-grade aggregate. Deposits that have excessive amounts of clay, silt, organic*

[15] San Joaquin County Geographic Information Systems, 1999. Expansive Soils 1999, map at 1:120,000 scale, printed April 29, 2009.

[16] California State Mining and Geology Board, 2008. A Report on Mineral Land Classification and Designation Under the Surface Mining and Reclamation Act of 1975, Information Report No. 2008-05.

[17] California Division of Mines and Geology, 1988, Mineral Land Classification of Portland Cement Concrete Aggregate In the Stockton-Lodi Production-Consumption Region, by Laurel S. Jensen and Michael A. Silva, Special Report 160.

matter, absorptive rock, alkali reactive rock, platy rock, or soft rock are unsuitable as sources of PCC aggregate. Areas containing such deposits are classified as MRZ-1.

Considering this information, the likelihood of significant mineral resources in the EIR Study Area appears to be low.

4.6.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact related to geology, soils, seismicity, and mineral resources if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction.
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

4.6.3 IMPACT DISCUSSION

This section discusses potential impacts of the proposed General Plan and UMPS with respect to geology, soils, seismicity, and mineral resources. The impact discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

GEO-1 Implementation of the proposed project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides.

No designated Alquist-Priolo Earthquake Fault Zones have been mapped in the EIR Study Area or its immediate vicinity. Similarly, no other active faults are known to be present. In addition, State-level protections concerning this seismic hazard are afforded by the Alquist-Priolo Earthquake Fault Zoning Act of 1972, the Seismic Hazards Mapping Act of 1990, and the CBC (i.e., CCR Title 24). Thus, the likelihood of substantial adverse effects to the EIR Study Area due to the surface rupture of an earthquake fault is considered low and the impact from implementation of the proposed General Plan and UMPS would be less than significant.

The closest significant earthquake fault to the EIR Study Area is the Greenville Fault, which is located roughly 22 miles west-southwest of the EIR Study Area. As previous noted, the maximum forecasted earthquake on this fault is magnitude 6.0 and the probability of such a seismic event occurring by the year 2036 is approximately 3 percent. Nevertheless, the EIR Study Area could experience significant ground shaking during a major earthquake in the San Francisco Bay area to the west. Such seismic ground shaking would almost certainly be less intense than in the Bay area, due to the distances involved. In general, careful control of new development in the EIR Study Area together with adherence to CBC building design and construction requirements (as embraced by the City's Building Code) will substantially mitigate the adverse effects of strong seismic ground shaking. Accordingly, the likelihood of substantial adverse effects to the EIR Study Area due to strong seismic shaking is considered low and the impact from implementation of the proposed General Plan and UMPS would be less than significant.

Although the EIR Study Area has not been mapped by the CGS or USGS for potential liquefaction hazards, the potential for seismically-triggered liquefaction could be a concern where silty sediments are prevalent and the groundwater table is shallow. However, based on reviews of local geotechnical investigations, including an investigation in support of a new courthouse in Downtown Stockton,[18] much of the shallow sediments beneath the EIR Study Area are dominated by clays and clay-rich deposits. These soil types are less susceptible to liquefaction behavior. Therefore, the likelihood of substantial adverse effects to the EIR Study Area due to seismically-triggered liquefaction is considered low and the impact from implementation of the proposed General Plan and UMPS would be less than significant.

The topography in the EIR Study Area and its immediate vicinity is comparatively flat and devoid of steep slopes. Neither the CGS nor the USGS have identified any landslide hazard zones within the EIR Study Area boundaries. Therefore, the likelihood of substantial adverse effects to the EIR Study Area due to seismically-triggered landslides is considered low and the impact from implementation of the proposed General Plan and UMPS would be less than significant.

As noted above, State-level regulatory protections against these seismic hazards are provided by the Alquist-Priolo Earthquake Fault Zoning Act of 1972, the Seismic Hazards Mapping Act of 1990, and the

[18] ENGEO, 2009. Geotechnical Report - Stockton Courthouse, Stockton, California, March 25.

CBC (i.e., CCR Title 24). Safeguards afforded through local regulations and policies include the adoption by reference of the CBC in the Stockton Municipal Code.

Compliance with these existing State and local laws and regulations would ensure that the impacts associated with the aforementioned seismic hazards are minimized to the maximum extent practicable. Consequently, the overall impact of implementation of the proposed General Plan and UMPS associated with rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landsliding would be *less than significant*.

Significance Without Mitigation: Less than significant.

GEO-2 Implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil.

Substantial soil erosion or loss of topsoil during construction could undermine structures and minor slopes, and this could be a concern of nearly all construction that might arise from implementation of the proposed General Plan and UMPS. Compliance with existing regulatory requirements, such as implementation of erosion control measures specified in the CBC, Chapter 15.48 of the City of Stockton Municipal Code, and the City's grading permit process, would mitigate the potential impacts of soil erosion and loss of topsoil to the maximum extent practicable. Thus, adherence to existing regulatory requirements would ensure that impacts associated with substantial erosion and loss of topsoil during development in the EIR Study Area would be mitigated and the impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

GEO-3 Implementation of the proposed project would not result in a significant impact related to development on unstable geologic units or soils or result in lateral spreading, subsidence, liquefaction, or collapse.

Based on mapping by the USGS, CGS, and other agencies, the majority of the EIR Study Area does not appear to be located atop unstable geologic materials that are prone to subsidence, lateral spreading, or collapse. As discussed above under Threshold GEO-1, parts of the EIR Study Area could be subject to seismically-induced liquefaction, although liquefaction hazards have not yet been mapped in the area.

CBC requirements, as adopted in the Stockton Municipal Code, can require detailed soils and/or geotechnical studies in areas of suspected geological hazards, such as unstable geologic units that may be subject to collapse, subsidence, landsliding, liquefaction, or lateral spreading. In addition to these CBC safeguards, the City's grading and building permit process can provide protections where potentially serious geologic risks are known to be present.

Compliance with these regulatory requirements would reduce the potential impacts from development allowed under the proposed General Plan and UMPS on unstable geologic units and soils or resulting in lateral spreading, subsidence, liquefaction, or collapse to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

GEO-4 Implementation of the proposed project would not create substantial risks to property as a result of its location on expansive soil, as defined by Section 1803.5.3 of the California Building Code.

Published USDA soil surveys of San Joaquin County contain test data that suggests that the shrink-swell potential for the dominant soil types in the EIR Study Area is moderate. A cursory review of recent geotechnical investigations in the EIR Study Area generally confirms this observation. Nevertheless, soil plasticity often varies from site to site, and detailed geotechnical investigations generally provide the most reliable means of evaluating and mitigating such soil characteristics.

Compliance with existing State and local laws and regulations, such as the CBC and the City's Municipal Code, and the City's grading and building permit process, would ensure that the impacts associated with development on expansive soil are minimized to the maximum extent practicable. Consequently, the overall impact from implementation of the proposed General Plan and UMPS as it relates to this hazard would be *less than significant*.

Significance Without Mitigation: Less than significant.

GEO-5 Implementation of the proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Development within the EIR Study Area is not expected to require the use of septic tanks or alternative waste water disposal systems. Wastewater will be discharged into the existing public sanitary sewer system in the EIR Study Area, which is serviced by the City of Stockton Municipal Utilities Department (MUD). The MUD maintains the City's network of sanitary sewers and a 55 million gallon per day (mgd) Regional Wastewater Control Facility located at 2500 Navy Drive. This tertiary treatment facility serves the City of Stockton and outlying county areas, processing an average of 33 mgd of wastewater. Treated effluent is eventually discharged to the San Joaquin River.

Given the foregoing, development allowed under the proposed General Plan and UMPS would be served by sewers, and the impact related to reliance on septic tanks or alternative wastewater disposal systems in areas with inappropriate soils would be *less than significant*.

Significance Without Mitigation: Less than significant.

GEO-6	**Implementation of the proposed project would a) result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or b) result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.**

As previously discussed in Section 4.6.1.2, Mineral Resources, the Plan Area has been classified as a MRZ-1 zone, signifying that it is in an area where the available information indicates that no significant mineral deposits are present, or where the CGS has determined that little likelihood exists for their presence. Given this finding, the likelihood that implementation of the proposed General Plan would result in the loss of availability of a known valuable mineral resource or the loss of availability of a locally-important mineral resource recovery site is considered low. For these reasons, the impacts related to mineral resources and associated with adoption or implementation of the proposed General Plan Update and UMPS would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.7 GREENHOUSE GAS EMISSIONS

This section evaluates the potential for the proposed General Plan Update and Utility Master Plan Supplements (UMPS) to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single site-specific development project over the timeframe of the General Plan is large enough individually to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a the program-level General Plan Update are considered on a cumulative basis. This quantitative analysis is based on the methodology recommended by the San Joaquin Valley Air Pollution Control District (SJVAPCD). GHG emissions are based on average daily trip (ADT) generation and vehicle miles traveled (VMT) data provided by Fehr and Peers for the on-road transportation emissions section (see Appendix C). The GHG emissions modeling is included in Appendix B, Air Quality and Greenhouse Gas Data, of this Draft EIR.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[1,2,3] The major GHGs are briefly described below.

- Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board. 2017, March 14. *Final Proposed Short-Lived Climate Pollutant Reduction Strategy*. Available at: https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, State and national GHG inventories do not include black carbon yet due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet address black carbon.

[3] Intergovernmental Panel on Climate Change (IPCC), 2001. *Third Assessment Report: Climate Change 2001*. New York: Cambridge University Press.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases, which are discussed further below.
  - ***Chlorofluorocarbons (CFCs)*** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (i.e., troposphere or stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down the ozone layer. These gases are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
  - ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high GWP.
  - ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
  - ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs.
  - ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.[4, 5]

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 4.7-1, which shows the GWP values from IPCC's Second Assessment Report (SAR) and the Fourth Assessment Report (AR4). The GWP is used to convert GHGs to CO_2-equivalence

[4] Intergovernmental Panel on Climate Change (IPCC), 1996. *Second Assessment Report: Climate Change 1995*.
[5] United States Environmental Protection Agency (EPA), 2017. Greenhouse Gas Emissions, https://19january2017snapshot.epa.gov/ghgemissions/overview-greenhouse-gases_.html, accessed October 20, 2017

(CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's AR4 GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[6] For comparison, under IPCC's previous SAR, 10 MT of CH_4 was considered to be equivalent to 210 MT of CO_2. The difference in GWP values from IPCC's SAR and AR4 can be generally due to updated scientific estimates of the energy absorption or lifetime of GHGs, or to changing atmospheric concentrations of GHGs.[7]

California's GHG Sources and Relative Contribution

California is the 20th largest GHG emitter in the world and the 2nd largest emitter of GHG emissions in the United States, surpassed only by Texas.[8] However, California also has over 12 million more people than Texas. Because of more stringent air emission regulations, in 2014, California ranked third lowest in the United States in energy-related carbon emissions per capita.[9]

In 2016, the statewide GHG emissions inventory was updated for 2000 to 2014 emissions using the AR4 GWPs.[10] Based on these GWPs, California produced 442 million metric tons (MMT) of CO_2e GHG emissions in 2014. California's transportation sector remains the single largest generator of GHG emissions, producing 36.1 percent of the State's total emissions; industrial sector emissions made up 21.1 percent, and electric power generation made up 20.0 percent. Other major sectors of GHG emissions include commercial and residential (8.7 percent), agriculture (8.2 percent), high-GWP GHGs (3.9 percent), and recycling and waste (2.0 percent).[11]

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960,

[6] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[7] United States Environmental Protection Agency. 2017. Understanding Global Warming Potentials, https://www.epa.gov/ghgemissions/understanding-global-warming-potentials, accessed October 20, 2017.

[8] California Air Resources Board (CARB), 2014. California Greenhouse Gas Inventory: 2000–2012, https://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf, accessed October 19, 2017.

[9] US Energy Information Administration, 2014. Rankings: Total Carbon Dioxide Emissions 2014, https://www.eia.gov/environment/emissions/state/archive/state2014/, accessed July 3, 2017.

[10] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006), which is discussed in Section 4.7.1.2.

[11] California Air Resources Board (CARB), 2016. 2016 Edition California Greenhouse Gas Inventory for 2000-2014: By Category as Defined in the 2008 Scoping Plan, https://www.arb.ca.gov/cc/inventory/pubs/pubs.htm, accessed October 20, 2017

TABLE 4.7-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	SAR Atmospheric Lifetime (Years)	AR4 Atmospheric Lifetime (Years)	SAR GWP Relative to CO_2[a]	AR4 GWP Relative to CO_2[a]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[b] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_20)	120	114	310	298
Hyrofluorocarbons				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4130mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Notes:
SAR: IPCC Second Assessment Report
AR4: IPCC Fourth Assessment Report
The IPCC has published updated GWP values in its Fifth Assessment Report that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2 (Intergovernmental Panel on Climate Change, 2013. Fifth Assessment Report: Climate Change 2013, New York: Cambridge University Press.) The 2014 State Scoping Plan Update, which is described in Section 4.7.1.2, was based on the GWP values in the Fourth Assessment Report.
a. Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
Source: Intergovernmental Panel on Climate Change. 1996. Second Assessment Report: Climate Change 1995; Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

mainly due to combustion of fossil fuels and deforestation.[12] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[13] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, and other changes in the environment. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[14]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Increased intense tropical cyclone activity.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7 degrees Fahrenheit (°F) from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the

[12] Intergovernmental Panel on Climate Change (IPCC), 2007. *Fourth Assessment Report: Climate Change 2007*. New York: Cambridge University Press.
[13] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.
[14] Intergovernmental Panel on Climate Change (IPCC), 2007. *Fourth Assessment Report: Climate Change 2007*. New York: Cambridge University Press.

last century. By 2100, average temperatures could increase from 4.1 to 8.6°F, depending on emissions levels.[15]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) a shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[16] According to the California Climate Action Team—a committee of State agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.7-1), and the inertia of the earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 4.7-2 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy impacts.

Specific climate change impacts that could affect the EIR Study Area include:

- Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the state can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months.[17]

  Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[18]

[15] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.
[16] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.
[17] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.
[18] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

TABLE 4.7-2 SUMMARY OF GHG EMISSIONS RISKS TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Poor air quality made worse Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species

Sources: California Energy Commission. 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report, California Climate Change Center. CEC-500-2006-077; California Energy Commission. 2009, May. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077; California Climate Change Center. 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California; California Natural Resources Agency. 2014, July. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession and heat waves occurring simultaneously in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[19]

[19] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

- Increased Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[20]

4.7.1.2 REGULATORY FRAMEWORK

Federal Regulations

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[21]

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the GHG emissions inventory for the proposed General Plan and UMPS because they constitute the majority of GHG emissions and, per SJVAPCD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (e.g., large stationary sources) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2e per year are required to submit an annual report.

[20] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[21] US Environmental Protection Agency (EPA), 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment: Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, https://yosemite.epa.gov/opa/admpress.nsf/0/08d11a451131bca585257685005bf252, accessed October 18, 2017.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for vehicle model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with State requirements. The federal government issued new standards in 2012 for model years 2017 to 2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the EPA is reexamining the 2017–2025 emissions standards.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to also develop regulations for existing stationary sources. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

State Regulations

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the State:

- 2000 levels by 2010.
- 1990 levels by 2020.
- 80 percent below 1990 levels by 2050.

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State guidance and goals for reductions in GHG emissions are generally embodied in the Global Warming Solutions Act. AB 32 was passed by the California State legislature on August 31, 2006, to place the State on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. The *2008 Scoping Plan* identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the State.[22] In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting

[22] California Air Resources Board (CARB), 2008. Climate Change Proposed Scoping Plan: A Framework for Change.

system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, Board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher at 431 $MMTCO_2e$.[23]

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the State's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the State to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[24] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.[25]

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the State to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires State agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, to ensure climate change is accounted for in State planning and investment decisions.

[23] California Air Resources Board (CARB), 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm, accessed October 18, 2017.

[24] California Air Resources Board (CARB), 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm, accessed October 18, 2017.

[25] California Air Resources Board (CARB), 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm, accessed October 18, 2017.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction on emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the State. On January 20, 2017, CARB released the *Draft 2017 Climate Change Scoping Plan*, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[26] CARB anticipates adoption of the 2017 Scoping Plan Update in December 2017.

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (i.e., methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.

[26] California Air Resources Board (CARB), 2017, October 27. Draft – The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf, accessed November 21, 2017.

- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)— consistent with the Scoping Plan and the State's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what the GHG emissions would look like if the State did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 4.7-3. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard (LCFS), and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 4.7-4 provides estimated GHG emissions by sector at 1990 levels, and the range of emissions for each sector estimated for 2030.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the State Board, no later than January 1, 2018, to approve and begin implementing a

TABLE 4.7-3 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS REDUCTIONS GAP TO ACHIEVE THE 2030 GHG TARGET

Modeling Scenario	2030 GHG Emissions ($MMTCO_2e$)
Reference Scenario (Business-as-Usual)	398
With Known Contaminants	320
2030 GHG Target	260
Gap to 2030 Target	60

Source: California Air Resources Board, 2017, October 27. Draft – The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf, accessed November 21, 2017.

TABLE 4.7-4 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS REDUCTIONS CHANGE BY SECTOR TO ACHIEVE THE 2030 TARGET

Scoping Plan Sector	1990 MMTCO2e	2030 Proposed Plan Ranges MMTCO2e	Percent Change from 1990
Agricultural	26	24-25	-4% to -8%
Residential and Commercial	44	38–40	-9% to -14%
Electric Power	108	30–53	-51% to -72%
High GWP	3	8–11	267% to 367%
Industrial	98	83–93	-8% to -15%
Recycling and Waste	7	8–9	14% to 29%
Transportation (including TCU)	152	103–111	-27% to -32%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294–339	-21% to -32%
Cap-and-Trade Program	NA	34–79	NA
Total	431	260	-40%

Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
a. Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.
Source: California Air Resources Board. 2017, October 27. Draft – The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf, accessed November 21, 2017.

comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the *Final Proposed Short-Lived Climate Pollutant*

Strategy, which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use.[27] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Senate Bill 375

In 2008, SB 375 was adopted to achieve the GHG reduction targets in the Scoping Plan for the transportation sector through local land use decisions that affect travel behavior. Implementation is intended to reduce VMT and GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations with local land use planning. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

The San Joaquin Council of Governments (SJCOG) is the MPO for the County of San Joaquin and the City of Stockton. In September 2010, CARB set per capita GHG emissions reduction targets for 2020 and 2035 for the MPOs, except the MPOs in the San Joaquin Valley region (which includes SJCOG). CARB identified a provisional target for the entire San Joaquin Valley region because the eight MPOs in the San Joaquin Valley region are anticipated to absorb 22 percent of California's population growth. On December 14, 2012, CARB adopted a target recommendation for the eight MPOs in the San Joaquin Valley on an aggregate, valleywide basis—a 5 percent per capita GHG reduction in 2020 from 2005 levels and a 10 percent per capita GHG reduction in 2035 from 2005 levels. Therefore, an individual target is not proposed for SJCOG.[28]

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's existing transportation network. The targets would result in 3 $MMTCO_2e$ of GHG reductions statewide by 2020 and 15 $MMTCO_2e$ of GHG reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met.[29]

[27] California Air Resources Board (CARB), 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/shortlived.htm, accessed October 20, 2017.

[28] California Air Resources Board (CARB), 2013. Staff Report Update on Senate Bill 375 Implementation in the San Joaquin Valley, http://www.arb.ca.gov/cc/sb375/finalstaffreport_011513.pdf, accessed October 20, 2017.

[29] California Air Resources Board (CARB), 2010. Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Staff Report.

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology. The updated targets consider the need to further reduce VMT, as identified in the draft 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of State technology and fuels strategies, and any potential future State strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels contained in the MPOs' currently adopted Sustainable Community Strategies (SCSs, discussed below) to achieve the SB 375 targets. As proposed, CARB staff's proposed targets would result in an additional reduction of over 10 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, the eight MPOs in the San Joaquin Valley now have individual targets. CARB's updated targets for the SJCOG are a 12 percent per capita GHG reduction in 2020 from 2005 levels (compared to the 2010 target of 5 percent) and a 16 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 10 percent). CARB anticipates adoption of the updated targets and methodology in November 2017. The updated targets and methodology will take effect on January 1, 2018, and SCSs adopted in 2018 and later would be subject to these new targets.[30]

SJCOG 2014–2040 Regional Transportation Plan/Sustainable Community Strategy

SB 375 requires each MPO to prepare a SCS in their regional transportation plan. The SCS establishes a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS provides growth strategies to achieve the regional GHG emissions reduction targets. It does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency. The eight counties of the San Joaquin Valley are coordinating on development of their SCS to maximize resources through the Valley Vision SCS process. However, each MPO is developing a separate SCS. The SJCOG adopted its 2014-2040 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) on June 26, 2014.[31] It is based on the current planning assumptions in the county. SJCOG is in the process of updating the RTP/SCS. SJCOG kicked off its public outreach for the 2018 RTP/SCS Update in the spring of 2017.[32]

[30] California Air Resources Board (CARB), 2017, June. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, https://www.arb.ca.gov/cc/sb375/sb375.htm, accessed October 20, 2017.

[31] San Joaquin Council of Governments (SJCOG), 2014. 2014-2040 Regional Transportation Plan & Sustainable Communities Strategy, http://www.sjcog.org/DocumentCenter/View/489, accessed October 20, 2017.

[32] San Joaquin Council of Governments (SJCOG), 2017, August. 2018 Public Outreach, http://www.sjcog.org/319/2018-Public-Outreach, accessed October 20, 2017.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and was anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Regulations*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the State set a new low carbon fuel standard (LCFS) for transportation fuels sold within the State. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the RPS established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the State's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law in September 2015. SB 350 established tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-16-2012

On March 23, 2012, the State directed CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of zero-emission vehicles in California's State vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles were zero-emission by 2015 and at least 25 percent are zero-emission by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continue to improve upon the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively.[33] Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards because of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the State's goal and make important steps toward changing residential building practices in California. The future 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California.[34]

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design

[33] California Energy Commission (CEC), 2015. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation, http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/, accessed June 10, 2017.

[34] California Energy Commission (CEC), 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions, http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf, accessed October 23, 2017.

standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[35] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2016. The 2016 Standards became effective on January 1, 2017.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR Sections 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other States, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code Section 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Section 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 California Green Building Standards Code also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October 2014, Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings that consist

[35] The green building standards became mandatory in the 2010 edition of the code.

of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Local Regulations

The following discusses the City of Stockton's applicable plans and regulations that would contribute in reducing GHG emissions.

2008 Settlement Agreement on the Stockton 2035 General Plan

On December 11, 2007, the City approved the existing 2035 General Plan, along with an associated Infrastructure Studies Project and Bicycle Master Plan; at this time the City also certified the EIR and adopted a Statement of Overriding Considerations. On January 10, 2008, the Sierra Club filed a lawsuit alleging that the City had violated CEQA in its approval of the 2035 General Plan. This lawsuit was threatened to be enjoined by the California Attorney General's Office, raising concerns over the incorporation of enforceable measures to mitigate GHG emissions impacts in the EIR. In order to allow continued implementation of the Stockton General Plan while addressing the environmental concerns of the Sierra Club and Attorney General, the City of Stockton entered into a Settlement Agreement with the parties in October 2008, which required preparation of a Climate Action Plan, adoption of green building requirements for existing and new residential and non-residential buildings, a transit gap study, amendments to the General Plan to support infill development in the Greater Downtown and city limit as it existed in 2008, and monitoring of the plan elements.

City of Stockton 2014 Climate Action Plan

The City adopted its Climate Action Plan (CAP) on December 2, 2014. The CAP includes a GHG emissions inventory and forecasts for 1990 (backcast), 2005 (baseline), and 2020 (AB 32 forecast). The City's 2020

GHG reduction goal was identified as a 10 percent reduction below 2005 levels, which is consistent to the AB 32 reduction goal of 1990 levels by 2020. To achieve the City's GHG reduction goal for 2020, the CAP includes strategies to reduce GHG emissions from new development, building energy use, transportation, water use and treatment, off-road vehicles, and solid waste. State and local measures identified the CAP would reduce the City's GHG emission by 565,000 to 571,000 $MTCO_2e$ and would achieve the City's GHG reduction goal for 2020.[36]

4.7.1.3 EXISTING CONDITIONS

The EIR Study Area includes the city limit and Sphere of Influence (SOI). The city limit includes the Greater Downtown Area, as shown on Figure 3-2, *Planning Boundaries* (see Chapter 3, Project Description). An emissions inventory of the EIR Study Area was conducted for the existing residential, institutional, commercial, office, and industrial uses identified on Figure 4.10-1, Existing General Plan Land Use. GHG emissions generated in the EIR Study Area were estimated using EMFAC2014, OFFROAD2007, and data provided by PG&E for electricity and natural gas use, and summarized in Table 4.7-5. Emissions in the EIR Study Area come from the following sources:

- Transportation: Emissions from vehicle trips beginning and ending in the EIR Study Area boundaries and from external/internal vehicle trips (i.e., trips that either begin or end in the EIR Study Area).
- Energy: Emissions generated from purchased electricity and natural gas consumption used for cooking and heating in the EIR Study Area.
- Solid Waste Disposal: Indirect emissions from waste generated in the EIR Study Area.
- Water/Wastewater: Emissions from electricity used to supply, treat, and distribute water based on the overall water demand and wastewater generation in the EIR Study Area.
- Area Sources: Emissions generated from lawn and garden, agricultural, commercial, and construction equipment use in the EIR Study Area.

4.7.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant effect on the environment with respect to GHG emissions if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

[36] City of Stockton, 2014. City of Stockton Climate Action Plan. Prepared by ICF International, August.

TABLE 4.7-5 EXISTING STOCKTON EIR STUDY AREA GREENHOUSE GAS EMISSIONS INVENTORY

	Existing (CEQA Baseline) 2017 GHG Emissions	
Sector	$MTCO_2e$/year	Percent of Total
Transportation[a]	1,000,387	67%
Energy – Residential[b]	165,012	11%
Energy – Nonresidential[b]	188,223	13%
Solid Waste[c]	48,698	3%
Water/Wastewater[d]	19,767	<1%
Other – Off-Road Equipment[e]	72,107	5%
Existing Community-Wide Emissions Total	1,494,195	100%
Service Population (SP)[f]	401,800	NA
$MTCO_2e$/Year/SP	3.72 $MTCO_2e$/Year/SP	NA

Note: Emissions may not total 100 percent due to rounding. Based on IPCC's AR4 GWPs.
Sources:
a. EMFAC2014. Model runs were based on daily per capita VMT data provided by Fehr & Peers (see Appendix C).
b. Electricity and natural gas usage data provided by PG&E. For natural gas, the intensity factors for CO_2, CH_4, and NO_2 are from the LGOP, version 1.1 (California Air Resources Board (CARB), 2010. Local Government Operations Protocol (LGOP), Version 1.1, May).
c. Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on three-year average (2014–2016) waste commitment for the City of Stockton obtained from CalRecycle and adjusted to account for solid waste associated with the SOI. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's Local Government Operations Protocol (LGOP), version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.
d. LGOP, version 1.1, based on the water demand and wastewater generation rates provided by West Yost (see Section 4.15, Utilities).
e. OFFROAD2007. Consists of landscaping, light commercial, agricultural, and construction equipment. Landscaping and light commercial equipment emissions based on population and employment for the City of Stockton as a percentage of San Joaquin County. Agricultural emissions are based on the acreage of agricultural land in Stockton as a percentage of San Joaquin County. Construction equipment emissions based on housing permit data for San Joaquin County and the City of Stockton from the US Census. Area sources exclude emissions from fireplaces.
f. Approximately 320,600 residents and 81,200 employees in the EIR Study Area.

4.7.2.1 GHG SIGNIFICANCE CRITERIA

SJVAPCD Performance Metric

The issue of global climate change is, by definition, a cumulative environmental impact. The SJVAPCD adopted Guidance Methodology for addressing GHG emissions under CEQA on December 17, 2009.[37] In addition, SJVAPCD adopted a Climate Change Action Plan (CCAP) to identify strategies to reduce GHG emissions in the SJVAPCD.[38] SJVAPCD's methodology includes a tiered approach:

[37] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2009. Guidance for Valley Land-Use Agencies in Addressing GHG Emissions for New Projects.

[38] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2009. Climate Change Action Plan, Final Staff Report, Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.

- If a project is exempt from CEQA, individual-level and cumulative GHG emissions are treated as less than significant.
- If the project complies with a GHG emissions reduction plan or mitigation programs that avoid or substantially reduce GHG emissions in the geographic area where the project is located (i.e., city or county), individual-level and cumulative GHG emissions are treated as less than significant.
- SJVAPCD does not have thresholds of significance for construction-related GHG emissions. Construction emissions are one-time, nonrecurring emissions. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires its first major renovation.[39] Therefore, construction emissions are amortized over a 30-year duration and included in the operational emissions analysis for informational purposes. GHG emissions from construction activity are therefore not assumed to significantly contribute to cumulative GHG emissions impacts of the proposed project.

SJVAPCD's methodology for evaluating GHG emissions impacts also includes methodology to evaluate whether a project would comply with AB 32 by conducting an analysis of whether the project would reduce GHG emissions by 29 percent from business as usual (BAU) through implementation of Best Performance Standards. The November 30, 2015, *Center for Biological Diversity v. California Department of Fish and Wildlife* (Newhall Ranch) ruling effectively limits use of this performance metric. The 29 percent below BAU established in the CARB Scoping Plan is derived from the statewide reduction target set by AB 32 for year 2020. The court held that the 29 percent is the statewide goal, but there is no substantial evidence that establishes a nexus between the Statewide goal and the percent reduction a specific land use project would need to achieve to be consistent with the goals of AB 32. Projects must determine the reduction target specific to the land use type being proposed.

Because SJVAPCD's significance criteria does not establish a nexus that connects the statewide GHG emissions reductions identified in the Scoping Plan to reductions needed for new development projects, an alternative approach to use of the performance metric is being used by the District until SJVAPCD revises their Guidance Methodology to address the Newhall Ranch ruling.

Bright-Line Significance Threshold

The bright-line significance threshold is a numeric, mass emissions threshold. In general, the bright-line threshold identifies the point at which additional analysis of project-related GHG emissions impacts is necessary. Projects below the established bright-line significance criteria have a *de minimus* contribution to the local, regional, and/or statewide GHG emissions inventory and have less than significant impacts. Projects above this threshold may result in a substantial increase in GHG emissions.

[39] International Energy Agency, 2008. *Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings,* March.

The bright-line threshold is based on the methodology identified in the 2008 California Air Pollution Control Officers Association (CAPCOA) white paper (CAPCOA 2008).[40] It is based on the market capture approach and reflects the amount of emissions that 90 percent of development projects surveyed in four cities within California would generate. CAPCOA identified that a bright-line threshold set at 900 $MTCO_2e$ per year would capture 90 percent of projects. In general, 900 $MTCO_2e$ per year corresponds to (1) a residential development of 50 dwelling units; (2) 35,000 square feet of office space; (3) 11,000 square feet of retail space; and (4) 6,300 square feet of supermarket space.[41]

The 900 $MTCO_2e$ per year ($MTCO_2e$/yr) threshold is used in this EIR because it is the most conservative bright-line threshold. Exceeding the bright-line significance criteria does not necessarily indicate that the proposed project would generate a significant unavoidable impact. Typically, based on how the bright-line threshold is applied in other air districts, the bright-line thresholds are utilized as a screening criterion to identify whether a full analysis of GHG emissions is warranted. Furthermore, if a project exceeds the screening threshold, the second level of analysis would compare the project to the efficiency metric discussed below.

Efficiency Metric Significance Threshold (AB 32, SB 32, and Trajectory to 2050 Climate Stability Goals)

The Plan-Level efficiency metric identified by some air districts in California in the absence of a countywide GHG reduction plan is derived from CARB's Scoping Plan and is based on the projected year 2020 statewide emissions inventory (total) and Statewide population and employment. Based on the updated emissions inventory and statewide service population for the land use sector in 2020 in the 2017 Update to the Scoping Plan, the land use sector Plan-Level efficiency threshold is estimated at 7.6 $MTCO_2e$ per service population per year. This efficiency metric represents the target per service population emission rate for land use development projects that would be consistent in meeting the AB 32 Year 2020 reduction target.

For projects that would be implemented beyond year 2020, the GHG emissions reduction target is extrapolated based on the 2050 climate stabilization goals. The Plan-Level GHG threshold is based on the trajectory needed as shown in Table 4.7-6 to achieve the year 2030 GHG reduction target under SB 32 (40 percent below 1990 levels by 2030) and Executive Order S-03-05 (80 percent below 1990 levels by

[40] California Air Pollution Control Officer's Association, 2008. CEQA and Climate Change.

[41] The Bay Area Air Quality Management District (BAAQMD) and South Coast Air Quality Management District (SCAQMD) have also established bright-line screening thresholds of 1,100 $MTCO_2e$ and 3,000 $MTCO_2e$ per year, respectively, for development projects based on similar market capture methodologies utilized by CAPCOA. SCAQMD based their bright-line screening threshold on review of 711 CEQA projects and determined that 90 percent of the projects reviewed would exceed 3,000 $MTCO_2e$ per year (South Coast Air Quality Management District. 2009, November 19. Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #14, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-%28ghg%29-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2, accessed October 23, 2017). Similarly, the bright-line screening threshold established by BAAQMD captures approximately 59 percent of all development projects (Bay Area Air Quality Management District. May 2017. California Environmental Quality Act: Air Quality Guidelines).

TABLE 4.7-6 FORECASTED GHG REDUCTION TARGET

GHG Section[a]	2017 Scoping Plan Scenario
2030 Plan-Level Target[a]	260 $MMTCO_2e$
2030 Population[b]	44,085,600
2030 Employment[c]	17,394,580
2030 Service Population (SP)	61,480,180
2030 Efficiency Target	4.2 $MTCO_2e$/SP
2040 Plan Level Target[d]	173.1 $MMTCO_2e$
2040 Population Estimate	47,233,240
2040 Employment Estimate	18,992,870
2040 Service Population Estimate	66,226,110
2040 Efficiency Target	2.61 $MTCO_2e$/SP
2050 Plan Level Target[a]	86 $MMTCO_2e$
2050 Population Estimate	49,779,362
2050 Employment Estimate	20,698,460
2050 Service Population Estimate	70,477,822
2050 Efficiency Target	1.2 $MTCO_2e$/SP

a. California Air Resources Board, 2017, October 27. Draft – The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf, accessed November 21, 2017.
b. California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments). http://www.dof.ca.gov/Forecasting/Demographics/Projections/
c. California Department of Transportation. 2016. Long-Term Socio-Economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html; Without industrial and agricultural sectors
d. The 2040 Efficiency target is based on interpolating the 2030 land use emissions target (40 percent below 1990 levels by 2030) and the 2050 land use emissions target (80 percent below 1990 levels by 2050), which equates to approximately 60 percent below 1990 levels by 2040. The population and employment estimates are based on a similar forecast to estimate the service population in California in 2040.

2050) for the horizon year of the projects. As shown in the table, the 2040 GHG estimated Plan-Level efficiency target would be 2.61 $MTCO_2e$ per service population per year. The proposed project would be deemed to have a significant GHG emissions impact if it does not meet this efficiency target. Furthermore, per the California Supreme Court ruling in *Cleveland National Forest Foundation (CNFF) v. San Diego Association of Governments (SANDAG)*, as data and methods become available, projects should evaluate consistency in meeting the year 2050 GHG reduction goal established under Executive Order S-03-05. To achieve the climate stabilization goals of S-03-05, the proposed General Plan would need to achieve an efficiency of 1.2 $MTCO_2e$/SP by 2050. Because the horizon year for the proposed General Plan and UPMS is 2040, year 2050 data is not available. However, the year 2040 efficiency target is also utilized to

determine whether the proposed project would be on a trajectory to achieve the GHG reduction goal of Executive Order S-03-05. If the proposed project does not meet the forecasted 2040 efficiency target, it would be deemed to also not be on trajectory to meet the 2050 efficiency target and would be considered to result in a significant GHG emissions impact.

4.7.3 IMPACT DISCUSSION

Community-wide GHG emissions for the proposed project, which includes growth in the EIR Study Area, follows ICLEI's *US Community Protocol for Accounting and Reporting of GHG Emissions*[42] and includes the following sectors:

Transportation: On-road transportation emissions from passenger vehicles and trucks generated by land uses in the EIR Study Area are based on daily VMT data provided by Fehr & Peers for existing conditions (2017) and year 2040 conditions under the proposed General Plan. Accounting of VMT is based on the recommendations of CARB's Regional Targets Advisory Committee (RTAC) created under SB 375.[43] GHG emissions associated with the VMT provided by Fehr & Peers were modeled using CARB's EMFAC2014-PL.[44] Consistent with CARB's methodology within the *Climate Change Scoping Plan Measure Documentation Supplement*, daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to determine annual emissions.[45] The emissions forecast includes the GHG emissions reductions from federal and State regulations included in EMFAC2014, including the Pavley I fuel efficiency standards, the California Advanced Clean Car Standards, the LCFS, on-road diesel fleet rules, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation.

- Energy: Natural gas and electricity use for residential and nonresidential land uses in the EIR Study Area were modeled using data provided by PG&E and can be found in Appendix B. Natural gas and electricity use are based on three-year (2014–2016) averages to account for fluctuation in annual use as a result of natural variations in climate. Forecasts are adjusted for increases in population in the EIR Study Area. The carbon intensity factor of the purchased electricity is based on PG&E's reported CO_2 intensity factor of 404.51 pounds per megawatt hour (lbs/MWh) for Year 2015 as reported to the Climate Registry and the US EPA eGRID intensity factors of 33.1 pounds per gigawatt hour (lbs/GWH) and 4.0 lbs/GWH for CH_4 and N_2O, respectively.[46] Intensity factors for CO_2, CH_4, and N_2O provided in

[42] ICLEI – Local Governments for Sustainability USA, 2012. US Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions. Version 1.0, October.

[43] For accounting purposes, there are three types of trips: (1) Vehicle trips that originate and terminate within the EIR Study Area (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips, and their emissions, are attributed to the EIR Study Area. (2) Vehicle trips that either originate or terminate (but not both) within the EIR Study Area (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the EIR Study Area. (3) Vehicle trips that neither originate nor terminate within the EIR Study Area. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted towards the EIR Study Area's VMT or emissions.

[44] California Air Resources Board (CARB), 2014. EMFAC2014-PL.

[45] California Air Resources Board (CARB), 2008. Climate Change Proposed Scoping Plan, a Framework for Change, October.

[46] The Climate Registry. 2017, March 15. The 2017 Default Emission Factors; United State Environmental Protection Agency. 2017, February 27. eGRID2014v2 Annual Output Emission Rates, WECC California Region, https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_ghgoutputrates_v2.pdf, accessed September 18, 2017.

CARB's Local Governments Protocol (LGOP), version 1.1, were used for natural gas. Emissions associated with the electricity generated by the Port of Stockton utility is not included in the analysis as the utility provides electricity for the US naval base on Rough and Ready Island only.

- Waste: GHG emissions from solid waste disposed of by residents and employees in the EIR Study Area were quantified based on the waste-in-place (WIP) method. This method assumes that the degradable organic component (degradable organic carbon, DOC) in waste decays slowly throughout a few decades, during which CH_4 and biogenic CO_2 are formed. If conditions are constant, the rate of CH_4 production depends solely on the amount of carbon remaining in the waste. As a result, emissions of CH_4 from waste deposited in a disposal site are highest in the first few years after deposition, then gradually decline as the degradable carbon in the waste is consumed by the bacteria responsible for the decay. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Waste disposal was averaged over several years to account for fluctuations in average annual solid was disposal. Waste generated in the EIR Study Area was averaged over a three-year period (2014-2016),[47] based on data obtained from CalRecycle, to provide an estimate of GHG emissions for existing conditions (baseline year).[48] GHG emissions from solid waste disposal in the baseline year were modeled using CARB's Landfill Emissions Tool Version 1_2013, which includes waste characterization data from CalRecycle.[49] Because the landfill gas captured is not under the jurisdiction of Stockton, the landfill gas emissions from the capture system are not included in the inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's Landfill Gas Capture System. The Landfill gas capture efficiency is based on CARB's LGOP, Version 1.1.[50] Emissions were adjusted to the AR4 GWP assigned for CH_4. Total GHG emissions from waste disposal in 2040 were forecasted based on the percent increase in service population. The emissions forecast does not account for reductions from increasing waste diversion.
- Water Use and Wastewater Generation: GHG emissions from this sector include indirect GHG emissions from the embodied energy associated with water use and wastewater generation and fugitive GHG emissions from processing wastewater. The total annual existing and horizon year proposed project water demand and wastewater generation (gallons per year) in the EIR Study Area are based on average daily rates (gallons per day) estimated by West Yost and multiplied by 365 days. Electricity use from water use is estimated using energy rates identified by the CEC.[51] Then energy is multiplied by the carbon intensity of energy.[52] Wastewater treatment also results in fugitive GHG

[47] 2014 data is not available from CalRecycle.

[48] CalRecycle, 2014. Disposal Reporting System, Jurisdiction Reporting by Facility, Stockton, http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx, accessed October 23, 2017.

[49] California Department of Resources Recycling and Recovery (CalRecycle), Disposal Reporting System, 2014. *2012-2010 Stockton Jurisdiction Disposal By Facility with Reported Alternative Daily Cover (ADC) and Alternative Intermediate Cover (AIC),* http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx, accessed October 23, 2017.

[50] California Air Resources Board (CARB), 2010. Local Government Operations Protocol (LGOP), Version 1.1, May.

[51] California Energy Commission (CEC), 2006. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc., December. Based on the electricity use for Northern California.

[52] CO_2 intensity factor based on PG&E CO_2 intensity factor of 404.51 lbs/MWh for Year 2015 as reported to the Climate Registry. The Climate Registry. 2017, March 15. The 2017 Default Emission Factors; CH_4 and N_2O intensity factors based on US

emissions from wastewater processing. Fugitive emissions from wastewater treatment in the EIR Study Area were calculated using the emission factor's in CARB's LGOP, Version 1.1.[53]

- Other Sources: OFFROAD2007[54] was used to obtain a rough estimate of GHG emissions from landscaping, agricultural, light commercial, and construction equipment in the EIR Study Area. Emissions from pleasure craft are excluded from the inventory because there is no data on the number of crafts and annual usage. OFFROAD2007 is a database of equipment use and associated emissions for each county compiled by CARB. Annual emissions were compiled using OFFROAD2007 for San Joaquin County for year 2017. The percentage of emissions attributable to the EIR Study Area is estimated based on population (Landscaping Equipment),[55] employment (Light Commercial Equipment),[56] agricultural land acreage (Agricultural Equipment),[57] and construction building permits (Construction Equipment)[58] for Stockton as a percentage of San Joaquin County. Daily off-road construction emissions are multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays. Annual average construction emissions are assumed to be similar to historic conditions. Total GHG emissions from landscaping equipment and commercial equipment in the baseline year are forecasted based on the percent increase in population and employment growth, respectively. The emissions forecast for the Other Sector included GHG reductions from the LCFS.

Industrial sources of emissions that require a permit from SJVAPCD are not included in the EIR Study Area's community inventory. However, due to the 15/15 Rule, natural gas and electricity use data for industrial land uses may also be aggregated with the nonresidential land uses in the data provided by PG&E.[59] Life-cycle emissions are not included in this analysis because not enough information is available

EPA eGRID CH_4 and N_2O intensity factors of 33.1 lbs/GWH and 4.0 lbs/GWH, respectively. United State Environmental Protection Agency. 2017, February 27. eGRID2014v2 Annual Output Emission Rates, WECC California Region, https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_ghgoutputrates_v2.pdf (CH_4 = 33.1 lbs/GWH & N_2O = 4.0 lbs/GWH), accessed October 23, 2017.

[53] California Air Resources Board (CARB), 2010. Local Government Operations Protocol (LGOP), Version 1.1, May.

[54] Although there is a new OFFROAD Model, the 2011 update did not categorize emissions at the county level, only statewide in the new model update. Therefore, GHG emissions from this sector are a conservative estimate from off-road equipment.

[55] U.S. Census Bureau. 2011-2015 American Community Survey 5-Year Estimates, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed September 18, 2017.

[56] U.S. Census Bureau, 2010. Longitudinal Employer-Household Dynamics, http://lehd.ces.census.gov/, accessed September 18, 2017.

[57] Acreage based on lands classified by the State as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland, as reported in Section 4.2, Agriculture and Forestry Resources, of the Draft EIR. County acreage based on the California Department of Conservation data, http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls, accessed September 18, 2017.

[58] U.S. Census Bureau, Construction Building Permits Survey, https://www.census.gov/construction/bps/, accessed September 18, 2017.

[59] The 15/15 Rule was adopted by the California Public Utilities Commission in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 rule requires that any aggregated information provided by a utility must be made up of at least 15 customers, and a single customer's load must be less than 15 percent of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released. The Rule further requires that if the 15/15 Rule is

for the proposed General Plan and UMPS, and therefore they would be speculative. Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the State's AB 32 inventory and treats this short-lived climate pollutant separately.[60]

GHG-1 Implementation of the proposed project would result in a substantial increase in GHG emissions.

Development allowed under the proposed General Plan and UMPS would contribute to global climate change through direct and indirect emissions of GHGs from land uses within the EIR Study Area. A general plan does not directly result in development without additional approvals. Before any development can occur in the city, it must be analyzed for consistency with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. Although implementation of the proposed project is not linked to a specific development time frame, by the General Plan horizon year of 2040, the proposed project would result in a net increase of 132,200 people and 63,200 jobs in the EIR Study Area.

Development that would be accommodated by the proposed General Plan would generate a net increase of approximately 3.12 million vehicle miles per day. Implementation of proposed General Plan goals, policies, and actions could contribute in reducing GHG emissions compared to a no project buildout scenario. As discussed in Section 4.7, Air Quality, the Transportation Chapter of the Draft General Plan includes goals, policies, and actions that encompass multi-modal and active transit improvements within the EIR Study Area (e.g., Goals TR-1 and TR-2). Improvements include requiring new development to incorporate design features that would provide easier access to transit (Action TR-2.2.A), dedication of adequate bicycle and transit right-of-way on arterial and collector streets (Action TR-2.3.B), and developing guidelines for installation of electric vehicle charging stations for new developments (Action TR-3.2.B). Additionally, support of infill and mixed-use development (see Policy LU-1.1 and Policy LU-6.2) would further support balanced development which would contribute in reducing VMT by increasing use of alternative transit options (i.e., walking, biking, and public transit) and decreasing vehicle trips and the average trip distances traveled. Furthermore, the Safety Chapter includes a policy and action to encourage new employers to participate in a transportation demand management program (Policy SAF-4.2 and Action SAF-4.2.A). These goals, policies, and actions would contribute to reducing VMT and in minimizing long-term mobile-source GHG emissions to the extent feasible.

As shown in Table 4.7-7, the proposed project would result in net annual emissions that would exceed the 900 $MTCO_2e$/yr bright-line screening threshold. In addition, the proposed project would not achieve the

triggered for a second time after the data have been screened once already using the 15/15 Rule, the customer be dropped from the information provided.

[60] Particulate matter emissions, which include black carbon, are analyzed in Section 4.3, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within ten years. California Air Resources Board, 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/shortlived.htm, accessed October 23, 2017.

TABLE 4.7-7 2040 STOCKTON EIR STUDY AREA COMMUNITY GHG EMISSIONS FORECAST

	GHG Emissions ($MtCO_2e$/Year)		
Category	**Existing**	**2040**	**Net Change**
Transportation[a]	1,000,387	919,262	(81,125)
Residential (Natural Gas and Electricity)[b]	165,012	222,265	57,252
Non-residential (Natural Gas and Electricity)[b]	188,223	318,993	130,770
Waste[c]	48,698	72,380	23,682
Water/Wastewater[d]	19,767	27,824	8,057
Other – Off-Road Equipment[e]	72,107	56,706	(15,400)
Total Community Emissions	**1,494,195**	**1,617,431**	**123,236**
Bright-line Screening Threshold	NA	NA	900 $MTCO_2e$
Exceeds Bright-Line?	NA	NA	**Yes**
Service Population (SP)[f]	401,800	597,200	195,400
$MTCO_2e$/SP	3.72 $MTCO_2e$/SP	2.71 $MTCO_2e$/SP	(1.01) $MTCO_2e$/SP
2040 Efficiency Target	NA	2.61 $MTCO_2e$/SP	NA
Achieves 2040 Plan-Level Threshold?	NA	**NO**	NA
2050 Efficiency Target	NA	1.2 $MTCO_2e$	NA
Achieves 2050 Plan-Level Threshold?	NA	**NO**	NA

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fourth Assessment Report (AR4).
Sources:
a. Based on on-road VMT provided by Fehr & Peers and modeled using EMFAC2014-PL.
b. Based on electricity and natural gas use provided by the PG&E. GHG emissions from natural gas use are based on the LGOP.
c. Based on solid waste disposal in the city obtained from CalRecycle and modeled using CARB's Landfill Emissions Tool.
d. Based on water demand and wastewater generation provided by West Yost. Fugitive GHG emissions from wastewater treatment use are based on the LGOP emissions factors.
e. GHG emissions from off-road equipment use are based on OFFROAD2007.
f. Based on the following for the EIR Study Area: existing = 320,600 people and 81,200 jobs; 2040 = 452,800 people and 144,400 jobs.

2040 Plan-Level efficiency metric. As discussed in Section 4.7.2.1, a 2040 efficiency target was derived for the proposed project based on the horizon year and the 2030 goal established in SB 32 and the 2050 climate stabilization goal established under Executive Order S-03-05. Also, as stated in Section 4.7.2.1, because the 2040 Plan-Level efficiency metric is used to gauge whether the proposed project would also progress towards achieving the long-term 2050 reduction goal, the proposed project would also not meet the 2050 climate stabilization target of 1.2 $MTCO_2e$/SP. Furthermore, additional federal, State, and local GHG reductions would be needed to achieve the 2050 Plan-Level efficiency target and the State's climate stabilization goals; consequently, the impact is considered *significant*.

Significance Without Mitigation: Significant.

Impact GHG-1: Implementation of the proposed General Plan would result in a substantial increase in GHG emissions.

Mitigation Measure GHG-1: Within 24 months of adoption of the proposed General Plan, the City of Stockton shall proceed to adoption hearings for an update to its Climate Action Plan (CAP). The CAP shall provide:

- GHG inventories of existing and 2030 GHG levels;
- Targets for 2030 from land uses under the City's jurisdiction based on the goals of SB 32; and
- Tools and strategies for reducing GHG emissions in accordance with the 2030 goals of the CAP.

The City shall consider the following GHG reduction measures in its CAP Update:

- Reevaluate the City's current green building requirements (Stockton Municipal Code Chapter 15.72, Green Building Standards) every five years to consider additional requirements for substantial new residential and non-residential development to ensure that new development achieves a performance objective consistent with the best performing (top 25 percent) of city green building measures in the state.
- Require financing and/or installing energy-saving retrofits on existing structures as potential mitigation measures for discretionary projects that have significant GHG impacts as part of the CEQA process.
- Utilize transfer of development rights and other mechanisms, such as an infill mitigation bank, to enhance the viability of development in the Greater Downtown.
- Establish a goal for 15 percent of existing development to install solar panels over carports.
- Establish a goal to achieve 10 percent of non-residential electricity and 5 percent of residential electricity entirely by solar.
- Offer incentives for contractors that use electric equipment when bidding on City contracts.
- Limit non-essential idling of large construction equipment to no more than 3 minutes.

In addition, to implement the CAP, the City shall develop key ordinances, programs, and policies required to promote voluntary, incentive- based measures in the CAP, establish the planning

framework for the performance-based development review process, and support and implement the local mandatory GHG reduction measures. These implementation tasks include:

- Update the community GHG inventory to monitor emissions trends every five years.
- In 2030, develop a plan for post-2030 actions.
- Appoint an Implementation Coordinator to oversee the successful implementation of all selected GHG reduction strategies. The primary function of the Implementation Coordinator will be to create a streamlined approach to manage implementation of the CAP. The Implementation Coordinator will also coordinate periodic community outreach to leverage community involvement, interest, and perspectives.

Significance With Mitigation: Implementation of the proposed General Plan policies and actions, combined with Mitigation Measure GHG-1, would reduce GHG emissions to the extent feasible. However, due to the magnitude of growth associated with the proposed General Plan, it is anticipated that an increase in GHG emissions would remain substantial and would not contribute to net achievement of the State's long-term climate stabilization goals. While adherence to the City of Stockton's CAP would also contribute in reducing GHG emissions in the EIR Study Area and progress in meeting the year 2020 AB 32 reduction target, additional federal, State, and local measures would be necessary to reduce GHG emissions to meet the long-term GHG reduction goals under Executive Order S-03-05. At this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the State cannot meet the 2050 goal without major advancements in technology. [61] Since no additional statewide measures are currently available, Impact GHG-1 would be *significant and unavoidable*.

GHG-2 Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, SJCOG's 2014-2040 RTP/SCS, and the City of Stockton's CAP. In addition, because the 2008 Settlement Agreement stipulates certain requirements for the General Plan, a consistency analysis for the Settlement Agreement is also included to ensure that individual measures identified in the Settlement Agreement are considered for inclusion as General Plan policies and actions. The consistency analyses with these plans are presented below.

[61] California Council on Science and Technology (CCST). 2012, September. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets, http://www.ccst.us/publications/2012/2012ghg.pdf, accessed October 20, 2017.

2008 Settlement Agreement Requirements

A consistency analysis between the proposed General Plan and the measures identified in the 2008 Settlement Agreement is shown in Table 4.7-8. The proposed General Plan limits the opportunity for new development in the SOI (i.e., outside the city limit) mainly to what has already been approved. While the EIR evaluates growth from existing conditions that includes an increase in emissions from approved and pending projects outside the city limit, the proposed General Plan focuses new growth in Greater Downtown Stockton and the city limit. As identified in the table, overall, the proposed General Plan includes and/or considered the mandatory measures listed in the Settlement Agreement. Additionally, Mitigation Measure GHG-1 ensures that updates to the measures are considered in the update to the CAP. Therefore, the proposed project would not conflict with the mandatory stipulations in the 2008 Settlement Agreement and the impact is considered *less than significant*.

Significance Without Mitigation: Less than significant.

City of Stockton Climate Action Plan

A consistency analysis between the proposed General Plan and the applicable measures in the City's CAP is shown in Table 4.7-9. As identified in the table, overall, the proposed General Plan would generally be consistent with the strategies in the CAP. Therefore, the proposed project would not conflict with the CAP and impacts are considered *less than significant*.

Significance Without Mitigation: Less than significant.

CARB Scoping Plan

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the State's strategy established by AB 32, which is to return the State's GHG emissions inventory to 1990 levels by year 2020. In September 2016, SB 32 was signed into law, requiring the State's GHG emissions to return to 40 percent below 1990 levels by 2030. Executive Order B-30-15 and SB 32 require CARB to prepare another update to the Scoping Plan to address the 2030 target for the State. On October 27, 2017, CARB released the latest draft 2017 Climate Change Scoping Plan to address the new interim GHG emissions target under SB 32. The CARB Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

The 2017 Climate Change Scoping Plan has adoption hearings planned for December 2017, and provides the strategies for the State to meet the 2030 GHG reduction target as established under SB 32. Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include implementing SB 350, which expands the RPS to 50 percent by 2030 and doubles energy efficiency savings; expanding the LCFS to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent

TABLE 4.7-8 2008 SETTLEMENT AGREEMENT CONSISTENCY ANALYSIS

	Settlement Agreement Stipulation Summary	Proposed General Plan Compliance
Climate Action Plan		
1. CAP Preparation	The Agreement requires preparation of a CAP and submittal to the City Council for adoption. The Agreement does not require actual City Council adoption of a CAP.	The City adopted a CAP in December 2014 and has thus met this requirement. Additionally the proposed General Plan includes Action CH-5.1.B, which identifies that the City will maintain and implement the City's CAP after adoption of the CAP to include a 2030 GHG emissions reduction target consistent with SB 32.
2. Advisory Committee	The Agreement requires formation of an advisory committee.	The Climate Action Plan Advisory Committee (CAPAC) was formed during preparation of the CAP and was involved in the development of the Green Building Ordinance, the 2014 CAP, and review of other Agreement requirements.
3. CAP Contents	The Agreement requires the CAP to include (a) GHG inventories of existing, 1990, and 2020 GHG levels; (b) targets for 2020 from land uses within the City's discretion; (c) a goal to reduce per capita VMT; and (d) tools and strategies for reducing GHG emissions and VMT in accordance with the goals of the CAP.	These are included in the 2014 CAP. Implementation of the CAP would achieve the City's 2020 GHG reduction target and result in VMT growth less than population growth as required by the Agreement. The proposed General Plan also includes GHG inventories and policies and actions for reducing GHG emissions and VMT. Proposed Action CH-5.1.B identifies that the City will provide an updated GHG emissions inventory, targets, and measures to address the 2030 goal of SB 32. Policies TR-4.2 and TR-4.3 identify use of a VMT threshold to reduce VMT per capita in accordance with the goals of the CAP.
Green Building Program		
4. Green Building Ordinance	(a) New Buildings. The Agreement requires development and consideration for adoption of a green building program ordinance which requires (1) new housing units to meet Build it Green certification or similar program with comparable effectiveness; (2) non-residential buildings that exceed 5,000 square feet to meet the Leadership in Energy and Environmental Design (LEED) Silver standards or similar program with comparable effectiveness; (3) that if a comparable program for the residential and non-residential program is used, then an outside verifier shall validate that the alternative program complies with the applicable standards; and (4) compliance with CALGreen. The Agreement also allows the ordinance to provide an implementation schedule for non-residential buildings that phases in the LEED Silver (or comparable) requirements for buildings larger than 20,000 square feet and then between 20,000 and 5,000 square feet. The Agreement does not require actual City Council adoption of the Ordinance.	In 2010, the City adopted a Green Building Ordinance in compliance with this part of the Agreement. The City's Green Building Ordinance was revised in 2014 following the Great Recession and the mortgage restrictions of Fannie Mae and Freddie Mac. The City's current Green Building Ordinance (Stockton Municipal Code (SMC) Chapter 15.72, Green Building Standards) currently requires compliance with the current standards of CALGreen; however, the ordinance requires review of this ordinance every five years. Per SMC Section 15.72, when conditions warrant, the City Council may request that staff propose for adoption an enhanced green building program (ordinance). Mitigation Measure GHG-1 requires that the City reevaluate the current green building program to consider additional requirements for substantial new residential and non-residential development.

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TABLE 4.7-8 2008 SETTLEMENT AGREEMENT CONSISTENCY ANALYSIS

	Settlement Agreement Stipulation Summary	Proposed General Plan Compliance
	(b) Existing Housing. The Agreement requires development and consideration for adoption of an ordinance for existing housing when there are substantial modifications to an existing house. The Agreement does not require actual City Council adoption of the Ordinance.	The City adopted the Green-Up Stockton Ordinance (SMC Chapter 15.76, Residential Energy Efficiency Assessment and Retrofit) in compliance with the Agreement in March 2011.
	(c) Financing Mechanism. The Agreement requires the City to explore the creation of a local assessment district or other financing mechanism for energy efficiency measures.	The 2014 CAP calls for establishing a local assessment district for non-residential buildings. The City has adopted the Home Energy Retrofit Opportunity (HERO) program, which provides Property Assessed Clean Energy (PACE) financing. The HERO program allows property owners to obtain long-term competitive financing through an additional property assessment and can be used for both energy-efficiency retrofits as well as solar panels and electric vehicle charging stations.
	(d) Retrofits. The Agreement also requires the City to explore the possibility of requiring retrofits as potential mitigation measures in the CEQA process.	As identified above, the City adopted the Green-Up Stockton Ordinance (SMC Chapter 15.76, Residential Energy Efficiency Assessment and Retrofit) in compliance with the Agreement. Mitigation Measure GHG-1 requires that the City consider financing and/or installing energy-saving retrofits on existing structures as potential mitigation measures in the CEQA process.
	(e) Ordinance Update. The Agreement requires the City to review the Green Building Requirements every five years to ensure they achieve the performance objectives consistent with the best performing (top 25 percent) of city green building measures in the state.	The City's Green Building Oordinance requires review every five years. Per Section 15.72, when conditions warrant, the City Council may request that staff propose for adoption an enhanced green building program (ordinance). Mitigation Measure GHG-1 requires that the City reevaluate the current green building requirements to consider additional requirements for substantial new residential and non-residential development to achieve the 25 percent performance metric.
Transit Gap Program		
5. Transit Gap Program	The Agreement requires consideration of a transit program and development of transit policies/ implementation measures regarding development of Bus Rapid Transit (BRT) as identified in (a) through (d) below. The Agreement does not require actual City Council adoption of a transit program or BRT policies and implementation measures:	
	(a) Transit Gap Study. The Agreement requires development of transit gap study to reduce per capita VMT throughout the city.	A transit gap study was completed and a transit program was developed; the transit program is included as Appendix D of the 2014 CAP. The proposed General Plan includes policies and actions that support VMT as a transportation metric in the city to reduce vehicle trips (Policies TR-4.2 and TR-4.3).
	(b) Street Design Standards for Complete Streets. Requires that housing or development projects that are subject to a Specific Plan/Master Development Plan or regionally significant projects	Since the Settlement Agreement was signed, the State adopted Assembly Bill 1358, California Complete Streets Act. The City's Transportation Element and street design standards are consistent with these requirements to provide for all

TABLE 4.7-8 2008 SETTLEMENT AGREEMENT CONSISTENCY ANALYSIS

	Settlement Agreement Stipulation Summary	Proposed General Plan Compliance
	shall be configured to be internally accessible by all modes of transportation.	modes of transportation. The proposed General Plan includes several policies and actions to ensure that new projects are accessible by all modes of transportation (Policies TR-1.1, TR-2.1 through TR-2.3, and TR-3.1 through TR-3.2). Action TR-3.1.C requires dedication of right-of-way for transit and bicycle uses when designating new roadways and improving existing roadways.
	(c) Financing of Transit Impact. Requires that housing or development projects subject to a Specific Plan/Master Development Plan or regionally significant projects provide financial and/or other support for transit use. Fees are required to cover the project's fair share of the transit system and contribute to the overall VMT goals of the CAP and Transit Gap Study.	Proposed General Plan Policy TR-4.2 requires the City to amend its CEQA Transportation Impact Analysis Guidelines to include alternative transportation metrics. The proposed General Plan also includes Action LU-2.2.C to ensure that development in the Greater Downtown is supported by a Public Facilities Fee Structure that would be used to finance infrastructure and public facilities, including transit use. Since the Settlement Agreement, the use of ride-share companies to supplement mobility options has expanded. The proposed General Plan includes Action TR-2.3.B to ensure that new development projects coordinate with transit project so that they are designed to support transit and provide adequate transit service and access.
	(d) Density Requirements to Support Transit. The Agreement requires that housing or development projects subject to a Specific Plan/Master Development Plan or regionally significant projects must be of sufficient density overall to support the feasible operation of transit, as determined with consultation with the San Joaquin Regional Transit District.	The proposed General Plan includes several policies to facilitate the development of housing in the Greater Downtown. It is envisioned that the housing densities in the Greater Downtown would be of sufficient overall density to support transit operations. The proposed General Plan includes several policies and actions to encourage mixed-use development along transportation corridors, including Policies LU-1.1, LU-2.2, LU-2.4, and LU-2.5).
General Plan		
6. General Plan Policies	The Agreement requires consideration of the following policies and programs in the General Plan to support infill and Downtown development. The Agreement does not require actual City Council adoption of such policies or programs:	The proposed General Plan is intended to satisfy these requirements.
	(a) Require at least 4,400 units of Stockton's new housing growth to be located in Greater Downtown Stockton, with the goal of approving 3,000 of these units by 2020.	The projected 2040 development under the proposed General Plan includes over 7,600 new units in the Greater Downtown. In addition, Policy LU-2.2 directs the City to facilitate at least 4,400 new units in the Greater Downtown by 2040. The proposed General Plan incentivizes growth in the Greater Downtown in compliance with the Agreement for the near-term horizon (see Policies LU-2.1 through LU-2.5).
	(b) Require at least an additional 14,000 of Stockton's new housing units to be located within the city limit [as it existed in 2008].	The projected 2040 development under the proposed General Plan includes over 21,000 new units in the 2008 city limit.[a] The proposed General Plan also includes policies and actions to prioritize development in infill areas (see Policy LU-6.2) and to prohibit new development if there is not funded or planned infrastructure in

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TABLE 4.7-8 2008 SETTLEMENT AGREEMENT CONSISTENCY ANALYSIS

	Settlement Agreement Stipulation Summary	Proposed General Plan Compliance
		place to support the growth (Action LU-6.1.E).
	(c) Provide incentives to promote infill development in Greater Downtown Stockton, including: reduced impact fees, lower permit fees, less restrictive height limits, less restrictive setback requirements, less restrictive parking requirements, subsidies, and streamlined permitting process.	The proposed General Plan includes the following policies and actions to promote infill in the Greater Downtown: ▪ Action LU-1.1.B: Directs the City to evaluate parking policies to provide more flexibility for mixed-use development. ▪ Action LU-2.2.A: Allows for streamlined residential development process in the Greater Downtown. ▪ Action LU-2.2.B: Establishes a TOD overlay around the transit station areas. ▪ Action LU-2.3.A: Reduces parking and shared parking requirements, in addition to curbside management policies to promote ride-sharing in the Downtown area (Action LU-2.3.C). ▪ Action TR-3.2.A: Directs the City to amend the Development Code to encourage shared parking, require preferential parking for rideshare vehicles, and allow reduced parking requirements to support transit, bicycling, and walking.
	(d) Provide incentives for infill development within the existing city limit but outside Greater Downtown Stockton and excluding projects of significance.	The proposed General Plan includes policies LU-2.1 through LU-2.5, which promote infill in the city limit. Incentives considered include streamlining the residential permit process, reducing permit requirements, allowing for reduced or shared parking, providing other incentives, and/or facilitating planning and permitting for building renovations (Actions LU-2.2.A, LU-2.3.A, and LU-2.4.A).
7. Amendments to the General Plan	The Agreement requires consideration of the following amendments to the General Plan to ensure that development on the city's outskirts does not grow in a manner that is out of balance with development of infill. The Agreement does not require actual City Council adoption of such policies or programs. Amendments shall include measures limiting the granting of entitlements for certain development projects outside the city limit until certain criteria are met:	
	(a) Urban Performance Measures. Minimum levels of transportation efficiency, transit availability, and level of service; City service capacity; water availability; and other urban services performance measures.	The proposed UMPS ensure that new growth can be supported by essential public services and infrastructure (Actions LU-6.1.B through LU-6.1.G). Action 6.1.F directs the City to evaluate and implement adjustments to the Public Facilities Fee structure to encourage development in areas where infrastructure is already present and ensure that non-infill development pays its fair share of anticipated citywide capital facilities and operational costs. While the EIR evaluates growth from existing conditions that includes an increase in emissions from approved and pending projects outside the city limit, the General Plan focuses new growth in

TABLE 4.7-8 2008 SETTLEMENT AGREEMENT CONSISTENCY ANALYSIS

	Settlement Agreement Stipulation Summary	Proposed General Plan Compliance
		Greater Downtown Stockton and the city limit (Actions LU-6.2.A and LU-6.2.B). The incentives for new development in the Greater Downtown Stockton would facilitate the development of 4,400 new housing units in the Greater Downtown (Actions LU-2.2A, LU-2.3A, and LU-2.4.A). The proposed General Plan also includes policies to ensure that new development maintains roadway levels of service (LOS) and reduces VMT per capita (Policies TR-4.1 through TR-4.3).
	(b) Milestones for Infill Development. Milestones that will assure the specified levels of infill development, jobs-housing balance goals, and GHG and VMT reduction goals.	Proposed General Plan Policy LU-6.1 ensures that growth in the EIR Study Area is managed and does not exceed the level of infrastructure and services analyzed in the EIR. Policy LU-2.2 sets a goal to achieve 4,400 units in the Greater Downtown by 2040. Action TR-4.2.B requires that the City update the Transportation Impact Analysis Guidelines to include the City's VMT criteria.
	(c) Impact Fees on New Development. Impact fees or alternative financing mechanisms to achieve the milestones. The fees are required to be structured to ensure that development outside the infill areas within the city limit is revenue-neutral to the City, and may be in addition to CEQA mitigation, based on a Fiscal Impact Analysis and a Public Facilities Financing Plan.	In addition to the infill incentives in the proposed General Plan discussed above, Action 6.1.F directs the City to evaluate and implement adjustments to the Public Facilities Fee structure to encourage development in areas where infrastructure is already present and ensure that non-infill development pays its fair share of anticipated citywide capital facilities and operational costs. Other financing mechanisms for the City include development agreements (see Action LU-6.5.B), strategic partnerships (see Action LU-4.2.B), and other financing tools such as assessment districts (see Action LU-2.1.A) to stimulate development.
	(d) Enhancing the Financial Viability of Infill Development in Greater Downtown Stockton. The Agreement requires that the City explore mechanisms such as an infill mitigation bank to enhance the financial viability of infill development in Greater Downtown Stockton.	Mitigation Measure GHG-1 requires that the City explore the possibility of utilizing transfer of development rights and other mechanisms, such as an infill mitigation bank, to enhance the viability of development in Greater Downtown Stockton.
Other General Requirements		
8. Monitoring.	The Agreement requires monitoring of program elements.	The City would track any measures and strategies that are adopted pursuant to the CAP and other Settlement Agreement elements. The State also requires that cities monitor and annually report on General Plan implementation.
9. Early Climate Protection Actions.	The Agreement requires development of certain early climate protection actions until the City adopts a CAP.	The City developed a Climate Impact Study Process prior to approval of the 2014 CAP. Since the City has adopted the 2014 CAP, these requirements are no longer warranted.

a. The CAP identified that as of fall 2013, 8,256 units had already been entitled in the city limit but outside of the Greater Downtown since 2008. In addition, the Stockton Housing Element identifies enough vacant/opportunity sites within the city limit but outside the Greater Downtown to realistically allow for the development of an additional 6,038 units, for a total development capacity in this area of 14,294 units (2010 Housing Element). Therefore, the City has already reached its goal of allowing for the amount of development within the city limit but outside the Greater Downtown, as required by the Settlement Agreement.
Source: City of Stockton et. al., 2008. Memorandum of Agreement, October.

GREENHOUSE GAS EMISSIONS

TABLE 4.7-9 CITY OF STOCKTON CLIMATE ACTION PLAN CONSISTENCY ANALYSIS

CAP Measure	Strategy Policies and Objectives	Proposed General Plan Compliance
Energy-1: Green Building Ordinance [M]	The City's existing Green Building Ordinance requires that all building additions greater than 500 square feet for single-family detached residential homes and all building additions greater than 5,000 square feet for non-residential space for structures permitted before 2002 must meet or exceed 2008 Title 24 of the California Code of Regulations Standards for the total building space.	The City is currently considering potential changes to the existing Green Building Ordinance (October 2013); any potential revisions wouldrequire approval by the City and the CEC (see Mitigation Measure GHG-1). Additionally, proposed Policy LU-5.4 requires water and energy conservation and efficiency in new construction.
Energy-2a: Outdoor Lighting Upgrades for Existing Development [V/City] – Municipal Outdoor Lighting Upgrades	Measure Energy-2a would require the City to implement a program to change out traffic signals and street lights, with the following goals: ▪ Installation of energy-efficient bulbs (e.g., light emitting diode [LED], high pressure sodium [HPS]) in 50 percent of streetlights. ▪ Installation of energy-efficient bulbs (LED) in all traffic signals.	Through implementation of Energy-2a, the City has expanded its programs to replace streetlights and traffic signals with LED bulbs.
Energy-2: Outdoor Lighting Upgrades for Existing Development [V/City] – Private Outdoor Lighting Upgrades	Energy 2b is a voluntary program to encourage and promote lighting upgrades for the private sector and other public agencies with the following goal: ▪ Installation of energy-efficient bulbs (e.g., compact fluorescent [CFL]) in 75 percent of outdoor lighting fixtures.	The Green-Up Stockton Ordinance (Ordinance 005-11 C.S.) encourages voluntary residential energy efficiency assessments and retrofits for existing dwelling units. The City is working with community services agencies (see Action CH-3.3.C), PG&E, and other funding sources to identify funding and incentivize residential energy efficient lighting projects. Policy LU-5.4 requires energy conservation and efficiency retrofits.
Energy-3: Energy Efficiency Incentives and Programs to Promote Retrofits for Existing Residential Buildings [V]	Through the Green-Up Stockton Ordinance, incentivize and support voluntary energy efficiency retrofits of existing residential buildings to achieve reductions in natural gas and electricity usage.	The Green-Up Stockton Ordinance (Ordinance 005-11 C.S.) encourages voluntary residential energy efficiency assessment and retrofits for existing dwelling units. The ordinance applies to units permitted prior to November 1, 2002 (excluding unconditioned space). The 2014 CAP identified that the goals of the Green-Up Stockton program have been met. Overall, between 11,500 and 12,300 retrofits were implemented (depending on retrofit definition) under PG&E programs between 2011 and 2013. The City has adopted the Home Energy Retrofit Opportunity (HERO) program, which provides Property Assessed Clean Energy (PACE) financing. The HERO program allows property owners to obtain long-term competitive financing through an additional property assessment and can be used for both energy-efficiency retrofits as well as solar panels and electric vehicle charging stations.
Energy-4: Energy Efficiency Incentives and Programs to Promote Retrofits for	Incentivize and support voluntary energy efficiency retrofits of existing non-residential buildings to achieve reductions in natural gas and electricity usage. Promote voluntary programs for	The City has adopted the HERO Program to assist residents and businesses in financing energy retrofits.

TABLE 4.7-9 CITY OF STOCKTON CLIMATE ACTION PLAN CONSISTENCY ANALYSIS

CAP Measure	Strategy Policies and Objectives	Proposed General Plan Compliance
Existing Non-Residential Buildings [V]	existing facilities to improve building-wide energy efficiency by 20 percent by 2020.	
Energy-5: Solar Powered Parking [V]	Support programs to encourage existing commercial development and multi-family housing complexes to install solar panels on carports. Establish a goal for 15 percent of existing development (including any existing solar parking installed after 2005) to install solar panels over carports by 2020.	The City has adopted the HERO Program to assist residents and businesses in financing energy retrofits, including solar panels on carports. Mitigation Measure GHG-1 also requires the City to consider a goal for 15 percent of existing development to install solar panels over carports.
Energy-6: Residential and Non-Residential Rooftop Solar [V]	Encourage businesses and residents to install rooftop solar using Power Purchase Agreements and other low or zero up-front cost options for installing solar photovoltaic systems. Establish the following local renewable energy goals: ▪ Existing Commercial Developments: 10 percent of electricity in 2020 provided entirely by solar. ▪ Existing Residential Developments: 5 percent of electricity in 2020 provided entirely by solar.	The City has adopted the HERO Program to assist residents and businesses in financing energy retrofits, including solar panels. Mitigation Measure GHG-1 also requires the City to consider a goal to achieve 10 percent of non-residential electricity and 5 percent of residential electricity to be provided entirely by solar.
Trans-1: Land Use/Transportation System Design Integration [CITY, V]	This measure includes integration of land use and transportation planning including an infill goal for new units in the Greater Downtown and promotion of a balance of jobs and housing in new village areas and throughout the city. The City would promote these efforts through implementation of new General Plan Amendments for the Greater Downtown area, a new Greater Downtown Stockton Area Specific Plan, potential facilitation of demonstration projects, promotion of incentives for Downtown and other infill development, and requirements for a balance of jobs and housing in new development areas.	The proposed General Plan provides for 4,400 new units by 2040 in the Greater Downtown (see Policy LU-2.2). The proposed General Plan also incentivizes growth in the Greater Downtown Stockton; see Policies LU-2.1 through LU-2.5). Additionally, Action TR-3.2.B would require new development to provide electric vehicle charging stations and prioritize parking for electric and alternative fueled vehicles.
Trans-2: Parking Policies [M]	Encourage the development of policies that increase parking costs by 10 percent in the Downtown area and reduce parking requirements for new development by 20 percent in the Downtown outside the central parking district and 10 percent elsewhere in the city. Support strategies to achieve this goal, such as designating the most attractive spots for rideshare vehicles and offering incentives for employees not to park in the Downtown	The proposed General Plan includes actions that would amend the Development Code to encourage shared parking, require preferential parking for rideshare vehicles, and allow reduced parking requirements to support transit, bicycling, and walking in the city and Downtown (see Actions TR-3.2.A, LU-1.1.B, and LU-2.3.A). Policy SAF-4.2 and Action SAF-4.2.A encourages new major employers to participate in a transportation demand management program (TDM) to provide incentives for employees to reduce vehicle trips.

GREENHOUSE GAS EMISSIONS

TABLE 4.7-9 CITY OF STOCKTON CLIMATE ACTION PLAN CONSISTENCY ANALYSIS

CAP Measure	Strategy Policies and Objectives	Proposed General Plan Compliance
Trans-3: Transit System Support [CITY]	Encourage the development of transit support facilities (such as bus shelters) as well as 200 new park and ride spaces.	Proposed General Plan Action TR-2.2.A requires major new development to incorporate design features to promote safe and comfortable access to transit, such as a sheltered bus stops, park-and-ride facilities, and highly visible transit information and maps.
Trans-4: Efficient Goods Movement [CITY]	Construct grade-separated crossings on Eight Mile Road, Lower Sacramento Road, and Sperry Road.	Proposed General Plan Action TR-1.2.C directs the City to provide grade separations at railroad crossings on arterial streets where feasible.
Trans-5: Reduce Barriers for Non-Motorized Travel [CITY]	Reduce physical barriers to bicycle and pedestrian networks by providing additional bicycle lanes and implementing the Multi Modal Street Design Guidelines.	The proposed General Plan includes Policy TR-2.1 to develop interconnected bicycle and pedestrian facilities. Action TR-2.1.B requires the City to implement the City of Stockton Bicycle Master Plan. Action TR-2.3.B requires dedication of right-of-way for bicycles use in arterial and collector streets.
Trans-6: Transit System Improvements [CITY]	Expand transit system network and increase service frequency through implementation of the City's Transit Plan.	Proposed Action CH-2.2.D directs the City to work with transit agencies to improve transit service. Actions TR-1.2.A and TR-1.2.B direct the City to actively support high speed rail and expansion of rail service. The proposed General Plan also improves multi-modal connections throughout the city, including the Greater Downtown (Policy LU-2.5).
Trans-7: Safe Routes to School [CITY]	Work with local school districts to enhance pedestrian crossings, encourage activities such as a walking school bus, and create educational programs that teach students bicycle safety.	Proposed Action TR-1.1.E directs the City to work with school districts to enhance pedestrian crossings to encourage walking and biking to school.
Trans-8a: Additional Safe Routes to School [CITY, V]	Work with local school districts to expand the Safe Routes to School Program (Trans-7) to achieve a participation rate of 10 percent of K-12 students.	Proposed Action TR-1.1.E directs the City to work with school districts to enhance pedestrian crossings to encourage walking and biking to school.
Trans-8b: Transportation Demand Management [CITY, V]	Encourage employers within the city, county, and region to take actions that would result in at least 1 percent of employees participating in a Transportation Demand Management Program.	Proposed Policy SAF-4.2 and Action SAF-4.2.A encourage new major employers to participate in a TDM program.
Waste-1: Increased Waste Diversion [M]	Continue to provide public education and collection services to community residents and business. Exceed the waste diversion rate required by AB 34147 by diverting 75 percent of community waste by 2020.	Proposed Policy CH-5.2 expands opportunities for residents and business in the city to reduce, reuse, and recycle. Action CH-5.2.B identifies that the City will continue to require recycling in private and public operations.
Water-1: Comply with Senate Bill X7-7 [M]	Comply with SB X7-7 and achieve a 20 percent reduction in per capita water usage by 2020.	In addition to mandatory compliance with SB X7-7, the City requires landscape plans to incorporate native and drought tolerant plants in accordance with the City's Water Efficient Landscape Ordinance (see proposed Action LU-5.1.C). Additionally, Policy LU-5.4 requires water conservation in new construction and retrofits.

TABLE 4.7-9 CITY OF STOCKTON CLIMATE ACTION PLAN CONSISTENCY ANALYSIS

CAP Measure	Strategy Policies and Objectives	Proposed General Plan Compliance
Water-2: Promotion of Water-Efficiency for Existing Development [V]	Encourage existing buildings to achieve higher levels of water efficiency. Education and outreach programs can help educate individuals on the importance of water efficiency and how to reduce water use. Rebate programs can help promote installation of water-efficient plumbing fixtures.	See Water-1. Proposed Policy LU-5.4 requires water conservation and efficiency in new construction and retrofits.
Wastewater-1: Energy Efficiency Improvements at the RWCF [CITY]	Implement energy efficiency measures described in the City's Capital and Improvement EMP.	The City is implementing the measures identified in the Capital and Improvement EMP. Additionally, proposed Policy LU-5.4 requires energy conservation and efficiency in new construction and retrofits.
Urban Forestry-1: Urban Tree Planting Programs [CITY]	Strive to expand urban forestry programs to plant between 500 and 900 trees per year from 2016 to 2020. To maximize GHG and other environmental benefits, new trees would be targeted to the Downtown and urban areas.	Proposed Policy LU-5.1 ensures the City continues to maintain Stockton's urban forest.
High GWP GHG-1: Residential Responsible Appliance Disposal Programs [CITY]	To help residents dispose of their freezers and refrigerators using Responsible Appliance Disposal (RAD), with this measure, the City would establish a RAD drop-off center in Stockton. This center would be done by a solid waste vendor under contract to the City.	Stockton has coordinated with its waste management provider to recycle large appliances, including refrigerators and freezers.
Off-Road-1: Electric Powered Construction Equipment [V]	Offer incentives (e.g., reduced procedural requirements, preference points when bidding on City contracts, and partnerships with CARB or SJVACPD to leverage funding) to construction contractors that utilize electric equipment in at least 20 percent of their fleet.	California's construction vehicle fleets have gotten cleaner as equipment has turned over and new equipment complies with US EPA and CARB regulations. However, large all-electric and hybrid options are still in demonstration phase and/or have not been fully integrated into California's fleets. Proposed Action SAF-4.1.C requires use of electric-powered construction and landscaping equipment where appropriate. Mitigation Measure GHG-1 requires the City to consider offering incentives for contractors that use electric equipment when bidding on City contracts.
Off-Road-2: Reduced Idling Times for Construction Equipment [M]	Develop an ordinance that limits idling time for heavy-duty construction equipment to 3 minutes.	CARB requires that heavy duty construction vehicles idle for no more than five minutes (non-essential idling) (see proposed Action SAF-4.1.D). Mitigation Measure GHG-1 requires the City to consider an ordinance to further limit non-essential idling to 3 minutes.
Off-Road-3: Electric Landscaping Equipment [V]	Through a combination of outreach, education and incentives, pursue a goal for 15 percent of the City's landscaping equipment to be electric or battery powered by 2020.	Proposed Action SAF-4.1.C requires use of electric-powered construction and landscaping equipment where appropriate.
DRP-1: Development Review Process [M]	New discretionary development would be required to reduce their emissions by 29 percent compared to unmitigated conditions consistent with current City CEQA practice and SJVAPCD recommended CEQA thresholds.	Since the 2014 CAP, CARB has released the 2017 Scoping Plan Update to ensure that the State achieves further GHG reductions in line with the goals for 2030 established under SB 32. Mitigation Measure GHG-1 would require the City to update the CAP to align the CAP with the updated target for 2030 under SB 32.

GREENHOUSE GAS EMISSIONS

TABLE 4.7-9 CITY OF STOCKTON CLIMATE ACTION PLAN CONSISTENCY ANALYSIS

CAP Measure	Strategy Policies and Objectives	Proposed General Plan Compliance
		Applicants for discretionary projects subject to CEQA would be required to evaluate their potential GHG emissions impacts relative to the updated GHG reduction goals of SB 32 and the long-term climate stabilization goal of 2050, depending on the buildout year of the project.

Notes: M = Mandatory Measure; V = Voluntary Measure; CITY = Municipal Measure
Source: Stockton, City of. 2014, August. City of Stockton Climate Action Plan. Prepared by ICF International.

below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.[62]

The GHG emissions under the proposed project shown in Table 4.7-7 include reductions associated with statewide strategies that have been adopted since AB 32. The proposed General Plan would comply with these GHG emissions reduction measures since they are statewide strategies. In addition, future buildings constructed over the lifetime of the proposed General Plan would be subject to the future triannual updates to the Building and Energy Efficiency Standards, which will ultimately require zero net energy (ZNE) construction. However, the Scoping Plan itself is not directly applicable to the proposed General Plan and UMPS. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

SJCOG Regional Transportation Plan/Sustainable Communities Strategy

The 2014 SCS/RTP is an integrated long-range transportation and land-use/housing plan for San Joaquin County through the year 2040. The 2014 SCS/RTP responds to State mandates (AB 32 and SB 375) that require California's 18 metropolitan areas – including San Joaquin County – to adopt an SCS that will coordinate land use planning with transportation investments in order to reduce GHG emissions from motor vehicles. The policies in the 2014 SCS/RTP for meeting State requirements affect land use and transportation throughout Stockton. As identified in Section 4.10, Land Use and Planning, implementation and adoption the proposed General Plan goals, policies, and actions would ensure consistency with the 2014 SCS/RTP by encouraging multi-modal transportation opportunities. Therefore, implementation of the proposed General Plan would not conflict with the 2014 SCS/RTP and the impact would be *less than significant.*

Significance Without Mitigation: Less than significant.

[62] California Air Resources Board, 2017, October 27. Draft – The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf, accessed November 21, 2017.

GREENHOUSE GAS EMISSIONS

4.8 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the regulatory framework and existing conditions in the EIR Study Area related to hazards and hazardous materials. The following evaluation is based on a spatial analysis and examines the potential impacts related to the release of hazardous materials into the environment associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). Cumulative impacts related to hazards and hazardous materials would be contiguous with the Sphere of Influence (SOI) boundary.

4.8.1 ENVIRONMENTAL SETTING

4.8.1.1 REGULATORY FRAMEWORK

Hazardous materials refer generally to hazardous substances, hazardous waste, and other materials that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. Hazardous materials are used in products (e.g., household cleaners, industrial solvents, paint, and pesticides) and in the manufacturing of products (e.g., electronics, newspapers, and plastic products). Hazardous materials can include petroleum products, natural gas, synthetic gas, acutely toxic chemicals, and other toxic chemicals that are used in agriculture, commercial and industrial uses, retail businesses, hospitals, and households. Accidental release of hazardous materials can result from a variety of incidents, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

The term “hazardous materials” as used in this section includes all materials defined in the California Health and Safety Code (H&SC):

> *A material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. ‘Hazardous materials’ include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the unified program agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

The term includes chemicals regulated by the United States Department of Transportation (USDOT), the United States Environmental Protection Agency (US EPA), the California Department of Toxic Substances Control (DTSC), the California Governor’s Office of Emergency Services (Cal OES), and other agencies as hazardous materials, wastes, or substances. ”Hazardous waste” is any hazardous material that has been discarded, except those materials specifically excluded by regulation. Hazardous materials that have been intentionally disposed of or inadvertently released are defined as “discarded” materials and can result in the creation of hazardous waste. Hazardous wastes are broadly characterized by their ignitability, toxicity, corrosivity, reactivity, radioactivity, or bioactivity. Federal and State hazardous waste definitions are similar, but contain enough distinctions that separate classifications are in place for federal Resource Conservation and Recovery Act (RCRA) hazardous wastes and State non-RCRA hazardous wastes. Hazardous wastes require special handling and disposal because of their potential to impact public health

and the environment. Some materials are designated "acutely" or "extremely" hazardous under relevant statutes and regulations.

Hazardous materials and wastes can pose a significant actual or potential hazard to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Many federal, State, and local programs that regulate the use, storage, and transportation of hazardous materials and hazardous waste are in place to prevent these unwanted consequences. These regulatory programs are designed to reduce the danger that hazardous substances may pose to people and businesses under normal daily circumstances and as a result of emergencies and disasters.

Federal Agencies and Regulations

United States Environmental Protection Agency

The US EPA is the primary federal agency that regulates hazardous materials and waste. In general, the US EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs and delegates the responsibility for issuing permits and for monitoring and enforcing compliance to States and Native American tribes. US EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing waste volumes through such strategies as recycling. California falls under the jurisdiction of US EPA Region 9. Under the authority of RCRA and in cooperation with State and tribal partners, the US EPA Region 9 Waste Management and Superfund Divisions manage programs for site environmental assessment and cleanup, hazardous and solid waste management, and underground storage tanks.

United States Department of Transportation

The USDOT has the regulatory responsibility for the safe transportation of hazardous materials between states as well as to foreign countries. The USDOT regulations govern all means of transportation, except for those packages shipped by mail, which are covered by United States Postal Service regulations. The federal RCRA of 1976 (described below) imposes additional standards for the transport of hazardous wastes.

Occupational Safety and Health Administration

OSHA oversees the administration of the Occupational Safety and Health Act, which requires specific training for hazardous materials handlers, provision of information to employees who may be exposed to hazardous materials, and acquisition of material safety data sheets from materials manufacturers. The material safety data sheets describe the risks, as well as proper handling and procedures, related to particular hazardous materials. Employee training must include response and remediation procedures for hazardous materials releases and exposures.

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to San Joaquin County for State law regulating hazardous waste producers or generators in Stockton.

Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," in 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The Superfund Amendments and Reauthorization Act (SARA) amended the CERCLA in 1986. SARA elevated the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other State and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased State involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the program's fund to $8.5 billion.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), also known as SARA Title III, was enacted in October 1986. This law requires State and local governments to plan for chemical emergencies. Reported information is made publicly available to increase awareness about potentially dangerous chemicals in a community. EPCRA Sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through California Accidental Release Program (CalARP). The State of California has delegated local oversight authority of the CalARP program to San Joaquin County.

Hazardous Materials Transportation Act

The USDOT regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). The California State Fire Marshal's

Office has oversight authority for hazardous materials liquid pipelines. The California Public Utilities Commission has oversight authority for natural gas pipelines in California. These agencies also govern permitting for hazardous materials transportation.

National Fire Plan

The National Fire Plan (NFP), developed in 2000, is an effort to examine the nation's intergovernmental structure for wildland fire protection and response and describe the existing legal responsibilities, authorities, and roles of federal, State, local, and tribal wildland fire protection organizations. The NFP focuses on five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistant, and accountability. The US Department of Agriculture (USDA) Forest Service and Department of Interior are charged with implementing the NFP and providing assistance to communities threatened by wildland fire. The NFP also provides recommendations for wildland fire risk reduction.[1]

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and other resource providers, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event that would likely need federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency. The Federal Response Plan is part of the National Response Framework, which was most recently updated in 2008.

Robert T. Stafford Disaster Relief and Emergency Act

The Stafford Act of 1988 authorizes federal government assistance for emergencies and disasters when State and local capacities to address them are exceeded. The Stafford Act forms the statutory authority for most federal disaster response activities, especially as they relate to the Federal Emergency Management Agency (FEMA) and FEMA programs.

National Response Framework

The National Response Framework of 2013, published by the Department of Homeland Security, is a guide for the nation to respond to all types of disasters and emergencies. The Framework describes specific authorities and best practices for managing incidents that range from serious local to large-scale terrorist attacks or catastrophic natural disasters. In addition, the Framework describes the principles, roles, and responsibilities, and coordinating structures for responding to an incident, and further describes how response efforts integrate with those of the other mission areas.

[1] National Fire Plan, http://www.fs.fed.us/database/budgetoffice/NFP_final32601.pdf, accessed April 22, 2016.

State Agencies and Regulations

California Environmental Protection Agency

One of the primary State agencies that regulate hazardous materials is the CalEPA. CalEPA is authorized by the US EPA to enforce and implement certain federal hazardous materials laws and regulations. The California DTSC, a department of the CalEPA, protects California and Californians from exposure to hazardous waste, primarily under the authority of the RCRA and the California H&SC.[2] DTSC mandates the preparation of written programs and response plans, such as Hazardous Materials Business Plans (HMBPs). The DTSC programs include dealing with aftermath cleanups of improper hazardous waste management, evaluation of samples taken from sites, enforcement of regulations regarding use, storage, and disposal of hazardous materials, and encouragement of pollution prevention.

California Division of Occupational Safety and Health

Like OSHA at the federal level, the California Division of Occupational Safety and Health (Cal/OSHA) is the State agency responsible for ensuring workplace safety. Cal/OSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. In the event that a work site is contaminated, a Site Safety Plan must be crafted and implemented to protect the safety of workers. Site Safety Plans establish policies, practices, and procedures to prevent the exposure of workers and members of the public to hazardous materials originating from a contaminated site or building.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California.[3] CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning based on topography, fire history, and climate. The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, CAL FIRE published the *2010 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments.[4]

California Building Code

The State of California provides a minimum standard for building design through the California Building Code (CBC), which is found in Title 24, Part 2 of the California Code of Regulations (CCR). The CBC is based on the 1997 Uniform Building Code, with certain California-specific modifications. The CBC is updated every three years, and the current 2016 edition of the CBC went into effect on January 1, 2017. It is generally adopted on a jurisdiction-by-jurisdiction basis, and may be subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county

[2] Hazardous Substance Account, Chapter 6.5 (Section 25100 et seq.) and the Hazardous Waste Control Law, Chapter 6.8 (Section 25300 et seq.) of the Health and Safety Code.

[3] California Department of Forestry and Fire Protection (CAL FIRE), http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_development.php, accessed July 20, 2017.

[4] California Department of Forestry and Fire Protection (CAL FIRE), 2010, *2010 Strategic Fire Plan for California,* http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf668.pdf, accessed July 20, 2017.

building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors and building materials; and the clearance of debris and vegetation near occupied structures in wildfire hazard areas. The City of Stockton has adopted all sections of the CBC Title 24, Part 2, according to Chapter 15.08, Building Code, of the Stockton Municipal Code.

Public Resources Code Fire Safe Regulations

Section 4290 of the Public Resources Code covers Fire Safe Regulations, establishing minimum road standards; signage for streets, roads, and buildings; private water supply resources; and wildland fuel modification. Section 4290 works in conjunction with building construction development standards in State Responsibility Areas (SRAs), which are State-identified lands or areas for which CAL FIRE has the primary responsibility to manage the public safety during a fire incident. SRAs are defined based on land ownership, population density, and land use. In addition, Section 4291 of the PRC requires annular defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area or land covered with forest, brush, grass, or other flammable material.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is found in CCR Title 24, Part 9 and is revised and published approximately every three years by the California Building Standards Commission. The City of Stockton has adopted all the sections of the CFC as published by the International Fire Code according to Chapter 15.12, Fire Code, of the Stockton Municipal Code.

Senate Bill 1241: Wildfire Prevention Planning

Signed into law at the end of 2012, SB 1241 amends the Government and Public Resources Codes to require cities and counties to review and update the Safety Element as necessary to address the risk of fire in SRAs and Very High Fire Hazard Severity Zones (VHFHSZ). There are no SRAs or VHFHSZs within the EIR Study Area.

California Governor's Office of Emergency Services

Cal OES was established as part of the Governor's Office on January 1, 2009. It was created pursuant to Assembly Bill 38, which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall State agency response to major disasters in support of local government. The agency is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, human-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

California Department of Transportation and California Highway Patrol

Caltrans and the CHP are the two State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies. Caltrans manages more than 50,000 miles of California's highways and freeways, provides intercity rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on highways, freeways, and intercity rail lines.

The CHP enforces hazardous materials and hazardous waste labeling and packing regulations designed to prevent leakage and spills of materials in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. In addition, the State of California regulates the transportation of hazardous waste originating from or passing through California.

Common carriers are licensed by the CHP, pursuant to Section 32000 of the California Vehicle Code. This section requires licensing every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of the business in the delivery of hazardous materials.

California Health and Safety Code and Code of Regulations

California H&SC Chapter 6.95 and CCR Title 19, Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business which uses hazardous materials or a mixture containing hazardous materials must establish and implement a business and area plan if the hazardous material is handled in certain quantities.

California State Aeronautics Act

The State Aeronautics Act is implemented by the Caltrans Division of Aeronautics. The purpose of this Act is to: 1) foster and promote safety in aeronautics; 2) ensure State laws and regulations relating to aeronautics are consistent with federal aeronautics laws and regulations; 3) assure that persons residing near airports are protected against unreasonable levels of aircraft noise; and 4) develop informational programs to increase the understanding of current air transportation issues. The Caltrans Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within 2 miles of an airport runway, and authorizes helicopter landing sites at/near schools.

Assembly Bill 2776: Airport Influence Area

AB 2776, passed in 2002, establishes "airport influence areas" (AIA), which are areas where airport-related factors "may significantly affect land uses or necessitate restrictions on those uses as determined

by an airport land use commission (ALUC)." The California Public Utilities Code establishes airport land use commissions in every county to provide for the orderly development of air transportation and ensure compatible land uses around airports that are open to public use. According to the State Division of Aeronautics, the airport influence area is usually the planning area designated by an airport land use commission for each airport.

Regional Agencies and Regulations

Central Valley Regional Water Quality Control Board

The Porter-Cologne Water Quality Act[5] established the State Water Resources Control Board (SWRCB) and divided the State into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB – Region 5 regulates water quality in the EIR Study Area. The Central Valley RWQCB has the authority to require groundwater investigations and/or remedial action if the quality of groundwater or surface waters of the State is threatened.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (San Joaquin Valley Air District) is made up of eight counties in the Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and a portion of Kern. The San Joaquin Valley Air District has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products. The latter are typically the responsibility of CalEPA and the California Air Resources Board (CARB). The San Joaquin Valley Air District is responsible for preparation of attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and issuance of permits for activities.

San Joaquin County Environmental Health Department

A Certified Unified Program Agency (CUPA) is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. The San Joaquin County Environmental Health Department is the certified CUPA for the City of Stockton and its vicinity. The Environmental Health Department administers the Hazardous Material Business Plan, California Accidental Release Prevention Program, Aboveground Petroleum Storage Act, Hazardous Waste Generator, Hazardous Waste Onsite Treatment, and Underground Storage Tank program.

San Joaquin County Office of Emergency Services

The San Joaquin County Office of Emergency Services (OES) is responsible for preparing the County's Local Hazard Mitigation Plan (LHMP). The federal Disaster Management Act of 2000 requires local agencies to develop LHMPs in order to qualify for grant funding for hazard mitigations. To maintain eligibility for funding, the plans are updated on a five-year cycle of monitoring, evaluating, and updating. The most

[5] California Water Code Sections 13000 et seq.

recent LHMP for San Joaquin County was completed in 2009, and an update is currently underway. The San Joaquin County LHMP identifies and profiles human-made and natural hazards, and prioritizes hazard mitigations, which are actions that reduce the severity or intensity of risk from potential disasters and allow for quicker recovery from disaster.

Stockton Metropolitan Airport Land Use Compatibility Plan

The Airport Land Use Compatibility Plan (ALUCP) for the Stockton Metropolitan Airport was last updated in May 2016.[6] The ALUCP provides guidance related to the placement of land uses near the Stockton Metropolitan Airport. Specifically, the ALUCP seeks to protect the public from adverse effects of aircraft noise, ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect navigable airspace. The safety zones in the ALUCP are described in detail below in Section 4.8.1.2.

Local Agencies and Regulations

Stockton Municipal Code

Chapter 2.82, Emergency Organization and Functions

This chapter of the Stockton Municipal Code describes the preparation and implementation of plans for the protection of persons and property within Stockton in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of the City with all other public agencies, corporations, organizations, and affected private persons. Stockton Municipal Code Section 2.82.060, Director and Deputy Director of Emergency Services, establishes that one of the duties of the Director of Emergency Services is to request that the City proclaim the existence of a threat or local emergency. Once a local emergency is proclaimed, the Director has seven days to take action. In addition, the Director has the authority to request the Governor to proclaim a "state of emergency" when local resources are inadequate to cope with the emergency. The Director is charged with controlling and directing the efforts of the emergency organization of the City and directing cooperation between the coordination of services and staff.

Chapter 16.28, Overlay Zoning District Land Use and Development Standards

Chapter 16.28 of the Stockton Municipal Code regulates development and new land uses in overlay districts established by Section 16.16.020. Section 16.28.030 establishes the Airport Operations (AIR) overlay district and provides height limits for structures in the vicinity of the Stockton Metropolitan Airport, based on zones or surfaces defined in the air space above the airport and its surroundings. It also requires that all proposed uses be consistent with the ALUCP.

[6] San Joaquin County's Aviation System, Stockton Metropolitan Airport Land Use Compatibility Plan, http://www.sjcog.org/DocumentCenter/View/1318, accessed July 21, 2017.

Section 16.36.080, Hazardous Materials

This section of the Stockton Municipal Code sets forth the standards for regulating the use, handling, storage, and transportation of hazardous materials. Per Section 16.36.080(A), a use permit is required for any new commercial, industrial, institutional, or accessory use, or major addition (over 10 percent) to an existing use within 1,000 feet of a residential zoning district that involves the manufacture, storage, handling, or processing of hazardous materials in sufficient quantities that would require permits as hazardous materials. In addition, this section of the Stockton Municipal Code provides standards for reporting, notification, new development, and both underground and above-ground storage of hazardous materials.

City of Stockton Emergency Operations Plan

The City adopted its most recent version of its Emergency Operations Plan (EOP) in June 2012. The EOP addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The EOP establishes the emergency management organization required to mitigate any significant emergencies and identifies roles and responsibilities required to protect the health and safety of Stockton residents and property. In addition, the EOP establishes operations concepts associated with a field response to emergencies.[7]

Stockton Fire Department

The Stockton Fire Department's (SFD) Hazardous Materials (Haz Mat) Team is charged with mitigating hazardous materials releases and environmental emergencies. The Haz Mat Team is also responsible for coordinating with State and local authorities to prepare, prevent, respond to, mitigate, and determine the responsible party for a variety of hazardous materials releases.

4.8.1.2 EXISTING CONDITIONS

Hazardous Materials Sites

California Government Code Section 65962.5 requires the CalEPA to compile, maintain, and update specified lists of hazardous material release sites. CEQA requires the lead agency to consult the lists compiled pursuant to Government Code Section 65962.5 to determine whether a project and any alternatives are identified on any of the following lists:[8]

- US EPA NPL: The US EPA's National Priorities List (NPL) includes all sites under the US EPAs Superfund program, which was established to fund cleanup of contaminated sites that pose risk to human health and the environment.
- US EPA CERCLIS and Archived Sites: The US EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) includes a list of 15,000 sites nationally

[7] City of Stockton, Emergency Operations Plan, http://stockton.granicus.com/MetaViewer.php?view_id=48&clip_id=4191&meta_id=345765, accessed April 26, 2015.

[8] California Public Resources Code (CPRC) Section 21092.6.

identified as hazardous sites. This would also involve a review for archived sites that have been removed from CERCLIS due to No Further Remedial Action Planned (NFRAP) status.

- US EPA RCRIS (RCRA Info): The Resource Conservation and Recovery Act Information System (RCRIS or RCRA Info) is a national inventory system about hazardous waste handlers. Generators, transporters, handlers, and disposers of hazardous waste are required to provide information for this database.
- DTSC Cortese List: The DTSC maintains the Hazardous Waste and Substances Sites (Cortese) list as a planning document for use by the State and local agencies to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. This list includes the Site Mitigation and Brownfields Reuse Program Database (CalSites).
- DTSC HazNet: The DTSC uses the HazNet database to track hazardous waste shipments.
- SWRCB LUSTIS: Through the Leaking Underground Storage Tank Information System (LUSTIS), the SWRCB maintains an inventory of underground storage tanks (UST) and leaking USTs (LUST), which tracks unauthorized releases.

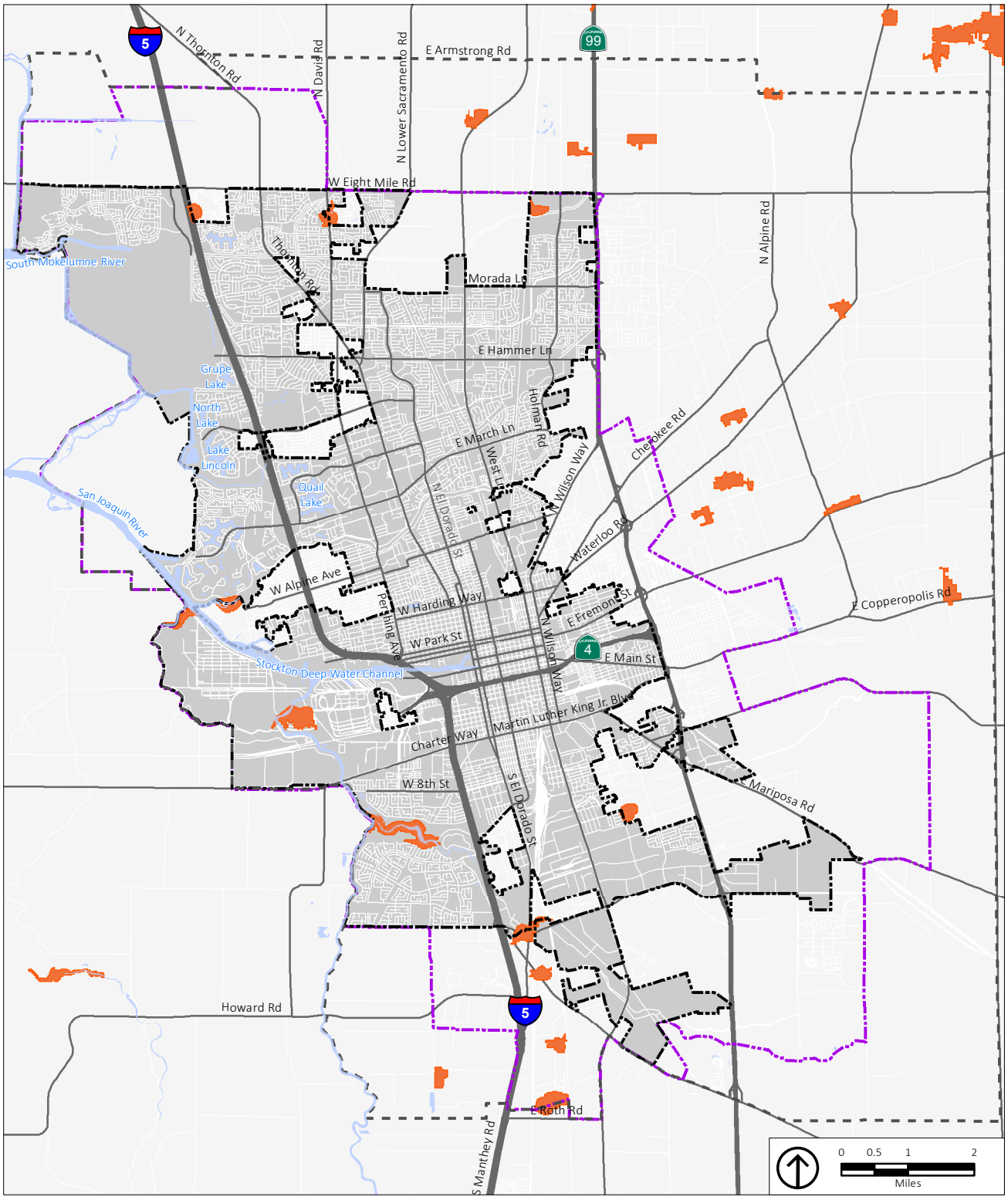
The required lists of hazardous material release sites are commonly referred to as the "Cortese List," named after the legislator who authored the legislation. Because the statute was enacted more than 20 years ago, some of the provisions refer to outdated agency activities and, in some cases, the information required in the Cortese List no longer exists. Those requesting a copy of the Cortese Lists are now referred directly to the appropriate information resources contained on internet websites hosted by the boards or departments referenced in the statute, including DTSC's online EnviroStor database and the SWRCB's online GeoTracker database. These two databases include hazardous material release sites, along with other categories of sites or facilities specific to each agency's jurisdiction. As shown in Table 4.8-1, there are numerous hazardous materials sites located throughout the EIR Study Area.

Wildland Fire Hazard

The severity of wildfire hazards is based on fuel classification, topography, and critical fire weather frequency. CAL FIRE defines fire hazard severity zones (FHSZ) for areas that have been assigned a hazard score based on likelihood of fire as well as fire behavior.[9] The CAL FIRE FHSZ maps indicate areas for which the Board of Forestry has determined that the State has fiscal responsibility for wildland fire protection services as SRAs, and areas for which local jurisdictions have fiscal responsibility as the Local Responsibility Area (LRA). SRAs include areas covered by forest or trees capable of producing forest products, and lands used for range or forage purposes. SRAs do not include lands owned by the federal government or lands within city boundaries. The entire EIR Study Area is considered an LRA. As shown on Figure 4.8-1, there are no high or very high FHSZs in the EIR Study Area; approximately 945 acres of land classified as moderate FHSZ are scattered throughout the EIR Study Area, mostly beyond the city limit.

[9] California Department of Forestry and Fire Protection (CAL FIRE), May 2007, http://calfire.ca.gov/fire_prevention/downloads/FHSZ_fact_sheet.pdf, accessed October 24, 2017

HAZARDS AND HAZARDOUS MATERIALS



Source: The California Department of Forestry and Fire Protection (CAl FIRE), 2007; City of Stockton; PlaceWorks, 2017.

Fire Hazard Severity Zone
- Moderate

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.8-1
Fire Hazard Severity Zones

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Acme Saw & Industrial	1204 East Main St	LUST Cleanup Site	Completed – Case Closed
Albert Paper Company	1225 North Union St	Cleanup Program Site	Completed – Case Closed
Aalex G. Spanos Elementary School	East Church St/American St	School	Certified
Allied Wastes/Independent Trucking	401 South Lincoln St	LUST Cleanup Site	Completed – Case Closed
American Savings Bank	222 El Dorado St	Cleanup Program Site	Completed – Case Closed
Anchor Village	133 East Oak	Voluntary Cleanup	Active
Angelica Textiles	1145 Sierra Nevada	LUST Cleanup Site	Completed – Case Closed
Antonini Brothers	1750 East Channel St	LUST Cleanup Site	Completed – Case Closed
Apache Plastics	2050 East Fremont St	LUST Cleanup Site	Open – Remediation
Arco #4493 (former)	205 North Center St	LUST Cleanup Site	Completed – Case Closed
Arco #4932	16 East Harding Way	LUST Cleanup Site	Completed – Case Closed
Arco #5450 (case # 2)	1617 West Fremont St	LUST Cleanup Site	Completed – Case Closed
Arco #5450 (case #2)	1617 West Fremont St	LUST Cleanup Site	Completed – Case Closed
Arco #5469	130 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
Assoc. Adjustment	303 North Pilgrim St	LUST Cleanup Site	Completed – Case Closed
Aurora Auto Body Works	446 North Aurora St	Cleanup Program Site	Open – Inactive
Bank of the West(former Shell)	1267 Country Club Blvd	LUST Cleanup Site	Completed – Case Closed
Beaulieu Chemical Company	400 South Aurora St	Voluntary Cleanup	No Further Action
Bevanda Properties (vacant)	221-225 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Bob's Sheet Metal	404 North San Jose St	Evaluation	Inactive – Needs Evaluation
BP #11192 (former Mobil)	1403 Country Club Blvd	LUST Cleanup Site	Completed – Case Closed
Brannon Tire	540 North Hunter St	LUST Cleanup Site	Completed – Case Closed
Bridgestone/Firestone – Site 1	400 North El Dorado St	LUST Cleanup Site	Completed – Case Closed
Bryson's Heating	907 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
CA Department of Developmental Services	510 East Magnolia St	LUST Cleanup Site	Completed – Case Closed
California Water Service	1602 East Lafayette St	LUST Cleanup Site	Completed – Case Closed
Cancun Restaurant	135 Miner Ave	LUST Cleanup Site	Open – Site Assessment
Canepa's Car Wash Downtown	248 East Park St	LUST Cleanup Site	Open – Assessment & Interim Remedial Action
Canlis Building	24 South Hunter St	LUST Cleanup Site	Completed – Case Closed
Capitol Venture Enterprises	400 South Aurora St	LUST Cleanup Site	Completed – Case Closed
Carnation Plant/Diamond Distribution	969 Fremont St (Aka 540 Aurora)	LUST Cleanup Site	Completed – Case Closed

HAZARDS AND HAZARDOUS MATERIALS

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Channel Street Clinic	701 East Channel St	Calmortgage	No Action Required
Charlie's Day-N-Nite	706 North El Dorado St	LUST Cleanup Site	Completed – Case Closed
Chase Chevrolet	423 North Madison St	LUST Cleanup Site	Completed – Case Closed
Chase Chevrolet	424 Van Buren St	LUST Cleanup Site	Open – Site Assessment
Chets Auto Repair	545 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Chevron	1246 East Harding Way	LUST Cleanup Site	Completed – Case Closed
Chevron #9-0557	139 South Center St	LUST Cleanup Site	Completed – Case Closed
Chevron #9-1918	45 East Harding Way	LUST Cleanup Site	Completed – Case Closed
Children's Museum of Stockton	402 West Weber Ave	Voluntary Cleanup	Inactive – Action Required
Children's Museum of Stockton	402 West Weber Ave	Cleanup Program Site	Open – Site Assessment
Chlorinated solvent case	East Main St & South Grant St	Cleanup Program Site	Open – Inactive
City of Stockton	800 East Main St	LUST Cleanup Site	Completed – Case Closed
City of Stockton Redevelopment Agency	216 California St	LUST Cleanup Site	Open – Site Assessment
City of Stockton Redevelopment Agency	423 Madison St	LUST Cleanup Site	Completed – Case Closed
Coca-Cola Company	1100 North Wilson Way	LUST Cleanup Site	Completed – Case Closed
Colberg Boat Works	848 West Fremont St	Voluntary Cleanup	Active
Colberg Inc. Stockton	848 West Fremont St	LUST Cleanup Site	Completed – Case Closed
ConcretE, Inc.	749 Stanislaus St	LUST Cleanup Site	Completed – Case Closed
Conrady Property	1002 North Yosemite St	LUST Cleanup Site	Completed – Case Closed
Continental Grain Company	1805 Harbor Drive	LUST Cleanup Site	Completed – Case Closed
Cornell/Yale Community School	702 Yale Ave/705 North Columbia	School	No Further Action
Crystal Cream & Cutter	404 West Fremont St	LUST Cleanup Site	Open – Site Assessment
De Rollo Mazda	835 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Delta Gateway Apartments	720/802 West Weber Ave	Voluntary Cleanup	Refer: RWQCB
Delta Marine Sales and Services	401 North San Jose St	Cleanup Program Site	Open – Site Assessment
Delta Plating, Inc.	818 Stanislaus St	Tiered Permit	Active
Delta Pumps, Inc.	646 South California St	Cleanup Program Site	Completed – Case Closed
Den's Auto Repair	308 South El Dorado St	LUST Cleanup Site	Completed – Case Closed
Don's Distributing Company	1320 West Weber Ave	LUST Cleanup Site	Completed – Case Closed
E-Z Serve	952 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
E.F. Mitchler Company	400 South Lincoln St	LUST Cleanup Site	Completed – Case Closed

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
East Bay Municipal Utility District	1804 West Main St	LUST Cleanup Site	Completed – Case Closed
Eggiman's Hydraulic Garage	1112 East Harding Way	LUST Cleanup Site	Completed – Case Closed
Exxon	140 West Harding Way	LUST Cleanup Site	Completed – Case Closed
Fabricare	711 South San Joaquin St	LUST Cleanup Site	Completed – Case Closed
Falcon Energy Association	Arch Austin Road	RCRA	Closed
Fast & Easy Market	244 West Harding Way	LUST Cleanup Site	Completed – Case Closed
Federal Building – Stockton	401 North San Joaquin St	LUST Cleanup Site	Completed – Case Closed
Fire Engine Company #9	550 East Harding Way	LUST Cleanup Site	Completed – Case Closed
Fire Engine Company #2	110 West Sonora St	LUST Cleanup Site	Completed – Case Closed
Five Star Marina (East)	345 North Yosemite St Blvd	LUST Cleanup Site	Completed – Case Closed
Five Star Marina (West)	345 North Yosemite St	LUST Cleanup Site	Completed – Case Closed
Former Beauty Supply	731 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Former Carando Machine Works	420 Madison St	LUST Cleanup Site	Completed – Case Closed
Former Unocal #0187	437 East Miner Ave	LUST Cleanup Site	Open – Eligible For Closure
Former Vintage Car Wash	601 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Fowler 's Auto Body	405 North Edison St	LUST Cleanup Site	Completed – Case Closed
Gateway Project	325 South El Dorado St	LUST Cleanup Site	Completed – Case Closed
Gene Gabbard Inc.	640 El Dorado St	LUST Cleanup Site	Completed – Case Closed
Gene Gabbard Inc.	640 North El Dorado St	Cleanup Program Site	Completed – Case Closed
Genova Bakery Inc.	749 North Sierra Nevada St	LUST Cleanup Site	Completed – Case Closed
Gleason Park Apartment	411 South Stanislaus St	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only
Goodwill Industries	129 South Grant St	LUST Cleanup Site	Completed – Case Closed
Graphic Contractors	1325 West Weber Ave	LUST Cleanup Site	Completed – Case Closed
Greyhound Lines Inc.	121 South Center St	LUST Cleanup Site	Completed – Case Closed
Guaranty Federal Bank	501 West Weber Ave	Cleanup Program Site	Completed – Case Closed
Guardino-Crawford Company	517 West Fremont St	LUST Cleanup Site	Open – Verification Monitoring
H/S Auto Repair	300 South California St	LUST Cleanup Site	Open – Remediation
Henry Wolters & Son Inc.	888 East Lindsay St	LUST Cleanup Site	Completed – Case Closed
Heritage Square	640 San Joaquin St	LUST Cleanup Site	Completed – Case Closed
Hess – Dubois Cleaners	348 West Harding Way	Cleanup Program Site	Open – Site Assessment
Hess-Dubois Cleaners	348 West Harding Way	LUST Cleanup Site	Open – Site Assessment
Hickinbotham Bros. Limited	635 South Aurora St	LUST Cleanup Site	Completed – Case Closed

HAZARDS AND HAZARDOUS MATERIALS

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Human Services Agency	145 South Sutter St	LUST Cleanup Site	Open – Site Assessment
Inland Paint Company	117 West Harding Way	LUST Cleanup Site	Completed – Case Closed
Jack Renney Buick	415 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Larry's Auto	308 North Grant St	LUST Cleanup Site	Open – Remediation
Main Street Investors	601 East Main St	LUST Cleanup Site	Open – Site Assessment
Market Street Parking Garage	134 South Sutter St	LUST Cleanup Site	Completed – Case Closed
McCormick & Baxter Creosoting	1214 West Washington St	Cleanup Program Site	Open – Remediation
McCormick & Baxter Creosoting Company	1214 West Washington St	State Response	Active
McCormick and Baxter Creosoting Company	1214 West Washington St	Corrective Action	Refer: SMBRP
Merlo Property (Former Sp Rr)	936 East Weber Ave	LUST Cleanup Site	Completed – Case Closed
Morton Paint Company	South Lincoln St & West Main	Evaluation	Refer: Other Agency
Muller & Vail Tile Company	1119 East Roosevelt St	LUST Cleanup Site	Completed – Case Closed
N.A. Giotelli Trucking	1649 East Channel St	LUST Cleanup Site	Completed – Case Closed
N.A. Giotelli Trucking	1634 East Channel St	LUST Cleanup Site	Completed – Case Closed
Newark Sierra Paperboard	800 West Church St	LUST Cleanup Site	Completed – Case Closed
Nor-Cal Beverage	1800 East Fremont St	LUST Cleanup Site	Completed – Case Closed
North Shore Property	423 North Madison St	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only
Northern 2-Acre Portion Of Colberg Boat Works	848 West Fremont St	Voluntary Cleanup	Active
Ocampo Property	821 South Wilson Way	LUST Cleanup Site	Open – Site Assessment
Ohi	820 South Pershing Ave	LUST Cleanup Site	Completed – Case Closed
P.E. O'hair Company	1102 South Aurora St	LUST Cleanup Site	Completed – Case Closed
Pacific Bell Facility Ueo42	345 North San Joaquin St	LUST Cleanup Site	Completed – Case Closed
Parking Garage	130 North Hunter St	LUST Cleanup Site	Open – Site Assessment
PG&E – Stockton Former Mgp	535 South Center St	Cleanup Program Site	Open – Verification Monitoring
PG&E North Union Street	425 North Union St	Voluntary Cleanup	No Further Action
PG&E, Stockton	530 South Center St	Voluntary Cleanup	Certified / Operation & Maintenance
Port Of Stockton	Port Road B & 2	LUST Cleanup Site	Completed – Case Closed
Port Of Stockton	Port Road 21 & M	LUST Cleanup Site	Completed – Case Closed
Port Of Stockton	Port Road K & 21	LUST Cleanup Site	Completed – Case Closed
Port of Stockton Rough & Ready Island – Kwajalein Village	1 West Flora St	Military Privatized Site	Completed – Case Closed

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Production Chemicals Manufacturing Inc.	1000 East Channel St	LUST Cleanup Site	Completed – Case Closed
Public Works	1810 East Hazelton Ave	LUST Cleanup Site	Open – Site Assessment
Ragu Foods	1147 North D St	LUST Cleanup Site	Completed – Case Closed
Raymond Investment Corp, Case #1	145 North Grant St	LUST Cleanup Site	Completed – Case Closed
Raymond Investments, Case #2	730 Channel – Aka 145 North Grant St Case #1	LUST Cleanup Site	Completed – Case Closed
Regal #604	1448 North El Dorado St	LUST Cleanup Site	Completed – Case Closed
Richard Pittman Elementary School	510 East Magnolia St	School	Certified
Rite Way Cleaners	700 East Market St	Evaluation	Inactive – Needs Evaluation
Rmb Garage (Erardi Ventures)	715 North Hunter St	LUST Cleanup Site	Open – Remediation
Roek Construction	102 South Wilson Way S	LUST Cleanup Site	Open – Remediation
Rotor Blades	1514 East Scotts Ave	LUST Cleanup Site	Completed – Case Closed
Rotor Blades, Inc.	1514 East Scotts Ave	Voluntary Cleanup	Active
Rotor Blades, Inc.	1514 East Scotts Ave	Tiered Permit	Certified
Sacramento Insulation	1722 East Flora St	LUST Cleanup Site	Completed – Case Closed
Safety Kleen	225 West Fremont St	Cleanup Program Site	Completed – Case Closed
San Joaquin Beverage	1149 West Weber Ave	LUST Cleanup Site	Completed – Case Closed
San Joaquin County Courthouse	222 East Weber Ave	LUST Cleanup Site	Completed – Case Closed
San Joaquin County Mp (Case #2)	444 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
San Joaquin County Records Center	630 North California St	LUST Cleanup Site	Open – Site Assessment
San Joaquin Electric	535 North Union St	LUST Cleanup Site	Completed – Case Closed
San Joaquin Marketing Association	122 North Wilson Way	LUST Cleanup Site	Completed – Case Closed
Santa Fe Railway	1033 East Scotts Ave	LUST Cleanup Site	Completed – Case Closed
Santa Fe Railway	748 South Union St	LUST Cleanup Site	Completed – Case Closed
Sierra Lumber Case #2	375 Hazelton Ave	LUST Cleanup Site	Open – Remediation
South Shore Property	West Weber Ave	Voluntary Cleanup	Refer: RWQCB
Southpointe Property	Weber Ave + Stockton Deep Water Channel	Voluntary Cleanup	Inactive – Action Required
Stallworth Auto Detail	602 North California St	LUST Cleanup Site	Open – Remediation
Stanislaus Farm Supply	1630 East Channel St	Cleanup Program Site	Open – Inactive
Stockton City Cab Co	2085 East Fremont St	LUST Cleanup Site	Open – Site Assessment
Stockton Courthouse Redevelopment Site	180 East Weber Ave	Cleanup Program Site	Open – Assessment & Interim Remedial Action
Stockton Developmental Center	1252 Stanislaus St	LUST Cleanup Site	Completed – Case Closed

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Stockton Fire Station #1	1701 West Washington St	LUST Cleanup Site	Completed – Case Closed
Stockton Iron Works	600 West Lindsay St	Evaluation	Refer: EPA
Stockton Metro Transit Distribution	1533 East Lindsay St	LUST Cleanup Site	Completed – Case Closed
Stockton Muni Utilities	Royal Oaks Drive & Princess	LUST Cleanup Site	Completed – Case Closed
Stockton Plating	632 South El Dorado St	Evaluation	Inactive – Needs Evaluation
Stockton Plating Inc.	632 South El Dorado St	LUST Cleanup Site	Completed – Case Closed
Stockton Plating, Inc.	632 South El Dorado St	Tiered Permit	Inactive – Needs Evaluation
Stockton Police Department	22 East Market St	LUST Cleanup Site	Completed – Case Closed
Stockton Redevelopment – Northshore Parcels	248 West Fremont Adison to North Lincoln St	Cleanup Program Site	Open – Inactive
Stockton Service Station	808 North Union St	LUST Cleanup Site	Completed – Case Closed
Stockton State Hospital	510 East Magnolia St		Known Generators
Stockton Warehouse Bldg	935 East Scotts Ave	LUST Cleanup Site	Completed – Case Closed
Stockton Waterfront South Shore – City of Stockton L&M Operable Unit	666 West Weber Ave	Cleanup Program Site	Open – Remediation
Stockton Waterfront South Shore – City of Stockton Morton Op Unit	17 South Lincoln St	Cleanup Program Site	Open – Site Assessment
Stockton Waterfront South Shore – City of Stockton Unocal Op Unit	504 West Weber Ave	Cleanup Program Site	Open – Assessment & Interim Remedial Action
Stockton Waterfront South Shore – City of Stockton Worknet	56 South Lincoln St	Cleanup Program Site	Open – Assessment & Interim Remedial Action
Stockton Waterfront South Shore – Stockton Promenade & Southpointe Properties	701 West Weber Ave	Cleanup Program Site	Open – Remediation
Stockton Waterfront South Shore – Wotoa Parking Lot	666 West Weber Ave	Cleanup Program Site	Open – Remediation
Storm Pumping Station	Bianchi & El Dorado Road	LUST Cleanup Site	Completed – Case Closed
Sutter Office Center	242 Sutter St	LUST Cleanup Site	Completed – Case Closed
Swett & Crawford	711 North Pershing Ave	Cleanup Program Site	Completed – Case Closed
The Record	530 Market St	LUST Cleanup Site	Completed – Case Closed
Top Filling Station	101 South Wilson Way	LUST Cleanup Site	Open – Remediation
Tosco/Unocal #05643 Aka:#4409	1502 North El Dorado St	LUST Cleanup Site	Open – Assessment & Interim Remedial Action
Toyota Town Inc.	610 North Hunter St	LUST Cleanup Site	Open – Verification Monitoring
Tri Valley Growers, Plant K	11 South A St	LUST Cleanup Site	Completed – Case Closed
Unifirst Corporation	819 North Hunter St	LUST Cleanup Site	Completed – Case Closed
Unifirst Corporation	819 North Hunter St	Cleanup Program Site	Open – Assessment & Interim Remedial Action
Union Ice Corp	425 North Union St	LUST Cleanup Site	Completed – Case Closed

TABLE 4.8-1 HAZARDOUS MATERIALS CLEANUP SITES IN THE EIR STUDY AREA

Site Name	Address	Type	Cleanup Status
Unocal #2859	1665 Pacific Ave	LUST Cleanup Site	Completed – Case Closed
Valley Engine	1040 Union St N	LUST Cleanup Site	Completed – Case Closed
Valley Motors	800 East Main St	LUST Cleanup Site	Completed – Case Closed
Valley Showcase	913-921 West Fremont St	LUST Cleanup Site	Completed – Case Closed
Valley Volkswagen, Inc.	647 East Miner Ave	LUST Cleanup Site	Completed – Case Closed
Valley Water Treatment	612 North Buena Vista Road	Cleanup Program Site	Completed – Case Closed – Land Use Restrictions
Valley Water Treatment	612 North Buena Vista Ave	LUST Cleanup Site	Completed – Case Closed
Valley Wholesale Drug	1401 West Fremont St	LUST Cleanup Site	Completed – Case Closed
Victory Park Fire Station #6	1501 Picardy Drive	LUST Cleanup Site	Completed – Case Closed
Wasserman Family Trust -Site 2	400 North El Dorado St	LUST Cleanup Site	Completed – Case Closed
Water Front Yacht Harbor	333 Tuleberg Levee	LUST Cleanup Site	Completed – Case Closed
Weber Block	Weber Ave And El Dorado St	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only
Weber Enterprises	141 North El Dorado St	LUST Cleanup Site	Completed – Case Closed
Wells Fargo Bank Property	49 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
West Weber Site	West Weber Ave	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only
Wilson Way Complex/Motor Pool	444 South Wilson Way	LUST Cleanup Site	Completed – Case Closed
Wilson Way Tire	1535-1537 East Market	Cleanup Program Site	Completed – Case Closed
Work Net Project, Stockton	40 Lincoln St (Bound By Lincoln St	Voluntary Cleanup	Refer: RWQCB

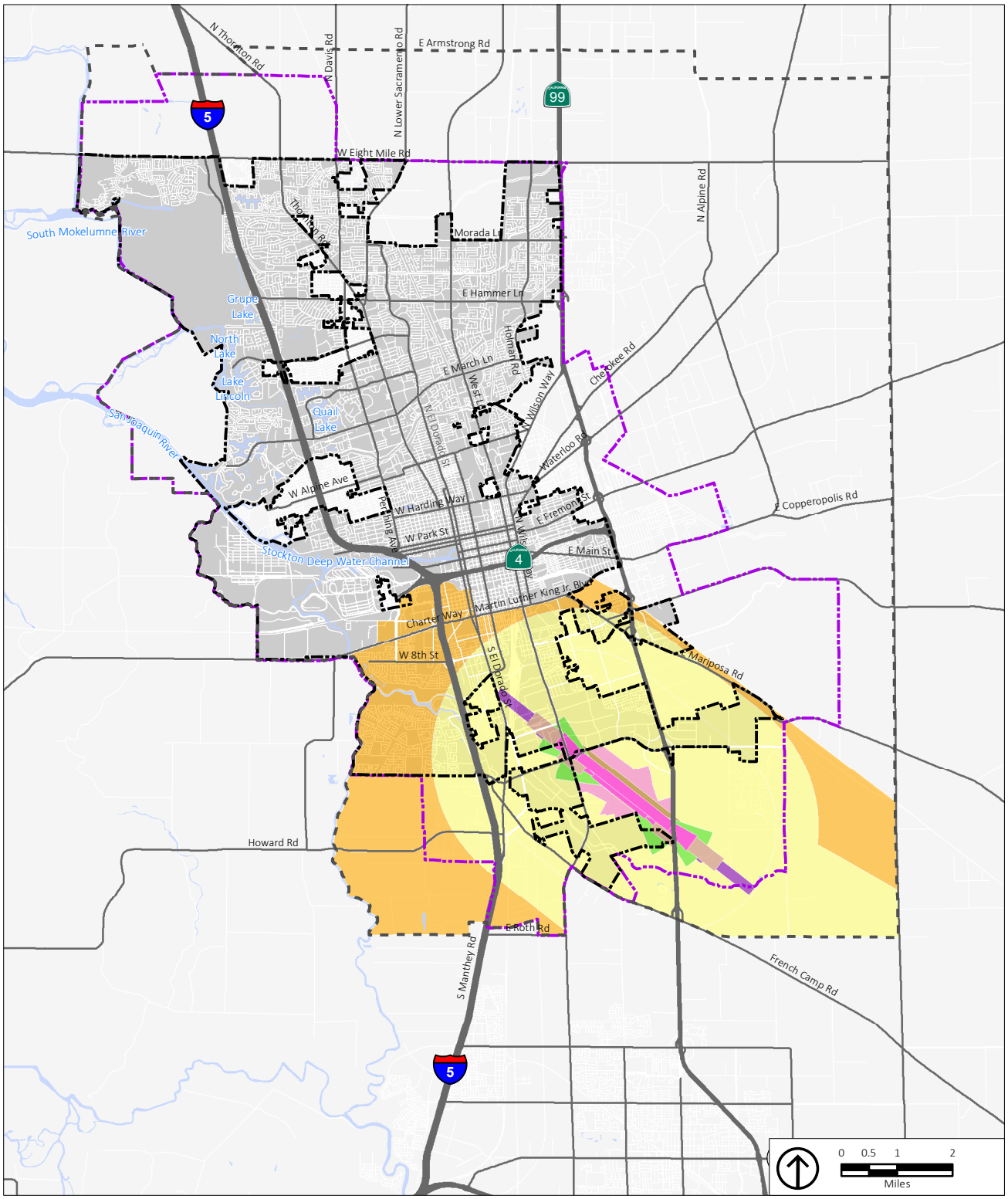
Note: LUST = leaking underground storage tank
Source: California Department of Toxic Substances Control, EnviroStor, http://envirostor.dtsc.ca.gov/public, accessed July 21, 2017.

Airports

The Stockton Municipal Airport is located immediately south of the city limit. Its AIA totals 56,184 acres; of this total acreage, 21,030 acres are within the southwest portion of the city limit.[10] The following eight Safety Zones are defined by the airport, all of which are located within the EIR Study Area, as shown on Figure 4.8-2:

- Zone 1, Runway Protection Zone. All non-aeronautically functional structures are prohibited.
- Zone 2, Inner Approach/Departure Zone. Residential development is prohibited within this zone except very low density residential at a density of one dwelling unit per 10 acres.

[10] San Joaquin Council of Governments, 2016, Airport Land Use Compatibility Plan Update for Stockton Metropolitan Airport, page 2-8.



Source: City of Stockton; San Joaquin County; PlaceWorks, 2017.

Safety Zones

- Zone 1, Runway Protection Zone
- Zone 2, Inner Approach/Departure Zone
- Zone 3, Inner Turning Zone
- Zone 4, Outer Approach/Departure Zone
- Zone 5, Sideline Safety Zone
- Zone 6, Airport Property Zone
- Zone 7, Traffic Pattern Zone
- Zone 8, Airport Influence Area
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.8-2

Stockton Metropolitan Airport Safety Zones

- Zone 3, Inner Turning Zone. Residential densities should be limited to one dwelling unit per 5 acres.
- Zone 4, Outer Approach/Departure Zone. Residential densities should be limited to one dwelling unit per 5 acres.
- Zone 5, Sideline Safety Zone. Residential densities should be limited to one dwelling unit per 2 acres.
- Zone 6, Airport Property Zone. Residential development is prohibited within this zone.
- Zone 7, Traffic Pattern Zone. There are no limits on residential density within this zone.
- Zone 8, Airport Influence Area. There are no limits on residential density within this zone.

4.8.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact related to hazards or hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
- Be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area.
- Be located within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.8.3 IMPACT DISCUSSION

HAZ-1 Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

A number of companies that use, store, or dispose of hazardous materials currently operate in Stockton. In addition, existing structures may contain hazardous building materials, such as asbestos and lead-based paint. Construction and operation of new development allowed by the proposed General Plan and UMPS would involve the routine use and handling of hazardous materials (e.g., diesel gasoline and fertilizers), and could involve the use of petroleum-based fuels for maintenance and construction equipment, which would be transported within the city.

In support of its goal to protect residents and businesses from human-caused hazards, the proposed General Plan includes Policy SAF-2.6 – "minimize the risk to city residents and property associated with the transport, distribution, use, and storage of hazardous materials" - and its three implementing actions, which all help to reduce the risks associated with the transport, use, and disposal of hazardous materials. Specifically, Action SAF-2.6.A directs the City to restrict the transport of hazardous materials to designated routes, which avoid residential and other sensitive areas. Action SAF-2.6.B directs the City to require a hazardous material inventory or Phase I or Phase II hazardous materials studies when appropriate, including any required cleanup measures, helping to avoid hazards resulting from the redevelopment of sites that had previously involved hazardous materials. Finally, Action SAF-2.6.C directs the City to educate the public about household hazardous wastes and the proper methods of disposal, which will minimize risk from the routine use of household hazardous materials.

New development would also be subject to existing regulations related to the transport, use, and disposal of hazardous materials. For example, through its Hazardous Waste Management Program, the DTSC works with CalEPA to enforce and implement regulations pertaining to hazardous wastes. In addition, the US EPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes. Finally, Stockton Municipal Code Section 16.36.080 requires a use permit for any new commercial, industrial, institutional, or accessory use, or major addition (over 10 percent) to an existing use within 1,000 feet of a residential zoning district that involves the manufacture, storage, handling, or processing of hazardous materials in sufficient quantities that would require permits as hazardous materials.

With these proposed policies and actions and existing regulations in place, development allowed by the proposed General Plan and UMPS would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and therefore would be a *less-than-significant* impact.

Significance Without Mitigation: Less than significant.

HAZ-2 Implementation of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Increased development within Stockton could increase the frequency of accidents involving the release of hazardous materials. As established above, there are a number of businesses conducted in structures on properties that use, store, and dispose hazardous materials, and the construction and operation of new development allowed by the proposed General Plan could involve the transport, use, and disposal of hazardous materials.

The proposed General Plan includes the following policies and actions intended to reduce the risks associated with the release of hazardous materials into the environment:

- Policy SAF-2.1 directs the City to ensure that community members are adequately prepared for emergencies through education and training, and in support of this policy, Action SAF-2.1.A directs the City to develop neighborhood watch and emergency support groups that are trained and ready to be put into action in the event of an emergency. Implementation of this policy and action will ensure that community members know how to protect themselves and their neighbors in the event of an accidental release of hazardous materials.
- Policy SAF-2.2 directs the City to prepare sufficiently for major events to enable quick and effective response. To support this policy, Action SAF-2.2.A directs the City to require that new development provide adequate access for emergency vehicles and evacuation routes; Action SAF-2.2.C ensures that new critical facilities, including hospitals, emergency operations centers, communications facilities, fire stations, and police stations, are be located, designed, and constructed to avoid or mitigate potential risks and ensure functional operation during fires and explosions; and Action SAF-2.2.D directs cooperation with San Joaquin County, the County Office of Emergency Services, other cities in the region, and disaster agencies to coordinate disaster and emergency preparedness planning. This policy and associated actions will ensure that emergency response to the accidental release of hazardous materials is coordinated, quick, and effective.

As discussed above under the discussion of Threshold HAZ-1, Policy SAF-2.6 and its three implementing actions minimize the risk to city residents and property associated with the transport, distribution, use, and storage of hazardous materials.

In addition, under the California Accidental Release Prevention Program, which San Joaquin County implements as the local Certified Unified Program Agency, facilities that store highly hazardous materials are required to prepare a Risk Management Plan for responding to release incidents, and, as discussed above, Stockton Municipal Code Section 16.36.080 requires a use permit for new or expanded uses that involve the manufacture, storage, handling, or processing of hazardous materials in sufficient quantities that would require permits as hazardous materials within 1,000 feet of a residential zoning district.

With implementation of proposed policies and actions and the California Accidental Release Prevention Program, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

HAZ-3 Implementation of the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼-mile of an existing or proposed school.

Implementation of the proposed General Plan and UMPS would allow land uses and construction activities that could be reasonably expected to handle hazardous materials or generate hazardous emissions. It is possible that such uses and activities could occur near existing or proposed schools. However, any new uses or construction activity occurring in the vicinity of existing or future schools would be required to adhere to the existing federal and State regulations, including the DTSC's Hazardous Waste Management Program and the California Accidental Release Prevention Program enforced by San Joaquin County. In addition, as discussed above in the discussions of Thresholds HAZ-1 and HAZ-2, the proposed General Plan includes policies and actions that aim to reduce the risks associated with the transport, use, disposal, handling, and accidental release of hazardous materials, and Stockton Municipal Code Section 16.36.080 requires a use permit for new or expanded uses that involve the manufacture, storage, handling, or processing of hazardous materials in sufficient quantities that would require permits as hazardous materials within 1,000 feet of a residential zoning district.

Furthermore, future development projects that involve the use of hazardous materials would be subject to project-level CEQA review, which would involve an analysis and disclosure of any impacts to nearby schools as a result of hazardous emissions or hazardous materials handling.

Because of the proposed General Plan policies and actions and existing regulations described above, the impact to existing and future schools is *less than significant*.

Significance Without Mitigation: Less than significant.

HAZ-4 Implementation of the proposed project would not create a significant hazard to the public or the environment as a result of being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Sites within the EIR Study Area that are known to contain, or to have previously contained, hazardous materials are listed in Table 4.8-1 above. As shown in Table 4.8-1, the EIR Study Area contains LUST cleanup sites, voluntary cleanup sites, cleanup program sites, tiered permit sites, school sites, evaluation sites, a State response site, and a military privatized site. The cleanup sites include sites listed on databases compiled pursuant to Government Code Section 65962.5. Most of these sites are listed as closed, indicating that they have been remediated to the satisfaction of the RWQCB based on the land use at the time of closure. However, development allowed under the proposed General Plan and UMPS could create a hazard to the public or the environment if the development occurs on contaminated sites.

As described above in the discussion for Threshold HAZ-1, the proposed General Plan includes Action SAF-2.6.B, which directs the City to require that new development prepare a hazardous materials inventory and/or prepare Phase I or Phase II hazardous materials studies, including any required cleanup measures, when appropriate. In addition, the US EPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes. US EPA oversight, combined with the implementation of the proposed General Plan, would result in a *less than significant* impact.

Significance Without Mitigation: Less than significant.

HAZ-5 Implementation of the proposed project would not result in a safety hazard for people residing or working within the airport land use plan area.

The Stockton Municipal Airport is located immediately south of the city limit. As described above and shown on Figure 4.8-2, the EIR Study Area falls within Stockton Municipal Airport Safety Zones 1 through 8.Safety Zones 1 through 6 establish limits on residential uses and densities, along with other development restrictions, while Safety Zones 7 and 8, which cover a larger area, do not establish limits on residential densities. The proposed General Plan designates the area within Safety Zones 1 through 6 as Public and Industrial, which are uses that are consistent with these Safety Zones.

New development under the proposed General Plan would be subject to Stockton Municipal Code Chapter 16.28, which requires that uses be consistent with the Stockton Municipal Airport ALUCP, and that heights be limited in various zones to ensure safety.

In addition, the proposed General Plan includes Action TR-1.3.A, which directs the City to ensure that all future development is consistent with the ALUCP, except in cases where the City Council concludes that project would protect public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards.

Given that the proposed General Plan designates land for uses that are compatible with the safety requirements of the ALUCP, and that future development would be subject to existing Stockton Municipal Code Chapter 16.28 requirements as well as proposed General Plan requirements about development within the AIA, the impact would be *less than significant.*

Significance Without Mitigation: Less than significant.

HAZ-6 Implementation of the proposed project would not be within the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the project area.

As discussed above, the Stockton Municipal Airport is located immediately south of the city limit. The Stockton Municipal Airport a public airport and the safety impacts related to it are discussed in above

under the discussion of Threshold HAZ-5. The EIR Study Area does not contain any private airstrips. Therefore, there would be *no impact* associated with risks in the vicinity of a private airstrip.

Significance Without Mitigation: No impact.

HAZ-7 Implementation of the proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

The proposed General Plan and UMPS would have a significant environmental impact if they would impact or physically interfere with an adopted emergency response plan or emergency evacuation plan, thereby putting the public or the environment at risk. As discussed under Section 4.8.1.1, the City of Stockton's EOP establishes the emergency management organization required to mitigate any significant emergencies and identifies roles and responsibilities required to protect the health and safety of Stockton residents and property.

As discussed above in the discussion of Threshold HAZ-2, the proposed General Plan includes policies and actions that ensure community members know how to protect themselves and their neighbors during emergencies and that facilitate coordinated, quick, and effective emergency response. In particular, Action SAF-2.2.A directs the City to require that new development provide adequate access for emergency vehicles and evacuation routes; Action SAF-2.2.B directs the City to formulate, review, periodically update, and make available to the public emergency management plans for the safe evacuation of people from areas subject to inundation from levee and dam failure; Action SAF-2.2.C requires new critical facilities, including hospitals, emergency operations centers, communications facilities, fire stations, and police stations, to be located, designed, and constructed to avoid or mitigate potential risks and ensure functional operation during flood events, seismic and geological events, fires, and explosions; and Action SAF-2.2.D directs the City to work with San Joaquin County, the County Office of Emergency Services, other cities in the region, and disaster agencies to coordinate disaster and emergency preparedness planning. Through the implementation of the proposed General Plan policies listed above, the impact would be *less than significant.*

Significance Without Mitigation: Less than significant.

HAZ-8 Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The proposed General Plan and UMPS would have significant environmental impact if they would locate people or structures in in a High or Very High FHSZ, as defined by CAL FIRE. As shown on Figure 4.8-1, there are no High or Very High FHSZs in the EIR Study Area; however, approximately 945 acres classified as Moderate FHSZ are scattered throughout the EIR Study Area, mostly beyond the city limit.

Although portions of the EIR Study Area are moderately subject to wildland fire hazards, proposed General Plan policies and actions would further prevent the exposure of people and structures to

significant risks associated with wildland fires. As discussed above in the discussion of Threshold HAZ-7, the proposed General Plan includes policies and actions that support effective response in the event of an emergency, including from a wildfire. In addition, Action LU-6.1.G ensures that there are adequate fire protection service providers in the event of a fire by directing the City to maintain adequate staffing levels to support achieving the City's service level goals for fire protection.

Furthermore, as discussed in Section 4.8.1.1 above, State and City regulations have established structural fire resistance and protection standards, as well as requirements regarding debris and vegetation in wildfire hazard areas.

Because there are no High or Very High FHSZs within the EIR Study Area, and because existing State and local regulations, combined with proposed General Plan policies and actions, would further prevent the exposure of people and structures to significant risks from wildland fires, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.9 HYDROLOGY AND WATER QUALITY

This section describes the regulatory framework and existing conditions in the EIR Study Area related to hydrology and water quality, and uses a spatial evaluation to identify the potential impacts to hydrology and water quality associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). Cumulative impacts related to hydrology and water quality would be contiguous with the San Joaquin Delta, Upper Calaveras, and Rock Creek-French Camp Slough Subbasins of the San Joaquin Groundwater Basin; flood impacts would be contiguous with the Sphere of Influence (SOI) boundary.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) of 1977, as administered by the US Environmental Protection Agency (US EPA), seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the US EPA to implement water quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved State NPDES program. The US EPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water quality standards established by the State). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the State is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non- point sources. The intent of the 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality.

National Pollutant Discharge Elimination System

The CWA-established NPDES permit program regulates municipal and industrial discharges to surface waters of the United States from their municipal separate storm sewer systems (MS4s). Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program.

HYDROLOGY AND WATER QUALITY

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 100,000 or more, as well as construction sites 1 acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, human-made channels, and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator of a regulated municipal separate storm sewer system, or "MS4" (such as a city) to develop, implement, and enforce a program (e.g., Best Management Plans [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in post construction runoff to the city's storm drain system from new development and redevelopment projects that result in the disturbance of land greater than or equal to 1 acre.

MS4 Permits

MS4 Permit for Stockton and San Joaquin County, 2015

The MS4 Permit in effect for Stockton and San Joaquin County is Order No. R5-2015-0024, which was issued by the Central Valley Regional Water Quality Control Board (CVRWQCB) in 2015. Requirements for this permit are not discussed here, as the City expects to enroll under a new MS4 permit, described below, in 2018.

The City of Stockton set forth specific implementation measures in its Stormwater Management Plan dated April 2009.[1]

Detailed descriptions of BMPs and stormwater volume reduction measures are set forth in the Final Stormwater Quality Control Criteria Plan for the City of Stockton and County of San Joaquin revised in February 2011.[2]

MS4 Permit for Central Valley Region, 2016

The CVRWQCB issued a region-wide MS4 Permit (Order No. R5-2016-0040) covering the entire CVRWQCB Region, and covering storm drainage systems in cities as small as 10,000 population, in June 2016.[3] The City of Stockton and San Joaquin County are permittees on the region-wide Permit.

The City of Stockton and San Joaquin County will be updating their Stormwater Management Plan (City) and Stormwater Quality Control Criteria Plan (City and County) pursuant to the region-wide Permit, with

[1] City of Stockton, 2009. Stormwater Management Program, http://www.stocktongov.com/files/sw_swmp.pdf, accessed July 25, 2017.

[2] City of Stockton and County of San Joaquin, 2011. Final Stormwater Quality Control Criteria Plan, http://www.stocktongov.com/files/sw_swqccp.pdf, accessed July 25, 2017.

[3] The region-wide MS4 permit covers the entire Central Valley region, about 60,000 square miles, extending from some of the north edges of Ventura and Los Angeles counties in the south to the Oregon border in Modoc County to the north.

completion anticipated in 2018. The City and County will enroll under this permit after completion of those documents.[4]

Permittees must develop and implement a Storm Water Management Program (SWMP) including the following elements:[5]

- Illegal Connection and Illicit Discharge Elimination Program.
- Construction Storm Water Runoff Control Program.
- Industrial/Commercial Storm Water Runoff Control Program.
- Municipal Operations Storm Water Runoff Control Program (Pollution Prevention/Good Housekeeping).
- Public Involvement and Participation Program.
- Planning and Land Development/Post Construction Storm Water Management Program:
  - Priority development projects, identified below, are required to incorporate storm water mitigation measures:
    - Single-family hillside residences.
    - Residential subdivisions of ten or more units.
    - 100,000-square foot industrial/commercial developments.
    - Automotive repair shops.
    - Restaurants.
    - Parking lots with 5,000 square feet or more or with 25 or more parking spaces.
    - Redevelopment projects that are within one of the above categories and that add or create at least 5,000 square feet of new impervious surface.
  - Stormwater management strategies include:
    - Site Design Measures: Emphasize conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to mimic natural drainage.
    - Source Control Measures: Intended to keep pollutants from mixing with runoff, and thus minimize the transport of urban runoff and pollutants off-site and into storm drains. Source control measures include standards for design and operation of outdoor areas where substances that could contaminate stormwater are used, such as fueling areas, loading areas, material storage areas, and work areas.
- Treatment Control Measures: remove pollutants from site runoff; measures include bioretention planters, vegetated swales, and infiltration trenches and basins.
- Low Impact Development (LID) Measures: emphasize conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to mimic natural drainage. LID measures include stream setbacks and buffers, soil amendments, tree planting and preservation,

[4] Than, Ba, Deputy Director of Collections/Maintenance. Phone conversation with City of Stockton Municipal Utilities Department, August 1, 2017.

[5] Central Valley Regional Water Quality Control Board (CVRWQCB). 2016. Order No. R5-2016-0040. General Permit for Discharges from Municipal Separate Storm Sewer Systems [MS4s], http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0040_ms4.pdf, accessed June 22, 2017.

rooftop and impervious area disconnection, porous pavement, eco roofs, bioretention planters, and rain barrels or cisterns.

- Monitoring Program.
- Project Stormwater Quality Control Plan: Priority projects must prepare a Project Stormwater Quality Control Plan (SQCP) specifying BMPs the project will use, and design specifications for selected BMPs, for submission to the City of Stockton Department of Municipal Utilities (for projects in the city), or to the San Joaquin County Department of Public Works (for projects in the SOI).

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development by identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). The most recent FIS and FIRMs were completed and published for the City of Stockton in 2009. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

The Flood Disaster Protection Act (FDPA) requires owners of all structures in identified SFHAs to purchase and maintain flood insurance as a condition of receiving federal or federally-related financial assistance, such as mortgage loans from federally-insured lending institutions. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally-subsidized flood insurance to property owners in those communities that adopt and enforce floodplain management ordinances that meet minimum criteria established by FEMA. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System (CRS), a system for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing erosion hazards.

The City of Stockton, under NFIP, has created standards and policies to ensure flood protection. These policies address development and redevelopment, compatibility of uses, required predevelopment drainage studies, compliance with discharge permits, enhancement of existing waterways, cooperation with the US Army Corps of Engineers (Corps) and the San Joaquin Area Flood Control Agency (SJAFCA) for updating, and method consistency with the RWQCB and proposed BMPs.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act is the basic water quality control law for California. Under this Act, the SWRCB has ultimate control over State water rights and water quality policy. In California, the California Environmental Protection Agency (Cal EPA) has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a Water Quality

Control Plan, or Basin Plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The EIR Study Area is within the San Joaquin River Basin and is under the jurisdiction of the CVRWQCB (Region 5). The CVRWQCB Region is divided into three basins: the Sacramento River Basin; the San Joaquin River Basin, in which the EIR Study Area is located; and the Tulare Lake Basin.

The CVRWQCB monitors surface water quality through implementation of the Water Quality Control Plan for the San Joaquin River Basin (Basin Plan) and designates beneficial uses for surface water bodies and groundwater in the Basin. The Basin Plan for the Sacramento and San Joaquin River Basins was last revised in 2016. This Basin Plan describes the water quality that must be maintained to support the designated beneficial uses and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Basin Plan also contains water quality criteria for groundwater.

Statewide General Construction Permit

Construction projects of 1 acre or more are regulated under the General Construction Permit (GCP), Order No. 2012-0006-DWQ, issued by the SWRCB. Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The SWPPP must demonstrate conformance with applicable BMPs, including a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project location. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Categories of BMPs used in SWPPPs are described below in Table 4.9-1. Some sites may require implementation of a Rain Event Action Plan (REAP). The GCP also requires applicants to comply with post-construction runoff reduction requirements. Projects in the SWQMP Area over 1 acre in size are subject to these requirements.

Senate Bill 5 and Assembly Bill 162

Senate Bill 5 (SB 5; Chapter 364, Statutes of 2007) requires a 200-year level of flood protection from urban and urbanized areas within the Central Valley. Per SB 5, all cities and counties in the Central Valley are required to incorporate the data and analysis of the Central Valley Flood Protection Plan (CVFPP) into their General Plans and Zoning Ordinances. Under SB 5, development in moderate or special hazard areas within the Central Valley is permitted if the local agency can provide substantial evidence that the development would be subject to less than 3 feet of flooding during a 200-year flood event.

TABLE 4.9-1 CONSTRUCTION BMPS

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind.	Mulch, geotextiles, mats, hydroseeding, earth dikes, swales.
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping.
Tracking Controls	Minimize the tracking of soil off-site by vehicles.	Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash.
Nonstorm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize nonstormwater discharges and contamination of any such discharges.	BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.
Waste Management and Controls (i.e., good-housekeeping practices)	Management of materials and wastes to avoid contamination of stormwater.	Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.

Source: CASQA 2003.

Assembly Bill 162 (AB 162; Chapter 369, Statutes of 2007) was approved by the Governor in 2007, and amended Sections 65302, 65303.4, 65352, 65584.04, and 65584.06, and added Sections 65300.2 and 65302.7, to the Government Code. The new and amended sections require cities and counties to address flood management in the Land Use, Conservation, Safety, and Housing Elements of their General Plans. This ensures that flood management is addressed in General Plans in the following ways:

- Requires that areas subject to flooding, as identified by federal and State maps of floodplains, are identified in the Land Use Element for annual review.
- Requires that rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for specified purposes are identified in the Conservation Element, upon the next Housing Element review on or after January 1, 2009.
- Requires that flood hazard zones are identified and policies to avoid or minimize the unreasonable risks of flooding are established in the Safety Element, by the next Housing Element review on or after January 1, 2009.
- Permits areas where the flood management infrastructure is inadequate and housing development is impractical to be excluded from the determination of land suitable for urban development in the Housing Element analysis.

Separate from the 2040 General Plan Update process, the City recently completed updates to the General Plan in compliance with SB 5 and AB 162, including the following:

- Updates to the General Plan Background Report to identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management, as well as to provide updated information related to flood protection facilities and emergency services.
- Updates to the Safety Element to include information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives for the protection of the community from unreasonable risks of flooding.

The City has amended Titles 15 and 16 of the Stockton Municipal Code in compliance with SB 5. These amendments address floodplain management and development in 200-year floodplains.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014, consisting of SBs 1168 and 1319 and Assembly Bill 1739, requires groundwater-dependent regions to halt overdraft and bring basins into balanced levels of pumping and recharge. The legislation requires that a Groundwater Sustainability Plan (GSP) be adopted for the most important groundwater basins in California; establishes a timetable for adoption of GSPs; empowers local agencies to manage basins sustainably; and establishes basic requirements for GSPs.

Regional and Local Regulations

Delta Plan

The Delta Reform Plan, adopted by the Delta Stewardship Council on May 16, 2013, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority included in the Delta Reform Act, enacted as part of SB X7. These policies address flood protection for residential development and limit encroachment in floodplains.

Soon after the Delta Stewardship Council adopted the Plan, it was challenged in court by a variety of interests, including the City of Stockton, in seven separate lawsuits. The court consolidated the seven lawsuits and issued a ruling on the statutory challenges on May 18, 2016. In that ruling, the court directed the Council to revise the Plan to include quantified or otherwise measurable targets associated with achieving reduced Delta reliance, decreasing environmental harm from invasive species, restoring more natural flows, and increasing water supply reliability, in accordance with the Delta Reform Act, as well as to promote options for water conveyance and storage systems.

Central Valley Flood Protection Board

The Central Valley Flood Protection Board (CVFPB), formerly known as the California State Reclamation Board, is the regulating authority over flood risk management in the Central Valley. In addition, CVFPB is charged with the review and adoption the CVFPP. The CVFPB's governing body consists of seven Governor-appointed and Senate-confirmed members. The board works in close partnership with the California Department of Water Resources (DWR), the US Army Corp of Engineers (USACE), and stakeholders to implement the CVFPP. The CVFPB also works closely with the California Department of Fish and Wildlife, US Fish and Wildlife, and the National Marine Fisheries Service to evaluate the environmental impacts of flood control.

Central Valley Flood Protection Plan

The CVFPP was adopted by the CVFPB on June 29, 2012. The plan provides a policy, program, and project implementation framework to help guide regional and State level financing plans and investments. The CVFPP proposes a State Systemwide Investment Approach (SSIA) for sustainable, integrated flood management in areas currently protected by facilities of the State Plan of Flood Control (SPFC). The CVFPP suggests improvements to SPFC levees located along the San Joaquin River and tributary channels in the Stockton Metropolitan Area.

San Joaquin Area Flood Control Agency

The SJAFCA is a joint powers agency consisting of the following members: San Joaquin County, the City of Stockton, and the San Joaquin Flood Control and Water Conservation District. The SJAFCA's mission is to study, plan, and implement flood protection projects in order to reduce the risk to people, structures, and the economy.

Regional Flood Management Plan

The Regional Flood Management Plan (RFMP) provides a framework for managing flood risk within the Lower San Joaquin River Region and Delta South Region. The RFMP provides a reconnaissance-level assessment of flood risks and presents a prioritized list of short-term and long-term flood risk reduction projects for each region. The Lower San Joaquin River Region and Delta South Region are further divided into five planning regions. The EIR Study Area is located within the Upper Sacramento/Mid-Sacramento River planning region.

City of Stockton

The City of Stockton Stormwater Management Plan and the City and San Joaquin County Final Stormwater Quality Control Criteria Plan are described above under *Federal Regulations*.

The City of Stockton sets forth stormwater quality requirements in Municipal Code Chapter 13.16, *Stormwater Management and Discharge Control*, and 13.20, *Stormwater Quality Control Criteria Plan*. Chapter 15.44, *Flood Damage Prevention*, includes provisions that serve to minimize public and private losses due to flood conditions. In addition, Chapter 15.48 of the Stockton Municipal Code regulates grading and erosion control in the city.

4.9.1.2 EXISTING CONDITIONS

Surface Water and Drainage

Regional Drainage

The EIR Study Area is in the San Joaquin Basin, which spans about 15,825 square miles, including the northern half of the San Joaquin Valley, the central Sierra Nevada, and some of the eastern part of the Coast Ranges (see Figure 4.9-1). The San Joaquin Valley is the southerly of the two valleys comprising the Central Valley, the other being the Sacramento Valley. The main stream in the San Joaquin Basin, the San Joaquin River, flows east-west near the southern boundary of the San Joaquin Basin, then continues northwest until it flows into the Sacramento River just north of the cities of Antioch and Pittsburgh in Contra Costa and Sacramento counties.

The San Joaquin Basin is divided into several subbasins. The northern, central, and western parts of the EIR Study Area are in the San Joaquin Delta, which spans 1,232 square miles in the northern San Joaquin Valley and eastern portion of the Coast Ranges. Part of the northeastern portion of the EIR Study Area is in the Upper Calaveras Subbasin, which encompasses about 529 square miles in the northeastern San Joaquin Valley and the Sierra Nevada. Part of the southeastern portion of the EIR Study Area is in the Rock Creek-French Camp Slough Subbasin, consisting of about 473 square miles of the San Joaquin Valley and Sierra Nevada foothills (see Figure 4.9-1).

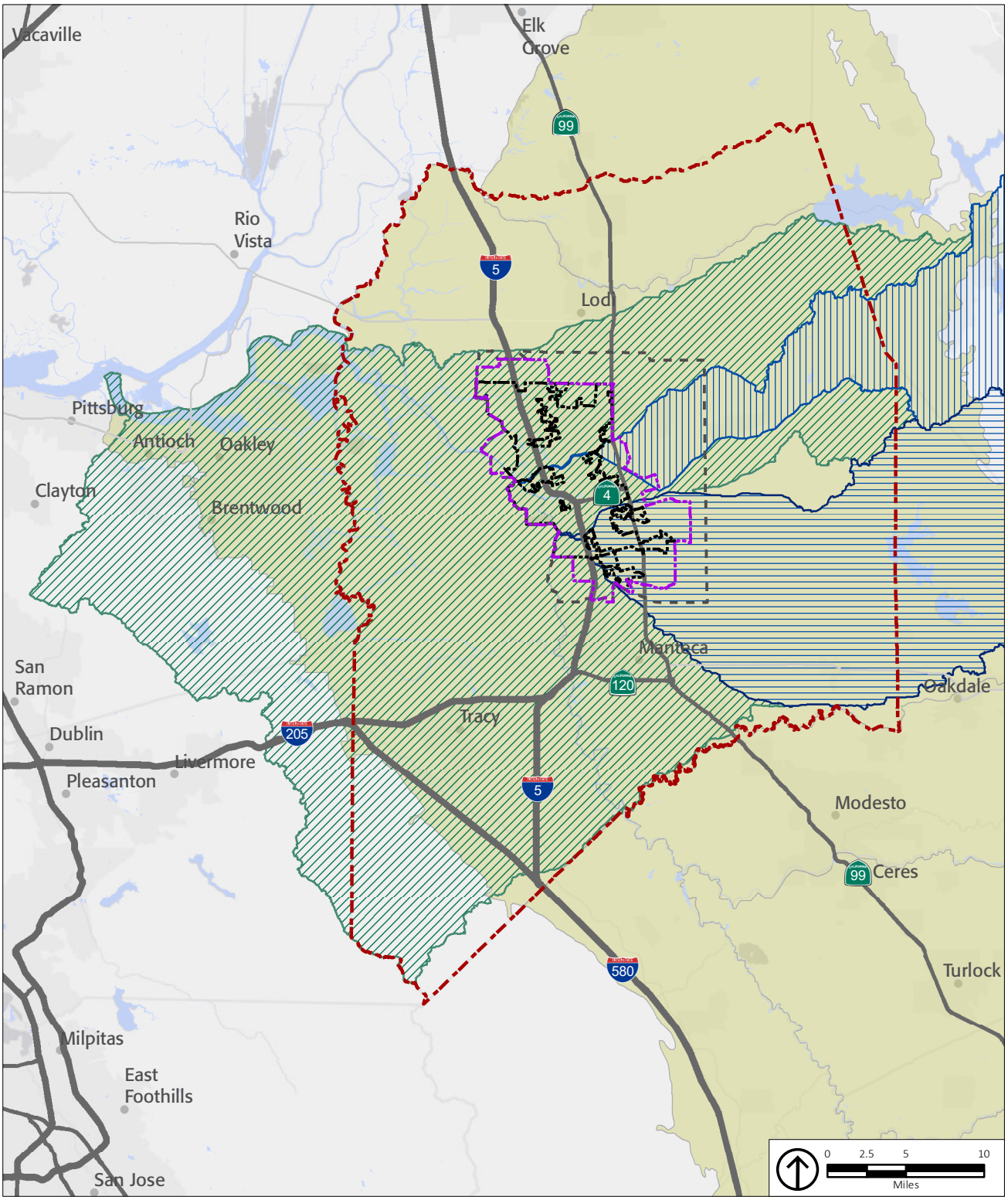
The western half of Stockton is in the Sacramento-San Joaquin Delta (Delta) as defined by DWR (see Figure 4.9-2). The Sacramento and San Joaquin rivers join in the Delta before they flow to San Francisco Bay. The Delta, spanning over 1,150 square miles in five counties, is the largest estuary on the west coast of North America. The Delta provides drinking water for two-thirds of Californians and irrigation water for over 7 million acres of farmland. Rivers in San Joaquin County all flow into the Delta.[6]

The major drainage pattern in the EIR Study Area region is westerly from the Sierra Nevada, and then northerly through the San Joaquin Valley to the San Joaquin Delta.

Drainage in the EIR Study Area

The drainage pattern in the EIR Study Area includes the San Joaquin River, which flows northerly through the southern and western parts of the EIR Study Area. The stretch of the San Joaquin River from central Stockton to the Sacramento River has been engineered into the Stockton Deep Water Channel to allow large ships to access the Port of Stockton. Several tributaries extend east from the San Joaquin River including, from north to south, Pixley Slough, Bear Creek, Mosher Creek, the Calaveras River, Mormon Slough, Duck Creek, and Littlejohns Creek. Several irrigation channels, including the Stockton Diverting Canal, also pass through the EIR Study Area.

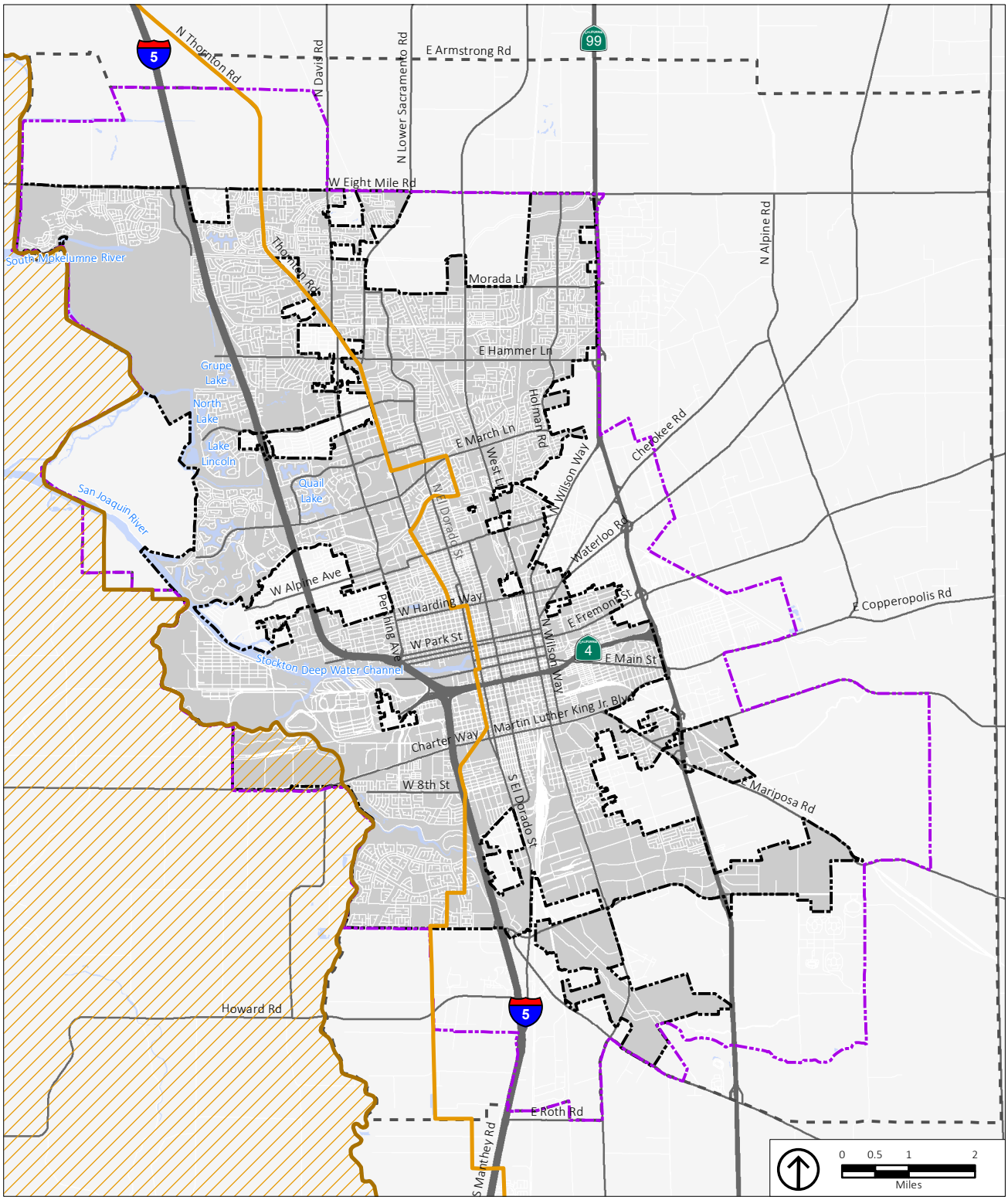
[6] Eastern San Joaquin County Groundwater Basin Authority. 2014. 2014 Eastern San Joaquin Integrated Regional Water Management Plan, http://www.gbawater.org/IRWMP/2014-IRWMP-Update, accessed July 24, 2017.



Source: CA Department of Water Resources, 2017; San Joaquin County, 2017; PlaceWorks, 2017.

- Rock Creek- French Camp Slough Subbasin
- Upper Calaveras Subbasin
- San Joaquin Delta
- San Joaquin Groundwater Basin
- County Limit
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-1
Watersheds



Source: CA Department of Water Resources, 2017; San Joaquin County, 2017; PlaceWorks, 2017.

Primary Delta
Legal Delta
City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Figure 4.9-2
Sacramento-San Joaquin Delta

Drainage in the EIR Study Area is via storm drains, canals, and ditches. Storm drains convey runoff to pump stations discharging into the above-mentioned rivers, creeks, and sloughs, all of which flow westward to the San Joaquin River and San Joaquin Delta. Most of the storm drains have capacity for a 100-year storm.[7] Canals and ditches generally discharge directly to rivers, creeks, and sloughs.

The drainage pattern in the westernmost part of the EIR Study Area is a complex network of canals, natural sloughs, and levees in the San Joaquin Delta.[8]

Surface Water Uses

The City uses surface water as its primary water supply source, supplementing it with groundwater when insufficient surface water is available to meet water demands. Surface water comprised about two-thirds of City of Stockton Municipal Utility Department (COSMUD) water supplies in 2015, and is forecast to comprise about 75 percent of such supplies in 2040.[9] Surface water is also used extensively for agricultural irrigation in the Stockton region.[10]

Surface Water Quality

Overall, surface water quality is generally better in the eastern part of the Stockton region, and lower in the San Joaquin Delta in the western part of the region.[11]

Numerous water bodies in the EIR Study Area are listed on the CWA Section 303(d) List of Water Quality Limited Segments. Listed water bodies include the Stockton Ship Channel, San Joaquin River, Pixley Slough, Bear Creek, Mosher Slough, Calaveras River, Mormon Slough, Duck Creek, French Camp Slough, and Littlejohns Creek. Pollutants include organochlorine pesticides (dioxin, DDT [dichlorodiphenyltrichloroethane], Group A pesticides, and diuron); organophosphate pesticides (chlorpyrifos, diazinon, and disulfoton); polychlorinated biphenyls (PCBs); pathogens and bacteria; heavy metals (copper and mercury); unknown toxicity; sediment toxicity; organic enrichment/low dissolved oxygen; dissolved oxygen; and invasive species.[12]

[7] City of Stockton. 2007. Final Background Report, Stockton 2035 General Plan, http://www.stocktongov.com/files/FinalBackgroundReport.pdf, accessed July 28, 2017.

[8] A slough is a sluggish channel of water, such as a side channel of a river, in which water flows slowly through low, swampy ground; see Natural Resources Conservation Service, 2013, Glossary of Landform and Geologic Terms, https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcs142p2_053182&ext=pdf, accessed July 28, 2017.

[9] City of Stockton. 2016. 2015 Urban Water Management Plan, https://wuedata.water.ca.gov/public/uwmp_attachments/7188153922/Stockton%202015%20UWMP_FINAL_V3.pdf, accessed July 25, 2017.

[10] Eastern San Joaquin County Groundwater Basin Authority. 2014. 2014 Eastern San Joaquin Integrated Regional Water Management Plan.

[11] Eastern San Joaquin County Groundwater Basin Authority, 2014. 2014 Eastern San Joaquin Integrated Regional Water Management Plan.

[12] State Water Resources Control Board (SWRCB), 2017. Impaired Water Bodies, http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml, accessed July 24, 2017.

Groundwater

The EIR Study Area is located above the San Joaquin Valley Groundwater Basin (Basin), which underlies about 5,809 square miles in the north half of the San Joaquin Valley (see Figure 4.9-3). The Basin is divided into several subbasins. Most of the EIR Study Area is above the Eastern San Joaquin Subbasin; the west end of the EIR Study Area is above the Tracy Subbasin. The San Joaquin Subbasin underlies approximately 1,105 square miles in the northeast part of the Basin, and the Tracy Subbasin underlies about 539 square miles in the northwest part of the Basin (see Figure 4.9-3).[13,14]

Groundwater Supplies and Uses

The Eastern San Joaquin Subbasin is identified as a critically overdrafted groundwater basin. Average groundwater use in the Eastern San Joaquin Subbasin is about 809,321 acre-feet per year (afy), of which approximately 95 percent is for agricultural uses and 5 percent for municipal and industrial uses. Historically, groundwater elevations have declined about 40 to 60 feet, averaging approximately 1.7 feet per year. As a result, a regional cone of depression has formed in eastern San Joaquin County, creating a gradient that allows saline water underlying the Delta region to migrate northeast within the southern portions of the EIR Study Area.[15]

The demand for water in San Joaquin County appears to have peaked in the 1990s and is projected to continue to decline as more efficient urban and irrigation practices are adopted. Long-term groundwater elevations suggest water level recovery in some areas. Once rapid saline water migration appears to have slowed significantly.[16]

The Eastern San Joaquin Subbasin is recharged by water from sources including streams, percolation of rainfall and irrigation water, inflow from other groundwater basins, and intentional recharge at numerous facilities. Intentional recharge is conducted in recharge ponds and on some farm fields with compensation to landowners.[17]

Groundwater Quality

Extensive groundwater pumping has caused movement of the saline waters eastward from under the San Joaquin Delta.[18]

[13] State Water Resources Control Board (SWRCB), 2017. Groundwater Information Center Interactive Map Application, https://gis.water.ca.gov/app/gicima/, accessed July 24, 2017.

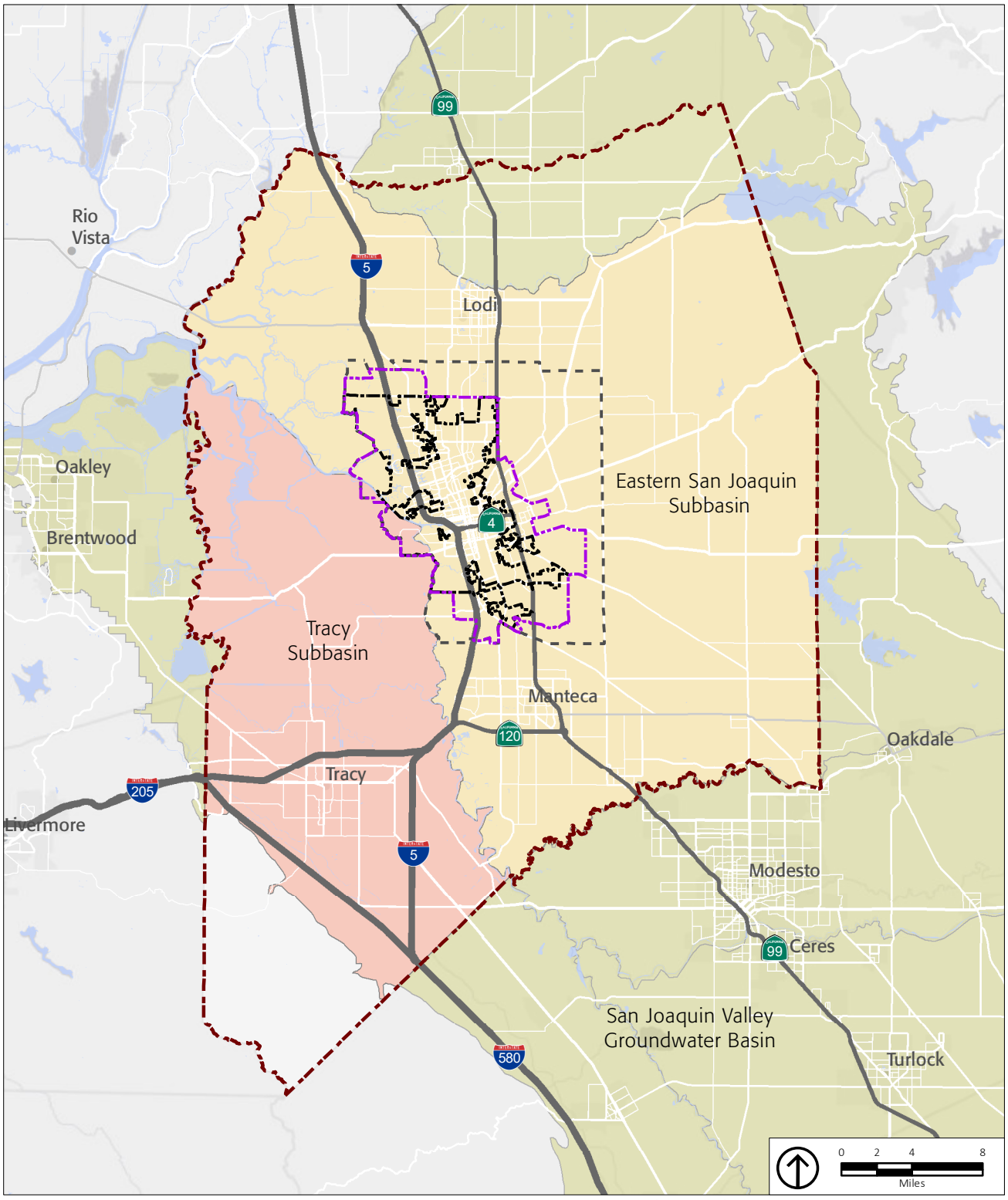
[14] Department of Water Resources, 2003. California's Groundwater: Bulletin 118. 2003 Basins and Subbasins of the San Joaquin River Hydrologic Region, http://water.ca.gov/groundwater/bulletin118/sanjoaquinriver.cfm, accessed July 24, 2017.

[15] City of Stockton, 2016. 2015 Urban Water Management Plan, https://wuedata.water.ca.gov/public/uwmp_attachments/7188153922/Stockton%202015%20UWMP_FINAL_V3.pdf, accessed July 25, 2017.

[16] Eastern San Joaquin County Groundwater Basin Authority, 2014. 2014 Eastern San Joaquin Integrated Regional Water Management Plan.

[17] City of Stockton Public Works Department, 2004. Eastern San Joaquin Groundwater Basin Groundwater Management Plan.

[18] City of Stockton, 2016. 2015 Urban Water Management Plan, https://wuedata.water.ca.gov/public/uwmp_attachments/7188153922/Stockton%202015%20UWMP_FINAL_V3.pdf, accessed July 25, 2017.



Source: CA Department of Water Resources, 2017; San Joaquin County, 2017; PlaceWorks, 2017.

- Eastern San Joaquin Subbasin
- Tracy Subbasin
- San Joaquin Valley Groundwater Basin
- County Limit
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-3

San Joaquin Valley Groundwater Basin

Groundwater flow in the Basin now converges on the depression with relatively steep groundwater gradients eastward from the Delta toward the depression east of Stockton. The eastward flow from the Delta area is significant because of the typically poorer quality water now moving eastward in the Stockton area. Degradation of water quality due to saline migration threatens the long-term sustainability of the underlying basin. Salt-laden groundwater is unusable for urban drinking water needs and for irrigating crops.[19]

Groundwater Management

Several agencies in the Eastern San Joaquin and Tracy Subbasins have become Groundwater Sustainability Agencies (GSAs) under the Sustainable Groundwater Management Act, including the City of Stockton, San Joaquin County, the East Stockton Water District, Central San Joaquin Water Conservation District, and South San Joaquin Groundwater Sustainability Agency.[20] Critically overdrafted groundwater basins, including the Eastern San Joaquin Subbasin, are required to be managed under a Groundwater Sustainability Plan by January 31, 2020.[21]

The Eastern San Joaquin County Groundwater Basin Authority (GBA), a joint powers agency, was established in 2001 to collectively develop locally-supported projects to strengthen water supply reliability in eastern San Joaquin County. An Eastern San Joaquin Groundwater Basin Groundwater Management Plan was issued by the San Joaquin County Public Works Department in 2004.[22]

Flood Hazards

Flood Zones

As shown on Figure 4.9-4, substantial portions of the EIR Study Area are in the 100-year flood zone mapped by FEMA, including:

- Undeveloped land in the northwestern portion of the EIR Study Area.
- The area around the Country Club neighborhood with inadequate levee protection (see the discussion of the Smith Canal levees below).
- Areas along the San Joaquin River and its floodplain in southern parts of the city limit and southeastern parts of the EIR Study Area.
- The area north of the Stockton Diversion Canal, east of the city limit.

[19] City of Stockton Public Works Department, 2004. Eastern San Joaquin Groundwater Basin Groundwater Management Plan.

[20] Department of Water Resources, 2017. GSA [Groundwater Sustainability Agency] Map Viewer, http://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true, accessed August 2, 2017.

[21] Department of Water Resources. 2015. Sustainable Groundwater Management Program Draft Strategic Plan, http://www.water.ca.gov/groundwater/sgm/pdfs/DWR_GSP_DraftStrategicPlanMarch2015.pdf, accessed August 2, 2017.

[22] City of Stockton Public Works Department, 2004. Eastern San Joaquin Groundwater Basin Groundwater Management Plan.

There are also large areas within the 500-year flood zone, and, as discussed below, the majority of the city limit is outside of the flood zone based on levee protection (see Figure 4.9-4).

As shown on Figure 4.9-5, considerable portions of the city and the EIR Study Area are subject to flood depths of 3 feet or more during a 200-year storm event, including the majority of the area west of Interstate 5 (I-5), as well as the area extending east of I-5 north of the port. There are also other more isolated areas subject to flooding in a 200-year storm event, primarily north and east of the city limit.

Levees

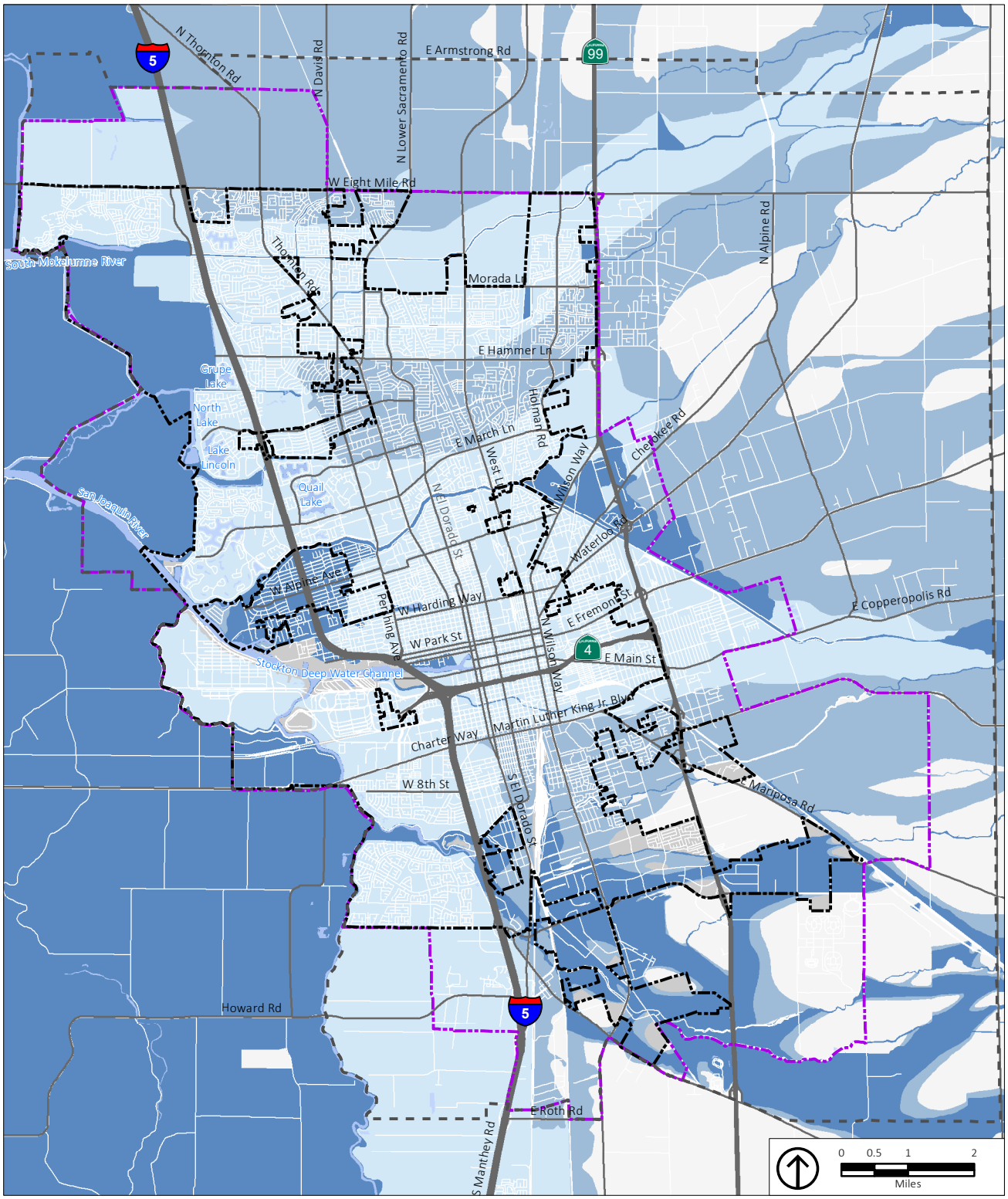
Waterways in Stockton have been heavily modified since the 1800s by dredging natural channels, constructing bypasses, and narrowing floodplains through levee construction. Most of the city is protected from flooding by levees. Levees in the EIR Study Area are shown on Figure 4.9-6. However, there is still a risk of flooding of these areas due to: geotechnical instability of the levees, primarily seepage through and under levees; one bank of the levee being higher than the other; water flowing around the upstream end of a levee; and encroachments such as culverts and roadway crossings.

In 2005, FEMA began requiring local communities and levee owners to submit documentation showing levee systems providing 100-year flood protection. FEMA de-accredited levees that did not provide the required documentation, and the areas behind those levees are included in the Special Flood Hazard Areas on the current FIRMs.

FEMA de-accredited the Smith Canal levees in 2009. During a 100-year flood, water from the San Joaquin River to the west could back up into the Smith Canal. Should the Smith Canal levees overtop or fail, the Country Club area, most of which lies at or near sea level, would be inundated by flood waters flowing through the breach. The SJAFCA is currently pursuing the design and construction of a gate structure at the mouth of Smith Canal. The gate would normally rest on the bottom of the channel, allowing for boat traffic and normal tidal fluctuations. During high water periods, the gate would be raised, preventing floodwaters from the San Joaquin River from entering Smith Canal. The proposed wall and gate and structure would be built to provide a minimum 200-year level of performance as required in the CVFPP.

In addition, FEMA is currently reviewing a Conditional Letter of Map Revision (CLOMR) for the Bear Creek system, Upper Calaveras and Diverting Canal, which could be remapped into the floodplain. Lower Bear Creek and Lower Mosher Slough west of I-5 at the Twin Creeks subdivision currently do not meet FEMA criteria, and Twin Creeks could be placed in the floodplain if FEMA remaps the area. The levee protecting the Boggs Tract does not currently meet FEMA criteria, and the local Reclamation District (#404) has been working to resolve the issues. There are also issues with the levee that provides protection for the Weston Ranch area.

Although all remaining levees provide 100-year flood protection, no levees meet the State's 200-year flood protection requirement in the CVFPP. There is currently a feasibility study underway to reach a 200-year flood protection standard.



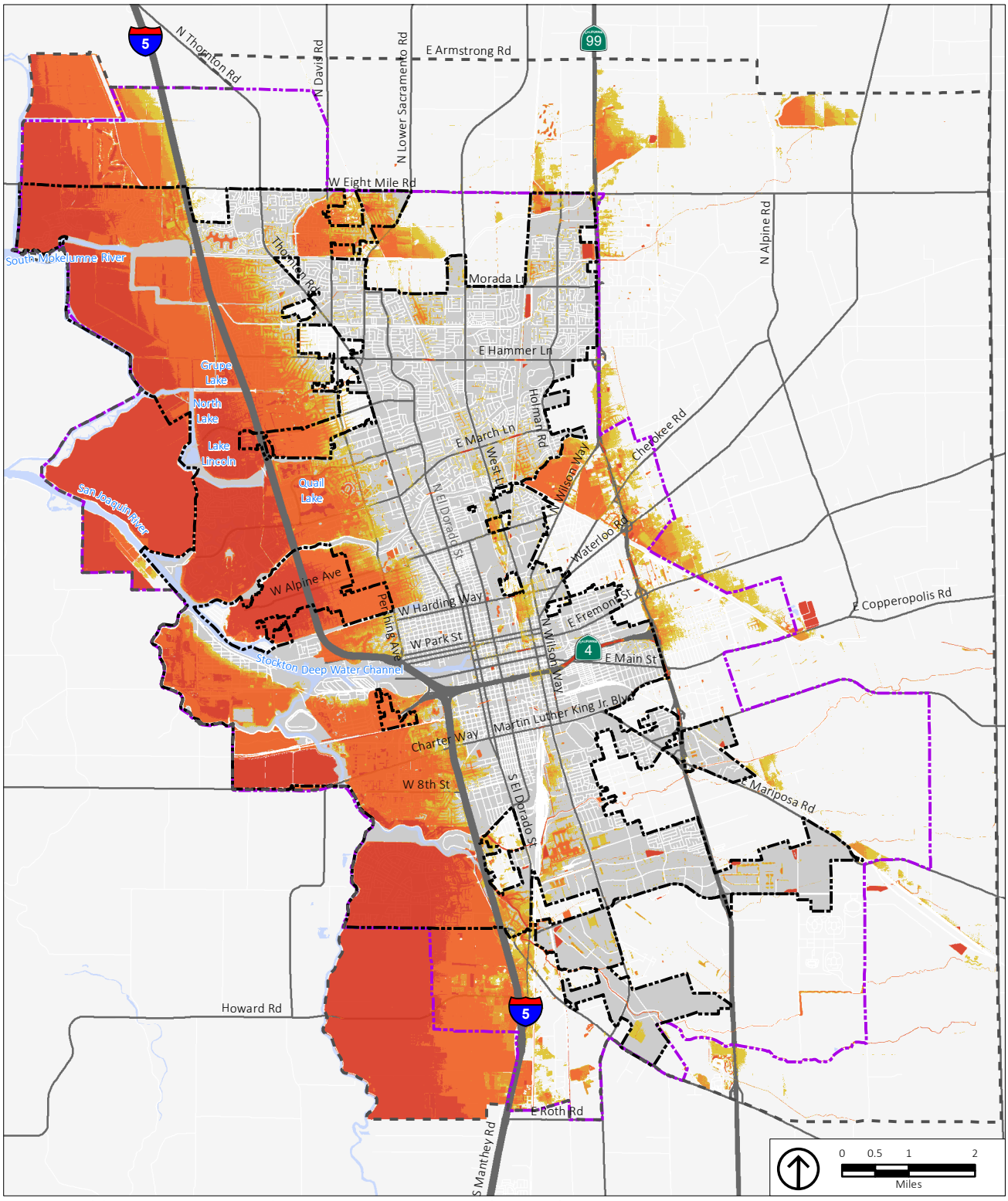
Source: City of Stockton; San Joaquin County; Federal Emergency Management System (FEMA), 2016; PlaceWorks, 2017.

Flood Zones
- 100-Year Flood Zone
- 500-Year Flood Zone
- Protected by a Levee

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-4
FEMA Flood Zones

HYDROLOGY AND WATER QUALITY



Source: California Department of Water Resources, 2016; PlaceWorks, 2017.

200-Year Storm Flood Depth

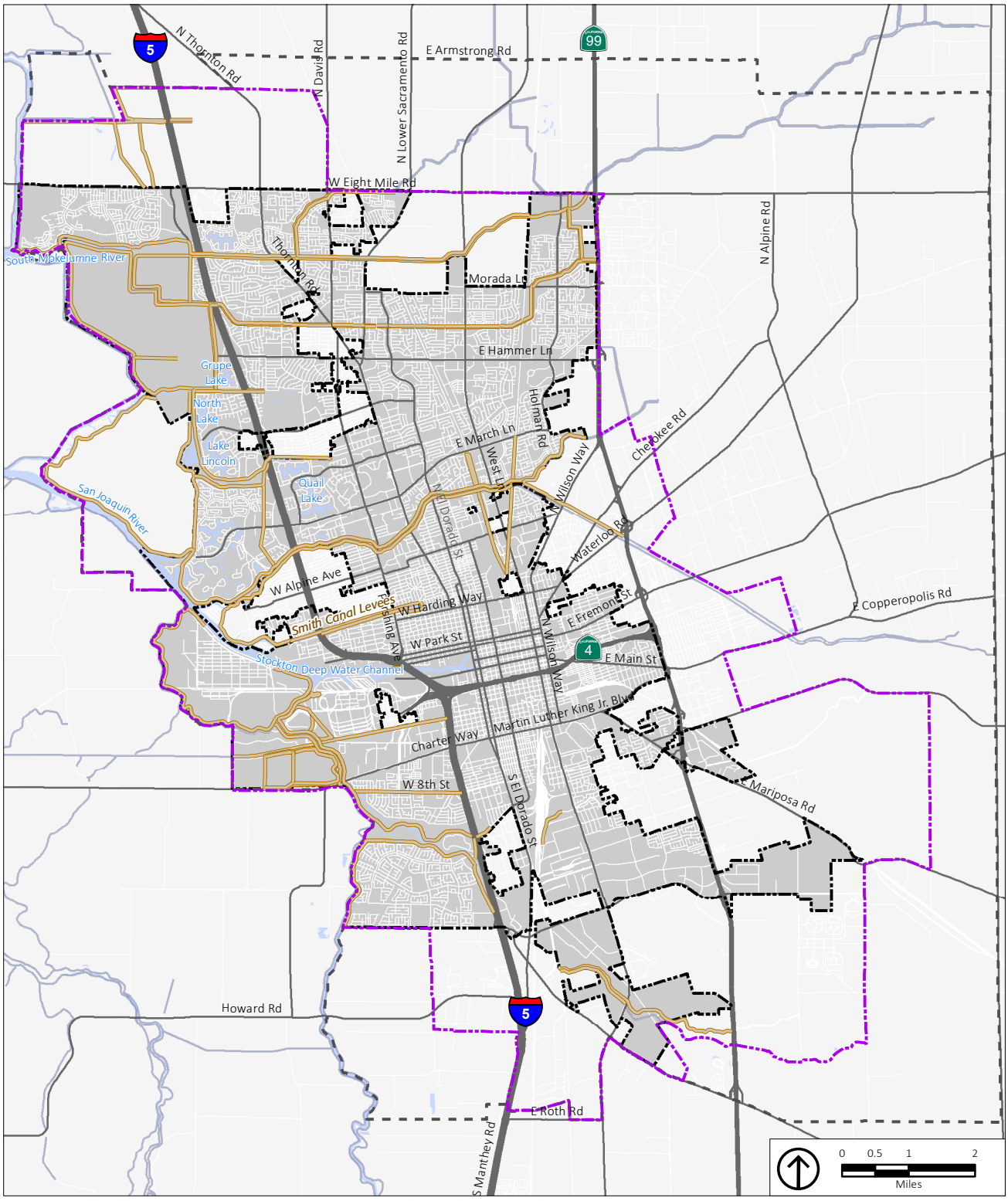
- 3 - 4 feet
- 4 - 5 feet
- 5 - 10 feet
- > 10 feet

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-5

200 - Year Flood Depths

HYDROLOGY AND WATER QUALITY



Source:Federal Emergency Management System (FEMA), 2017; PlaceWorks, 2017.

- Levees
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-6
Levees

The San Joaquin County Office of Emergency Services has prepared an evacuation plan for response to flooding due to failure of a levee or dike. The evacuation plan includes routes for people evacuating by car; rally points for people needing assistance evacuating; and instructions for evacuation and safety during a flood.[23]

Dam Inundation Areas

As shown on Figure 4.9-7, north of the Calaveras River, the EIR Study Area is in the inundation area of Camanche Dam, which is located about 24 miles northeast of downtown Stockton.[24] Camanche Dam is an earthfill dam on the Mokelumne River owned and operated by the East Bay Municipal Utilities District (EBMUD) for flood control, agricultural irrigation supply, fish habitat, and recreation. EBMUD has a comprehensive Dam Safety Program. Engineers monitor dams using instruments, monthly visual inspections and periodic dam safety reviews to prevent loss of life, personal injury and property damage from the failure of dams. The safety of each dam is regularly evaluated with advances in geotechnical, structural, and earthquake engineering and to identify any evidence of seepage or ongoing ground movement. Most of these dams are under the jurisdiction of the California Division of Safety of Dams (DSOD). Camanche Dam is also under the jurisdiction of the Federal Energy Regulatory Commission (FERC) because it produces hydropower. These regulatory agencies perform independent annual dam inspections.[25]

Nearly the entire EIR Study Area is in the dam inundation area of New Hogan Dam, which is located on the Calaveras River about 29 miles northeast of central Stockton.[26] New Hogan Dam is owned and operated by the Corps to provide flood protection to the City of Stockton and water for irrigation, drinking, and hydroelectric power.[27] The dam is inspected annually by the CSOD.[28]

Approximately the west half of the EIR Study Area is in the dam inundation area of New Melones Dam on the Stanislaus River, located about 42 miles east of central Stockton.[29] New Melones Dam is operated by the US Bureau of Reclamation (USBR) as a component of the USBR's Central Valley Project, which stores and conveys water to farms and cities in the Central Valley. New Melones Dam also provides flood control, hydropower, and recreation benefits.

The USBR's Dam Safety Program consists of two programs: Safety Evaluation of Existing Dams (SEED) and Safety of Dams (SOD). The primary emphasis of the SEED program is to perform site evaluations and to quickly identify dams that pose an increased threat to the public, and to quickly complete the related

[23] San Joaquin County Office of Emergency Services, 2017. San Joaquin County Evacuation Maps, http://www.sjmap.org/evacmaps/, accessed August 4, 2017.

[24] California Office of Emergency Services (Cal OES), 2016, February 23. DVD. Dam Inundation Maps.

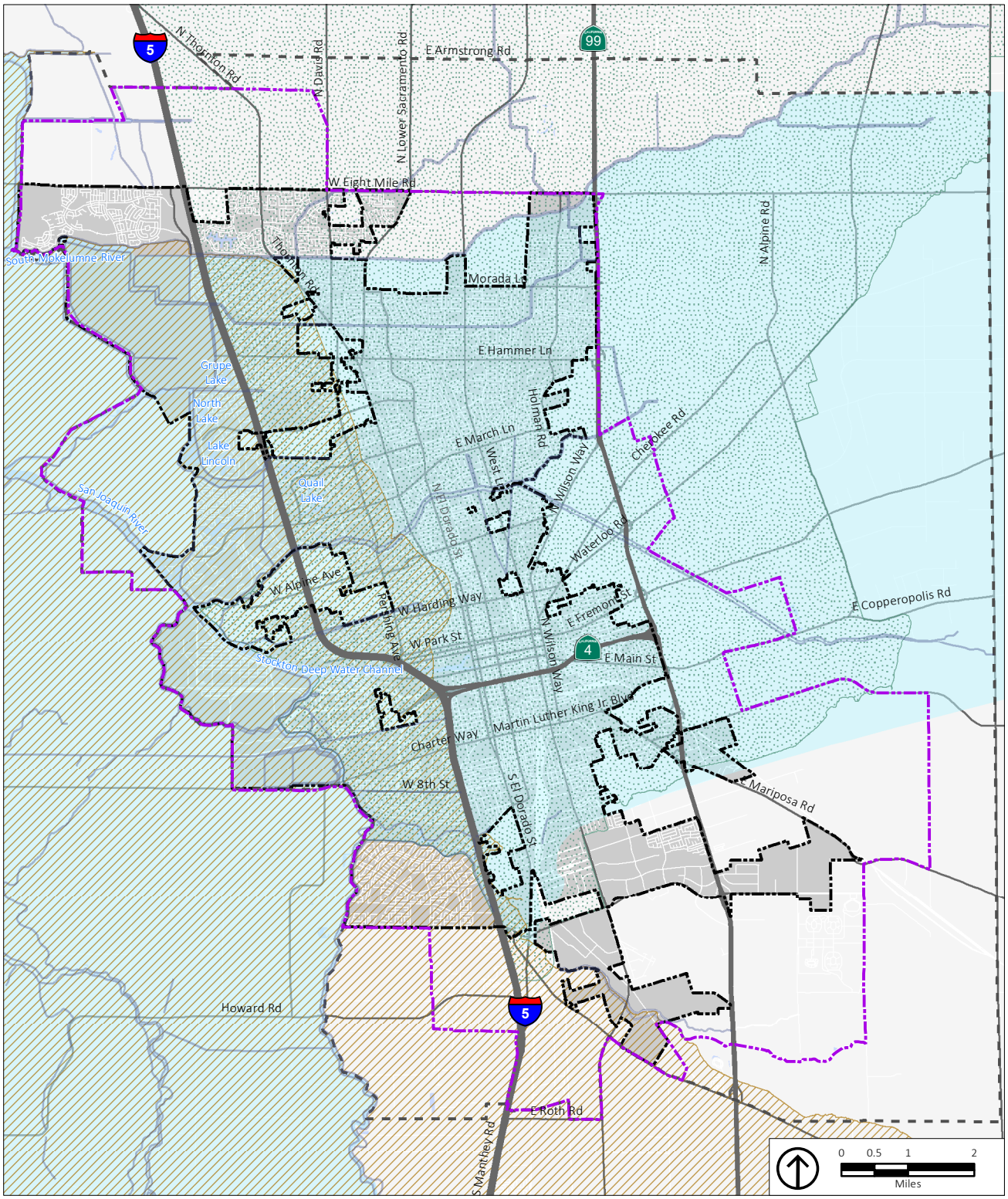
[25] East Bay Municipal Utilities District (EBMUD), 2017. Dam Safety Program, https://www.ebmud.com/about-us/construction-my-neighborhood/dam-safety-program, accessed July 25, 2017.

[26] California Office of Emergency Services (Cal OES). 2016, February 23. DVD. Dam Inundation Maps.

[27] US Army Corps of Engineers (Corps). 2017. New Hogan Lake, http://www.spk.usace.army.mil/Locations/Sacramento-District-Parks/New-Hogan-Lake/, accessed July 25, 2017.

[28] Department of Water Resources. 2017. Division of Safety of Dams: About DSOD, http://www.water.ca.gov/damsafety/aboutdamsafety/index.cfm, accessed July 25, 2017.

[29] California Office of Emergency Services (Cal OES). 2016, February 23. DVD. Dam Inundation Maps.



Source: San Joaquin County, 2017; PlaceWorks, 2017.

Dam Inundation Areas

- Camanche Dam
- New Melones Dam
- New Hogan Dam
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.9-7
Dam Inundation Areas

analyses in order to expedite corrective action decisions and safeguard the public and associated resources. The SOD program focuses on evaluating and implementing actions to resolve safety concerns at USBR dams. Under this program, USBR will complete studies and identify and accomplish needed corrective action on USBR dams. The selected course of action relies on assessments of risks and liabilities with environmental and public involvement input into the decision-making process.[30]

In addition, the estimated time of arrival of floodwaters from a dam failure at Camanche Dam, the closest of the three dams to Stockton, would be over seven hours after the dam failure event.[31] Thus, some of the population of Stockton would be able to evacuate in the event of a dam failure using the procedures established for evacuation in response to a levee or dike failure.

Seiche

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. Inland water bodies in and near the EIR Study Area that could pose a flood hazard due to a seiche include the Stockton Ship Channel, canals lined by levees, several artificial lakes in the west half of the EIR Study Area, and the dams described above.

Tsunami

A tsunami is an ocean wave caused by a sudden displacement of the ocean floor, most often due to earthquakes. Tsunami inundation zones mapped by the California Geological Survey in the San Francisco Bay Region extend east to the City of Benicia in Solano County.[32] There is no tsunami inundation hazard in Stockton.

Mudflow

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. There are no slopes in or near the EIR Study Area that could generate a mudflow.

4.9.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant hydrology or water quality impact if it would:

- Violate any water quality standards or discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

[30] US Bureau of Reclamation (USBR). 2017. Dam Safety Program, https://www.usbr.gov/ssle/damsafety/, accessed July 25, 2017.

[31] California Office of Emergency Services (Cal OES). 2016, February 23. DVD. Dam Inundation Maps.

[32] California Geological Survey (CGS). 2017. Tsunami Inundation Zones, http://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=4d56b41ba6c64d538ec3a91d40078dff, accessed July 25, 2017.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Be subject to inundation by seiche, tsunami, or mudflow.

4.9.3 IMPACT DISCUSSION

HYDRO-1 Implementation of the proposed project would not violate any water quality standards or discharge requirements.

Construction Impacts

Clearing, grading, excavation, and construction activities associated with development allowed under the proposed General Plan and UMPS could impact water quality through soil erosion and increased silt and debris discharged into runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Temporary storage of construction materials and equipment in work areas or staging areas could involve a release of hazardous materials, trash, or sediment to the storm drain system.

Contaminants that can be released by construction projects and can contaminate stormwater include sediment, nutrients, bacteria and viruses, oil and grease, metals, organic (carbon-based) compounds, oxygen-demanding substances, pesticides, and trash and debris. Organic compounds are found in pesticides, solvents, and hydrocarbons. Oxygen-demanding substances include proteins, carbohydrates, and fats; microbial degradation of such substances increases oxygen demand in water.[33]

[33] California Stormwater Quality Association (CASQA). 2003, January. Stormwater Best Management Practice: Construction Handbook.

Construction projects of 1 acre or more would be required to comply with the General Construction Permit, Order No. 2012-0006-DWQ, issued by the SWRCB in 2012. Projects obtain coverage by developing and implementing a SWPPP estimating sediment risk from construction activities to receiving waters, and specifying BMPs that would be used by the project to minimize pollution of stormwater. Categories of BMPs used in SWPPPs are described above in Table 4.9-1. In addition, Stockton Municipal Code Chapter 13.16, *Stormwater Management and Discharge Control*, establishes limitations and regulations for discharges into the City's stormwater system, and Chapter 15.48, *Grading and Erosion Control*, establishes requirements that control the discharge of pollutants. Therefore, construction-related impacts would be *less than significant*.

Operational Impacts

The operation of development and redevelopment projects allowed under the proposed General Plan and UMPS can generate the same types of pollutants that are discussed above under Construction Impacts. Water quality requirements for project design and operation are set forth in the MS4 Permit for the City of Stockton and San Joaquin County (Order No. R5-2015-0024) issued by the CVRWQCB in 2015; the Stormwater Management Plan issued by the City in 2009; and the Final Stormwater Quality Control Criteria Plan for the City of Stockton and County of San Joaquin revised in February 2011. Selected requirements set forth in these documents are described above in Section 4.9.1.1 above, and are summarized below:

- Project Stormwater Quality Control Plan. Priority projects (see definition in Section 4.9.1.1) must prepare a Project Stormwater Quality Control Plan (SQCP) specifying BMPs the project will use, and design specifications for selected BMPs, for submission to the City of Stockton Department of Municipal Utilities (for projects in the City), or to the San Joaquin County Department of Public Works (for projects in the balance of the SOI).
- BMPs. BMPs specified in a SQCP include:
  - Site design BMPs intended to reduce stormwater runoff peak flows and volumes.
  - Source control BMPs designed to prevent pollutants from contacting stormwater runoff.
  - Volume reduction measures directing, retaining, reusing, and/or infiltrating stormwater runoff.
  - Treatment control BMPs designed to remove pollutants from stormwater, including LID BMPs and conventional treatment BMPs.

In addition, the proposed General Plan includes the following policies and actions that would further minimize potential water quality impacts from the operation of new development:

- Action SAF-3.1.A: Actively participate in appropriate forums designed to discuss and solve regional water supply and quality issues.
- Policy SAF-3.2: Protect the availability of clean potable water from groundwater sources.
- Action SAF-3.2.B: Require new development to employ low impact development (LID) approaches, including:

- Conserving natural areas and reducing imperviousness.
- Runoff storage.
- Hydro-modification (to mimic pre-development runoff volume and flow rate).
- Reducing trash accumulation.
- Public education and outreach.

Given the existing water quality requirements discussed above, including the preparation and implementation of SQCPs by priority projects, in combination with the proposed General Plan policies and actions discussed above, the operation of development allowed by the proposed General Plan and UMPS would result in a *less-than-significant* water quality impact.

Significance Without Mitigation: Less than significant.

HYDRO-2.1 Implementation of the proposed project would not substantially deplete groundwater supplies.

Groundwater supplies are forecast to increase from about 13,368 afy in 2015 to 29,840 afy in 2040. However, groundwater as a proportion of total water supplies used in the EIR Study Area is forecast to decrease from about 28 percent of total supplies to about 24 percent over the same period (see Table 4.9-2).[34]

TABLE 4.9-2 EXISTING AND FORECAST WATER SUPPLIES BY SOURCE, EIR STUDY AREA

		2015		2040	
Source		Supplies (afy)	Percent of Total Supplies	Supplies (afy)	Percent of Total Supplies
Purchased water – Calaveras, Stanislaus, and Mokelumne rivers	City of Stockton Municipal Utilities Dept. (COSMUD)	15,350	–	24,000	–
	California Water Service Company (CWSC)	8,787	–	19,000	–
	Total	24,137	51%	43,000	35%
Surface Water (San Joaquin Delta)	COSMUD	9,428	20%	50,000	41%
Groundwater	COSMUD	6,740	–	6,740	–
	CWSC	6,628	–	23,100	–
	Total	13,368	28%	29,840	24%
Total Water Supplies		**46,933**	**100%**	**122,840**	**100%**

Note: afy = acre-feet per year
Sources: California Water Service Company (CWSC) Stockton District. 2016. 2015 Urban Water Management Plan.
City of Stockton. 2016. 2015 Urban Water Management Plan.

[34] Sources: City of Stockton, 2016. 2015 Urban Water Management Plan; and California Water Service Company (CWSC) Stockton District. 2016. 2015 Urban Water Management Plan.

Proposed General Plan Policy SAF-3.2 and Actions SAF-3.1.A and SAF-3.2.A support regional efforts to reduce reliance on groundwater by directing the City to actively participate in regional forums to address water supply issues, protect the availability of clean potable water from groundwater sources, and cooperate with other regional agencies to monitor groundwater withdrawals and ensure that they fall within the target yield for the drinking water aquifer. In addition, proposed General Plan Actions LU-5.1.C and 5.4.A require new development to minimize overall water use through drought-tolerant landscaping, other best management practices for water use efficiency, and demonstrated water conservation measures.

Because of the previous and ongoing water supply planning efforts in the region, including those efforts that are supported by proposed General Plan policies and actions, combined with overall water conservation and efficiency requirements directed in the proposed General Plan, future development allowed under the proposed General Plan would avoid substantially impacting on groundwater supplies, resulting in a *less-than-significant* impact.

Significance Without Mitigation: Less than significant.

HYDRO-2.2 Implementation of the proposed project would not substantially interfere with groundwater recharge.

Intentional groundwater recharge is conducted at numerous facilities in San Joaquin County, including recharge ponds and on some farm fields temporarily used for recharge. Recharge ponds are required for maintaining both municipal and agricultural water supplies. The proposed General Plan does not designate these recharge ponds for other land uses, so they would be maintained under the proposed General Plan.

Future development allowed under the proposed General Plan would increase the total amount of impervious areas in the EIR Study Area, which could reduce the opportunity for groundwater recharge. However, priority projects would be required to implement multiple BMPs that minimize impervious areas and retain, reuse, and/or infiltrate stormwater, as described above in Section 4.9.1.1. In addition, proposed General Plan Action SAF-3.2.B requires new development to employ LID approaches that conserve natural areas and reduce impervious areas. Therefore, groundwater recharge impacts would be *less than significant* after implementation of BMPs required by the City of Stockton.

Significance Without Mitigation: Less than significant.

HYDRO-3 Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Development allowed under the proposed General Plan could convert existing undeveloped lands to residential, commercial, industrial, public, and park land uses. This land use conversion would increase the impervious surfaces and would alter the existing drainage pattern, which could cause an increase in the

peak flows and volumes discharged from the developed land during storm events. Increased flows could result in substantial erosion or siltation downstream if they discharged directly to downstream receiving waters.

However, as discussed above in Section 4.9.1.1 and in the discussion for Impact HYDRO-2.2, priority projects would be required to implement multiple BMPs that minimize impervious areas and retain, reuse, and/or infiltrate stormwater, and proposed General Plan Action SAF-3.2.B requires new development to employ LID approaches that conserve natural areas and reduce impervious areas.

Some development in the existing urbanized area could require construction of expanded storm drains. Development outside the existing urbanized area would be required to build new drainage facilities such as storm drains and pump stations.

For projects throughout the EIR Study Area, construction phases would implement erosion control and sediment control BMPs required under the Statewide General Construction Permit and Chapter 15.48 of the Stockton Municipal Code (see the discussion for Impact HYDRO-1 above), thus minimizing erosion and siltation impacts. Projects would implement numerous BMPs during design and operation phases reducing runoff and minimizing the amount of sediment entering runoff (see descriptions of categories of BMPs in Section 4.9.1.1, above). After implementation of such BMPs, projects developed under the proposed General Plan and UMPS would not cause substantial erosion or siltation, and impacts would be *less than significant.*

Significance Without Mitigation: Less than significant.

HYDRO-4	**Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.**

Implementation of the proposed General Plan and UMPS would not substantially change the drainage pattern of the EIR Study Area. As discussed above, priority projects would be required to implement multiple BMPs that minimize impervious areas and retain, reuse, and/or infiltrate stormwater, and, per proposed General Plan Action SAF-3.2.B, new development will be required to employ LID approaches that conserve natural areas and reduce impervious areas.

In addition, the proposed General Plan includes policies and actions to prevent flooding, including the following:

- Policy SAF-2.3: Protect the community from potential flood events.
- Action SAF-2.3A: Coordinate with appropriate State, federal, and local flood control agencies to develop a flood protection plan for the levee systems protecting the city that:
    - Identifies the levees protecting the city and the entities responsible for the operation and maintenance of the levees;

- Determines the flood levels in the waterways and the level of protection offered by the existing levees along the waterways;
- Identifies a long-term plan to upgrade the system as necessary to provide at least a 100-year level of flood protection to the city, and 200-year level of flood protection, where feasible;
- Encourages multi-purpose flood management projects that, where feasible, incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the city's streams, creeks, and lakes; and
- Includes provisions for updates to reflect future State or federally mandated levels of flood protection.

- Action SAF-2.3B: Collaborate with State and local flood management agencies and other interested parties to develop funding mechanisms to finance the local share of flood management responsibilities, and maintain cooperative working relationships with appropriate agencies to minimize flood hazards and improve safety.
- Action SAF-2.3C: Require new public and private waterfront development to be oriented to waterways and provide setbacks and easements along levees and channels to provide space for levee widening, flood fighting, roadway and maintenance access, open space and trail amenities, and appropriate landscaping.
- Action SAF-2.4C: Preserve floodways and floodplains for non-urban uses to maintain existing flood carrying capacities, except when mitigated in conformance with the City's floodplain management program.

Because of the BMP requirements and proposed General Plan policies and actions that prevent alterations to the drainage patterns and flooding, the drainage impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

HYDRO-5 Implementation of the proposed project could create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

As part of the proposed project, the City prepared the UMPS to identify the utility needs of development anticipated under the proposed General Plan. The proposed UMPS are supplements to the City's existing utility master plans, which were based on the adopted General Plan, and consider how anticipated development allowed under the proposed General Plan would change the previous utility master plans. The proposed UMPS address the City's stormwater drainage system.

However, the City's storm drainage master plan does not rely on hydrologic and hydraulic models. The previous storm drain master plans did not incorporate modeling and therefore lacked information critical to infrastructure planning. In addition, the projected 2040 land uses under the proposed General Plan are different than the buildout land uses under the adopted General Plan. Consequently, the storm drain

system improvements identified in previous storm drain master plans may no longer be appropriate; this could result in some storm drain infrastructure being undersized, which could lead to flooding.

In addition, the stormwater study that is part of the proposed UMPS is a high-level assessment of required detention volumes and pumping capacities for anticipated development, and does not assess storm drainage piping facilities, nor does it consider the sizing of detention basins or other facilities to address stormwater quality and stormwater pollution control measures. Consequently, storm drainage and runoff impacts could be *significant*.

Significance Without Mitigation: Significant.

Impact HYDRO-5: Development allowed under the proposed General Plan could result in existing and planned stormwater drain infrastructure to be undersized or otherwise inadequate, which could lead to flooding and polluted runoff.

> Mitigation Measure HYDRO-5: Complete a citywide storm drainage master plan, including hydrologic and hydraulic models for existing land use conditions and for the land uses anticipated in 2040 under the proposed General Plan. The master plan should identify the future stormwater infrastructure needs and develop a current stormwater capital improvement plan. As part of this process, require new development to complete stormwater plans covering drainage, flood control, and storm water quality/permitting. Use the master plan and project-level stormwater plans to assess future development, and require that future development construct the required on- and off-site infrastructure.
>
> Significance With Mitigation: Less than significant.

HYDRO-6 Implementation of the proposed project would not otherwise substantially degrade water quality.

As described above in the discussion for Impact HYDRO-1, construction and operation of development allowed by the proposed General Plan and UMPS could degrade water quality. However, as described above, construction activities that disturb 1 acre or more would be required to comply with the General Construction Permit, Order No. 2012-0006-DWQ, issued by the SWRCB in 2012, which requires the development and implementation of a SWPPP specifying BMPs that would be used by the project to minimize pollution of stormwater. In addition, there are water quality requirements for project design and operation set forth in the MS4 Permit for the City of Stockton and San Joaquin County (Order No. R5-2015-0024) issued by the CVRWQCB in 2015; the Stormwater Management Plan issued by the City in 2009; and the Final Stormwater Quality Control Criteria Plan for the City of Stockton and County of San Joaquin revised in February 2011. Furthermore, Stockton Municipal Code Chapter 13.16, *Stormwater Management and Discharge Control*, establishes limitations and regulations for discharges into the City's stormwater system, and Chapter 15.48, *Grading and Erosion Control*, establishes requirements that control the discharge of pollutants.

These existing water quality requirements, combined with the proposed General Plan policies and actions described above in the discussion for Impact HYDRO-1 (i.e., Action SAF-3.1.A, Policy SAF-3.2, and Action SAF-3.2.B), would reduce potential water quality impacts to a *less-than-significant* level.

Significance Without Mitigation: Less than significant.

HYDRO-7 Implementation of the proposed project would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

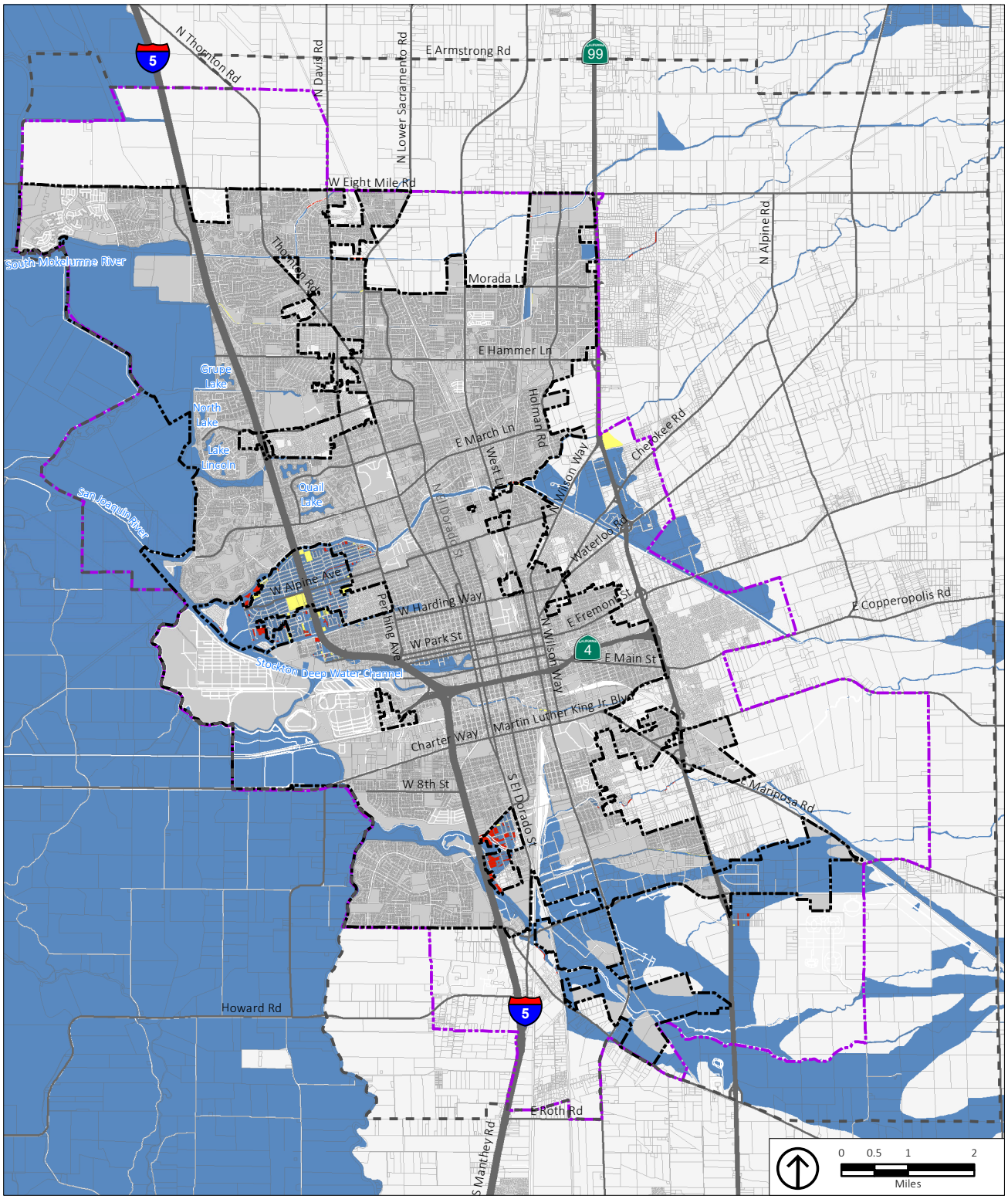
The proposed General Plan would designate approximately 155 acres of vacant land in the 100-year flood zone for residential use, and would re-designate approximately 173 acres of land from other land uses to residential within the 100-year flood zone. As shown on Figure 4.9-8, these residential areas are generally located:

- On the eastern boundary of the EIR Study Area, east of the interchange of State Route 99 with Wilson Way.
- In the west-central part of the EIR Study Area, centered near the I-5 overpass over Alpine Avenue.
- In the south-central part of the EIR Study Area near where the I-5 passes over the San Joaquin River and Downing Avenue.

Most of these areas would be designated low-density residential uses, permitting up to 6.1 residential units per gross acre. Therefore, approximately 2,000 residential units could be constructed within the 100-year flood zone.

However, homeowners in the 100-year flood zone would be required to comply with flood insurance requirements under the National Flood Insurance Program. Per Section 15.44.150 of the Stockton Municipal Code, new residential development, or existing structure necessitating significant improvements, located within the 100-year flood zone are required to be elevated at least 2 feet above the 100-year flood level. Development would only be permitted in areas where the City of Stockton could provide substantial evidence showing that flood depths in a 200-year flood would not exceed 3 feet, per SB 5 (Chapter 364, Statutes of 2007) and proposed General Plan Action SAF-2.4.A. In addition, proposed General Plan policies SAF-2.2 through SAF-2.4 and their associated actions (listed in the discussion for Impact HYDRO-4), would further address flood hazards, and proposed Policy SAF-2.1 and Action SAF-2.1.B call for educating and informing the public about preparedness for emergencies, including flooding. Because development would only be allowed where flood depths would not exceed 3 feet in a 200-year storm, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.



Source: City of Stockton; San Joaquin County; Federal Emergency Management System (FEMA), 2016; PlaceWorks, 2017.

- Existing Vacant Land to Residential Designation
- Existing Non-Residential Land to Residential Designation
- 100-Year Flood Zone
- City Limit
- General Plan Planning Area
- Sphere of Influence/ EIR Study Area

Figure 4.9-8

Proposed Residential Designations in 100-Year Flood Zones

HYDRO-8 Implementation of the proposed project would not place within a 100-year flood hazard area structures which would impede or redirect flood flows.

As explained in the discussion of HYDRO-8 above, development allowed by the proposed General Plan could include up to 2,000 residential units within the in 100-year flood zone. Pursuant to proposed General Plan Action SAF-2.4.A, SB 5, and AB 162, such development would only be permitted in areas where the City could demonstrate that flood depths in a 200-year flood would be below 3 feet. In addition, proposed General Plan Action SAF-2.4.C requires the City to preserve floodways and floodplains for non-urban uses to maintain existing flood carrying capacities, except when mitigated in conformance with the City's floodplain management program. Combined with other proposed General Plan policies and actions noted in the discussion of HYDRO-8 above, flood flows would not be impeded or redirected by development allowed by the proposed General Plan and UMPS, and the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

HYDRO-9 Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Dam Inundation

Portions of the EIR Study Area are within the inundation areas of three dams: Camanche, New Hogan, and New Melones.

Camanche Dam is inspected periodically by EBMUD, FERC, and DSOD, and maintained by EBMUD. New Hogan Dam is inspected annually by the DSOD and maintained by the Corps. New Melones Dam is inspected and maintained by the USBR. Considering the efforts by multiple agencies to maintain the structural and operational safety of the dams, the likelihood of a dam failure resulting in floodwaters affecting the EIR Study Area is considered small. In addition, the estimated time of arrival of floodwaters from a dam failure at Camanche Dam, the closest of the three dams to Stockton, would be over seven hours after the dam failure event.[35] Thus, at least some of the people in the affected areas would be able to evacuate the inundation area before floodwaters arrived.

Levee Failure

Most of Stockton is protected from flooding by levees. However, there is still a risk of flooding of these areas due to: geotechnical instability of the levees, primarily seepage through and under levees; one bank of the levee being higher than the other; water flowing around the upstream end of a levee; and encroachments such as culverts and roadway crossings.

[35] California Office of Emergency Services (Cal OES). 2016, February 23. DVD. Dam Inundation Maps.

In 2005, FEMA began requiring local communities and levee owners to submit documentation that show levee systems providing 100-year flood protection. FEMA de-accredited levees that did not provide the required documentation, and the areas behind those levees are included in the Special Flood Hazard Areas on the current FIRMs.

The San Joaquin County Office of Emergency Services has prepared an evacuation plan for response to flooding due to failure of a levee or dike. The evacuation plan includes routes for people evacuating by car, rally points for people needing assistance evacuating, and instructions for evacuation and safety during a flood.[36]

Overall Impact Finding

The proposed General Plan includes the following actions that help to mitigate potential impacts from dam or levee failure:

- Action SAF-2.2.A: Require new development to provide adequate access for emergency vehicles and evacuation routes, including by designing roadway systems to provide multiple escape routes in the event of a levee failure.
- Action SAF-2.2.B: Formulate, review, periodically update, and make available to the public emergency management plans for the safe evacuation of people from areas subject to inundation from levee and dam failure.
- Action SAF-2.2.C: Require new critical facilities, including hospitals, emergency operations centers, communications facilities, fire stations, and police stations, to be located, designed, and constructed to avoid or mitigate potential risks and ensure functional operation during flood events (i.e., avoid locating in the 100-year and 200-year floodplains), seismic and geological events, fires, and explosions.
- Action SAF-2.2.D: Work with San Joaquin County, the County Office of Emergency Services, other cities in the region, and disaster agencies to coordinate disaster and emergency preparedness planning.
- Action SAF-2.3.A: Coordinate with appropriate State, federal, and local flood control agencies to develop a flood protection plan for the levee systems protecting the city that:
  - Identifies the levees protecting the city and the entities responsible for the operation and maintenance of the levees;
  - Determines the flood levels in the waterways and the level of protection offered by the existing levees along the waterways;
  - Identifies a long-term plan to upgrade the system as necessary to provide at least a 100-year level of flood protection to the city, and 200-year level of flood protection, where feasible;

[36] San Joaquin County Office of Emergency Services. 2017. San Joaquin County Evacuation Maps, http://www.sjmap.org/evacmaps/, accessed August 4, 2017.

  - Encourages multi-purpose flood management projects that, where feasible, incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the city's streams, creeks, and lakes; and
  - Includes provisions for updates to reflect future State or federally mandated levels of flood protection.
- Action SAF-2.3.B: Collaborate with State and local flood management agencies and other interested parties to develop funding mechanisms to finance the local share of flood management responsibilities, and maintain cooperative working relationships with appropriate agencies to minimize flood hazards and improve safety.
- Action SAF-2.3.C: Require new public and private waterfront development to be oriented to waterways and provide setbacks and easements along levees and channels to provide space for levee widening, flood fighting, roadway and maintenance access, open space and trail amenities, and appropriate landscaping.

Development allowed under the proposed General Plan and UMPS would not directly or indirectly cause or exacerbate flood hazards due to dam inundation, and there are existing and proposed programs and requirements that help to mitigate potential impacts from dam or levee failure. Therefore, impacts related to dam or levee failure would be *less than significant*.

Significance Without Mitigation: Less than significant.

HYDRO-10 Implementation of the proposed project would not cause substantial flood hazards arising from seiche, tsunami, or mudflow.

Seiche

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. Inland water bodies in the EIR Study Area that could pose a flood hazard due to a seiche include the Stockton Ship Channel, canals lined by levees, several artificial lakes in the west half of the EIR Study Area, and the reservoirs impounded behind the above-described dams.

Flood hazards from dam and levee failure would be less than significant, as substantiated above in the discussion for Impact HYDRO-9.

The Stockton Ship Channel is required for commercial navigation to and from the Port of Stockton. Development allowed by the proposed General Plan and UMPS would not place structures in the Channel that would redirect seiche waves.

The artificial lakes in the EIR Study Area are generally surrounded by existing residential land uses. Seiches in the artificial lakes could cause localized flooding at those existing residential uses that abut the lakes, but no new development is anticipated in those developed areas.

Tsunami

A tsunami is an ocean wave caused by a sudden displacement of the ocean floor, most often due to earthquakes. Tsunami inundation zones mapped by the California Geological Survey in the San Francisco Bay Region extend east to the City of Benicia in Solano County.[37] There is no tsunami inundation hazard in Stockton.

Mudflow

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. There are no slopes in or near the EIR Study Area that could generate a mudflow.

Overall Impact Finding

The proposed General Plan includes policies and actions that mitigate potential flood risks, as described above in the discussions for Impacts HYDRO-7, -8, and -9. These flood risk measures would also address potential flood risks resulting from seiches, tsunamis, and mudflows. In addition, as discussed above, the proposed General Plan and UMPS would not place new development in areas that are subject to flooding from seiches, tsunamis, or mudflows. Therefore, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

[37] California Geological Survey (CGS). 2017. Tsunami Inundation Zones, http://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=4d56b41ba6c64d538ec3a91d40078dff, accessed July 25, 2017.

4.10 LAND USE AND PLANNING

This section describes the regulatory framework and existing conditions in the EIR Study Area related to land use and planning, and evaluates the potential land use impacts associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). The following evaluation is based on a spatial analysis and examines whether implementation of the proposed project would physically divide established communities or conflict with other plans. Cumulative impacts related to land use and planning would be contiguous with the Sphere of Influence (SOI) boundary, but consider regional land use planning based on the San Joaquin Council of Governments (SJCOG).

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 REGULATORY FRAMEWORK

Regional Regulations

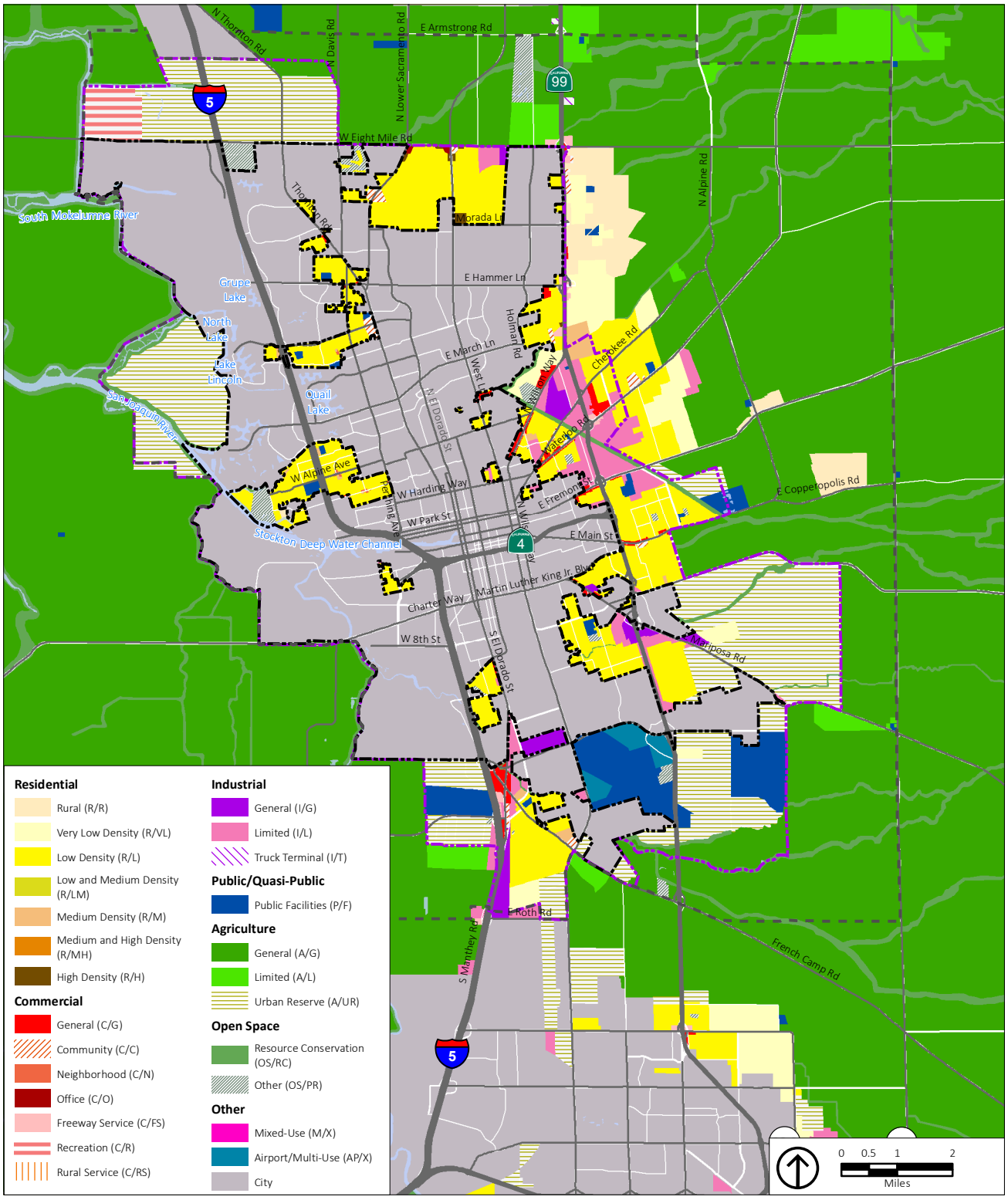
San Joaquin County General Plan

The San Joaquin County 2035 General Plan is a comprehensive long-range guide for land use in the unincorporated portions of the county, including land outside of Stockton's city limit but within the EIR Study Area (see Figure 4.10-1). The current General Plan was adopted in December 2016.

Policy C-4.3 in the San Joaquin County General Plan directs the County to generally maintain land use designations in "city fringe areas" that are consistent with land use designations contained in the City's General Plan.[1] The San Joaquin County General Plan land use map is shown on Figure 4.10-1, and it includes the following types of uses within the EIR Study Area:

- Agriculture. Large portions of the EIR Study Area are designated by the County for agricultural use, generally along the north, south, eastern, and western edges of the EIR Study Area.
- Residential. County residential designations are generally concentrated near the eastern edge of the city limit with some smaller pockets scattered throughout the unincorporated islands in the city.
- Commercial. County commercial designations are scattered throughout the urbanized unincorporated portions of the EIR Study Area and along major corridors.
- Industrial. County industrial designations are generally located in the eastern and southern portions of the EIR Study Area and east of the city limit.
- Open Space. County open space designations are generally located along waterways.
- Other. County public designations are scattered throughout the EIR Study Area in unincorporated pockets of Stockton near the southern and eastern edges of the city limit. The Stockton Metropolitan Airport area south of the city limit is designated by the County for airport/multi-use.

[1] San Joaquin County, 2016, 2035 General Plan Policy Document, page 3.1-79.



Source: San Joaquin County, 2017; PlaceWorks, 2017.

City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Figure 4.10-1
San Joaquin County General Plan Land Use Diagram

Stockton Metropolitan Airport Land Use Compatibility Plan

The Airport Land Use Compatibility Plan (ALUCP) for the Stockton Metropolitan Airport was last updated in May 2016.[2] The ALUCP provides guidance related to the placement of land uses near the Stockton Metropolitan Airport. Specifically, the ALUCP seeks to protect the public from adverse effects of aircraft noise, ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect navigable airspace.

Regional Smart Growth Transit-Oriented Development Plan

In 2012, SJCOG prepared the Regional Smart Growth Transit-Oriented Development (TOD) Plan. This Plan aims to shape future growth throughout San Joaquin County to put the region on a path toward environmental sustainability. Specifically, the Plan does the following:

- Defines and provides examples showing what smart growth means in San Joaquin County.
- Serves as a tool for SJCOG as it continues to implement its Smart Growth Incentive Program.
- Helps local agencies like the City of Stockton to promote infill development and evaluate potential development proposals by providing tools (i.e., a Smart Growth Scorecard) and recommendations.
- Helps developers seeking to expand smart growth development in the county by providing them with pre-identified sites for development potential and pro forma analyses of the financial feasibility of prototypical projects.

This TOD Plan includes an inventory of sites throughout the county, including in the EIR Study Area, that are appropriate for infill development based on criteria related to vacancy, identification in other planning documents, proximity to Downtown and transit, parcel size, and land use designations. The TOD Plan also includes development concepts and pro forma analyses for several sample projects in Downtown Stockton.

Sustainable Communities Strategy/Regional Transportation Plan

The 2014 Sustainable Communities Strategy/Regional Transportation Plan (SCS/RTP) is an integrated long-range transportation and land-use/housing plan for San Joaquin County through the year 2040. The 2014 SCS/RTP responds to State mandates (AB 32 and SB 375, which are discussed in Section 4.7, Greenhouse Gas [GHG] Emissions) that require California's 18 metropolitan areas—including San Joaquin County—to adopt an SCS that will coordinate land use planning with transportation investments in order to reduce GHG emissions from motor vehicles. The policies in the 2014 SCS/RTP for meeting State requirements will affect land use and transportation throughout Stockton.

San Joaquin Valley Blueprint

The San Joaquin Valley Blueprint is the result of an extensive planning process involving the eight regional transportation planning agencies in the San Joaquin Valley: Fresno Council of Governments (COG), Kern

[2] San Joaquin County's Aviation System, Stockton Metropolitan Airport Land Use Compatibility Plan, http://www.sjcog.org/DocumentCenter/View/1318, accessed on July 21, 2017.

COG, Kings County Association of Governments (CAG), Madera County Transportation Commission, Merced CAG, Tulare CAG, San Joaquin COG, and Stanislaus COG. Between 2005 and 2009, the Blueprint planning process formulated a regional vision of land use and transportation to guide growth in the San Joaquin Valley over the next 50 years. This vision is reflected in a preferred scenario (Scenario B+) that incorporates a set of 12 smart-growth principles.

Concurrent with the Valleywide process, each of the eight regional transportation planning agencies prepared separate countywide blueprints, which were then consolidated into the single Valleywide Blueprint. The San Joaquin County Regional Blueprint establishes a set of guiding principles, goals, and performance measures to achieve its land use, transportation, and environmental vision.

Delta Plan

The Delta Plan, adopted by the Delta Stewardship Council on May 16, 2013, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority included in the Delta Reform Act, enacted as part of Senate Bill X7. These policies include a requirement for Delta Plan consistency findings for "covered actions," which include the proposed General Plan. The Delta Plan covers the Legal Delta (shown on Figure 4.9-2, *Sacramento-San Joaquin Delta*, of this EIR) and Suisun Marsh, an area west of the central part of the Legal Delta.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) was adopted in 2001 and provides a framework for promoting the protection and recovery of natural resources, including endangered species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The SJMSCP allows various governments and agencies, including the City of Stockton, to receive endangered species permits for activities and projects they conduct, as well as for activities and projects conducted by project applicants under their jurisdiction.

Local Regulations

Stockton Municipal Code

The Stockton Municipal Code contains all ordinances for the city, and identifies land use categories, site development regulations, and other general provisions that ensure consistency between the General Plan and proposed development projects.

Title 16, Development Code

Title 16 of the Stockton Municipal Code is the primary tool that regulates physical development in Stockton. The Development Code implements the General Plan by classifying and regulating the uses of land and structure within the city. Per Section 16.04.020, the purpose of the Development Code is to:

- Provide standards for orderly growth and development of the city;
- Implement the land uses of the General Plan; maintain and protect the value of property;
- Conserve and protect the natural resources of the city, including its surrounding agricultural lands;
- Protect the character and social and economic stability of residential, commercial, and industrial areas;
- Assist in maintaining a high quality of life without causing unduly high public or private costs for development or unduly restricting private enterprise, initiative, or innovation in design; and
- Provide regulations for the subdivision of land in compliance with the Subdivision Map Act.

Figure 4.10-2 shows the adopted zoning map. While other parts of the Stockton Municipal Code address specific technical issues that also affect land use and development, they are summarized where relevant in other sections of this EIR. For example, Chapter 13.08 of the Stockton Municipal Code, Sewer Use, which deals with wastewater discharge and treatment, is described in Chapter 4.9, Hydrology and Water Quality, and Chapter 16.60 if the Stockton Municipal Code, Noise Standards, contains the noise standards that are discussed in Section 4.11, Noise, of this EIR.

Chapter 16.28, Overlay Zoning District Land Use and Development Standards

Chapter 16.28 of the Stockton Municipal Code regulates development and new land uses in overlay districts established by Section 16.16.020. Section 16.28.030 establishes the Airport Operations (AIR) overlay district and provides height limits for structures in the vicinity of the Stockton Metropolitan Airport, based on zones or surfaces defined in the air space above the airport and its surroundings. It also requires that all proposed uses be consistent with the ALUCP.

Settlement Agreement

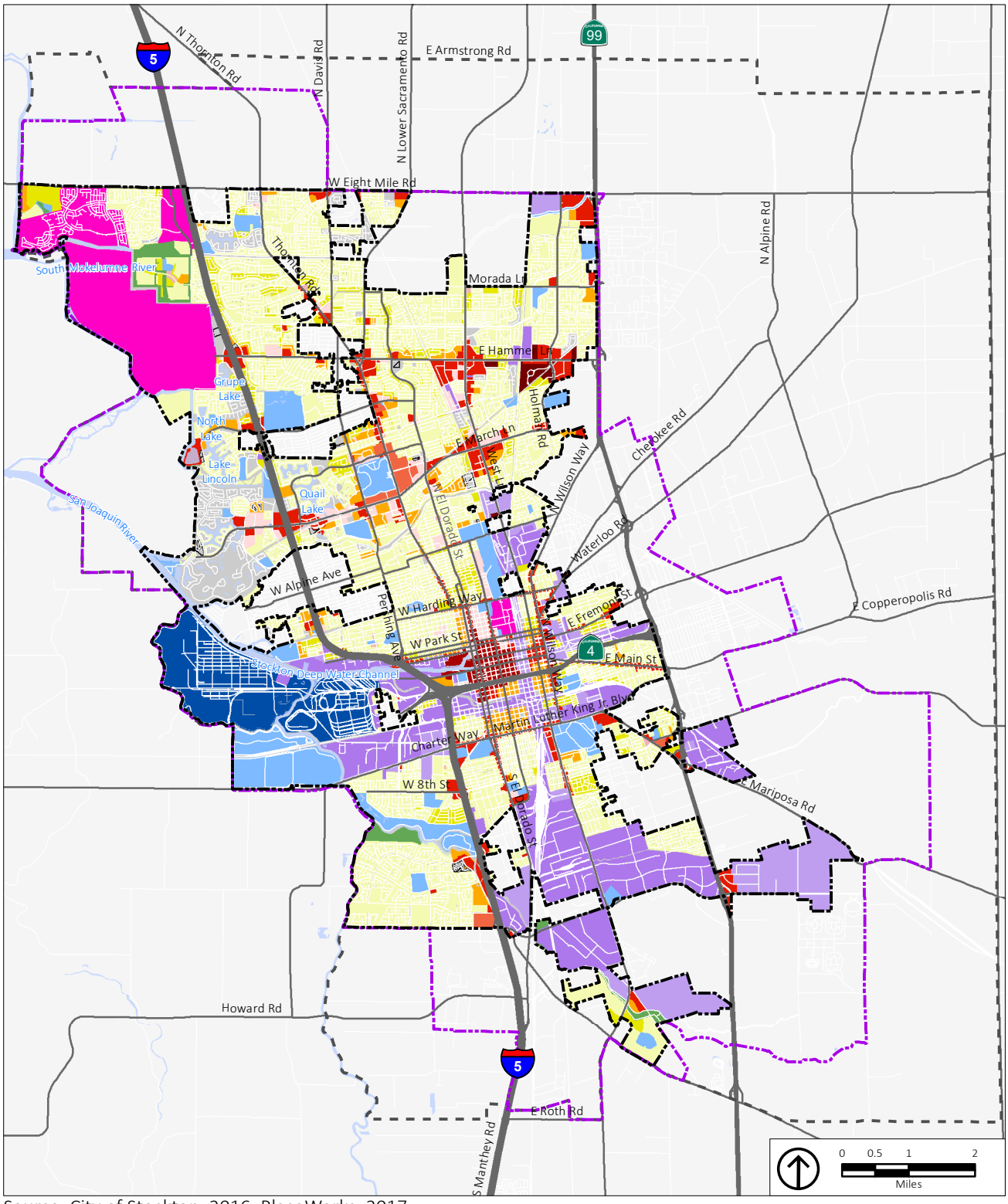
In 2008, the City entered into a Settlement Agreement with the State and the Sierra Club in response to litigation over the 2007 adoption of the existing 2035 General Plan. The Settlement Agreement directs the City to prepare a Climate Action Plan, which was completed in 2014, and to amend the General Plan to focus new growth in the interior of the city versus expanding into outlying areas. In particular, the Agreement directs the City to plan for the development of 18,400 housing units within the city limit as it existed in 2008, with at least 4,400 of those residences located in the Greater Downtown area.

4.10.1.2 EXISTING CONDITIONS

Existing Land Uses

The San Joaquin County Assessor tracks land uses throughout the county, including in the incorporated and unincorporated portions of the EIR Study Area. In this section, the term “existing land use” refers to the existing built environment, which may be different from the General Plan or zoning designations that are applied by the City for planning purposes. Based on the County Assessor information, existing land uses in the EIR Study Area are shown on Figure 4.10-3 and the acreages devoted to each mapped land use

LAND USE AND PLANNING



Source: City of Stockton, 2016; PlaceWorks, 2017

City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Residential
Residential - Low Density
Residential - Medium Density
Residential - High Density

Commercial
Commerical - Office
Commercial - Neighborhood
Commercial - General
Commercial - Downtown
Commercial - Large-Scale
Commercial - Auto

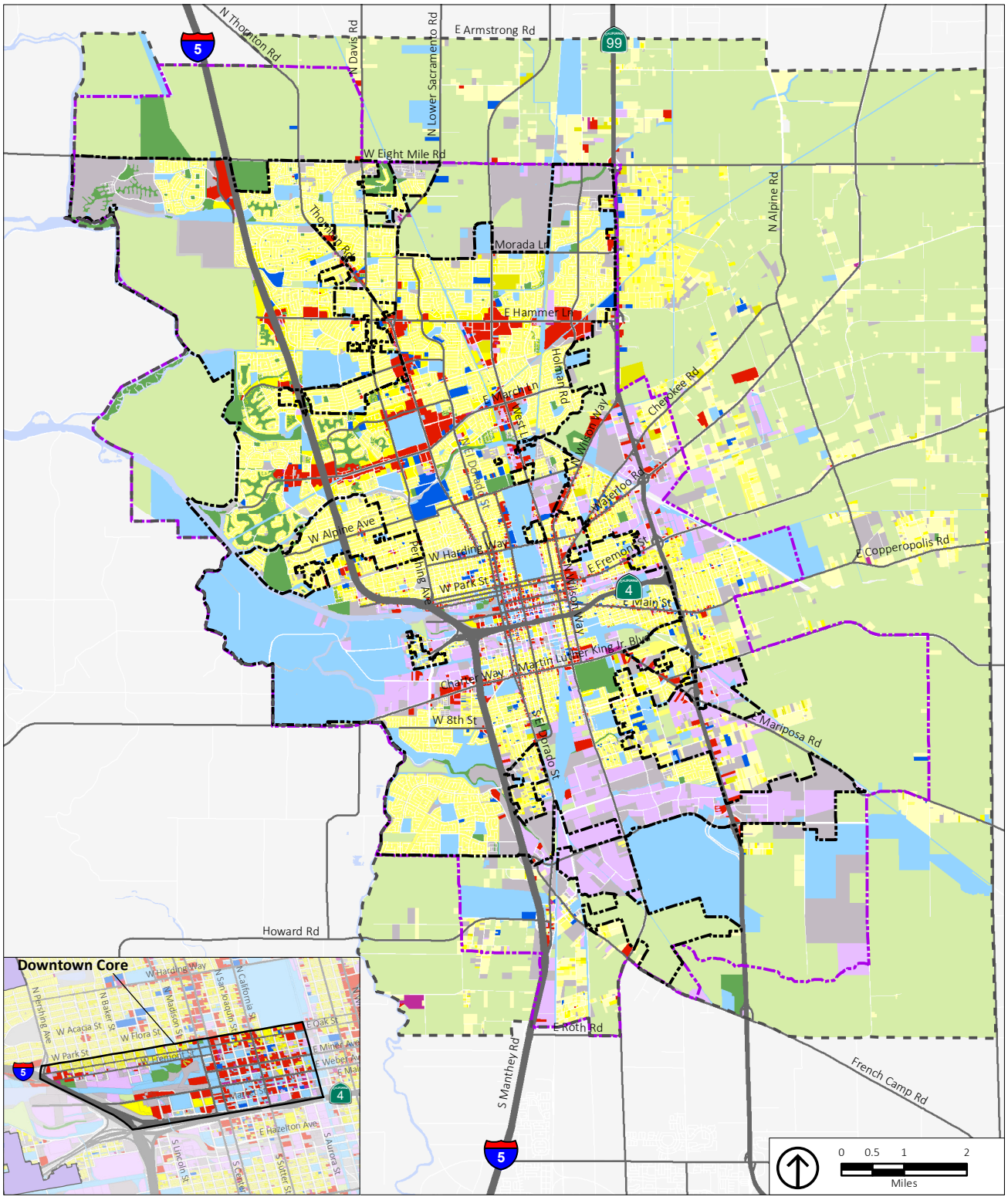
Industrial
Industrial - Limited
Industrial - General

Other Designations
Port
Public Facilities
Open Space
Mixed Use

Planned Development

PLACEWORKS

Figure 4.10-2
Existing Zoning Map



Source: City of Stockton, 2016; San Joaquin County, 2016; PlaceWorks, 2017

- Residential - Rural
- Residential - Single Family
- Residential - Multi-Family
- Residential - Mobile Home
- Mixed Use
- Commercial
- Industrial
- Institutional
- Public and Quasi Public
- Parks, Recreation, and Open Space
- Agriculture
- Vacant
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.10-3
Existing Land Use

are shown in Table 4.10-1 and summarized on Figure 4.10-4. Descriptions of each land use within the EIR Study Area are provided below.

TABLE 4.10-1 EXISTING LAND USE

Existing Land Use	EIR Study Area (Acres)
Residential Rural	1,220
Residential Single-Family	13,530
Residential Multi-Family	1,870
Residential Mobile Home	210
Mixed Use	120
Commercial	2,340
Industrial	4,570
Institutional	800
Public and Quasi-Public	10,990
Parks, Recreation, and Open Space	2,500
Agricultural	17,520
Vacant	6,970

Note: This table reports land uses that are mapped by the County Assessor; any unmapped land uses, such as rights-of-way, are excluded.
Source: San Joaquin County Assessor, 2016.

Residential

As shown on Figure 4.10-3, most of Stockton is used for single-family residential, which accounts for over 13,500 acres in the EIR Study Area and about a third of the city limit. Rural residential uses account for over 1,200 acres, multi-family residential uses total almost 1,900 acres, and mobile home parks account for just over 200 acres.

Mixed Use

Mixed use developments, including commercial/office, residential/commercial, and residential/office, account for 120 acres in the EIR Study Area, 80 of which are in the city limit. They are generally concentrated near or within Downtown Stockton.

Commercial

Commercial uses, including retail, services, office, and lodging, account for over 2,300 acres within the EIR Study Area, almost 2,000 of which are within the city limit. Commercial uses are generally located along major corridors near Downtown Stockton as well as along Pacific Avenue, Hammer Lane, and March Lane north of the Downtown area.

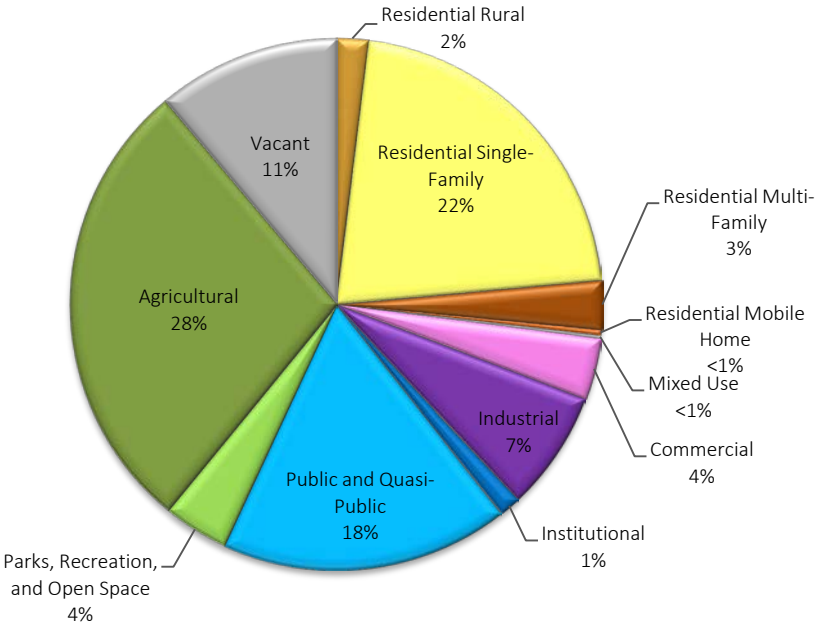
Industrial

Industrial uses account for almost 4,600 acres in the EIR Study Area, more than 3,000 of which are within the city limit, and include light manufacturing and industry, warehousing, heavy industry, shipyards, mineral processing, truck terminals, and packing plants. Industrial uses are generally concentrated within the southern half of the EIR Study Area.

Institutional

Institutional uses account for 800 acres in the EIR Study Area, about 600 of which are within the city limit, and include private schools and colleges, assisted living residences, County hospitals, and churches, synagogues, or temples. Institutional uses are generally distributed throughout the city limit and portions of the SOI.

Figure 4.10-4 Existing Land Use Acreage Summary



Public/Quasi-Public

Public and quasi-public uses account for the third highest acreage within the EIR Study Area, behind agriculture and single-family residential, at almost 11,000 acres; they constitute 20 percent of the acreage in the city limit. The public and quasi-public use category includes City and County buildings, State and federal buildings, school district properties, parking lots and garages, cemeteries, and the airport.

Parks, Recreation, and Open Space

Parks, recreation, and open space uses account for 2,500 acres in the EIR Study Area, about 1,500 of which are within the city limit, and include City and County parks and other recreation facilities and private recreation uses like country clubs, golf courses, and marinas. In general, parks, recreation, and open space uses are distributed throughout the EIR Study Area, with heavier concentrations in the northeastern portion of the city.

Agricultural

Agricultural uses account for the majority of the land area within the EIR Study Area at over 17,500 acres. The majority of this land is located outside the city limit.

Vacant

There are almost 7,000 acres of land within the EIR Study Area that are vacant. Significant portions of this acreage include land located at the edge of the city where large development projects are planned, but not yet constructed. Just over 4,000 acres of vacant land are within the city limit.

Existing Stockton 2035 General Plan

The existing Stockton General Plan was adopted by the Stockton City Council on December 11, 2007. The 2007 General Plan was a comprehensive update to the prior 1990 General Plan. This section describes the land use designations in the existing Stockton General Plan, which would be updated and replaced by the proposed 2040 General Plan Update.

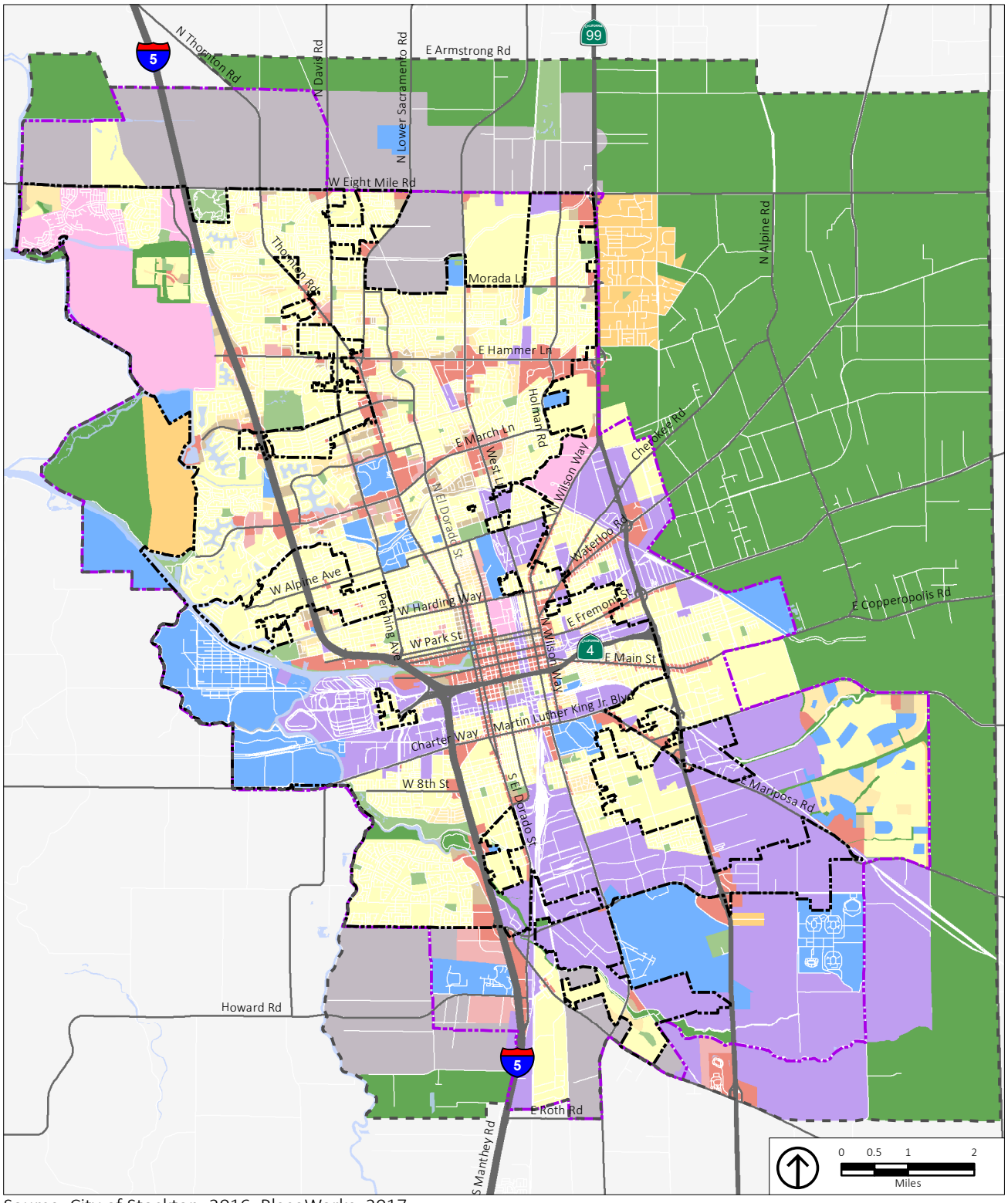
All development in the city limit must conform to the land use designations outlined in the existing 2035 General Plan. Goals, policies, and programs contained in the Land Use Element of the existing 2035 General Plan provide additional direction on how the various land use designations should be developed. Per State law, the City's General Plan is the primary planning document and all other City plans and policies must be consistent with the adopted General Plan.

The existing Land Use Element includes 12 discrete land use designations. Figure 4.10-5 shows the existing 2035 General Plan land use map. Table 4.10-2 shows each land use designation and the acreage of land designated for each category within the EIR Study Area. Figure 4.10-6 summarizes the acreages devoted to each designation.

TABLE 4.10-2 EXISTING 2035 GENERAL PLAN LAND USE DESIGNATIONS

General Plan Land Use Designation	EIR Study Area (Acres)
Residential Estate	1,010
Low Density Residential	22,580
Medium Density Residential	1,560
High Density Residential	1,120
Mixed Use	3,090
Village	5,640
Administrative Professional	820
Commercial	3,160
Industrial	12,430
Institutional	7,790
Parks and Recreation	1,470
Open Space/Agriculture	2,400
Total Acres	**63,060**

Notes: Numbers may not add up due to rounding.
This table reports land use designations mapped in the General Plan land use map, and excludes unmapped areas, such as rights-of-way.
Source: City of Stockton, 2016.



Source: City of Stockton, 2016; PlaceWorks, 2017

Residential
- Residential Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential

Mixed Use
- Village
- Mixed Use

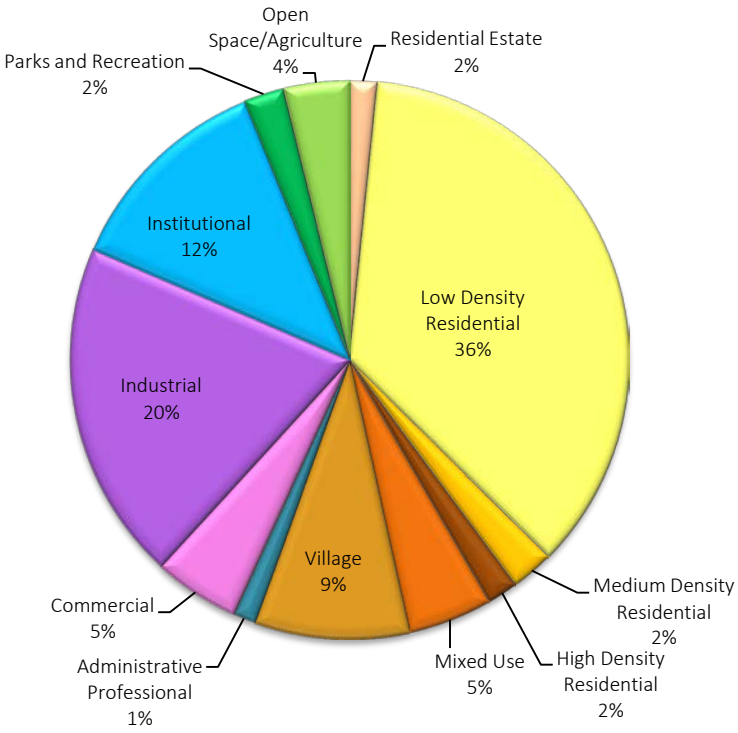
Business and Industry
- Commercial
- Administrative Professional
- Industrial

Public Facilities & Open Space
- Institutional
- Parks and Recreation
- Open Space/Agriculture

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.10-5
Existing 2035 General Plan Land Use Diagram

Figure 4.10-6 Existing 2035 General Plan Land Use Designations Acreage Summary



4.10.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact related to land use and planning if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the proposed project (including, but not limited to, the General Plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.10.3 IMPACT DISCUSSION

LU-1 Implementation of the proposed project would not physically divide an established community.

The proposed General Plan and UMPS would result in a significant impact if they would lead to new development or physical features that would divide existing neighborhoods. The physical division of an established community typically refers to the construction of a physical feature, such as a wall, interstate highway, airport, roadway, or railroad tracks, or the removal of a means of access, such as a local road or bridge that could impair mobility or constrain travel within an existing community, or between a community and outlying areas. The proposed General Plan and UMPS do not propose any new major roadways or other divisive physical features through existing neighborhoods that would create new barriers in the EIR Study Area.

The land uses in the proposed General Plan are largely consistent with existing development patterns. As discussed in Chapter 3 of this EIR, the proposed General Plan emphasizes new and redevelopment in existing "infill" neighborhoods. This approach is supported by proposed General Plan Action LU-2.1.E, which directs the City to develop and implement a strategy for mixed-use high-end development in already developed areas of the city and promotes the re-use of historic structures; Action LU-6.1.F, which uses the Public Facilities Fee structure to discourage non-infill development and ensure that such development pays its fair share of anticipated citywide capital facilities needs; and Action LU-6.2.A, which encourages infill development through expedited permitting, changes in fee structures, prioritizing infrastructure improvements in infill areas, and/or other incentives.

The most significant change to the existing land use pattern would occur in areas at the edge of the city, where there are already-approved and pending projects that would change areas currently used for open space and agriculture to urban development. In addition, the Economic and Education Enterprise designation could allow for an area that is currently open space and agriculture to change to an economic or job-generating use. Because these areas do not contain large amounts of contiguous residential development, development in these areas would not result in the division of an existing neighborhood. In addition, any development at the edge of the city would be subject to proposed General Plan Action LU-5.3.A, which directs the use of landscaping and other attractive edging instead of soundwalls and similar utilitarian edges of developments to maintain the visual integrity of open space, and Action LU-6.2.B, which requires that the City only approve future annexations or City utility connections that are consistent with the overall goals and policies of the General Plan and do not adversely impact quality of life. Both of these actions would further limit the possibility for development allowed under the proposed General Plan to divide an existing community.

Given that potential future development under the proposed General Plan would largely occur in already established neighborhoods, generally retaining the existing roadway patterns, and that development of open space and agriculture areas at the edge of the city wouldn't occur in areas with established neighborhoods, impacts related to the division of an existing community would be *less than significant*.

Significance Without Mitigation: Less than significant.

LU-2	**Implementation of the proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.**

Local Plans and Regulations

The proposed General Plan would be the primary long-range planning document for the City of Stockton. Once adopted, it would supersede the existing 2035 General Plan. Therefore, upon adoption and implementation of the proposed General Plan, other City documents will also need to be updated to ensure consistency. Title 16, Development Code, of the City's Municipal Code would be updated, as necessary, to conform to the proposed General Plan, as directed by proposed General Plan Action LU-6.6.C. Because the General Plan is the overriding planning document for the city, the impact would be *less than significant*.

San Joaquin County General Plan

The San Joaquin County 2035 General Plan, adopted in December 2016, is a long-range guide for land use in the unincorporated areas in the county, including land outside of Stockton's city limits but within the EIR Study Area. Although the proposed General Plan applies land use designations to lands within the SOI, all land beyond the Stockton city limit remains within the County's jurisdiction until annexed to the City.

The land use designations in the proposed General Plan are largely consistent with those in the County General Plan, although there are some areas where they differ, including in some areas that the County designates for Agriculture-Urban Reserve. This County designation is intended to provide a reserve for future urban development, so City designations that allow for urban development, while different, are not inconsistent. There are also smaller areas throughout the periphery of the city and in unincorporated islands where proposed City designations conflict with existing County designations. However, in most cases, the proposed City designation reflects an existing use. Because land outside the city limit is currently subject to County land use regulations, and would only come under City land use jurisdiction upon annexation, only one set of land use policies apply at a given time, and there cannot be a conflict between the City and County General Plan. As a result, adoption and implementation of the proposed General Plan would not result in a conflict with the County General Plan.

Furthermore, the County General Plan supports focused growth within incorporated cities, and calls for annexation to the City prior to development of lands outside of city limits. County General Plan Policy LU-1.10 states: "The County shall coordinate with San Joaquin LAFCo and cities within the County to ensure future annexation proposals and requests to expand Spheres of Influence reflect the growth and development patterns envisioned in this General Plan. The County shall provide input on annexation proposals and requests to expand Spheres of Influence in an effort to play a more active role in future expansion of cities into the unincorporated County." The proposed Stockton General Plan also includes actions that call for annexation prior to development; in particular, proposed Action LU-6.2.B, requires that future annexations or City utility connections be consistent with the overall goals and policies of the proposed General Plan prior to annexation.

In addition, both the proposed Stockton General Plan and the existing County General Plan include the following policies and actions that support communication and cooperation between the two agencies about land uses at the edges of the city:

- County General Plan Policy C-4.2, Coordination with Cities: The County acknowledges that upon annexation the cities ultimately will have primary responsibility for planning, new development approval, and the provision of services within City Fringe Areas; however, the County will maintain jurisdiction over development decisions until annexations occur. Within City Fringe Areas, the County shall coordinate with cities on plans, policies, and standards relating to building construction, subdivision development, land use and zoning regulations, street and highway construction, public utility systems, environmental studies, and other closely related matters affecting orderly development within City Fringe Areas.
- County General Plan Policy C-4.3, Consistent Planning: For land that is within a City Fringe Area, the County shall generally maintain General Plan land use designations that are consistent with the city's adopted General Plan, provided a city's planned growth patterns and development are consistent with SJCOG's Regional Transportation Plan and Sustainable Communities Strategy; provide for compact growth patterns and higher-density, mixed-use development; and include provisions to permanently preserve agricultural land within the county. The County shall maintain jurisdiction over development decisions in all unincorporated areas until annexations occur.
- County General Plan Policy C-4.5, City Development Standards: The County shall continue to notify a city whenever the County receives development applications for discretionary development permits within a City Urban Fringe Area, and solicit input from the City on the proposal. Where the Board of Supervisors finds that a proposed urban development is consistent with County General Plan objectives to approve development within a City Fringe Area, the County shall consider requiring the project to meet the development standards of the city in question and connect to City services.
- Proposed Stockton General Plan Action LU-6.2.B: Do not approve future annexations or City utility connections unless they are consistent with the overall goals and policies of the General Plan and do not adversely impact the City's fiscal viability, environmental resources, infrastructure and services, and quality of life.
- Proposed Stockton General Plan Action LU-6.5-A: Require preparation of a fiscal impact analysis for large development projects and proposed annexations to ensure a full accounting of infrastructure and public service costs and to confirm whether revenue enhancement mechanisms are necessary to ensure net fiscal balance or better, and require appropriate fiscal mitigations, when necessary, to ensure the City's ongoing fiscal health and continued viability of the City's General Fund.
- Proposed Stockton General Plan Policy LU-6.6: Coordinate land use planning efforts among City departments and with regional agencies.
- Proposed Stockton General Plan Action LU-6.6.A: Provide written comments to San Joaquin County on all proposed significant development projects in the City's Planning Area to request consistency with this General Plan and other City regulations.
- Proposed Stockton General Plan Action LU-6.6.B: Participate in SJCOG's regional planning programs and coordinate City plans and programs with those of SJCOG, including the Regional Transportation Plan/Sustainable Communities Strategy, among others.

Because only one set of land use policies apply at a given time, and because both the County General Plan and the proposed Stockton General Plan include policies and actions that ensure development at the city's edge only occur after annexation and that promote cooperation and communication between the two agencies, the impact related to consistency with the San Joaquin County 2035 General Plan would be *less than significant*.

Stockton Metropolitan Airport Land Use Compatibility Plan

The Stockton Municipal Airport is located immediately south of the city limit. The southwest portion of the EIR Study Area falls within the Stockton Metropolitan Airport Land Use Compatibility Plan safety zones, which are shown on Figure 4.8-2, *Stockton Metropolitan Airport Safety Zones*, of this EIR, and include the following:

- Zone 1, Runway Protection Zone. All non-aeronautically functional structures are prohibited.
- Zone 2, Inner Approach/Departure Zone. Residential development is prohibited within this zone except very low density residential at a density of one dwelling unit per 10 acres.
- Zone 3, Inner Turning Zone. Residential densities should be limited to one dwelling unit per 5 acres.
- Zone 4, Outer Approach/Departure Zone. Residential densities should be limited to one dwelling unit per 5 acres.
- Zone 5, Sideline Safety Zone. Residential densities should be limited to one dwelling unit per 2 acres.
- Zone 6, Airport Property Zone. Residential development is prohibited within this zone.
- Zone 7, Traffic Pattern Zone. There are no limits on residential density within this zone.
- Zone 8, Airport Influence Area. There are no limits on residential density within this zone.

The proposed General Plan designates the area within Safety Zones 1 through 6 as Public and Industrial, which are uses that are consistent with these Safety Zones. In addition, the proposed General Plan includes the following actions that promote compatibility with the Airport Land Use Compatibility Plan:

- Action TR-1.3.A: Protect the Airport and related aviation facilities from encroachment by ensuring that all future development within the Airport Influence Area (AIA) is consistent with the policies adopted by the San Joaquin County Airport Land Use Commission (ALUC), except in cases where the City Council concludes that project approval would provide for the orderly development of the Airport and the areas surrounding it while protecting the public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards.
- Action TR-1.3.B: Where substantial development already exists within the AIA and is incompatible with ALUC policies, only allow additional infill development of similar land uses if projects meet all of the following criteria to be an infill project:
  - The project site is bounded on at least three sides by uses similar to those proposed.
  - The proposed project would not extend the perimeter of the area developed with incompatible uses.

- The proposed project does not otherwise increase the intensity and/or incompatibility of use through use permits, density transfers, or other strategies.

- Action TR-1.3.C: Within the AIA, require that new development or an expansion of an existing use that requires a building permit file an avigation easement with the City.

In addition, new development under the proposed General Plan would be subject to Stockton Municipal Code Chapter 16.28, which requires that uses be consistent with the Stockton Municipal Airport Land Use Compatibility Plan.

Because the proposed General Plan land use map is consistent with the Stockton Metropolitan Airport Land Use Compatibility Plan safety zones, and proposed General Plan actions promote consistency, the impact would be *less than significant.*

Regional Smart Growth Transit-Oriented Development Plan

As described above, the Regional Smart Growth TOD Plan aims to shape future growth throughout San Joaquin County to put the region on a path toward environmental sustainability by promoting TOD and infill development. As discussed above and in Chapter 3 of this EIR, the proposed General Plan emphasizes infill development, including through proposed General Plan Actions LU-2.1.E, which directs the City to develop and implement a strategy for mixed-use high-end development in already developed areas of the city and promotes the re-use of historic structures; LU-6.1.F, which uses the Public Facilities Fee structure to discourage non-infill development and ensure that such development pays its fair share of anticipated citywide capital facilities needs; and LU-6.2.A, which encourages infill development through expedited permitting, changes in fee structures, prioritizing infrastructure improvements in infill areas, and/or other incentives. In addition, proposed General Plan Goal LU-2 and its associated policies and actions promote development in the Downtown, which is an area targeted for TOD and infill development by the Regional Smart Growth Plan. In particular:

- Action LU-2.2.A directs the City to amend the Development Code to provide more flexibility for residential development to be feasible, including through a streamlined residential development permit process, and to contribute to the "charm" of the Downtown.
- Action LU-2.2.B directs the City to establish TOD Overlay Zones around the Robert J. Cabral ACE Train Station and the San Joaquin Street Amtrak Station to promote high-density residential, including affordable and mixed-income housing, and other TOD.
- Action LU-2.2.C directs the City to evaluate and implement adjustments to the Public Facilities Fee structure to promote development in the Downtown.
- Action LU-2.4.A directs the City to implement strategies to promote business development in the Downtown that will primarily serve the needs of Downtown residents.

Because the proposed General Plan includes goals, policies, and actions that are consistent with the goals of the Regional Smart Growth TOD Plan, implementation of the proposed General Plan and UMPS would not conflict and the impact would be less than significant.

Sustainable Communities Strategy/Regional Transportation Plan

The 2014 SCS/RTP is an integrated long-range transportation and land-use/housing plan for San Joaquin County. The 2014 SCS/RTP includes policies, support strategies, and performance indicators that promote a wide range of multi-modal transportation improvements and opportunities in the region. As described below, the proposed General Plan supports the following SCS/RTP policy framework:

- SCS/RTP policy: Enhance the environment for existing and future generations and conserve energy. Supporting strategies encourage efficient development patterns that maintain agricultural viability and natural resources, enhance the connection between land use and transportation choices through projects that support energy and water efficiency, and improve air quality by reducing transportation-related emissions. The proposed General Plan supports this part of the SCS/RTP policy framework through the proposed land use map, which preserves significant areas for open space and agriculture, and:
  - Goal LU-5: Protect, maintain, and restore natural and cultural resources - and its associated policies and actions.
  - Action LU-6.2.B: Do not approve future annexations or City utility connections unless they are consistent with the overall goals and policies of the General Plan and do not adversely impact the City's fiscal viability, environmental resources, infrastructure and services, and quality of life.
  - Policy TR-2.2: Connect housing and employment development in areas with good transit access—and its associated actions.
  - Goal TR-3: Design transportation infrastructure to help reduce pollution and vehicle travel—and its associated policies and actions.
  - Policy SAF-4.1: Reduce air impacts from mobile and stationary sources of air pollution.
- SCS/RTP policy: Maximize mobility and accessibility. Supporting strategies address regional transportation system efficiency and public transportation, facilitate TOD, and facilitate non-motorized travel and minimize impacts on rural roads through transportation improvements. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel—and its associated policies and actions.
  - Goal TR-2: Offer active transportation opportunities for the entire community—and its associated policies and actions.
  - Goal TR-3: Design transportation infrastructure to help reduce pollution and vehicle travel—and its associated policies and actions.
- SCS/RTP policy: Increase safety and security. Supporting strategies facilitate projects that reduce traffic incidents and otherwise increase safety and security, as well as improve communication and coordination between agencies and the public for emergency preparedness. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel—and its associated policies and actions.

- Policy SAF-2.1: Ensure that community members are adequately prepared for natural disasters and emergencies through education and training—and its associated actions.
- Policy SAF-2.2: Prepare sufficiently for major events to enable quick and effective response—and its associated actions.

- SCS/RTP policy: Preserve the efficiency of the existing transportation system. Supporting strategies optimize the existing transportation system capacity, including through continued maintenance and preservation, improved jobs/housing balance, and linking residents to employment centers. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Policy TR-1.1: Ensure that roadways safely and efficiently accommodate all modes and users, including private, commercial, and transit vehicles, as well as bicycles and pedestrians and vehicles for disabled travelers—and its associated actions.
  - Policy TR-2.2: Connect housing and employment development in areas with good transit access—and its associated actions.
  - Action LU-1.3.B: Work with transportation agency partners and private property owners to improve maintenance, code enforcement, screening, and landscaping of viewsheds along major transportation routes into Stockton, including rail corridors, Highway 99, Highway 4, and Interstate 5.
  - Policy LU-3.2: Ensure that land use decisions balance travel origins and destinations in as close proximity as possible—and its associated actions.
- SCS/RTP policy: Support economic vitality. Supporting strategies improve freight access to key economic centers, promote safe and efficient goods movements by all modes, and facilitate improvements that improve economic competitiveness and/or commercial/economic center revitalization. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel—and its associated policies and actions.
  - Policy LU-1.1: Encourage retail businesses in mixed-use developments along regional transportation routes and in areas that serve local residents—and its associated actions.
  - Policy LU-2.5: Promote Downtown Stockton as a primary transit node that provides multi-modal connections throughout the city and region—and its associated actions.
- SCS/RTP policy: Promote interagency coordination and public participation for transportation decision-making and planning efforts. Supporting strategies address equitable access to transportation planning; direct early, clear, and continuous public engagement; and encourage diversity in engagement by using a variety of methods. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Policy LU-6.6: Coordinate land use planning efforts among City departments and with regional agencies—and its associated actions.
  - Policy LU-6.7: Enhance public participation in the planning process—and its associated actions.

- SCS/RTP policy: Maximize cost-effectiveness. Supporting strategies address the use of State and federal funds to supplement local funds, direct the pursuit of grant funding, support projects that are cost-effective, and maximize existing transportation options. The proposed General Plan supports this part of the SCS/RTP policy framework through Policy LU-6.3— improve and maintain the City's fiscal health—and its associated actions, which help to ensure that the City secures adequate funding for the construction and maintenance of transportation infrastructure associated with new development.
- SCS/RTP policy: Improve the quality of life for residents. Supporting strategies encourage transportation investments that support a greater mix of housing options, improve the connection between land use and transportation, and enhance public health through active transportation. The proposed General Plan supports this part of the SCS/RTP policy framework through:
  - Goal TR-2: Offer active transportation opportunities for the entire community—and its associated policies and actions.
  - Policy LU-2.5: Promote Downtown Stockton as a primary transit node that provides multi-modal connections throughout the city and region—and its associated actions.
  - Policy LU-3.2: Ensure that land use decisions balance travel origins and destinations in as close proximity as possible—and its associated actions.
  - Goal CH-1: Support the ability of the entire community to maintain healthy lifestyles—and its associated policies and actions.
  - Goal CH-4: Ensure that all residents have a safe, high-quality, and stable place to call home—and its associated policies and actions.

As detailed above, the proposed General Plan supports the policy framework of the 2014 SCS/RTP. Therefore, the impact would be *less than significant.*

San Joaquin County Regional Blueprint

The San Joaquin County Regional Blueprint establishes a set of guiding principles, goals, and performance measures to achieve the region's 2050 vision for land use, transportation, and environmental. As described below, the proposed General Plan supports the Regional Blueprint's vision:

- Regional Blueprint Principle: Sustainable Planning & Growth. Goal 1: Recognize and allow for increases in development densities over time that allow for changes consistent with community and marketplace realities. Goal 2: Support innovative strategies that target growth in existing urban areas, with an emphasis on efficient design, land conservation (including working agriculture and open space), infill, and redevelopment. The proposed General Plan supports this guiding principle through the proposed land use map, which preserves significant areas for open space and agriculture, as well as the following goals, policies, and actions:
  - Goal LU-2: Strengthen the Downtown to reinforce it as the region's center for government, business, finance, arts, entertainment, and dining—and its associated policies and actions.
  - Goal LU-5: Protect, maintain, and restore natural and cultural resources - and its associated policies and actions,

- Policy LU-6.2: prioritize development and redevelopment of vacant, underutilized, and blighted infill areas—and its associated actions.

- Regional Blueprint Principle: Housing Choices. Goal 1: To provide the housing market with greater flexibility in meeting the market demand for a variety of housing choices. Goal 2: To improve the ability of individuals/families to access and afford quality housing. The proposed General Plan supports this guiding principle through the proposed land use map, which provides opportunities for high density residential development, as well as the following goals, policies, and actions:
  - Goal CH-2: Restore disadvantaged communities to help them become more vibrant and cohesive neighborhoods with high-quality affordable housing—and its associated policies and actions.
  - Policy CH-4.1: Encourage residential development that offers a range of housing options—and its associated actions.
  - Policy LU-2.5: Promote Downtown Stockton as a primary transit node that provides multi-modal connections throughout the city and region—and its associated actions.
  - Policy LU-2.2: Facilitate the development of at least 4,400 new housing units in the Greater Downtown by 2040—and its associated actions.
- Regional Blueprint Principle: Transportation & Mobility Options. Goal 1: Provide safe, efficient and aesthetically pleasing multi-model transportation and mobility option/connectivity for neighborhoods, communities, and between cities/regions. Goal 2: Create residential and non-residential development that is strategically connected to the community/city core and essential destinations of regional significance. The proposed General Plan supports this guiding principle through the proposed land use map, which situates residential development in proximity to employment and service destinations, as well as the following goals, policies, and actions:
  - Goal TR-1: Provide an integrated transportation system—and its associated policies and actions.
  - Goal TR-2: Offer active transportation opportunities for the entire community—and its associated policies and actions.
  - Policy LU-1.1: Encourage retail businesses in mixed-use developments along regional transportation routes—and its associated actions.
  - Policy LU-2.1: Promote the Downtown and waterfront as a hub for regional commerce and entertainment, with high-quality housing—and its associated actions.
  - Policy LU-2.2: Facilitate the development of at least 4,400 new housing units in the Greater Downtown by 2040—and its associated actions.
- Regional Blueprint Principle: Farming and Agriculture. Goal 1: To sustain agriculture in San Joaquin County as an economically viable and thriving industry, while also recognizing its unique contribution to the overall quality of life in the county. The proposed General Plan supports this guiding principle through the proposed land use map, and:
  - Policy LU-5.3: Define discrete and clear city edges that preserve agriculture, open space, and scenic views—and its associated actions.

- Policy LU-5.2: Protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources—and its associated actions.
- Policy CH-1.3: Encourage activities that support local agriculture—and its associated actions.

- Regional Blueprint Principle: Preservation of the Environment. Air Quality Goal 1: To decrease the amount of carbon dioxide and small particulate matter emissions from on-road vehicles. Water Resources Goal 1: To promote strategies that decrease residential water usage. Water Resources Goal 2: To promote strategies that increase agricultural water use efficiencies. Resource Lands Goal 1: Support preservation of natural resource and open space lands as distinct from production agricultural lands. The proposed General Plan supports this guiding principle through:
  - Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel—and its associated policies and actions.
  - Policy TR-2.2: Connect housing and employment development in areas with good transit access—and its associated actions.
  - Goal TR-3: Design transportation infrastructure to help reduce pollution and vehicle travel—and its associated policies and actions.
  - Goal SAF-4: Improve local air quality—and its associated policies and actions.
  - Action LU-5.1.C: Require landscape plans to incorporate native and drought-tolerant plants in order to preserve the visual integrity of the landscape, conserve water, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.
  - Policy LU-5.4: Require water and energy conservation and efficiency in both new construction and retrofits—and associated actions.
  - Goal SAF-3: Sustain clean and adequate water supplies—and its associated policies and actions.
  - Policy LU-5.2: Protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources—and its associated actions.
  - Policy LU-5.3: Define discrete and clear city edges that preserve agriculture, open space, and scenic views—and its associated actions.
- Regional Blueprint Principle: Economic Development. Economic Prosperity Goal 1: Strategically position San Joaquin County to compete with other regions throughout the state, the nation, and the global economy. Goods Movement Goal 1: Identify and pursue opportunities to increase goods movement as an essential part of economic development. The proposed General Plan supports this guiding principle through:
  - Goal LU-2: Strengthen the Downtown to reinforce it as the region's center for government, business, finance, arts, entertainment, and dining—and its associated policies and actions.
  - Goal TR-1: Provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel—and its associated policies and actions.

- Regional Blueprint Principle: Education & Workforce Preparation. Goal 1: To have a better locally prepared and trained workforce. The proposed General Plan supports this guiding principle through:
  - Goal CH-3: Expand opportunities for local enterprise, entrepreneurship, and gainful employment—and its associated policies and actions.
  - Goal LU-4: Attract and retain companies that offer high-quality jobs with wages that are competitive with the region and state—and its associated policies and actions.

As detailed above, the proposed General Plan supports the San Joaquin County Regional Blueprint guiding principles. Therefore, the impact would be *less than significant*.

Delta Plan

As described above, the Delta Plan is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. As described below, the proposed General Plan includes policies and actions that support the goals of the Delta Plan.

- In support of the Delta Plan's goal to improve water supply, the proposed General Plan includes Goal SAF-3—sustain clean and adequate water supplies—and associated policies and actions that address water contracts and agreements, participation in regional forums on water supply and quality, groundwater protection, and recycled water. In addition, Policy LU-5.4 and Action LU-5.4.A promote water conservation and efficiency.
- In support of the Delta Plan's goal to protect and restore a vibrant and healthy Delta ecosystem, the proposed General Plan includes Goal LU-5—protect, maintain, and restore natural and cultural resources—and its associated policies and actions that address preservation of riparian corridors, use of native and drought-tolerant landscaping, participation in the SJMSCP, and protection of special-status species and critical/sensitive habitats.
- In support of the Delta Plan's goal to preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta, the proposed General Plan includes Goal LU-5—protect, maintain, and restore natural and cultural resources—and its associated policies and actions that address the protection of agricultural, archaeological, paleontological, and tribal cultural resources, as well as establishing a greenbelt around the city.

In addition, Delta Plan Policy DP P1 requires that any new residential, commercial, or industrial development must be limited to areas designated for development in city or county general plans as of the date of the Delta Plan's adoption (May 16, 2013), as reflected in Appendix 7 of the Delta Plan regulations. Because the proposed General Plan does not allow new residential, commercial, or industrial development in the Delta that was not already allowed in the existing 2007 General Plan, the proposed General Plan is consistent with this key Delta Plan policy.

Therefore, implementation of these proposed policies and actions would support, rather than conflict with the Delta Plan, and the impact would be *less than significant.*

Overall Impact Finding

As discussed above, the proposed General Plan and UMPS would not conflict with the applicable land use plans adopted for the purpose of avoiding or mitigating an environmental impact in the EIR Study Area. Therefore, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

LU-3 Implementation of the proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

As described above under Section 4.10.1.1, the SJMSCP was adopted in 2001, and provides a framework for promoting the protection and recovery of natural resources. It allows various governments and agencies, including the City of Stockton, to receive endangered species permits for activities and projects they conduct, as well as for activities and projects conducted by project applicants under their jurisdiction.

The City of Stockton, as a plan participant, has used the SJMSCP to inform the development of the proposed General Plan, and proposed Land Use Action LU-5.2.A directs the City to continue to coordinate with SJCOG and comply with the terms of the SJMSCP. As further described under the discussion of Threshold BIO-6 in Section 4.4, *Biological Resources*, of this EIR, development allowed under the proposed General Plan and UMPS would require preconstruction surveys and be subject to SJMSPC fees, consistent with the provisions of the SJMSCP. Therefore, development allowed under the proposed General Plan and UMPS would not conflict with the SJMSCP, and the impact is *less than significant*.

Significance Without Mitigation: Less than significant.

4.11 NOISE

This section discusses the fundamentals of sound, describes the regulatory framework and existing conditions in the EIR Study Area related to noise, and evaluates potential noise impacts associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS) through both spatial and quantitative analyses. This evaluation uses procedures and methodologies as specified by Caltrans and the Federal Highway Administration (FHWA). Cumulative impacts related to noise would be contiguous with the Sphere of Influence (SOI) boundary.

4.11.1 ENVIRONMENTAL SETTING

4.11.1.1 BACKGROUND

Noise Descriptors

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

The following are brief definitions of terminology used in this section:

- Sound. A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- Noise. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Intrusive. Noise that intrudes over and above the existing ambient noise at a given location. Relative intrusiveness depends on amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.
- Decibel (dB). A unit-less measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 µPa).
- Vibration Decibel (VdB). A unit-less measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the United States, the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).
- A-Weighted Decibel (dBA). An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Ambient Noise Level. The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
- Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level. The value of an equivalent, steady sound level which, in a stated time-period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a

single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L90 is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. *NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice for general community noise, L_{dn} and CNEL values are inter-changeable and are treated as equivalent in this assessment.*

Characteristics of Sounds

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves. Sound is described in terms of amplitude or loudness, frequency or pitch, and time variations or duration.

Amplitude

The range of pressures that causes airborne vibrations (i.e., sound) is quite large and would be cumbersome to measure lineally. Therefore, noise is measured on a logarithmic scale, which has a more manageable range of numbers, and a decibel (dB) is the standard unit for measuring sound pressure amplitude.[1]

On a logarithmic scale, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system makes a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes

[1] The commonly held threshold of audibility is 20 micropascals, and the threshold of pain is around 200 million micropascals, a ratio of one to 10 million. By converting these pressures to a logarithmic scale (i.e., decibels), the range becomes a more convenient 0 dB to 140 dB.

of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable by human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound. These relationships are summarized in Table 4.11-1.

TABLE 4.11-1 NOISE PERCEPTIBILITY

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies, David A., and Colin H. Hansen. Engineering Noise Control, Theory and Practice. 4th ed., Spon Press, 2009.

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hertz (Hz) are not heard at all, but are “felt” more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The term "A-weighted" refers to a filtering of the noise signal in a manner corresponding to the way the human ear perceives sound. The A-weighted noise level has been found to correlate well with people’s judgments of the “noisiness” of different sounds and has been used for many years as a measure of community and industrial noise. For particularly high noise levels, there are additional weighting scales used to approximate the response of the human hear; the A-weighted scale is the most applicable scale to the noise sources related to the proposed project.

Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 4.11-2 shows typical noise levels from familiar noise sources.

Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of events and their repetitiveness
- Time of day

Time Variation

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of

TABLE 4.11-2 TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans), 2009. *Technical Noise Supplement ("TeNS").* Prepared by ICF International.

the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8, and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many city noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values

represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, State law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 p.m. to 10:00 p.m. and 10 dBA for the hours from 10:00 p.m. to 7:00 a.m. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 p.m. and 10:00 p.m. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a linear source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Linear source noise in a relatively flat environment with ground-level absorptive vegetation decreases by 4.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA would result in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. When the noise level reaches 120 dBA, an unpleasant "tickling" sensation occurs in the human ear; even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium. In comparison, for community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, and disturbance of concentration) and cause annoyance.

Loud noise can be annoying and it can have negative health effects.[2] The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction.

[2] United States Environmental Protection Agency (EPA), 1978. *Protective Noise Levels, Condensed Version of EPA Levels Document.*

- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as startling and hearing loss (both temporary and permanent).

In most cases, environmental noise produces effects in the first two categories only. However, unprotected workers in some industrial work settings may experience noise effects in the last category.

Characteristics of Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers.

Like noise, vibration is transmitted in waves, but through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt, rather than heard. As with noise, vibration can be described by both its amplitude and frequency.

Amplitude

Amplitude may be characterized in three ways: displacement, velocity, and acceleration. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity, and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal, and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, and RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). However, vibration is often presented and discussed in dB units in order to compress the range of numbers. In this analysis, PPV and RMS velocities are in in/sec, and vibration levels are in dB relative to 1 micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Human-made vibration problems are therefore usually confined to relatively short distances from the source (500 to 600 feet or less).

Frequency

Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, buses often generate frequencies around 3 Hz at high vehicle speeds. It is less common, but possible, to measure traffic frequencies above 30 Hz.

Propagation

The way in which vibration is transmitted through the earth is called propagation. Propagation of groundborne vibrations is complicated and difficult to predict because of the endless variations in the soil and rock through which waves travel. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation." As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Psychological and Physiological Effects of Vibration

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 4.11-3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

TABLE 4.11-3 HUMAN REACTION TO TYPICAL VIBRATION LEVELS

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and un-acceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans, 2013. *Transportation and Construction Vibration Guidance Manual.*

Human response to ground vibration has been best correlated with the root-mean-square (RMS) velocity of the vibration, typically expressed in terms of the vibration decibel of VdB.[3] The United States Department of Transportation – Federal Transit Administration (FTA) has developed rational vibration limits that can be used to evaluate human annoyance to groundborne vibration. These criteria are primarily based on experience with rapid transit and commuter rail systems.[4] Railroad and transit operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of track. Trains generate substantial vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions.

Similarly, construction operations generally include a wide range of activities that can generate groundborne vibration, which varies in intensity. In general, blasting and demolition as well as pile driving and vibratory compaction equipment generate the highest vibrations. Because of the impulsive nature of such activities, PPV is used to measure and assess groundborne vibration and assess the potential of vibration to induce structural damage and annoyance for humans. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, and differential settlement of pavement all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement.[5]

Noise- and Vibration-Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration, including residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Sensitive receptors within the EIR Study Area include residences, senior housing, schools, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not considered noise- and vibration-sensitive receptors for the purposes of this analysis, since noise- and vibration-sensitive activities are less likely to be undertaken in these areas, and because these uses often themselves generate noise in excess of what they receive from other uses.

4.11.1.2 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. This section describes the regulatory framework related to noise and vibration in the EIR Study Area.

[3] The reference velocity is 1 x 10^{-6} in/sec RMS, which equals 0 VdB, and 1 in/sec equals 120 VdB.

[4] Federal Transit Administration (FTA), US Department of Transportation, 2006. *Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06*.

[5] Caltrans, Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, 2004. *Transportation- and Construction-Induced Vibration Guidance Manual.* Prepared by ICF International.

State Standards and Regulations

California Government Code Section 65302(f)

Section 65302(f) of the California Government Code mandates that all general plans address the topic of noise through analysis and quantification, to the extent practicable, of current and projected noise levels from all of the following sources:

- Highways and freeways.
- Primary arterials and major local streets.
- Passenger and freight on-line railroad operations and ground rapid transit systems.
- Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operations.
- Local industrial plants, including, but not limited to, railroad classification yards.
- Other ground stationary sources identified by local agencies as contributing to the community noise environment.

This section of the Government Code also requires the local agency to recognize the State Noise Element Guidelines, and provide noise contours for all of the noise sources listed above using CNEL or L_{dn} measurement levels, based on monitoring or acceptable modeling. The noise contours are to be used to determine land use so that exposure to excessive noise can be minimized. The noise element must include actions that avoid existing and foreseeable noise problems, and address the State's noise insulation standards. The proposed General Plan addresses the topic of noise in its Safety Chapter, in compliance with this State requirement.

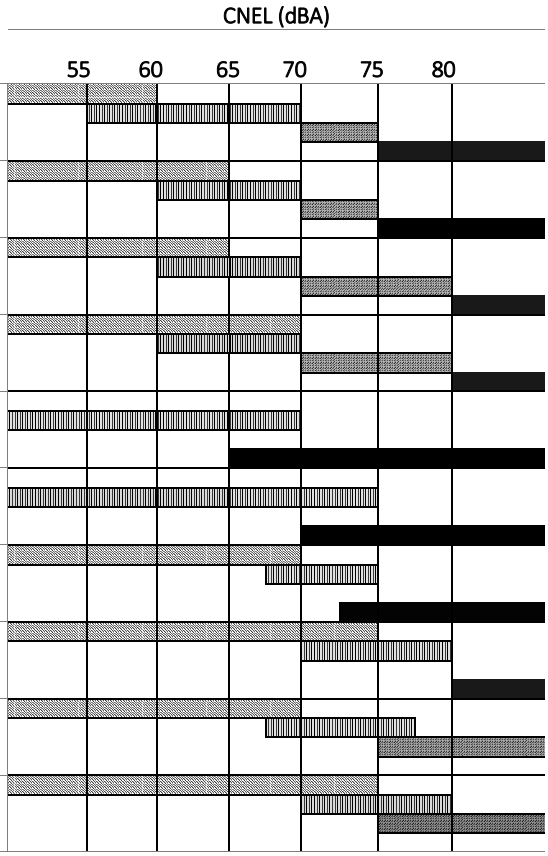
The State's General Plan Guidelines also discuss how ambient noise should influence land use and development decisions and include a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in CNEL. These land use compatibility guidelines are shown in Table 4.11-4.

Building Code

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Interior Environment, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources may not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

The California Green Building Standards Code (CALGreen), Chapter 5, Division 5.5, has additional requirements for insulation that affect exterior-interior noise transmission for non-residential structures. Pursuant to Section 5.507.4.1, Exterior Noise Transmission, Prescriptive Method, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope must meet a composite sound transmission class (STC) rating of at least 50 L_{dn} or CNEL or a composite

TABLE 4.11-4 CALIFORNIA LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable:
New construction or development generally should not be undertaken.

Source: California Office of Noise Control. Guidelines for the Preparation and Content of Noise Elements of the General Plan, February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December 1971.

outdoor-indoor transmission class (OITC) rating of no less than 40 L_{dn} or CNEL, with exterior windows of a minimum STC of 40 or OITC of 30; these standards apply to areas within a 65 dBA CNEL noise contour of an airport or within a 65 dBA CNEL or L_{dn} noise contour of a freeway, expressway, railroad, industrial source, or fixed-guideway source as determined by the noise element of the general plan. Where noise contours are not readily available, buildings exposed to a noise level of 65 dBA Leq 1-hour during any hour of operation must have building, addition, or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 L_{dn} or CNEL (or OITC 35), with exterior windows of a minimum of STC 40 (or OITC 30).

Residential structures located within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants for new residential projects are required to submit an acoustical analysis report. The report is required to show the topographical relationship of noise sources and the dwelling site, identification of noise sources and their characteristics, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary.

Airport Noise Standards

California Code of Regulations Title 21, Subchapter 6 (Airport Noise Standards), establishes 65 dBA CNEL as the acceptable level of aircraft noise for persons living in the vicinity of airports. Title 21 applies to airports that have been designated “noise problem airports.” Noise-sensitive land uses in locations where the aircraft exterior noise level exceeds 65 dBA CNEL are generally incompatible, unless an aviation easement for aircraft noise has been acquired by the airport proprietor, or the residence is a high-rise apartment or condominium that has an interior CNEL of 45 dBA or less in all habitable rooms despite aircraft noise and an air circulation or air conditioning system, as appropriate. AB 2776 requires any person who intends to sell or lease residential properties within an airport influence area to disclose that fact to the person buying the property.

City of Stockton Municipal Code

The purpose of the City’s Noise Control Ordinance is as follows:

- Establish standards to protect the health, safety, and welfare of those living and working in the city.
- Implement the noise-related goals and policies of the General Plan.
- Facilitate compliance with the State Noise Insulation Standards.
- Provide community noise control regulations and standards that are consistent with or exceed the guidelines of the State Office of Noise Control and the standards adopted by the FHWA, California Department of Transportation (CalTrans), or other government or regulatory agencies.
- Consolidate and/or reference all applicable City noise regulations.

NOISE

The City apples the Noise Control Ordinance in Chapters 8.20 and 16.60 of the Stockton Municipal Code, with the former being primarily aimed at controlling noise nuisances and the latter providing quantified noise levels limits, as well as details on their implementation. These two main Municipal Code sections are summarized separately below and the full text of all noise-applicable portions of the Municipal Code are included in Appendix D.

Municipal Code Chapter 8.20 – Noise Nuisances

Chapter 8.20 of the Stockton Municipal Code provides general qualitative limitations on noise sources within the city. Based on the provisions of Chapter 8.20, it is unlawful for any person to willfully make, continue, permit, or cause to be made or continued any loud, unnecessary, or unusual noise that unreasonably disturbs the peace and quiet of any neighborhood or that causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. The aspects that must be considered in determining a violation of the provisions of this chapter must include, but are not limited to, the following:

- The volume of the noise;
- The intensity of the noise;
- Whether the nature of the noise is usual or unusual;
- Whether the origin of the noise is natural or unnatural;
- The volume and intensity of the background noise, if any;
- The proximity of the noise to residential sleeping facilities;
- The nature and zoning of the area within which the noise emanates;
- The density of the inhabitation of the area within which the noise emanates;
- The time of the day or night the noise occurs;
- The duration of the noise; and
- Whether the noise is produced by a commercial or noncommercial activity.

Municipal Code Chapter 16.60 – Noise Standards

Per Section 16.60.020 of the Stockton Municipal Code, the following activities are exempt from the noise standards in Chapter 16.60: emergency activities, warning devices, outdoor play/school ground activities (between 7:00 a.m. to 10:00 p.m.), railroad activities, State or federal pre-exempted activities, public health and safety activities, and maintenance of residential real property.

Section 16.60.030 deems the following activities as violations of the Noise Control Ordinance: construction noise between the hours of 10:00 p.m. and 7:00 a.m. (additional details below), loading and unloading operations between the hours of 10:00 p.m. and 7:00 a.m., public nuisance noise, stationary nonemergency signaling devices, refuse collection vehicles operating in a residential zoning district between the hours of 5:00 p.m. and 5:00 a.m. (or when operation exceeds 85 dBA at 50 feet from vehicle), sweepers and associated equipment operating between the hours of 10:00 p.m. and 7:00 a.m. in or adjacent to a residential zoning district, and vehicle or motorboat repairs and testing (when it causes a noise disturbance across the property line of a noise-sensitive receptor). Section 16.60.040 provides standards that apply to both proposed noise-sensitive land uses near existing noise-generating land uses, and to proposed noise-generating land uses near existing noise-sensitive land uses. These standards are organized as follows:

A. Standards for Proposed Noise-Sensitive Land Uses on Noise-Impacted Sites (Except Infill Areas)
   1. Existing Transportation-Related Noise Sources
   2. Existing Land Use-Related Noise Sources

B. Standards for Proposed Noise-Generating Land Uses and Transportation-Related Sources
   1. Transportation-Related Noise Sources (Except Infill Sites)
   2. Commercial, Industrial, and Other Land Use-Related Noise Sources (Except Infill Sites)

C. Standards for Infill Sites
   1. Noise-Sensitive Land Uses on Noise-Impacted Infill Sites
   2. Noise-Generating Land Uses Impacting Noise-Sensitive Infill Sites

For each class of standards (i.e., A, B, or C in the list above), a proposed noise-sensitive land use that is not in an infill area and that may be impacted by an existing noise source is required to mitigate the existing noise so that the resulting levels do not exceed the limits presented in Table 4.11-5 for existing transportation noise and in Table 4.11-6 for existing land use-related (i.e., stationary) noise. Proposed noise-sensitive developments or expansions within infill areas are required to mitigate the existing and projected noise levels so that the resulting noise within the interior of the noise-sensitive development does not exceed 45 dB, L_{dn}.

In general, for transportation noise, the exterior noise environment around any proposed development that includes residential, including lodging, should be limited to 65 dB L_{dn}; the interior environment for all noise-sensitive receptors should be limited to 45 dB L_{dn}, as shown in Table 4.11-5. Also, projects outside of infill areas that include development or expansion of transportation-related facilities are required to mitigate their noise levels so that the resulting noise does not adversely impact noise-sensitive land uses and does not exceed the standards in Table 4.11-5.

Likewise, land use noise sources should not cause the noise environment within outdoor activity areas for proposed noise-sensitive developments to exceed the limits presented in Table 4.11-6.

Excluding developments within infill areas, projects that include development or expansion of land use-related facilities are required to mitigate their noise levels so that the resulting noise does not adversely impact noise-sensitive land uses and does not exceed the "New/ Expanded Noise Source" standards in Table 4.11-7, when measured at the property line of the receiving property. Additionally, any noise-generating commercial or industrial land uses[6] may not exceed the "existing commercial" or "existing industrial" noise limits in Table 4.11-7.

Requirement of Project-Level Acoustical Study

Per Municipal Code Section 16.60.050, the Community Development Director or other Review Authority, as applicable, must require the preparation of an acoustical study in instances where it has been determined that a project may expose existing or proposed noise-sensitive land uses to noise levels exceeding the noise standards specified above. This determination must be based on the existing and future 65 dB L_{dn} transportation-related noise contours contained in the noise section of the City's General

[6] Includes any permitted noise-generating activities in a retail commercial zoning district (CO, CN, CG, CD, CL, or CA) or in an industrial or public zoning district (IL, IG, PT, or PF).

TABLE 4.11-5 TRANSPORTATION-RELATED NOISE STANDARDS

	Maximum Allowable Noise Exposure, L_{dn} (dB)	
Noise-Sensitive Land Use Type	Outdoor Activity Areas	Indoor Spaces
Residential (all types)	65	45
Child Care	-	45
Educational Facilities	-	45
Libraries and Museums	-	45
Live-Work Facilities	65	45
Lodging	65	45
Medical Services	-	45
Multi-Use (with Residential)	65	45

Notes:
1. The noise standard must be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards must be applied on the receiving side of noise barriers or other property line noise mitigation measures.
2. Each of the noise level standards specified must be decreased by 5 for impulse noise, simple tone noise, or noise consisting primarily of speech or music.
Source: City of Stockton Municipal Code Section 16.60.040, Standards.

TABLE 4.11-6 LAND USE COMPATIBILITY STANDARDS FOR PROPOSED DEVELOPMENTS AFFECTED BY LAND USE NOISE SOURCES

		Noise Level Limit (dB) for Outdoor Activity Areas	
Land Use Type	Time of Day	Hourly Equivalent Level (L_{eq})	Maximum Level (L_{max})
Noise-Sensitive Land Use	7 AM – 10 PM	55	75
	10 PM – 7 AM	45	65

Notes:
1. The noise standard must be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards must be applied on the receiving side of noise barriers or other property line noise mitigation measures.
2. Each of the noise level standards specified must be decreased by 5 for impulse noise, simple tone noise, or noise consisting primarily of speech or music.
Source: City of Stockton Municipal Code Section 16.60.040, Standards.

Plan, the proximity of new noise-sensitive land uses to known noise sources, and/or the knowledge that a potential for adverse noise impacts exists (e.g., as determined in a project-level environmental document prepared in compliance with CEQA). Also, per Municipal Code Section 16.60.060, applicants for projects requiring discretionary approval are required to submit evidence to determine whether the proposed project complies or will comply with the City's Noise Control Ordinance.

Additional information about the preparation and review of project-level acoustical studies is shown in the detailed Municipal Code excerpts (Sections 16.60.050 and 16.60.060), provided in Appendix D.

TABLE 4.11-7 LAND USE-RELATED NOISE STANDARDS FOR OUTDOOR ACTIVITY AREAS

		Noise Level Limit (dB)	
Land Use Type	Time of Day	Hourly Equivalent Level (L_{eq})	Maximum Level (L_{max})
New/Expanded Noise Sources	7 AM – 10 PM	55	75
	10 PM – 7 AM	45	65
Existing Commercial	Anytime	65	75
Existing Industrial	Anytime	70	80

Notes:
1. The noise standard must be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards must be applied on the receiving side of noise barriers or other property line noise mitigation measures.
2. Each of the noise level standards specified must be decreased by 5 for impulse noise, simple tone noise, or noise consisting primarily of speech or music.
3. Where industrial or public facilities uses abut a retail commercial use or zone, the maximum noise levels may not exceed the above-listed standards for commercial uses and zones.
4. If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential (RE, RL, RM, or RH) or open space (OS) zoning districts, these uses shall comply with the "New/expanded Noise Sources" standards.
Source: City of Stockton Municipal Code Section 16.60.040, Standards.

Noise Attenuation/Mitigation Measures

Per Municipal Code Section 16.60.070, if the existing noise levels affecting a project are greater than those allowed, the developer must mitigate the noise as follows:

- **Infill Projects.** For infill projects, site planning and construction techniques must be used to reduce sound levels to allowed maximum interior sound levels or below. Examples of noise-reducing techniques include orienting building openings away from the noise source, appropriate subdivision design for noise avoidance, landscape setbacks and berms, use of acoustical barriers and walls, enclosure of noise-generating uses and equipment, and use of appropriate building construction technology and materials to reduce interior noise levels.
- **Other Projects.** For other projects, a noise attenuation barrier must be constructed and/or noise attenuation measures described above must be applied to the structures, as applicable, to bring sound levels down to allowed maximum interior and exterior sound levels or below.

Construction Noise

Municipal Code Section 16.60.030 includes restrictions on construction noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, is prohibited, except for emergency work of public service utilities. Construction activities within the daytime hours of 7:00 a.m. and 10:00 p.m. are considered to be exempt from the noise control provisions of the Municipal Code.

Vibration

Municipal Code Section 16.32.100 includes qualitative benchmarks for reducing vibration effects within the city. According to this section, land uses that generate vibrations may not generate ground vibration that is perceptible without instruments by the average person at any point along or beyond the property line of the parcel containing the activities. Such uses also may not generate vibrations that cause discomfort or annoyance to reasonable persons of normal sensitivity or that endangers the comfort, repose, health, or peace of residents whose property abuts the use.

Vibrations from temporary construction and demolition are exempt from the provisions of this Code section, as are vehicles that leave the subject parcel (e.g., trucks, trains, and aircrafts).

4.11.1.3 EXISTING CONDITIONS

This section describes the existing noise environment in the EIR Study Area. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise in the city. Transportation noise from Interstate (I-) 5, State Routes (SR) 4 and 99, as well as other major roadways, is audible in many locations throughout the city. Additional sources of transportation noise include aircraft at the Stockton Metropolitan Airport, freight train movements (primarily near the southern portion of the city), and industrial uses at the Port of Stockton. Stationary sources such as commercial and industrial operations also contribute to the community noise environment within the city.

Principal Noise Sources in Stockton

On-Road Vehicles

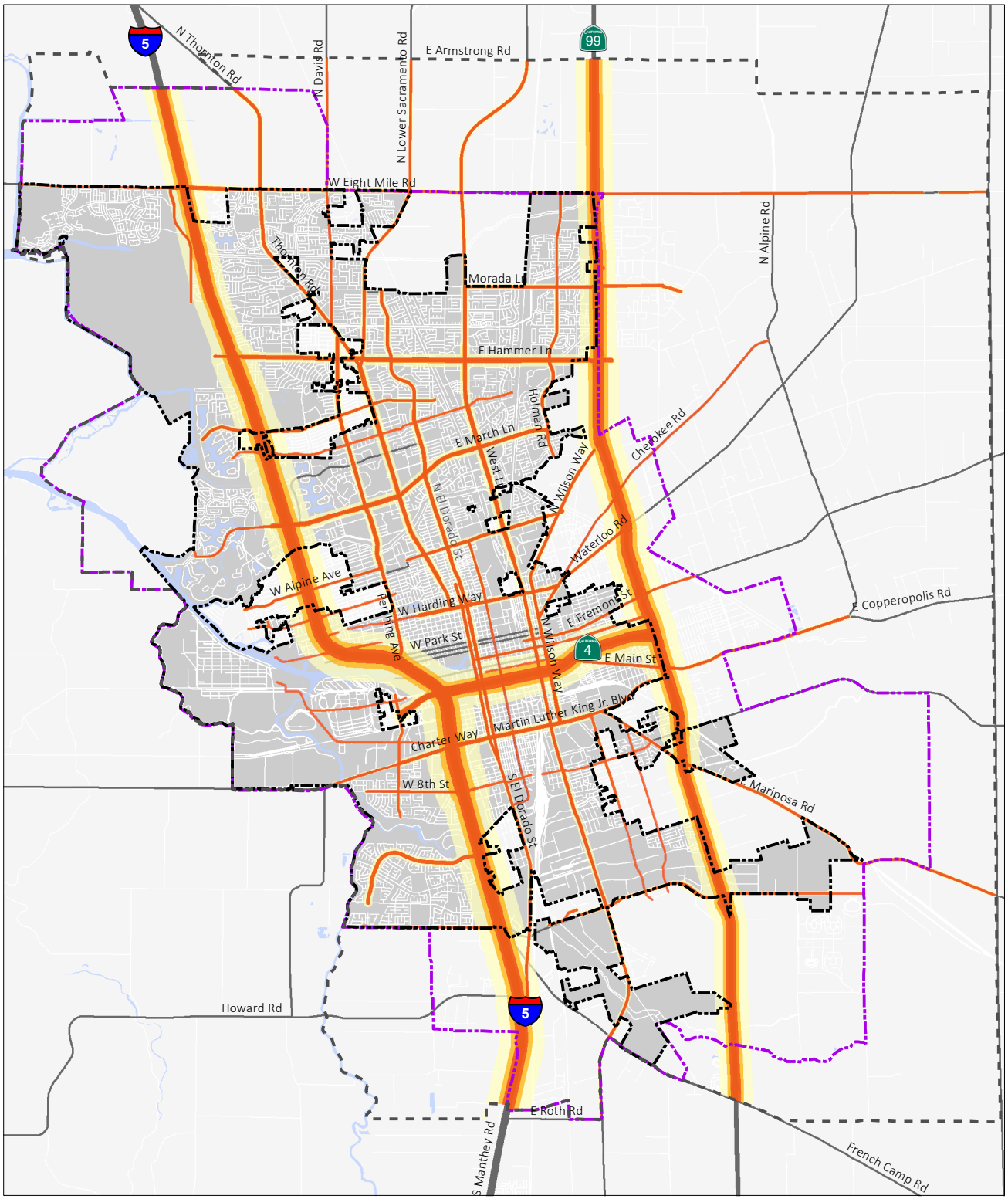
I-5, a north-south freeway that bisects the western/central part of the city, experiences the most traffic flow within the EIR Study Area. SR 99 is a north-south highway that runs along the eastern portion of the EIR Study Area, and also contributes to the noise environment in many locations. SR 4 is an east-west highway that bisects the center of the city and connects I-5 to SR 99.

Besides major freeway routes, other major roadways also contribute to the noise environment at receptors throughout the EIR Study Area. Existing average daily traffic (ADT) volumes along freeways and other major roadways throughout the study area were used to estimate existing traffic noise. These traffic noise estimates were based on the FHWA roadway noise calculation methods. The results of this modeling indicate that average noise levels along freeway routes currently range from approximately 75 dBA to 84 dBA CNEL[7], and noise levels along arterial segments currently range from approximately 61 dBA to 75 dBA CNEL.[8] Noise levels for existing conditions along analyzed roadways, and the associated distances to the 60, 65, and 70 dBA CNEL noise contours, are presented in Table 4.11-8 and shown in Figure 4.11-1.

According to this analysis, there may already be noise-sensitive receptors that are exposed to noise levels that exceed the transportation noise compatibility standards presented in Table 4.11-5.

[7] CNEL and L_{dn} values typically differ by less than 1 dB

[8] Calculated at a distance of 50 feet from each roadway's centerline.



Source: City of Stockton; PlaceWorks, 2016.

Existing Noise Contours

- 70dB
- 65dB
- 60dB

- City Limit
- Sphere of Influence
- General Plan Planning Area

Figure 4.11- 1

Existing Roadway Noise Contours

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
I-5	North of Eight Mile Road		65000	80.7	1196	555	258
I-5	Eight Mile Road	Hammer Lane	78000	81.5	1351	627	291
I-5	Hammer Lane	Ben Holt Drive	106000	82.8	1657	769	357
I-5	Ben Holt Drive	March Lane	120000	83.3	1800	835	388
I-5	March Lane	Country Club Boulevard	121000	83.4	1810	840	390
I-5	Country Club Boulevard	Monte Diablo Avenue	134730	83.8	1944	903	419
I-5	Monte Diablo Avenue	Pershing Avenue	137170	83.9	1968	913	424
I-5	Pershing Avenue	Crosstown Freeway	108580	82.9	1684	782	363
I-5	Crosstown Freeway	Charter Way	143310	84.1	2026	940	437
I-5	Charter Way	8th Street	151800	84.4	2105	977	454
I-5	8th Street	Downing Avenue	113640	83.1	1736	806	374
I-5	Downing Avenue	French Camp Road	120000	83.3	1800	835	388
I-5	French Camp Road	Mathews Road	115500	83.2	1755	814	378
SR 99	North of Eight Mile Road		85910	81.8	1426	662	307
SR 99	Eight Mile Road	Morada Lane	81000	81.6	1371	636	295
SR 99	Morada Lane	Hammer Lane	86000	81.8	1427	662	307
SR 99	Hammer Lane	Wilson Way	105000	82.7	1630	757	351
SR 99	Wilson Way	Cherokee Road	98120	82.4	1558	723	336
SR 99	Cherokee Road	Waterloo Road	107260	82.8	1653	767	356
SR 99	Waterloo Road	Fremont Street	115390	83.1	1736	806	374
SR 99	Fremont Street	Crosstown Freeway	114000	83.1	1722	799	371
SR 99	Crosstown Freeway	Martin Luther King Jr Blvd	103400	82.6	1614	749	348
SR 99	Martin Luther King Jr Blvd	Farmington Rd	95700	82.3	1532	711	330
SR 99	Farmington Rd	Mariposa Rd	80300	81.5	1363	633	294
SR 99	Mariposa Road	Arch Road	78000	81.4	1337	621	288
SR 99	Arch Road	French Camp Road	74000	81.2	1291	599	278
SR 99	French Camp Road	Lathrop Road	74000	81.2	1291	599	278
SR 4	West of I-5	West of I-5	18150	75.0	499	231	107
SR 4	I-5	El Dorado St	85000	81.7	1396	648	301
SR 4	El Dorado Street	Stanislaus Street	115140	83.0	1709	793	368
SR 4	Stanislaus Street	Wilson Way	105000	82.6	1607	746	346

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
Eight Mile Rd	Mokelume Drive	Trinity Parkway	9010	66.3	132	61	28
Eight Mile Rd	Trinity Parkway	I-5	31480	73.4	388	180	84
Eight Mile Rd	Thornton Rd	Davis Rd	15460	70.1	237	110	51
Eight Mile Rd	Davis Rd	Lower Sacramento	16930	69.1	201	93	43
Eight Mile Rd	Lower Sacramento	West Lane	20420	69.9	228	106	49
Eight Mile Rd	West Lane	SPRR	13170	68.0	170	79	37
Eight Mile Rd	West of Bear Creek	Rt 99	11810	67.5	158	73	34
Morada Lane	Cherbourg	West	14290	69.8	225	104	48
Morada Lane	Cherbourg	Fox Creek	15430	70.1	236	110	51
Morada Lane	Holman	Hwy 99	18010	70.9	266	123	57
Morada Lane	Mosher Creek	Holman	16160	70.4	247	115	53
Hammer Lane	Mariners Dr	I-5	17010	70.6	256	119	55
Hammer Lane	Westland	Richland	31960	73.4	390	181	84
Hammer Lane	Pershing Ave	Valencia	28610	72.8	357	166	77
Hammer Lane	Lower Sacramento Rd	El Dorado St	41780	74.6	469	218	101
Hammer Lane	At WPRR	0	48730	75.3	520	241	112
Hammer Lane	SPRR	Holman Rd	42060	74.6	471	219	101
Hammer Lane	Holman Rd	Rt 99	40360	74.4	458	213	99
Benjamin Holt Drive	Plymouth	Belmont	22630	70.3	244	113	53
Benjamin Holt Drive	Vicksburg	Gettysburg	16380	68.9	197	91	42
Swain Rd	Pylmouth Road	Morgan	10690	67.1	148	69	32
Swain Rd	Pershing Avenue	Vicksburg Place	9670	66.6	138	64	30
March Lane	Brookside Rd	Morningside Dr	6950	66.7	141	65	30
March Lane	Feather River Drive	I-5	40100	74.4	453	210	98
March Lane	Quail Lakes	Grouse Run	43050	74.7	475	221	102
March Lane	Pershing Ave	Pacific Ave	42910	74.7	474	220	102
March Lane	Pacific Ave	Claremont	33060	73.5	399	185	86
March Lane	At UPRR	0	38800	74.2	443	206	96
March Lane	West Lane	Bianchi	28720	73.0	365	170	79
Alpine Avenue	Pershing	Grange	9140	67.8	167	77	36
Alpine Avenue	Dwight	Kensington	7820	67.2	150	70	32
Alpine Avenue	Center	Commerce	14490	69.8	227	105	49
Alpine Avenue	Sutter	San Joaquin	20460	71.3	285	132	61

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
Country Club Drive	Grange Avenue	Pershing Avenue	8910	66.3	131	61	28
Monte Diablo Avenue	San Juan	Buena Vista	3540	62.3	71	33	15
Harding Way	Pershing	Columbia	3810	62.6	74	35	16
Harding Way	Baker	Stockton	11330	67.3	154	71	33
Harding Way	Commerce	Madison	24300	72.1	320	149	69
Harding Way	El Dorado	Center	25910	72.4	334	155	72
Harding Way	California	San Joaquin	21470	71.6	295	137	63
Harding Way	At UPRR	0	19550	71.1	277	128	60
Harding Way	Wilson	Sierra Nevada	22040	71.7	300	139	65
Fremont St	Watts	Laurel	14610	68.4	182	85	39
Fremont St	Broadway	Golden Gate	10960	67.2	150	70	32
Miner Ave	El Dorado Street	Center Street	7160	66.8	142	66	31
Miner Ave	California	San Joaquin	8770	67.7	162	75	35
Main St	California	Sutter	3210	63.3	83	39	18
Main St	Court	Ash	9890	68.2	176	82	38
Main St	Netherton	Golden Gate	15020	70.0	232	108	50
Charter Way	W of Roberts	W of Roberts	13650	68.1	174	81	38
Charter Way	Tillie Lewis Drive	Fresno Avenue	12480	67.7	164	76	35
Charter Way	Navy	Fresno	17420	69.2	205	95	44
Charter Way	I-5	Navy	31980	71.8	307	143	66
Martin Luther King Jr. Blvd	I-5	Lincoln	34420	73.6	404	187	87
Martin Luther King Jr. Blvd	California	Airport Way	30000	73.0	368	171	79
Martin Luther King Jr. Blvd	Airport Way	Wilson Way	28550	72.8	356	165	77
Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	15220	68.6	187	87	40
Navy Dr	San Joaquin River	Washington	4560	63.4	84	39	18
Navy Dr	BN&SF RR	Tillie Lewis	5090	63.8	90	42	19
Navy Dr	Josephine	Fresno	3970	62.8	76	35	16
Washington St	Agribusiness	Ventura	7940	65.8	121	56	26
8th Street	Argonaut	Fresno	12030	69.0	200	93	43
8th Street	Monroe	Lincoln	7890	67.2	151	70	33
8th Street	Pock	D	8190	65.9	124	58	27

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
Carolyn Weston Boulevard	Manthey	McDougald	27660	72.7	349	162	75
French Camp Rd	McDougald	E.W.S.Wood	10280	66.9	144	67	31
Sperry Road	Airport	McKinley	10560	68.5	184	85	40
Arch-Airport Rd	Airport	Pock	16680	69.0	199	92	43
Arch-Airport Rd	HW 99	Quantas	27070	72.6	344	160	74
Arch Rd	Frontier	HW 99 Frontage	14010	68.2	177	82	38
Arch Rd	Newcastle	Frontier	12340	67.7	163	76	35
Trinity Parkway	Scott Creek	8 Mile	14260	69.9	228	106	49
Trinity Parkway	Cosumnes	McAuliffe	8030	67.4	155	72	33
Thornton Rd	Bear Creek	Estate	21140	71.5	292	135	63
Thornton Rd	Waudman	Davis	25070	70.8	261	121	56
Thornton Rd	Aberdeen	Cortez	37460	72.5	341	158	74
Thornton Rd	Hammer	Rivera	22650	71.8	305	142	66
Davis Rd	Chaparral	Laramie	11480	67.4	155	72	33
Davis Rd	North of Bear Creek		9170	66.4	134	62	29
Davis Rd	Ponce De Leon	Thornton	15400	68.7	189	88	41
Lower Sacramento	Armor	Royal Oaks	17620	70.7	258	120	56
Lower Sacramento	Bear Creek	Eight Mile	16340	68.9	196	91	42
Lower Sacramento	Hammer	Rivera	17610	70.7	258	120	56
West Lane	8 Mile	Morada	17180	70.6	254	118	55
West Lane	Dalewood	Westmora	25010	72.3	331	154	71
West Lane	Hammer	Hammertown	31760	73.4	391	181	84
West Lane	Swain	March	37470	74.0	427	198	92
West Lane	Bradford	Walnut	24320	72.1	320	149	69
Wilson Way	McAllen	Alpine	16290	70.4	245	114	53
Wilson Way	Main	Market	26040	72.4	335	156	72
Wilson Way	Market	Washington	26340	72.4	338	157	73
Pershing Ave	Venetian	Burke-Bradley	24740	72.2	324	150	70
Pershing Ave	At Calaveras River		35990	73.8	416	193	90
Pershing Ave	Magnolia	Acacia	20440	71.3	285	132	61
Pacific Ave	Douglas	Porter	39970	74.3	452	210	97
Pacific Ave	Yokuts	March	33730	73.6	404	187	87
Pacific Ave	At Calaveras River		33150	73.4	394	183	85

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
Pacific Ave	Cleveland	Wyandotte	20160	71.3	283	131	61
Fresno Ave	Washington St	Navy Dr	11850	69.0	198	92	43
Fresno Ave	Navy Dr	Charter Way	10320	68.4	181	84	39
Fresno Ave	Charter Way	8th Street	8090	67.3	154	71	33
El Dorado St	Lincoln	Loretta	17820	70.8	264	123	57
El Dorado St	Mayfair	Robinhood	29200	73.0	367	170	79
El Dorado St	At Calaveras River		29050	72.8	359	167	77
El Dorado St	Pine	Cleveland	23940	72.0	315	146	68
El Dorado St	Lindsay	Miner	20590	71.3	285	132	61
El Dorado St	At AT & SF Overpass		15410	70.2	240	111	52
El Dorado St	MLK Blvd	First	12270	69.2	206	96	44
El Dorado St	Eighth	Ninth	13910	69.7	221	102	48
California St	Alpine	Harding	18070	68.1	173	80	37
California St	Harding	Park	11530	66.1	128	59	28
California St	Park	Weber	8050	62.9	79	36	17
California St	Weber	Crosstown Freeway	5460	61.3	61	28	13
Center St	Poplar	Flora	16180	70.4	248	115	53
Center St	At AT & SF Overpass		15690	70.3	243	113	52
Holman Rd	8 Mile	Morada	9530	66.9	144	67	31
Holman Rd	Morada Lane	Hammer	17850	69.6	219	102	47
Holman Rd	Auto Center	Auto Center	18230	70.9	268	124	58
Holman Rd	Wind Flower	March	15500	68.7	190	88	41
Cherokee Rd	Sierra	Sanguinetti	6420	64.9	105	49	23
Waterloo Rd	E	Williams	13890	69.7	220	102	47
Airport Way	Pinchot	Roosevelt	19900	71.2	280	130	60
Airport Way	Fremont	Lindsay	20430	71.3	285	132	61
Airport Way	Main	Market	16720	70.5	249	116	54
Airport Way	Ninth	Tenth	21760	71.6	297	138	64
Airport Way	Sperry	Industrial	16630	70.4	249	115	54
Airport Way	Sperry	CE Dixon St	14330	69.8	225	104	48
Mariposa Rd	Stagecoach	SR 99	11300	68.9	195	90	42
Mariposa Rd	Farmington	SR 99	12290	67.7	162	75	35
Mariposa Rd	MLK Blvd	Farmington	14260	68.3	179	83	39

TABLE 4.11-8 EXISTING ROADWAY NOISE ANALYSIS

Roadway	Segment (between)		ADT	CNEL at 50 feet (dBA)	Distance to CNEL Contour (Feet)		
					60 dBA	65 dBA	70 dBA
B St	Charter Way	Fourth	13530	68.1	173	80	37
B St	Ralph Ave	Arch Airport	4540	63.3	84	39	18
Pock Lane	Mariposa	Sixth	3720	62.5	73	34	16
Pock Lane	Togninali	Carpenter	5170	63.9	91	42	20

Source: Noise levels calculated by FHWA-RD77-108 Calculation Method. Traffic volumes from Fehr and Peers, 2017.

Rail Noise

The Altamont Corridor Express (ACE) and Amtrak are the only commuter railroad authorities that serve the EIR Study Area. The ACE rail line starts in San Jose and ends at the Downtown Station in Stockton. During the week, there are only eight ACE trains that stop at the Stockton station per day. The Amtrak San Joaquin Line also uses the Downtown Stockton Station. There are typically 14 Amtrak trains that travel through the EIR Study Area per day. Due to the small number of commuter train pass-bys within the city, commuter rail noise is expected to minimally affect overall community noise within the EIR Study Area.

There are several freight rail services that operate within the EIR Study Area, including the Union Pacific Railroad, BNSF Railway, Central California Traction Company (CCT), and, to a lesser extent, the Stockton Terminal and Eastern Railroad (STE), the Atchison, Topeka & Santa Fe Railway (AT&SF), and the Southern Pacific Railroad of Mexico.

Aircraft Noise

The only public airport in the EIR Study Area is the Stockton Metropolitan Airport (identifier code SCK), located in the southern portion of the study area.[9] The main runway is oriented northwest to southeast. The receptor areas to the northwest of the airport are primarily commercial and industrial land uses, while the receptor areas to the southeast of the airport are almost exclusively agricultural uses.

Based on the noise contour maps related to the Stockton Metropolitan Airport,[10] the projected 60 dBA CNEL contour extends no more than 1.52 miles to the northwest of the airport facility and the 65 dBA CNEL contour extends approximately 0.79 miles from the airport (both distances are with respect to the end of the runway).There are no residential developments within either the 65 or 60 dBA CNEL contours (see the discussion regarding the State's Airport Noise Standards in Section 4.11.1.2).

[9] Airnav, LLC, 2017. Airport Information, http://www.airnav.com/airports, accessed October 31, 2017 .

[10] Stockton Municipal Airport noise contour maps are included in Appendix D, as found in the existing (2007) Stockton General Plan for buildout year 2035.

Stationary Source Noise

Stationary sources of noise may occur from all types of land uses. Stockton is mostly developed with residential, commercial, and industrial uses. Industrial uses include, but are not limited to, manufacturing, trucking, and metal works. Industrial noise is generated from processing machinery, loading dock activity, and heating, ventilating, and air conditioning (HVAC) systems. Noise from industrial uses can be generated on a continual basis or intermittently, depending on the processes and types of machinery involved. In addition to on-site mechanical equipment, which generates stationary noise, warehousing and industrial land uses generate substantial truck traffic that results in additional sources of noise on local roadways in the vicinity of industrial operations.

For Stockton, the city's industrial areas are primarily located in the southern parts of the city, generally surrounding the Stockton Metropolitan Airport, and near the Port. These uses have the potential to generate noise impacts at nearby sensitive receptors, although long separation distances would generally preclude significant noise impacts. Such impacts would vary depending on the specific uses, with truck deliveries, HVAC, and other mechanical equipment being the primary sources of noise. In general, noise from closer roadways would be expected to typically exceed that from the industrial uses.

Commercial uses can generate noise from HVAC systems, loading docks, trash compactors, increased vehicle and pedestrian traffic, and other sources. These uses also have the potential to generate noise impacts upon nearby sensitive receptors. In Stockton, many of the commercial areas are located in the Downtown and along major arterials. Noise impacts from commercial uses would vary depending on the types of businesses and the vibrancy of the area, the nature and frequency of truck deliveries, the use of HVAC and other mechanical equipment, and the extent of nearby vehicle traffic.

Construction Noise

Construction activity also contributes to the noise environment of Stockton; however, such activities are typically temporary, occurring in any one location only for a relatively limited period of time. Larger or multi-phase construction projects, however, may contribute to the noise environment of a particular location for a more extended period of time. Public infrastructure facilities that require open-ended maintenance may also result in ongoing noise impacts, though usually not at a constant location. For example, different sections of road may be repaved at different times, meaning that noise impacts from associated construction activities would, at any given time, only occur along and near the section of roadway undergoing such maintenance.

Public Facility Noise

Outdoor activities that occur on school campuses and in parks throughout the city generate noticeable levels of noise. Noise generated on both the weekdays from physical education classes and sports programs and weekends from use of the fields and stadiums can elevate community noise levels somewhat during the timeframe of each particular usage.

Existing Ambient Noise Measurements

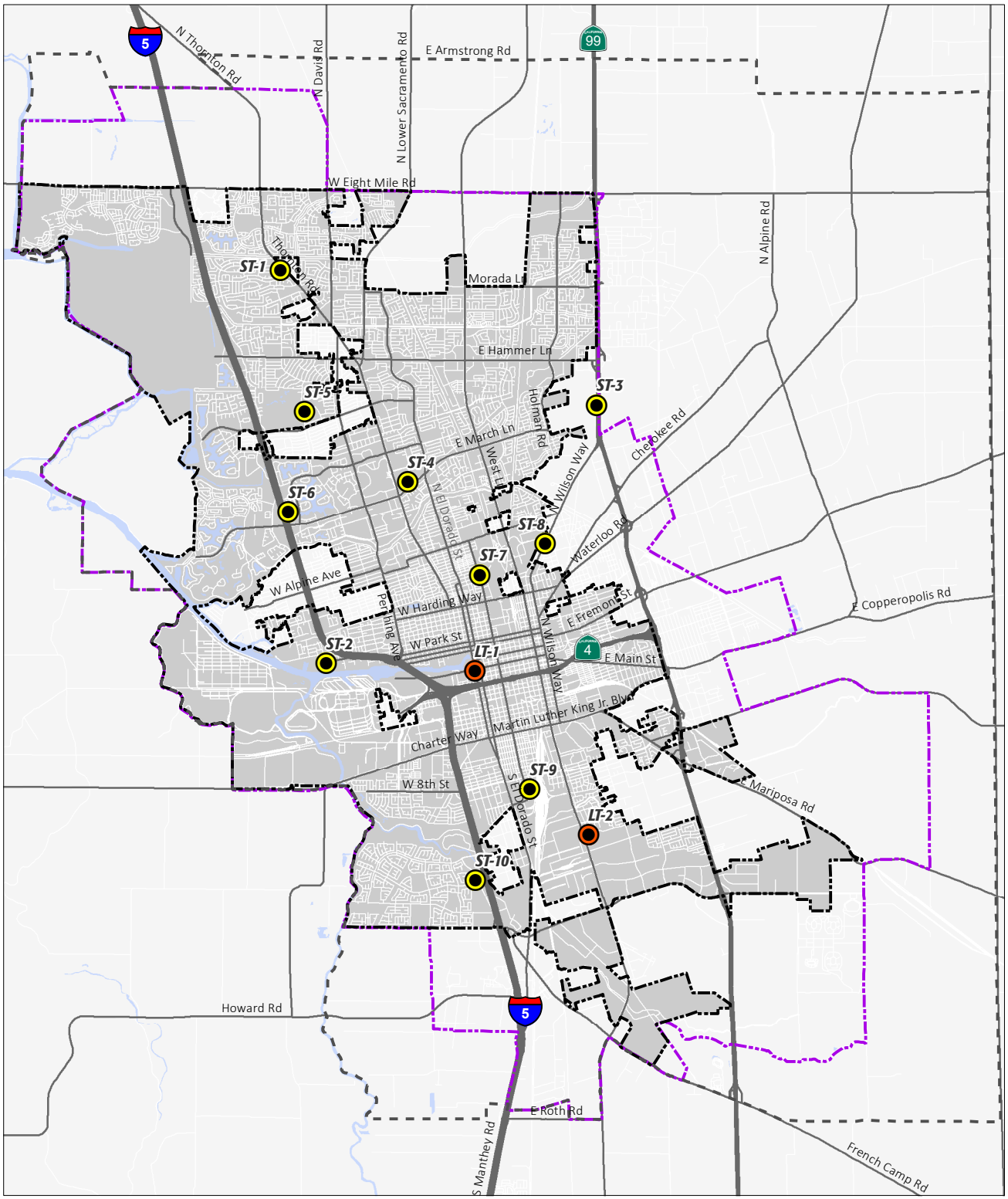
Ambient noise monitoring was conducted by PlaceWorks in May 2017, during normal weekday periods. Long-term (24-hour) measurements were conducted at two locations within the EIR Study Area, and short-term (15-minute) measurements were conducted at ten locations. Long-term measurements were conducted from Wednesday May 17 to Thursday May 18, and short-term measurements were conducted on Thursday, May 18. The general noise environment around the measurements is a combination of local and distant roadway noise, general community noise, aircraft flyovers, chirping birds, rustling vegetation, and various neighborhood activities (e.g., people talking, lawnmowers). Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of typical conditions for the season. Generally, conditions included clear skies, daytime temperatures from 75 to 92 degrees Fahrenheit (°F), and winds of less than 7 miles per hour (mph).

Long-term noise monitoring was performed using Larson-Davis Model 814 Sound Level Meters, and short-term noise monitoring was performed using a Larson-Davis Model 820 integrating/logging Sound Level Meter. All sound level meters used for noise monitoring satisfy the American National Standards Institute (ANSI) Standard S1.3 for Type 1 general environmental noise measurement instrumentation. The sound level meters were programmed to acquire noise levels with the "slow" time constant and using the "A" weighting filter network. The meters were field-calibrated immediately prior to the first set of readings. The calibration was rechecked immediately after the conclusion of the readings and no notable meter "drift" was noted (i.e., less than ½ dB deviation). This work effort included two long-term (24-hour) measurements and ten short-term (15-minute) measurements. For the long-term measurements, the microphone was mounted to a fence or tree approximately 5 feet above the ground. For the short-term samples, the sound level meter and microphone were mounted on a tripod 5 feet above the ground. All sound level meters were equipped with a windscreen during measurements. Noise measurement locations are described below and shown on Figure 4.11-2. The sections below describe the noise level measurement locations.

Long-Term Location 1 (LT-1)

Long-term noise monitoring Location 1 was near Downtown Stockton at the corner of Weber Avenue and Center Street. The noise monitor was attached to a fence surrounding the Howard Johnson Inn. A 24-hour noise measurement was taken beginning at 7:55 p.m. on Wednesday, May 17th, at which time the air temperature was 75°F with 35 percent relative humidity (RH), and winds were calm (0 to 1 mph). The noise environment of this site was characterized primarily by roadway noise along the nearest roadways, and by noise associated with a bustling downtown area (i.e., people talking, car horns, and mechanical equipment). Weather conditions during pickup were approximately the same as drop-off.

The 24-hour L_{eq} at the long-term monitoring location was 71.0 dBA, the L_{dn} was 74.1 dBA, and the CNEL was 74.8 dBA.



Source: City of Stockton; PlaceWorks, 2016.

LT-1 Long-Term Noise Monitoring Locations (2)
ST-1 Short-Term Noise Monitoring Locations (10)
City Limit
Sphere of Influence
General Plan Planning Area

Figure 4.11-2
Noise Monitoring Locations

Long-Term Location 2 (LT-2)

Long-term noise monitoring Location 2 was located within a residential community within close proximity to an industrial area. The noise monitor was attached to a fence, near the intersection of Carpenter Road and Phelps Street. A 24-hour noise measurement was taken beginning at 7:30 p.m. on Wednesday, May 16th, at which time the air temperature was 73°F with 37 percent RH, and winds were light (1 to 3 mph). The noise environment of this site was characterized primarily by roadway noise along Airport Way and other residential collectors, as well as distant industrial operations (i.e., truck movements, maintenance, and loading/unloading). Weather conditions during pickup were approximately the same as drop-off.

The 24-hour L_{eq} at the long-term monitoring location was 58.2 dBA, the L_{dn} was 62.0 dBA, and the CNEL was 62.3 dBA.

Short-Term Location 1 (ST-1)

Short-term noise monitoring Location 1 was within a residential area at the intersection of Fallenleaf Drive and Apple Blossom Way. Beginning at 1:48 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 85°F with 27 percent RH, and winds were calm, at approximately 1 to 3 mph. The noise environment around this monitoring location was comprised of local and distant traffic noise, property maintenance, and rustling leaves and vegetation. Distant roadway construction was also noted at the monitoring location.

Short-Term Location 2 (ST-2)

Short-term noise monitoring Location 2 was in a residential area near the Port of Stockton. This monitoring location was located near the corner of Ryde Avenue and Fremont Street, approximately 750 feet north of the Canal. At 4:04 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 90°F with 21 percent RH, and winds were light, at approximately 2 to 4 mph. The noise environment of this site was dominated by roadway noise along I-5, as well as local roadway noise. Neighborhood operations (i.e., people talking, property maintenance, and music) were also noted at the monitoring location.

Short-Term Location 3 (ST-3)

Short-term noise monitoring Location 3 was in a Utility Area Access lot approximately 100 feet west of SR-99. Beginning at 2:32 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 90°F with 26 percent RH, and winds were calm. The monitoring location was mostly surrounded by agricultural open space, and therefore the noise environment was dominated by roadway noise along SR 99.

Short-Term Location 4 (ST-4)

Short-term noise monitoring Location 4 was in the parking lot of JC Penney, among other retail stores. Beginning at 5:39 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 89°F with 19 percent RH, and winds were calm. The noise environment of

this site was primarily controlled by roadway noise along March Lane and Pacific Avenue, as well as parking lot noise (i.e., doors shutting, idling cars, and people talking).

Short-Term Location 5 (ST-5)

Short-term noise monitoring Location 5 was located on the Lincoln Unified School District Complex near the corner of Alexandria Place and Stanton Way. The school complex consists of a Middle School and a High School, and is surrounded by a golf course to the west and by residential uses to the north, east, and south. The noise monitor was located within an open space area just north of Stanton Way. At 1:15 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 81°F with 30 percent RH, and winds were light, at approximately 2 to 5 mph. The noise environment of this site was comprised of operations at the school (i.e., people talking and students moving among classrooms), property maintenance, and roadway noise along Alexandria Place and other residential collectors.

Short-Term Location 6 (ST-6)

Short-term noise monitoring Location 6 was within an office complex approximately 350 feet east of I-5. At 12:50 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 87°F with 28 percent RH, and winds were calm. The noise environment of this site was dominated by roadway noise along I-5, but parking lot noise was also noted at the monitoring location.

Short-Term Location 7 (ST-7)

Short-term noise monitoring Location 7 was located in an office parking lot near the intersection of California Street and Pine Street, approximately 25 feet east of California Street. At 3:34 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 89°F with 21 percent RH, and winds were calm. The noise environment of this site was primarily controlled by roadway noise along California Street. Rustling trees and vegetation and some parking lot noise was also noted at this monitoring location.

Short-Term Location 8 (ST-8)

Short-term noise monitoring Location 8 was directly next to Wilson Way, within the front parking lot of Crivella Autobody Inc. At 3:03 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 85°F with 22 percent RH, and winds between 5 and 8 mph. The noise environment of this site was dominated by roadway noise along Wilson Way. Industrial operations from the Autobody Garage were also noted at the monitoring location.

Short-Term Location 9 (ST-9)

Short-term noise monitoring Location 9 was in an industrial shipping yard near a major railway corridor. The industrial area was generally surrounded by residential uses. At 4:28 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 89°F with 21 percent RH, and winds were calm. The noise environment of this site was characterized primarily by truck movements, distant railway noise, and roadway noise along nearby residential collectors.

Short-Term Location 10 (ST-10)

Short-term noise monitoring Location 10 was within a residential area, in a cul-de-sac at the end of Steve Lillie Circle. This monitoring location was positioned approximately 850 feet west of I-5, separated by open space, trees, and a canal area. At 4:56 p.m. on Thursday, May 18, 15 minutes of noise measurements were taken, at which time the air temperature was 92°F with 20 percent RH, and winds were calm. The noise environment of this site was primarily controlled by roadway noise along I-5. Neighborhood operations, specifically power tool noise, also contributed to the noise environment.

Existing Ambient Noise Level Summary

During the ambient noise survey, the daytime, energy-average (L_{eq}) noise levels within the EIR Study Area ranged from 58 to 71 dBA L_{eq} at the long-term measurement locations, and from 55 to 76 dBA Leq at the short-term measurement locations. The long-term and short-term noise measurement results are summarized in Table 4.11-9. Additional noise monitoring details are included in Appendix D.

TABLE 4.11-9 NOISE MONITORING SUMMARY

Monitoring Location	Duration	Noise Level, dBA			
		L_{min}	L_{eq}	L_{max}	CNEL
LT-1	24 hours	51[a]	71	104[b]	75
LT-2	24 hours	44[a]	58	91[b]	62
ST-1	15 minutes	45	55	72	N/A
ST-2	15 minutes	56	60	72	N/A
ST-3	15 minutes	68	76	90	N/A
ST-4	15 minutes	48	56	69	N/A
ST-5	15 minutes	49	62	69	N/A
ST-6	15 minutes	56	61	69	N/A
ST-7	15 minutes	47	67	78	N/A
ST-8	15 minutes	51	71	82	N/A
ST-9	15 minutes	46	64	77	N/A
ST-10	15 minutes	48	64	79	N/A

Note: Noise measurement results printouts are included in Appendix D. Noise measurements were taken by PlaceWorks between May 17 and 18, 2017.

a. Represents the lowest 1-hour noise level within the 24-hour measurement period.

b. Represents the highest 1-hour noise level within the 24-hour measurement period.

4.11.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact if it would:

- Expose people to or generate noise levels in excess of standards established in the General Plan or the Municipal Code, and/or the applicable standards of other agencies.
- Expose people to or generate excessive groundborne vibration or groundborne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Expose people residing or working in the vicinity of the project area to excessive aircraft noise levels, either within an airport land use plan area or within 2 miles of a public airport or public use airport.
- Expose people residing or working in the project area to excessive noise levels from a private airstrip.

4.11.3 IMPACT DISCUSSION

This section analyzes potential noise-related impacts that could occur from implementation of the proposed General Plan Update and UMPS. The impact discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

NOISE-1	The proposed project would not expose people to or generate noise levels in excess of standards established in the General Plan or the Municipal Code, and/or the applicable standards of other agencies.

Development allowed by the proposed General Plan may result in the creation of new or expansion of existing stationary and mobile sources of noise that have the potential to disturb adjacent sensitive receptors, or could include the development of new sensitive land uses in the vicinity of existing noise sources. However, the proposed General Plan contains goals, policies, and actions that would serve to prevent or mitigate substantial permanent increases to ambient noise levels from long-term operations of new development and transportation-related sources (i.e., roadways, railways, and airports). In particular, proposed Policy SAF-2.5 directs the City to protect the community from health hazards and annoyance associated with excessive noise levels, implemented by Actions SAF-2.5.A through SAF-2.5.E. Key provisions of these actions include prohibiting new noise-generating land uses adjacent to existing sensitive receptors and requiring project level review when appropriate to ensure compliance with indoor/outdoor noise standards for sensitive uses. In combination with the Stockton Municipal Code requirements discussed in Section 4.11.1.2, these actions would ensure that new development under the proposed General Plan and UMPS would not result in substantial permanent increases in overall community noise within Stockton.

Overall noise land use compatibility standards would be carried forward from the existing 2035 General Plan, and are shown in Table 4.11-10. These standards are implemented by guidelines that describe the

TABLE 4.11-10 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

	Noise Level, L_{dn} (dBA)						
Land Use Type	0-55	56-60	61-65	66-70	71-75	75-80	>81
Residential							
Urban Residential Infill							
Hotels, Motels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Mining, Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable. Specified land use is satisfactory based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.
	Unacceptable. New construction or development should not be undertaken.

Notes: If existing noise standards are currently exceeded, a proposed project shall not incrementally increase noise levels by more than 3 dBA. Urban residential infill applies to residential uses in the Greater Downtown.
Source: Stockton General Plan 2035, Goal Policies Report; Table 11-1

criteria to determine whether proposed projects would be considered “normally acceptable,” ”conditionally acceptable,” or ”unacceptable.” Future proposed development projects would be required to demonstrate how such a land use would be acceptable at the proposed location, given the general noise environment in the area. Per proposed General Plan Action SAF-2.5.B, if the noise environment is found to be above the “normally acceptable” range, the proposed project would be required to conduct further noise-related investigations, as well as to incorporate mitigation measures that reduce the noted sound intrusion effects.

Under the premise that standard building materials and techniques, or, if needed, enhanced methods, will achieve the necessary exterior-to-interior noise reduction, the noise compatibility guidelines are further aimed at achieving acceptable interior sound environments per the noise standards set by the Title 24 of the State Building Code.

Interior Noise Environment Impacts

In areas where noise levels exceed those that are normally acceptable for a particular land use, development projects under the proposed General Plan would continue to be required to demonstrate—through acoustical studies, as necessary—that interior noise environments would comply with the noise compatibility guidelines of the General Plan.

Collectively, the proposed General Plan policies and actions, combined with the existing Stockton Municipal Code and State Noise Insulation Standards (described in Section 4.11.1.2), would ensure that land use and development decisions consider and seek to prevent potential noise impacts. Through implementation of these existing and new policies, actions, and regulations, the City would ensure compliance with local and State standards for interior noise, and the impact would be less than significant.

Exterior Noise Environment Impacts

Through adherence to the noise compatibility standards shown in Table 4.11-10, the City would only allow development of noise sensitive land uses in areas where existing or projected noise level are "acceptable," per proposed General Plan Action SAF-2.5.B. Further, per proposed General Plan Action SAF-2.5.A, the City shall prohibit the development of new commercial, industrial, or other noise-generating land uses adjacent to existing sensitive noise receptors such as residential uses, schools, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA CNEL, when measured at the property line of the noise sensitive land use.

Through implementation of the Stockton Municipal Code, as well as the proposed General Plan policies actions, the City would ensure compliance with local and State standards for exterior noise, and the impact would be less than significant.

Noise Compatibility

Future developments within the EIR Study Area have the potential to exceed the applicable standards, which would result in a significant impact. However, as mentioned above, the proposed General Plan Action SAF-2.5.B requires the development of noise sensitive land uses to comply with the guidelines presented in Table 4.11-10, including, as appropriate, a noise analysis and any necessary mitigation measures to reduce noise impacts to acceptable levels.

Through continued implementation of this requirement as part of the proposed General Plan, the City would ensure compliance with local and State noise-related standards for land use compatibility. Such local standards would include approvals and permits through the Planning Commission and Building Departments for compliance with City-enforced development review and authorization processes. The impact would be less than significant.

Overall Impact Finding

In addition to the proposed General Plan policies and actions, the continued enforcement of the Stockton Municipal Code would work in tandem with and reinforce the policies and actions within the proposed General Plan, and any impact arising from violation of applicable local standards would be *less than significant*.

Significance Without Mitigation: Less than significant.

NOISE-2 The proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels.

This analysis considers potential vibration impacts generated by short-term construction and long-term operations that may occur under implementation of the proposed General Plan and UMPS.

CEQA does not specify quantitative thresholds for what is considered "excessive" vibration or groundborne noise. As described in Section 4.11.1.2, Section 16.32.100 of the Stockton Municipal Code includes qualitative limits for vibration levels within the city. According to this section, uses that generate vibrations may not generate ground vibration that is perceptible without instruments by the average person at any point along or beyond the property line of the parcel containing the activities. Such uses also may not generate vibrations that cause discomfort or annoyance to reasonable persons of normal sensitivity or that endangers the comfort, repose, health, or peace of residents whose property abuts the use. Vibrations from temporary construction, demolition, and vehicles that leave the subject parcel (e.g., trucks, trains, and aircrafts) are exempt from the provisions of this section.

Because perception of vibration effects is subjective and would vary between individuals, to conduct an impact assessment, it is necessary to establish a quantitative threshold that reflects levels of vibration typically capable of causing perception and/or annoyance. Therefore, following standard industry practice, this analysis relies on criteria from the FTA for acceptable levels of ground-borne vibration for various types of special buildings that are sensitive to vibration. These guidelines identify that an impact would occur if construction activities generate vibration that is strong enough to cause (a) undue annoyance at sensitive receptors or (b) architectural damage[11] to buildings. The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. However, structures amplify groundborne vibration, and wood-frame buildings, which are often the building type of residential structures, are more affected by ground vibration than heavier buildings. From the research that underpinned the FTA guidelines, a conservative set of standards were implemented, as detailed below.

Consistent with the FTA guidelines, this analysis will use the following thresholds to identify whether a significant vibration impact would occur:

- Vibration-related annoyance: Implementation of the proposed project would result in ongoing exceedance of the criteria for annoyance presented in Table 4.11-11.

[11] The term 'architectural damage' is typically used to describe effects such as cracked plaster, cracks in drywall seams, sticking doors or windows, loosened baseboard/crown moldings, etc.

- Vibration-related damage: Implementation of the proposed project would result in vibration exceeding the criteria presented in Table 4.11-12 that could cause buildings architectural damage.

TABLE 4.11-11 GROUNDBORNE VIBRATION CRITERIA: HUMAN ANNOYANCE

Land Use Category	Description	Vibration Limit VdB (Lv)
Workshop	Distinctly felt vibration. Appropriate to workshops and non-sensitive areas.	90
Office	Felt vibration. Appropriate to offices and non-sensitive areas.	84
Residential – Daytime	Barely felt vibration. Adequate for computer equipment.	78
Residential – Nighttime	Vibration not felt, but groundborne noise may be audible inside quiet rooms.	72

a. RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch/second (8-80 Hz).
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

TABLE 4.11-12 GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE

	Building Category	PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Non-engineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

Short-Term Construction-Related Vibration Impacts

Implementation of the proposed General Plan and UMPS would occur over an approximately 20-year period, and would consist of many different physical development projects with their own construction timeframes and equipment. Individual construction projects within the EIR Study Area would generally only affect areas near the construction site. The most vibration-sensitive structures within and adjacent to the study area would be existing and future residences. There may also be some commercial or manufacturing entities within the study area that could contain vibration-sensitive equipment that could be susceptible to process disruptions from excessive vibration emissions from nearby construction activities.

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site depends on soil type, ground strata, and receptor building location. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from

construction activities rarely reaches levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 4.11-13 lists vibration levels for typical construction equipment.

As shown in Table 4.11-13, vibration generated by construction equipment has the possibility to be substantial, since it has the potential to exceed the applicable Stockton Municipal Code and FTA criteria presented above. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers.[12]

TABLE 4.11-13 GROUNDBORNE VIBRATION LEVELS FOR COMMON CONSTRUCTION EQUIPMENT

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS[a] Velocity at 25 Feet (inch/sec)
Pile Driver (Impact) Upper Range	112	1.518
Pile Driver (Impact) Lower Range	104	0.644
Pile Driver (Sonic) Upper Range	105	0.734
Pile Driver (Sonic) Lower Range	93	0.170
Large Bulldozer	87	0.089
Caisson Drilling	87	0.089
Jackhammer	79	0.035
Small Bulldozer	58	0.003
Loaded Trucks	86	0.076
FTA Criteria – Human Annoyance (Daytime)	78 to 90[b]	—
FTA Criteria – Structural Damage	—	0.2 to 0.5[c]

a. RMS velocity calculated from vibration level (VdB) using the reference of 1 micro-inch/second.
b. Depending on affected land use. For residential 78 VdB, for offices 84 VdB, workshops 90 VdB.
c. Depending on affected building structure, for timber and masonry buildings 0.2 in/sec, for reinforced-concrete, steel, or timber 0.5 in/sec.
Source: Federal Transit Administration, 2006. Transit Noise, and Vibration Impact Assessment.

Methods to reduce vibration during construction would include the use of smaller equipment, well-maintained equipment, and alternative methods (e.g., static rollers instead of vibratory rollers and drilling of piles as opposed to the use of impact driving techniques). Additionally, other vibration reduction methods could include limitations on construction hours and/or guidelines for the positioning of vibration-generating construction equipment. As such, vibration impacts may occur from construction equipment associated with development under the proposed General Plan and UMPS, and construction vibration impacts are considered potentially significant.

[12] Federal Transit Administration, 2006. Transit Noise, and Vibration Impact Assessment.

Section 16.60.030 of the Stockton Municipal Code restricts the hours of construction operation to between 7:00 a.m. and 10:00 p.m. This restriction would constrain construction-generated vibration to the least vibration-sensitive times of the day[13] and would significantly reduce the potential for annoyance. It should be noted that Municipal Code Section 16.60.030 exempts temporary construction and demolition activities from consideration as an infraction, but this exemption addresses annoyance and discomfort aspects[14] of temporary construction. In light of the CEQA-focused impact assessment herein, this construction vibration exemption would not apply as a potential impact-reduction mechanism. Rather, the previously-presented FTA criteria for vibration annoyance effects are still valid for purposes of this impact evaluation.

Because project-level construction activities could result in sustained levels of vibration that could result in annoyance or architectural damage in localized areas, but throughout the entire General Plan and UMPS implementation period, implementation of the proposed project could potentially result in levels of construction-related groundborne noise or vibration that would exceed the thresholds for annoyance or architectural damage, and the impact would therefore be potentially significant.

Roadway-Related Vibration Impacts

Operation of new commercial land uses could generate additional truck trips over existing conditions, which could potentially generate various levels of vibration along the traveled roadways. Additionally, truck trips could also be generated during construction of new development projects in the EIR Study Area. Caltrans has studied the effects of vehicle vibration on sensitive land uses and notes that "heavy trucks, and quite frequently buses, generate the highest earth borne vibrations of normal traffic." Caltrans also notes that the highest traffic-generated vibration is along freeways and state routes and finds that "vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 inches per second, with the worst combinations of heavy trucks." Further, trucks do not typically generate high levels of vibration because they travel on rubber tires and do not have substantial vertical movement, which generates ground vibration.[15] Given these observations and guidance notes from Caltrans, roadways in the EIR Study Area are not expected to generate excessive vibration. Therefore, there would be no impact due to roadway-related vibration.

Railway-Related Vibration Impacts

Trains generate substantial vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions. Railroad and transit operations are potential sources of substantial ground vibration depending on distances to receptors, the type of rail system, the speed of trains, the type of track, and the

[13] The phrase 'least vibration-sensitive times of the day' refers to the likelihood that the majority of residents would be away from their homes during the daytime when construction activities would generally take place.

[14] Based on interpreting the Code language "shall not generate ground vibration that is *perceptible* without instruments by the average person at any point along or beyond the property line of the parcel containing the activities; and shall not generate vibrations that cause *discomfort* or *annoyance* to reasonable persons of normal sensitivity or which endangers the *comfort, repose, health or peace* of residents whose property abuts the property lines of the parcel" [emphasis added] as primarily being concerned with the annoyance/irritation aspects of vibration.

[15] California Department of Transportation (Caltrans), Division of Environmental Analysis, 2002. Transportation Related Earthborne Vibration: Caltrans Experiences. Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.

condition of both steel wheels and steel rails. As discussed above, vibration impacts are highly dependent on a variety of localized factors, including geology, soil conditions, and building construction techniques.

Development under the proposed General Plan could result in changes to long-term freight and passenger train movements throughout the EIR Study Area. Additionally, regional growth and changing passenger ridership patterns, both of which are independent of development under the proposed General Plan, would be expected to generally increase over time. Such Plan-induced and Plan-independent increases in railway operations could result in vibration impacts to sensitive receptors if sensitive land uses (e.g., residences, educational facilities, hospitals, and places of worship) were to be located in close proximity to major railways. Given the proposed land use map included in the proposed General Plan, there are limited areas within Stockton where residential or other sensitive land uses would interface to a notable degree with railway operations. Additionally, in most cases, vibration attenuates relatively rapidly with distance, making setbacks and buffering particularly effective approaches for avoiding or minimizing significant vibration impacts. Given the City's policies and processes for screening and approving future development under the General Plan for both noise and vibration impacts, additional encroachment of sensitive land uses toward existing or future rail lines is effectively precluded. Thus, even with increases in rail operations due to Plan-induced and other, non-Plan factors, vibration effects due to railway operations, as they affect sensitive receptors, is not expected to notably change throughout the EIR Study Area. Therefore, railway-related vibration impacts would be less than significant.

Other Operations Vibration Impacts

Light industrial and commercial operations can possibly generate varying degrees of ground vibration, depending on the operational procedures and equipment. Specific project-level information is not available at this time for individual development projects that could be allowed under the proposed General Plan. However, project-specific operational vibration levels would be analyzed for future developments within the EIR Study Area in terms of applicable Stockton Municipal Code and FTA criteria. Through the enforcement of these applicable criteria, vibration potentially generated by these types of proposed land uses would not result in levels of vibration that would cause significant annoyance or architectural damage impacts. Therefore, operations-related vibration impacts associated with implementation of the proposed General Plan would be less than significant.

Overall Impact Finding

As described in Section 4.11.1.2, Sections 16.60.050 and 16.60.060 of the Stockton Municipal Code require the preparation of an acoustical study in instances where a project has the potential to affect sensitive receptors. Specific project-level information is not available at this time for individual development projects that could be allowed under the proposed General Plan and UMPS.

Future project-specific construction vibration levels would be analyzed in terms of applicable Stockton Municipal Code and FTA criteria. For the construction phase of any future project, the Planning Department must require that the project use the best available technology to minimize excessive vibration from construction equipment so that construction-related vibrations are reduced below applicable Stockton Municipal Code and FTA guidelines for both annoyance and architectural damage. General methods to reduce vibration during construction would include the use of smaller equipment,

well-maintained equipment, and alternative methods (e.g., static rollers instead of vibratory rollers and drilling of piles, as opposed to pile driving). Other methods to reduce human impacts of vibration from construction include limitations on construction hours and/or guidelines for the positioning of vibration-generating construction equipment.

Together, these existing requirements would ensure that development allowed under the proposed General Plan and UMPS would not result in perception of excessive noise and vibration by sensitive receptors. Through consideration of project-level review and requirements for mitigation of noise and vibration, implementation of the proposed General Plan and UMPS would not result in significant levels of groundborne noise or vibration that would exceed the thresholds for annoyance or architectural damage, and the impact would therefore be *less than significant.*

Significance Without Mitigation: Less than significant.

NOISE-3 The proposed project would cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Implementation of the proposed General Plan and UMPS would have a significant impact if it results in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. As discussed above, the Municipal Code identifies noise thresholds that constitute a maximum noise level allowed to be generated by certain land uses as it affects a sensitive receptor. However, the City of Stockton has not adopted a specific, quantitative threshold for what constitutes a significant permanent increase in ambient noise levels. Therefore, in the absence of such a City-adopted threshold, a substantial increase in ambient noise levels is defined in this analysis as either:

- A 5 dBA increase,[16] if after the increase, the ambient noise level remains in the range of what would be "normally acceptable" at the land use where the noise is being received; or
- A 3 dBA increase,[17] if after the increase, the ambient noise level exceeds the range of what would be "normally acceptable" at the land use where the noise is being received.

Long-Term Operational Noise

The proposed General Plan may allow for development of certain land uses that could result in substantial permanent increases in ambient noise. Land use types that have the potential to introduce a significant noise increase to a sensitive area include commercial land uses, industrial land uses, mixed uses, certain institutional uses, and recreational land uses (e.g., ball fields, skate-parks, and dog parks).

Throughout the implementation of the General Plan, commercial and industrial uses are expected to increase the most, by approximately 13.8 million and 35.6 million additional square feet, respectively, by 2040.[18] The primary stationary noise sources associated with commercial and similar land uses are

[16] As indicated in Table 4.11-1, a 5 dBA increase is a clearly noticeable change in noise level.
[17] As indicated in Table 4.11-1, 3 dBA is the threshold of human perceptibility.
[18] See Section 3.5, General Plan Development Projections, in Chapter 3, Project Description, for more information.

mechanical equipment, operational noise from workers and/or patrons, HVAC systems, and landscaping and maintenance activities. The primary stationary noise sources associated with industrial land uses are from truck loading/unloading, workpiece noise (e.g., power tools, dropping of materials), operational noise from workers, and mechanical system noise.

As discussed above, the proposed General Plan contains policies and actions that would serve to prevent or mitigate substantial permanent increases to ambient noise levels from long-term operations. In particular, proposed Policy SAF-2.5 directs the City to protect the community from health hazards and annoyance associated with excessive noise levels, implemented by Actions SAF-2.5.A through SAF-2.5.E. Key provisions of these actions include prohibiting new noise-generating land uses adjacent to existing sensitive receptors, requiring project level review when appropriate to ensure compliance with indoor/outdoor noise standards for sensitive uses, and requiring noise produced by commercial uses to not exceed 75 dB L_{dn}/CNEL at the nearest property line. Together, these actions would serve to ensure that the development of new land uses allowed under the proposed General Plan would not result in substantial permanent increases in the ambient noise level in the project vicinity.

Development allowed under the proposed General Plan would also result in an increase in residential uses within the EIR Study Area. Land uses such as housing, open space, and passive recreation (e.g., trails, rest areas, and picnic areas) are generally not associated with high levels of noise, but could introduce specific noise sources that would increase the noise environment around the source. Common noise sources associated with residential, open space, and passive recreational land uses include: property maintenance equipment, music playback systems, social gatherings, public trails, and picnic areas. These types of noise sources are typically intermittent and infrequent; however, they could potentially result in increased noise environments on a fairly localized basis. Noise impacts due to residential or open space noise sources would be handled on a complaint basis per Stockton's Noise Control Ordinance.

New and expanded stationary sources of noise may affect sensitive receptors within the city, but all such sources would be subject to Municipal Code Section 16.60 (presented above), both through pre-approval assessments and post-development code enforcement. Although the noise sources associated with individual future development projects are unknown at this time, stationary noise sources within the EIR Study Area would be analyzed in accordance with CEQA and the Municipal Code noise standards discussed above. Through the implementation and enforcement of the proposed General Plan policies and actions and the existing Municipal Code standards, stationary source noise from long-term operations associated with the various types of proposed land uses would not substantially increase the noise environment within the EIR Study Area, and the impact would be less than significant.

Long-Term Traffic Noise

As mentioned in Section 4.11.1.3 above, traffic noise generally dominates the noise environment around the EIR Study Area. Future development allowed under the proposed General Plan would increase traffic along local roadways. Traffic noise increases may affect various sensitive land uses, including residences, schools, churches, and medical uses. Commercial and industrial areas are not considered noise sensitive and generally have higher tolerances for exterior and interior noise levels.

The traffic noise levels for existing and 2040 conditions were estimated using the FHWA Highway Traffic Noise Prediction Model. The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic flows, vehicle speeds, car/truck mix, length of exposed roadway, and road width. The distances to the 70, 65, and 60 CNEL[19] contours for selected roadway segments in the EIR Study Area are included in Appendix D. The future 2040 community noise conditions are depicted graphically on Figure 4.11-3.

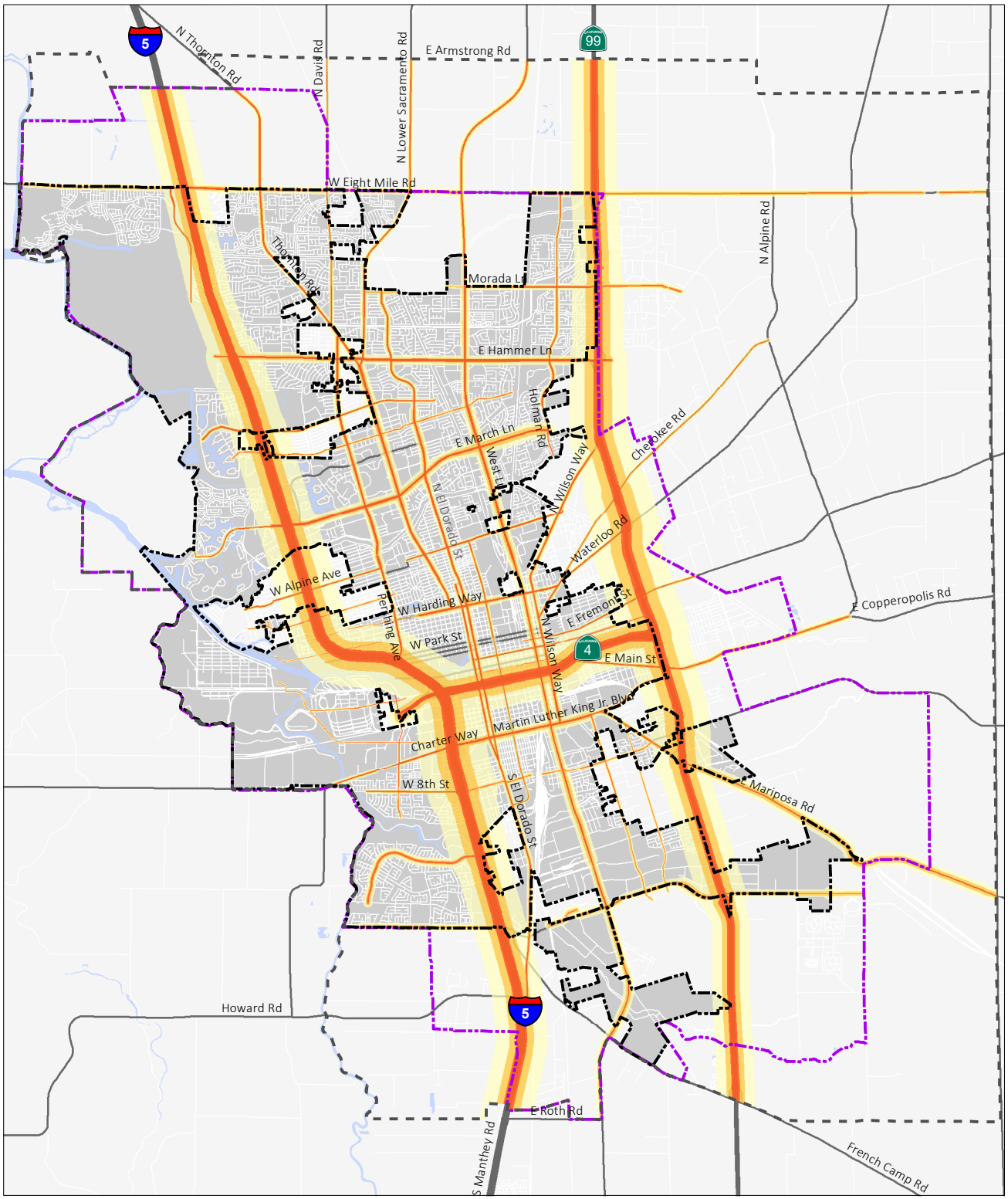
Table 4.11-14 presents the noise level increases due to the proposed project on roadways, relative to existing conditions at 50 feet from the centerline of each roadway segment. The "2040 Plus Project" traffic noise levels include effects of future regional ambient growth and growth due to the proposed General Plan. As discussed above, increases greater than 5.0 dB would be readily noticeable, and would automatically constitute a substantial permanent increase to the ambient noise level. Increases greater than 3.0 dB would be considered substantial if the resulting CNEL would exceed the maximum allowable noise exposure for the receiving land use, per section 16.60.040 of the Municipal Code (presented in Table 4.11-5).

Table 4.11-14 also discloses the noise level increase contribution that would result just from the proposed General Plan without any approved or pending projects. As shown in Table 3-2 and discussed in Section 3.5 of Chapter 3, Project Description, there is a significant amount of approved and pending development that can occur regardless of the proposed General Plan. While impact findings must consider the total noise level increase, inclusive of those projects, this table discloses the "General Plan only" impacts for informational purposes.

Table 4.11-14 shows that traffic noise and overall increases due to both the proposed project and regional growth would range from -7 to 6.8 dB in the CNEL metric. A negative noise level value is due to a reduction in average daily traffic resulting from projected changes in traffic flow patterns and specific roadway usage with the EIR Study Area. There are 18 road segments that would increase noise by 3 to 5 dB, and there is one roadway segment that increases noise by 5 dB or more. Of the 18 roadway segments that result in increases of 3 to 5 dB, 13 roadway segments constitute incompatible noise environments in terms of nearby adjacent land uses (per the transportation noise compatibility standards presented in Table 4.11-5). One roadway segment (Mariposa Road between Stagecoach and SR-99) does not affect any noise sensitive land use types, however this roadway noise increase is over 5 dB, and constitutes a significant impact. In total, 14 roadway segments within the EIR Study Area would be exposed to a significant roadway noise increase. These substantial permanent increases are due to a combination of regional ambient growth, ongoing projects, as well as the contributions from the projected 2040 development under the proposed General Plan.

Note that this is a program-level analysis and future developments within the EIR Study Area are expected to analyze project-specific roadway noise increases in accordance with CEQA and the standards from the Municipal Code and proposed General Plan policies and actions discussed above. Additionally, traffic noise associated with future projects within the EIR Study Area will be subject to the applicable policies and actions in the proposed General Plan, including Action TR-1.1.A, which requires the City to direct truck

[19] CNEL and L_{dn} values typically differ by less than 1 dB



Source: City of Stockton; PlaceWorks, 2016.

Future (2040) Noise Contours

- 70dB
- 65dB
- 60dB

- City Limit
- Sphere of Influence
- General Plan Planning Area

Figure 4.11-3

Future 2040 Roadway Noise Contours

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
I-5	North of Eight Mile Road		80.7	82.0	1.3	1.2
I-5	Eight Mile Road	Hammer Lane	81.5	82.8	1.3	1.2
I-5	Hammer Lane	Ben Holt Drive	82.8	84.3	1.4	1.1
I-5	Ben Holt Drive	March Lane	83.3	84.7	1.3	1.0
I-5	March Lane	Country Club Boulevard	83.4	85.0	1.6	1.1
I-5	Country Club Boulevard	Monte Diablo Avenue	83.8	85.3	1.5	1.0
I-5	Monte Diablo Avenue	Pershing Avenue	83.9	85.3	1.4	0.9
I-5	Pershing Avenue	Crosstown Freeway	82.9	84.7	1.8	1.1
I-5	Crosstown Freeway	Charter Way	84.1	85.6	1.4	0.8
I-5	Charter Way	8th Street	84.4	86.0	1.7	1.1
I-5	8th Street	Downing Avenue	83.1	85.1	2.0	1.1
I-5	Downing Avenue	French Camp Road	83.3	84.2	0.8	0.8
I-5	French Camp Road	Mathews Road	83.2	84.1	0.9	0.9
SR 99	North of Eight Mile Road		81.8	83.1	1.3	1.2
SR 99	Eight Mile Road	Morada Lane	81.6	83.5	1.9	1.3
SR 99	Morada Lane	Hammer Lane	81.8	84.2	2.3	1.2
SR 99	Hammer Lane	Wilson Way	82.7	84.9	2.2	1.2
SR 99	Wilson Way	Cherokee Road	82.4	84.7	2.3	1.3
SR 99	Cherokee Road	Waterloo Road	82.8	85.8	3.0	2.1
SR 99	Waterloo Road	Fremont Street	83.1	86.0	2.9	2.0
SR 99	Fremont Street	Crosstown Freeway	83.1	85.9	2.9	2.0
SR 99	Crosstown Freeway	Martin Luther King Jr Blvd	82.6	85.3	2.7	1.4
SR 99	Martin Luther King Jr Blvd	Farmington Rd	82.3	85.1	2.9	1.5
SR 99	Farmington Rd	Mariposa Rd	81.5	84.8	**3.2**	1.7
SR 99	Mariposa Road	Arch Road	81.4	83.6	2.1	1.0
SR 99	Arch Road	French Camp Road	81.2	82.0	0.8	0.8
SR 99	French Camp Road	Lathrop Road	81.2	82.2	1.0	0.9
SR 4	West of I-5	West of I-5	75.0	78.3	**3.4**	3.4

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
SR 4	I-5	El Dorado St	81.7	83.0	1.3	0.8
SR 4	El Dorado Street	Stanislaus Street	83.0	84.2	1.2	0.7
SR 4	Stanislaus Street	Wilson Way	82.6	83.9	1.3	0.7
Eight Mile Rd	Mokelume Drive	Trinity Parkway	66.3	70.6	**4.3**	4.3
Eight Mile Rd	Trinity Parkway	I-5	73.4	73.4	0.0	0.0
Eight Mile Rd	Thornton Rd	Davis Rd	70.1	71.6	1.5	1.2
Eight Mile Rd	Davis Rd	Lower Sacramento	69.1	71.0	2.0	1.5
Eight Mile Rd	Lower Sacramento	West Lane	69.9	72.4	2.5	1.6
Eight Mile Rd	West Lane	SPRR	68.0	71.5	**3.5**	1.5
Eight Mile Rd	West of Bear Creek	Rt 99	67.5	71.5	**4.0**	1.8
Morada Lane	Lower Sacramento Rd	West Lane	DNE	67.6	n/a	n/a
Morada Lane	Cherbourg	West	69.8	70.9	1.1	0.8
Morada Lane	Cherbourg	Fox Creek	70.1	70.9	0.7	0.4
Morada Lane	Holman	Hwy 99	70.9	71.1	0.2	0.0
Morada Lane	Mosher Creek	Holman	70.4	70.9	0.4	0.3
Hammer Lane	Mariners Dr	I-5	70.6	72.0	1.3	-0.1
Hammer Lane	Westland	Richland	73.4	73.8	0.4	0.2
Hammer Lane	Pershing Ave	Valencia	72.8	73.0	0.1	0.0
Hammer Lane	Lower Sacramento Rd	El Dorado St	74.6	73.3	-1.3	-1.3
Hammer Lane	At WPRR		75.3	73.4	-1.9	-2.1
Hammer Lane	SPRR	Holman Rd	74.6	73.0	-1.6	-1.9
Hammer Lane	Holman Rd	Rt 99	74.4	73.5	-0.9	-1.5
Benjamin Holt Drive	Plymouth	Belmont	70.3	70.1	-0.2	-0.4
Benjamin Holt Drive	Vicksburg	Gettysburg	68.9	68.6	-0.3	-0.5
Swain Rd	Pylmouth Road	Morgan	67.1	67.1	0.0	0.0
Swain Rd	Pershing Avenue	Vicksburg Place	66.6	66.6	-0.1	0.0
March Lane	Brookside Rd	Morningside Dr	66.7	67.8	1.0	1.0
March Lane	Feather River Drive	I-5	74.4	74.7	0.4	0.3

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
March Lane	Quail Lakes	Grouse Run	74.7	74.6	-0.1	-0.1
March Lane	Pershing Ave	Pacific Ave	74.7	74.5	-0.2	-0.1
March Lane	Pacific Ave	Claremont	73.5	74.5	0.9	1.0
March Lane	At UPRR		74.2	76.0	1.8	1.7
March Lane	West Lane	Bianchi	73.0	77.0	**4.0**	3.8
Alpine Avenue	Pershing	Grange	67.8	67.7	-0.1	-0.2
Alpine Avenue	Dwight	Kensington	67.2	67.2	0.0	-0.1
Alpine Avenue	Center	Commerce	69.8	67.6	-2.3	-2.2
Alpine Avenue	Sutter	San Joaquin	71.3	69.0	-2.4	-2.5
Country Club Drive	Grange Avenue	Pershing Avenue	66.3	66.2	-0.1	-0.2
Monte Diablo Avenue	San Juan	Buena Vista	62.3	62.5	0.2	0.0
Harding Way	Pershing	Columbia	62.6	62.3	-0.2	-0.1
Harding Way	Baker	Stockton	67.3	67.3	0.0	0.0
Harding Way	Commerce	Madison	72.1	71.9	-0.2	-0.1
Harding Way	El Dorado	Center	72.4	72.6	0.2	0.2
Harding Way	California	San Joaquin	71.6	72.7	1.1	1.0
Harding Way	At UPRR		71.1	70.9	-0.3	-0.6
Harding Way	Wilson	Sierra Nevada	71.7	70.4	-1.2	-1.4
Fremont St	Watts	Laurel	68.4	67.3	-1.2	-1.0
Fremont St	Broadway	Golden Gate	67.2	68.5	1.3	0.4
Miner Ave	El Dorado Street	Center Street	66.8	69.2	2.4	2.5
Miner Ave	California	San Joaquin	67.7	68.8	1.1	1.2
Main St	California	Sutter	63.3	63.9	0.6	0.1
Main St	Court	Ash	68.2	69.9	1.7	0.4
Main St	Netherton	Golden Gate	70.0	72.0	2.0	0.8
Charter Way	W of Roberts	W of Roberts	68.1	69.2	1.1	1.0
Charter Way	Tillie Lewis Drive	Fresno Avenue	67.7	64.0	-3.8	-4.5
Charter Way	Navy	Fresno	69.2	65.5	-3.7	-4.4
Charter Way	I-5	Navy	71.8	69.4	-2.4	-2.6

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
Martin Luther King Jr. Blvd	I-5	Lincoln	73.6	75.1	1.5	1.2
Martin Luther King Jr. Blvd	California	Airport Way	73.0	74.5	1.5	1.0
Martin Luther King Jr. Blvd	Airport Way	Wilson Way	72.8	74.6	1.8	1.1
Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	68.6	69.2	0.6	0.4
Navy Dr	San Joaquin River	Washington	63.4	63.4	0.0	0.0
Navy Dr	BN&SF RR	Tillie Lewis	63.8	64.3	0.5	0.5
Navy Dr	Josephine	Fresno	62.8	63.8	1.0	0.5
Washington St	Agribusiness	Ventura	65.8	65.4	-0.4	-0.4
8th Street	Argonaut	Fresno	69.0	68.4	-0.6	-0.7
8th Street	Monroe	Lincoln	67.2	69.4	2.2	1.9
8th Street	Pock	D	65.9	67.7	1.8	1.4
Carolyn Weston Boulevard	Manthey	McDougald	72.7	73.0	0.3	0.3
French Camp Rd	McDougald	E.W.S.Wood	66.9	71.6	**4.7**	0.3
Sperry Road	Airport	McKinley	68.5	73.1	4.6	2.2
Arch-Airport Rd	Airport	Pock	69.0	72.9	3.9	1.4
Arch-Airport Rd	HW 99	Quantas	72.6	76.1	3.6	1.6
Arch Rd	Frontier	HW 99 Frontage	68.2	72.8	4.5	1.1
Arch Rd	Newcastle	Frontier	67.7	72.4	4.8	1.3
Trinity Parkway	Scott Creek	8 Mile	69.9	70.3	0.4	0.4
Trinity Parkway	Cosumnes	McAuliffe	67.4	67.2	-0.2	-0.5
Thornton Rd	Bear Creek	Estate	71.5	71.2	-0.3	-0.4
Thornton Rd	Waudman	Davis	70.8	70.3	-0.5	-0.5
Thornton Rd	Aberdeen	Cortez	72.5	72.1	-0.4	-0.4
Thornton Rd	Hammer	Rivera	71.8	71.9	0.1	0.1
Davis Rd	Chaparral	Laramie	67.4	68.0	0.6	0.6
Davis Rd	North of Bear Creek		66.4	66.3	-0.1	-0.1
Davis Rd	Ponce De Leon	Thornton	68.7	69.2	0.6	0.5
Lower Sacramento	Armor	Royal Oaks	70.7	72.1	1.4	0.5

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
Lower Sacramento	Bear Creek	Eight Mile	68.9	70.3	1.4	0.5
Lower Sacramento	Hammer	Rivera	70.7	70.6	-0.1	-0.4
West Lane	8 Mile	Morada	70.6	71.9	1.3	0.5
West Lane	Dalewood	Westmora	72.3	73.2	0.9	0.2
West Lane	Hammer	Hammertown	73.4	72.5	-0.9	-1.2
West Lane	Swain	March	74.0	74.9	1.0	0.9
West Lane	Bradford	Walnut	72.1	73.2	1.1	0.9
Wilson Way	McAllen	Alpine	70.4	71.3	1.0	-0.1
Wilson Way	Main	Market	72.4	73.0	0.6	0.3
Wilson Way	Market	Washington	72.4	73.1	0.7	0.4
Pershing Ave	Venetian	Burke-Bradley	72.2	72.4	0.2	0.2
Pershing Ave	At Calaveras River		73.8	73.4	-0.4	-0.5
Pershing Ave	Magnolia	Acacia	71.3	71.5	0.2	-0.3
Pacific Ave	Douglas	Porter	74.3	74.7	0.3	0.2
Pacific Ave	Yokuts	March	73.6	74.2	0.6	0.5
Pacific Ave	At Calaveras River		73.4	72.9	-0.5	-0.4
Pacific Ave	Cleveland	Wyandotte	71.3	71.3	0.1	0.0
Fresno Ave	Washington St	Navy Dr	69.0	62.0	-7.0	-7.1
Fresno Ave	Navy Dr	Charter Way	68.4	65.3	-3.1	-2.9
Fresno Ave	Charter Way	8th Street	67.3	67.1	-0.2	-0.4
El Dorado St	Lincoln	Loretta	70.8	70.8	0.0	0.0
El Dorado St	Mayfair	Robinhood	73.0	73.4	0.4	0.3
El Dorado St	At Calaveras River		72.8	71.6	-1.2	-1.0
El Dorado St	Pine	Cleveland	72.0	71.6	-0.4	-0.5
El Dorado St	Lindsay	Miner	71.3	71.7	0.4	0.1
El Dorado St	At AT & SF Overpass		70.2	70.8	0.6	0.3
El Dorado St	MLK Blvd	First	69.2	69.7	0.4	0.0
El Dorado St	Eighth	Ninth	69.7	71.0	1.3	0.2
California St	Alpine	Harding	68.1	68.3	0.2	0.1

TABLE 4.11-14 INCREASES TO AMBIENT NOISE LEVELS ALONG MAJOR ROADWAY SEGMENTS

			Ambient Noise Level at 50 Feet from Roadway Centerline, CNEL dBA		Noise Level Increase (dB)	
Roadway	Segment (between)		Existing Conditions	2040 Plus Project Conditions	Total Increase	Contribution from General Plan Only[a]
California St	Harding	Park	66.1	68.9	2.7	2.6
California St	Park	Weber	62.9	66.7	**3.8**	3.0
California St	Weber	Crosstown Freeway	61.3	66.0	**4.7**	3.9
Center St	Poplar	Flora	70.4	69.9	-0.5	-0.5
Center St	At AT & SF Overpass		70.3	71.1	0.8	0.6
Holman Rd	8 Mile	Morada	66.9	67.2	0.3	0.1
Holman Rd	Morada Lane	Hammer	69.6	69.7	0.1	0.0
Holman Rd	Auto Center	Auto Center	70.9	70.9	0.0	0.0
Holman Rd	Wind Flower	March	68.7	64.6	-4.1	-4.3
Cherokee Rd	Sierra	Sanguinetti	64.9	67.8	2.9	2.5
Waterloo Rd	E	Williams	69.7	69.4	-0.3	-0.5
Airport Way	Pinchot	Roosevelt	71.2	73.6	2.3	1.8
Airport Way	Fremont	Lindsay	71.3	73.7	2.3	1.8
Airport Way	Main	Market	70.5	73.5	**3.0**	2.4
Airport Way	Ninth	Tenth	71.6	75.2	**3.6**	2.6
Airport Way	Sperry	Industrial	70.4	73.2	2.8	1.4
Airport Way	Sperry	CE Dixon St	69.8	74.0	**4.2**	-0.1
Mariposa Rd	Stagecoach	SR 99	68.9	75.6	**6.8**	3.2
Mariposa Rd	Farmington	SR 99	67.7	70.5	2.9	1.9
Mariposa Rd	MLK Blvd	Farmington	68.3	71.0	2.7	1.3
B St	Charter Way	Fourth	68.1	68.4	0.3	0.0
B St	Ralph Ave	Arch Airport	63.3	67.3	**4.0**	3.8
Pock Lane	Mariposa	Sixth	62.5	64.3	1.8	1.2
Pock Lane	Togninali	Carpenter	63.9	65.7	1.8	1.2

Notes: Noise levels calculated by FHWA Traffic Noise Modeling Methods.
DNE = Does not exist
Bold numbers indicate roadway segments that would experience a significant increase in ambient noise level (i.e., greater than 5.0 dB, or greater than 3.0 dB if the resulting CNEL would exceed the maximum allowable noise exposure for the receiving land use).
a. Contribution from the proposed General Plan without approved or pending development at the periphery of the city, which could occur regardless of whether the proposed General Plan is adopted and implemented.
Source: Fehr and Peers, 2017.

traffic to designated routes to minimize risk to sensitive receptors, which helps to minimize impacts from increased truck traffic, as well as various policies and actions in the proposed Land Use and Transportation chapters that reduce vehicle trips through various land use and transportations strategies.

Altogether, the existing and proposed policies, actions, and regulations would serve to reduce noise from vehicles at the source and to otherwise shield sensitive uses from excessive noise. However, while these policies, actions, and regulations would help to mitigate the severity of the effects of traffic noise, they would not prevent all of the anticipated traffic noise increases along the impacted roadway segments identified in Table 4.11-14, and the impact would be *significant*.

Significance Without Mitigation: Significant.

Impact NOISE-3: Increased traffic from projected development allowed by the proposed General Plan would result in a significant increase in traffic noise levels compared to existing conditions along the following roadway segments:

1. SR-99 between Farmington Road and Mariposa Road
2. SR-4 west of I-5
3. Eight Mile Road between Mokelumne Drive and Trinity Parkway
4. Eight Mile Road between West Lane and SP Railroad
5. Eight Mile Road between SR-99 and west of Bear Creek
6. March Lane between West Land and Bianchi
7. French Camp Road between McDougald and E.W.S Wood
8. California Street between Park and Weber
9. California Street between Weber and Crosstown Freeway
10. Airport Way between Main and Market
11. Airport Way between Ninth and Tenth
12. Airport Way between Sperry and CE Dixon St
13. Mariposa Road between Stagecoach and SR-99
14. B Street between Ralph Avenue and Arch Airport

The following mitigation measures were considered, but as described below, were found to be infeasible.

Technological Advances for Noise-Generating Vehicles

Implementation of improved technologies for the prevention or muffling of noise from vehicles could theoretically prevent substantial increases to ambient noise levels; however, this approach would be infeasible as much of this implementation is beyond the jurisdiction of the City.

Beyond currently-accepted State and industry standards and best practices, developing and/or requiring novel technological improvements for noise-generating vehicles would not be affordable, scientifically plausible, or within the City's jurisdiction. Therefore, this potential mitigation measure is regarded as infeasible.

Universal Use of Noise-Attenuating Features

The universal use of noise attenuating features such as rubberized asphalt, soundwalls, berms, and improved building sound-insulation, could prevent transmission of excessive noise to the outdoor and indoor areas of sensitive land uses and/or could prevent projected increases in ambient noise levels. However, this approach would be infeasible in several situations. Specifically, rubberized asphalt reduces tire-pavement noise and when new, achieves a reduction of approximately 4 dB when compared to normal pavement surfaces.[20] However, these noise reduction properties degrade over time, and the noise reduction would not be sufficient to reduce noise impacts in many areas of Stockton.

In many cases, aesthetic concerns, costs, physical constraints, or other issues would prevent the universal implementation of adequate noise-attenuating features. In addition to their expense, soundwalls often block views and are often regarded as unsightly, targets for graffiti, or presenting safety concerns. Moreover, the construction of soundwalls can result in reduced pedestrian and vehicle connectivity, which would contravene other goals of the proposed General Plan and have negative social, economic, and even environmental consequences.

Although improved building construction and insulation beyond that which is required by California Title 24 and the General Plan could further reduce indoor exposure to excessive noise, substantial outdoor increases to ambient noise levels would remain. Therefore, this potential mitigation measure is regarded as infeasible.

Summary

In summary, for this traffic-generated noise impact, there is no feasible mitigation that would prevent substantial increases in ambient noise levels since all conceivable mitigations would be, in some circumstances, economically impractical, scientifically unachievable, outside the City's jurisdiction, and/or inconsistent with City planning goals and objectives. Thus, because no feasible mitigation measures are available to mitigate noise impacts to a less than significant level, traffic noise would remain a *significant and unavoidable* impact.

Significance: Significant and unavoidable.

NOISE-4 The proposed project would cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

This impact discussion considers the potential short-term construction-related noise impacts resulting from development allowed under the proposed General Plan and UMPS. Such development would occur over an approximately 20-year period, and would consist of many different projects with their own construction timeframes and equipment. Individual construction projects within the EIR Study Area would generally only affect areas near the construction site. The most noise-sensitive land uses within and adjacent to the EIR Planning Area would be the existing and future residential uses. In general, most

[20] Sacramento County, Department of Environmental Review and Assessment, 1999. Report of the Status of Rubberized Asphalt Traffic Noise Reduction in Sacramento County.

commercial or manufacturing entities would typically not be considered to be notably affected by noise from construction activities.

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. The City of Stockton limits the use of construction equipment to the hours between 7:00 a.m. to 10:00 p.m. Additionally, the City's Noise Control Ordinance sets limits on construction noise as it affects sensitive receptors, based on the duration of the construction activities and the receptor's land use type. These citywide construction noise standards are outlined above in Section 4.11.1.2, Regulatory Framework.

Given the lack of foreseeable details about future development within the EIR Study Area, a generalized, program-level set of construction equipment items were used for this assessment. Two types of temporary noise impacts could occur during construction activities associated with development under the proposed General Plan and UMPS. First, the transport of workers and movement of materials to and from the site could incrementally increase noise levels along local access roads. Such material movement would include deliveries of building materials for the project's development, as well as any haul-in/haul-out of dirt or other fill material for necessary site topography modifications. The second type of temporary noise impact is related to onsite activities (e.g., demolition, site preparation, grading, and/or physical construction) that typically employ heavy or noisy construction equipment. Construction is performed in distinct steps, each of which has its own mix of equipment and noise characteristics. Table 4.11-15 lists typical construction equipment noise levels, based on a distance of 50 feet between the equipment and noise receptor.

As shown in Table 4.11-15, construction equipment can generate high levels of noise, with typical equipment often generating noise levels ranging from 71 dBA to 101 dBA at 50 feet. Construction of individual projects allowed under the proposed General Plan and UMPS would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of that project. Construction noise impacts would depend on the distance from the receptor to the location of individual construction activities and on the presence of intervening structures.

The average noise levels at noise-sensitive receptors would tend to be lower than what is presented in Table 4.11-15 because construction equipment noise is intermittent and diminishes at a rate of at least 6 dB per doubling distance. Additionally, since construction equipment would move around the site and be operated with different loads and power requirements, the associated noise emissions to nearby receptors is typically quite variable over the course of any given work day. Construction-related noise would be localized and would occur intermittently for varying time durations. By restricting project construction to the hours of 7:00 a.m. to 10:00 p.m., per Municipal Code Section 16.60.030, construction noise would generally affect sensitive receptors during the least-sensitive time periods of the day.[21]

Although implementation of the proposed General Plan and UMPS would occur over approximately 20 years, it is anticipated that exposure of individual receptors to elevated construction noise levels would be for much shorter periods (e.g., a few months for any given, individual project).

[21] The phrase 'least vibration-sensitive times of the day' refers to the likelihood that the majority of residents would be away from their homes during the daytime when construction activities would generally take place.

TABLE 4.11-15 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Typical Noise Level (dBA) at 50 Feet	Construction Equipment	Typical Noise Level (dBA) at 50 Feet
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

As described in Section 4.11.1.2, per Section 16.60.050 of the Stockton Municipal Code, the City will require the preparation of an acoustical study in instances where a project has the potential to affect sensitive receptors. The specific locations, duration, and equipment required for individual projects are unknown. Therefore, it cannot be specifically determined how noise-sensitive uses in the project area and surroundings would be affected. In addition to the requirements included in the Municipal Code, future projects within the EIR Study Area are expected to undergo project-specific construction noise impact assessments in accordance with CEQA, including construction noise level projections and their effects at nearby sensitive receptors.

Although it is possible that certain construction activities may in some cases lead to substantial temporary or periodic increases to ambient noise levels, the current regulations included in the Municipal Code would serve to reduce these impacts. With appropriate noise reduction techniques and/or shielding measures, temporary or periodic increases to ambient noise levels near any given project could be notably reduced, as needed. Therefore, impacts from temporary or periodic increases to ambient noise levels would be reduced to a *less–than-significant* level.

Significance Without Mitigation: Less than significant.

NOISE-5 The proposed project would not expose people residing or working in the vicinity of the project area to excessive aircraft noise levels from a public airport or public use airport.

The only public airport in the EIR Study Area is the Stockton Metropolitan Airport, which is located in its southern portion.[22] Based on the noise contour maps for the Stockton Metropolitan Airport,[23] the projected 60 dBA CNEL contour extends no more than 1.52 miles to the northwest of the airport facility and the 65 dBA CNEL contour extends approximately 0.79 miles from the airport (both distances are with respect to the end of the runway).

The entirety of the EIR Study Area within the 60 dBA CNEL contour for the Stockton Metropolitan Airport is industrial land use; the proposed General Plan does not include new residential land uses within the 65 or 60 dBA CNEL contours (see the discussion regarding the State's Airport Noise Standards in Section 4.11.1.2). According to the proposed General Plan, the maximum allowable ambient noise exposure (shown in Table 4.11-10) for industrial land uses is 80 dBA $L_{dn;}$[24] The entire 80 dBA CNEL contour for the Stockton Metropolitan Airport is contained within the airport property and does not affect any nearby industrial land uses.

Further, the proposed General Plan includes Action TR-1.3.A, which requires that development around the Stockton Metropolitan Airport be consistent with the noise standards contained in the approved Airport Land Use Plan.

Existing and future land uses within the EIR Study Area will not be exposed to increased noise from the Stockton Metropolitan Airport. Therefore, the impact would be *less than significant*

Significance Without Mitigation: Less than significant.

NOISE-6 The proposed project would not expose people residing or working in the project area to excessive noise levels from a private airstrip.

There are no private airstrips within the EIR Study Area, but there are two private heliports: the A. G. Spanos Companies HQ Heliport is located in the northwest corner of the study area, and the San Joaquin General Hospital Heliport is located in its southern part.[25] While operations at these private heliports may, at times, be audible within the city, the relatively limited and sporadic use of these heliports for corporate travel, medical treatment, and/or other limited uses would result in negligible amounts of community noise within the EIR Study Area. As such, implementation of the proposed project would not expose

[22] Airnav, LLC. 2017. Airport Information, http://www.airnav.com/airports, accessed October 31, 2017.

[23] Stockton Municipal Airport noise contour maps are included in Appendix D, as found in the existing (2007) Stockton General Plan for buildout year 2035.

[24] Note: Ldn and CNEL are comparable noise metrics used to describe 24-hour average noise levels. Values typically only differ by 1-2 dB.

[25] Airnav, LLC. 2017. Airport Information, http://www.airnav.com/airports, accessed October 31, 2017.

people to excessive noise levels from helicopters approaching or departing these facilities, and *no impact* would occur.

Significance Without Mitigation: Less than significant.

4.12 POPULATION AND HOUSING

This section describes the regulatory framework and existing conditions in the EIR Study Area related to population and housing. The following evaluation is based on both a quantitative and spatial analysis, and assesses population growth and the displacement of housing and people that would necessitate the construction of housing elsewhere. Cumulative impacts related to population and housing would be contiguous with the Sphere of Influence (SOI) boundary.

4.12.1 ENVIRONMENTAL SETTING

4.12.1.1 REGULATORY FRAMEWORK

California Housing Element Law

California Housing Element Law includes provisions related to the requirements for housing elements of local government General Plans.[1] Among these requirements, some of the necessary parts include an assessment of housing needs and an inventory of resources and constraints relevant to the meeting of these needs. Additionally, in order to assure that counties and cities recognize their responsibilities in contributing to the attainment of the State housing goals, this section of the Government Code calls for local jurisdictions to plan for and allow the construction of a share of the region's projected housing needs.

Regional Regulations and Programs

Regional Housing Needs Allocation

The California Department of Housing and Community Development (HCD) identifies the supply of housing necessary to meet the existing and projected growth in population and households in the state, and passes a portion along to each of the State's 38 Councils of Governments (COGs). As the local COG, the San Joaquin Council of Governments (SJCOG) receives a Regional Housing Needs Allocation (RHNA) from HCD that specifies the number of units, by affordability level, that need to be accommodated within the region during the Housing Element planning period, or cycle. SJCOG is then responsible for calculating specific RHNAs for Stockton and other jurisdictions, with input from the jurisdictions.

The RHNA for the City of Stockton for the 2014 to 2023 planning period includes a total of 11,824 units,[2] and the already adopted Stockton 2015-2023 Housing Element accommodates this need.[3]

[1] Government Code Section 65580-65589.8.
[2] San Joaquin Council of Governments, 2014. *SJCOG 2014-2023 Regional Housing Needs Plan*, page 26, August 28.
[3] City of Stockton, 2016. *City of Stockton 2015-2023 Housing Element*, page 4PD-17, April 12.

San Joaquin Council of Governments Forecast 2016

SJCOG is the official comprehensive planning agency for the San Joaquin region, which is composed of San Joaquin County and the cities within it, including Stockton, Lodi, Manteca, Tracy, Ripon, Escalon, and Lathrop. SJCOG produces growth forecasts, identified in documents entitled *San Joaquin County Forecast Summary*, on five-year cycles so that other regional agencies can use the forecast to make project funding and regulatory decisions.

SJCOG projections are the basis for the Regional Transportation Plan (RTP), Sustainable Communities Strategy (SCS), and the regional Ozone Attainment Plan. In this way, SJCOG projections have practical consequences that shape growth and environmental quality. The General Plans, zoning regulations, and growth management programs of local jurisdictions influence the SJCOG projections.

Stockton 2015-2023 Housing Element

The most recent Stockton Housing Element was adopted on April 12, 2016, and HCD has certified that it meets State requirements. The 2015-2023 Housing Element includes a housing needs assessment that identifies current and projected housing needs, as well as policies to accommodate housing development that will be affordable to a range of household types and income ranges. Goals, policies, and implementation measures that are pertinent to the analysis in this section are listed below:

- Goal HE-6: Conserve and enhance existing housing in Stockton's neighborhoods.
- Policy HE-6.1: The City shall seek to preserve existing affordable rental housing, such as subsidized apartments for lower-income households, mobile homes in mobile home parks, and low-cost private rental housing.
- Policy HE-6.2: The City shall strive to preserve residential neighborhoods by ensuring that permitted nonresidential uses and activities are compatible with the neighborhoods they serve to prevent land use conflicts, adverse social and environmental impacts, and undesirable traffic concentrations.
- Implementation Measure 18: The City shall continue to work with owners of “at-risk” projects to discuss the timing of a possible sale and potential sales price. The City shall ensure owners have met the tenant noticing requirements as set forth in California Government Code Sections 65863.10 and 65863.11. The City shall contact non-profit housing providers that work in the Stockton area to see if any are interested in acquiring and rehabilitating ”at-risk” projects. Assuming there is interest, the City shall provide technical assistance as needed and funding as available to these housing providers.

4.12.1.2 EXISTING CONDITIONS

This section describes existing population and housing conditions in the City of Stockton. California Department of Finance (DOF) data for 2017 presents the most up-to-date demographic profile available for Stockton; however, regional planning initiatives, including RHNA, are based on SJCOG’s 2016 projections. Therefore, both sets of population and housing data are described below. US Census data from 2010 is also presented where it provides additional detail.

Population

The US Census reports San Joaquin County's population in 2010 as 685,306, a 22-percent increase from 2000.[4] Between 2000 and 2010, the US Census reports that the population of Stockton increased from 243,771 to 291,707 residents.[5] As of 2017, DOF data indicates that the population of Stockton is approximately 320,600.[6]

As shown in Table 4.12-1, SJCOG projects that Stockton's population will grow to a total of 463,450 by 2040. This level of growth is consistent with the overall growth rate projected for San Joaquin County.

TABLE 4.12-1 SJCOG FORECASTS 2016 POPULATION, HOUSEHOLDS, AND EMPLOYMENT FORECASTS FOR STOCKTON

					Change 2015 - 2040	
		2015	2030	2040	Difference	Percent
Population						
	County	728,640	883,480	1,094,250	365,610	50%
	Stockton	309,920	374,940	463,450	153,530	50%
Housing Units						
	County	229,650	280,720	343,170	113,520	49%
	Stockton	95,430	117,240	143,700	48,270	51%
Employment						
	County	241,130	294,750	337,450	96,320	40%
	Stockton	100,200	123,100	141,230	41,030	41%

Source: University of the Pacific Eberhardt School of Business Center for Business & Policy Research, 2016. *San Joaquin County Forecast Summary*, July 7.

Housing

Types of Housing Stock

In 2017, DOF estimated approximately 100,300 housing units in Stockton, which was about 42 percent of all units in San Joaquin County (241,000 units).[7] Stockton's average household size in 2017, at 3.23, was

[4] U.S. Census Bureau American FactFinder, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed July 27, 2017.

[5] U.S. Census Bureau American FactFinder, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed July 27, 2017.

[6] State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*. Sacramento, California, May.

[7] State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*. Sacramento, California, May.

slightly higher than that of San Joaquin County.[8] According to DOF estimates, single-family detached units account for approximately 72 percent of Stockton's housing stock.[9]

Occupancy and Tenure

According to the 2010 Census, the homeowner vacancy rate in Stockton was approximately 3.2 percent and the rental vacancy rate was approximately 9.4 percent, compared to 2.8 and 8.1 percent, respectively, for San Joaquin County as a whole. Of the 90,605 occupied housing units in Stockton in 2010, approximately 51.6 percent were owner occupied and 48.4 percent were renter occupied, compared to 59.2 percent and 40.8 percent, respectively, for San Joaquin County as a whole.[10]

Housing Costs and Affordability

Average annual median home sale prices in San Joaquin County declined from 2006 to 2009 but then increased from 2010 until 2015. The average sale price in San Joaquin County was $276,946 in 2015, a 60-percent increase from the average sale price of $172,952 in 2010.[11]

According to the 2015 American Community Survey, the average home value for owner-occupied housing units was $171,500 in Stockton in 2015, compared to the average home value of $223,000 for San Joaquin County as a whole. The average gross rent was $946 in 2015, compared to $1,024 for San Joaquin County. For 51.1 percent of occupied rental units, the gross rent represented 35 percent or more of the household income, compared to 46 percent of units in San Joaquin County.[12]

Future Housing Needs

SJCOG's 2016 Forecasts for Stockton are shown in Table 4.12-2. According to the SJCOG 2016 Forecast, Stockton's population is expected to grow from 309,920 in 2015 to 463,450 in 2040, an approximately 50-percent increase, which is the same rate of projected increase in San Joaquin County.[13] During the same period, the number of households in Stockton is projected to grow by approximately 51 percent, from 95,430 to 143,700 households.[14] By comparison, San Joaquin County households are projected to grow by approximately 49 percent from 2015 to 2040.[15]

[8] State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*. Sacramento, California, May.

[9] State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*. Sacramento, California, May.

[10] U.S. Census Bureau American FactFinder, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed July 27, 2017.

[11] SJCOG, http://www.sjcog.org/252/Housing-Market, accessed July 27, 2017.

[12] U.S. Census Bureau American FactFinder, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#, accessed July 27, 2017.

[13] University of the Pacific Eberhardt School of Business Center for Business & Policy Research, 2016. *San Joaquin County Forecast Summary*, page 7, July 7.

[14] University of the Pacific Eberhardt School of Business Center for Business & Policy Research, 2016. *San Joaquin County Forecast Summary*, page 9, July 7.

[15] University of the Pacific Eberhardt School of Business Center for Business & Policy Research, 2016. *San Joaquin County Forecast Summary*, page 9, July 7.

TABLE 4.12-2 2040 HORIZON-YEAR PROJECTIONS

	Existing Development (2017)	Growth in 2040 from Proposed General Plan	Growth from Approved and Pending Projects	Total 2040 Horizon-Year Growth Projection
Dwelling Units	100,300[a]	12,100	28,800	141,200
Residents	320,600[a]	39,100[c]	93,100[c]	452,800
Commercial Space (square feet)	30.3 million[b]	8.7 million	5.1 million	44.2 million[d]
Industrial Space (square feet)	52.2 million[b]	2 million	33.6 million	87.8 million

a. State of California, Department of Finance, 2017. E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.
b. Based on the City of Stockton's land use database, which tracks ground floor area. The ground floor area was multiplied by the number of floors on each parcel to estimate total square footage of the use.
c. Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.*
d. Existing plus growth does not add up due to rounding.
Source: PlaceWorks, 2017.

As described above, the RHNA for the City of Stockton for the current 2015 to 2035 planning period includes a total of 11,824 units.[16]

4.12.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant population and housing impact if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.12.3 IMPACT DISCUSSION

POP-1 Implementation of the proposed project would induce substantial population growth in an area, either directly or indirectly.

This Draft EIR considers the "reasonably foreseeable" effects of adopting the proposed General Plan and UMPS, which would result from development allowed between the adoption of the document and its horizon year of 2040.

[16] San Joaquin Council of Governments, 2014. *SJCOG 2014-2023 Regional Housing Needs Plan*, page 26, August 28.

Based on the methodology described in Chapter 3, Project Description, and as shown in Table 4.12-2, the 2040 horizon-year projection for the proposed General Plan includes the following:

- 40,900 new dwelling units
- 132,200 new residents[17]
- 63,300 new jobs[18]
- 13.8 million square feet of new commercial space and office space
- 35.6 million square feet of new industrial space

By comparison, SJCOG projects the following between 2-15 and 2040:[19]

- 48,270 new dwelling units
- 153,530 new residents
- 41,030 new jobs

The amount of residential development and associated population growth anticipated by 2040 under the proposed General Plan falls within SJCOG's projections for new housing units and population, even accounting for development that has occurred in Stockton between 2015 (the SJCOG baseline) and 2017 (the baseline for this EIR). Furthermore, the proposed UMPS identify infrastructure improvements needed to support the projected amount of development in 2040 under the proposed General Plan, so they would not indirectly induce additional population growth beyond what is anticipated under the General Plan. Therefore, the residential population growth is within the regional projections, and is not substantial.

On the other hand, the proposed General Plan anticipates more job growth by 2040 than the SJCOG projections; the 2040 development projected under the proposed General Plan would exceed the SJCOG estimation by 22,300 jobs. The majority of these new jobs (43,750) would result from approved and pending development projects.

Goal LU-6 of proposed General Plan directs the City to provide for orderly, well-planned, and balanced development. To support this goal, Policy LU-6.1 and its seven actions ensure that the City carefully review plans for future development and proactively mitigate potential impacts by monitoring the rate of growth to ensure that it does not overburden the City's infrastructure and services and does not exceed the amounts analyzed in this EIR, thereby ensuring that there is adequate infrastructure in place or planned and funded before approving development as well as adequate staffing levels to support the City's service level goals for police and fire protection.

As described above, the proposed General Plan calls for orderly, planned growth, and projected residential growth is not substantial given regional projections. However, the projected employment

[17] Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017*.

[18] Based on an assumption of 500 square feet per employee for commercial/office uses and 1,000 sf per employee for industrial uses.

[19] University of the Pacific Eberhardt School of Business Center for Business & Policy Research, 2016. San Joaquin County Forecast Summary, July 7.

growth under the proposed General Plan would significantly exceed SJCOG's employment projections for 2040. Therefore, the impact would be *significant*.

Impact POP-1: The proposed General Plan and UMPS would induce substantial employment growth within the EIR Study Area.

In order to reduce the anticipated employment growth by 2040 to an "insubstantial" level that would not exceed SJCOG's projections, the City would have to limit employment development opportunities substantially. As noted above, 43,750 new jobs are projected within approved and pending development projects alone, a number that itself exceeds SJCOG's employment growth forecast. Since the City cannot rescind existing development entitlements, it would be infeasible to reduce the employment development capacity in the city to SJCOG's projections. The proposed General Plan land use map represents a land use plan that the City believes is appropriate to accommodate growth projected for 2040 and beyond. It is not feasible to mitigate employment growth to a level that is less than "substantial;" therefore, this impact is considered *significant and unavoidable*.

Significance: Significant and unavoidable.

POP-2 Implementation of the proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.

Overall, the proposed General Plan would allow an increase in the total number of housing units in Stockton from 100,300 to 141,200 units, a 41-percent increase by 2040, the horizon year of the proposed General Plan. No substantial redevelopment projects are envisioned, and the majority of development allowed under the proposed General Plan would occur as residential and non-residential uses are developed on vacant or underutilized parcels. If redevelopment under the proposed General Plan occurs, there is the potential that it would displace existing residential units. However, all redevelopment of parcels would be voluntary in nature, and no housing units would be displaced without permission of the property owners.

In addition, as described in Section 4.12.1.1, the Stockton 2015-2035 Housing Element includes goals, policies, and implementation measures that that would help to prevent impacts related to the displacement of housing.

Because the proposed General Plan would allow a net increase of housing and would not envision substantial redevelopment projects, and because the existing Housing Element includes goals, policies, and implementation measures that protect existing neighborhoods and housing, the impact related to housing displacement would be *less than significant*.

Significance Without Mitigation: Less than significant.

POP-3 Implementation of the proposed project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As discussed under Threshold POP-2, implementation of the proposed General Plan and UMPS is not expected to result in the displacement of a substantial number of housing units. By 2040, the proposed General Plan would allow an increase in the total number of housing units in Stockton from 100,300 to 141,200 units, a 41-percent increase. Furthermore, implementation of the proposed General Plan is projected to result in a net increase of 13.8 million square feet of commercial and office use and 35.6 million square feet of industrial use, which may serve as places of employment within Stockton.

As a result, the proposed General Plan is not expected to displace substantial numbers of people who live, work, or do both within Stockton. Therefore, the proposed General Plan and UMPS would have a *less-than-significant* impact regarding the displacement of people.

Significance Without Mitigation: Less than significant.

4.13 PUBLIC SERVICES AND RECREATION

This section describes the regulatory framework and existing conditions in the EIR Study Area related to public services and recreation. The following evaluation is based on a quantitative analysis and examines the potential impacts to public services and recreation associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). Cumulative impacts related to public services and recreation would be contiguous with the service area boundaries of the service providers evaluated in this section.

4.13.1 FIRE PROTECTION SERVICES

4.13.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California Government Code

Section 65302 of the California Government Code requires General Plans to include a Safety Element, which must include an assessment of wildland and urban fire hazards. The Public Facilities and Services Element of Stockton's existing 2035 General Plan satisfies this requirement, as does the Safety Chapter in the proposed General Plan.

California Building Code

The State of California provides a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The California Building Code is based on the International Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local City building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California Public Resources Code

Section 4290, Hazardous Fire Areas, of the Public Resources Code (PRC) includes fire safety regulations that apply to development in Stockton. This section establishes minimum standards for roads, signage, private water supply resources, and wildland fuel modification. Section 4290 works in conjunction with current and new building construction development standards in State Responsibility Areas (SRAs), defined by the State Board of Forestry and Fire Protection as an area in which the State has primary financial responsibility for preventing and suppressing fires. Section 4291, Mountainous, Forest-, Brush- and Grass-Covered Lands, of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-

covered lands, or any land that is covered with flammable material, including land with such characteristics located in portions of the EIR Study Area.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the California Code of Regulations, which is described in Section B.2.a.ii of the Code. The CFC is revised and published every three years by the California Building Standards Commission.

California Health and Safety Code

The California Health and Safety Code establishes regulations pertaining to the abatement of fire-related hazards. This Code also requires that local jurisdictions enforce the State Building Standards Code, which provides standards for fire-resistant building and roofing materials and other fire-related construction methods, as discussed above.

California Fire Plan

The California Fire Plan is the State's "road map" for reducing the risk of wildfire. The overall goal of the plan is to reduce total costs and losses from wildland fire in California through focused pre-fire management prescriptions and increased initial attack success. The current plan was finalized in early 2010. The Plan provides guidance to local jurisdictions in meeting State goals.[1]

Stockton Municipal Code

Article XVI, Fire Department

Article XVI of the Charter of the City of Stockton contains provisions that lay out the organizational structure, powers, and duties of the Stockton Fire Department (SFD). Under Section 1601, the SFD is responsible for the enforcement of ordinances and laws related to the prevention, control, and extinguishment of fires and fire hazards. Section 1602 establishes the authority of the Fire Chief over the control, management, and direction of the SFD. In addition, per Section 1602, the Fire Chief is held accountable to the City Manager.

Chapter 3.52, Funding for Police and Fire Protection Services

Chapter 3.52 of the Stockton Municipal Code was adopted to authorize the City of Stockton to impose a transaction and use tax per Bond Measure W, which was approved by Stockton voters on November 2, 2004. Per Section 3.52.010(e), revenue from the tax increase will provide funding to maintain the City's current level of police and fire protection services and undertake necessary capital projects to support

[1] California Department of Forestry and Fire protection, http://cdfdata.fire.ca.gov/fire_er/fpp_planning_cafireplan, accessed January 22, 2016.

these services. Section 3.52.040 imposes a 1/4-cent (0.25 percent) retail tax upon all retail sales within the city.

Chapter 15.12, Fire Code

Chapter 15.12 of the Stockton Municipal Code outlines the standards and regulations of the Stockton Fire Code. Section 15.12.010 incorporates the California Fire Code, 2013 Edition, by reference and adopts these documents as the Fire Code of the City of Stockton.

Section 16.72.260, Public Facilities Fee

Section 16.72.260 of the Stockton Municipal Code establishes a public facilities fee on the issuance of permits for development within the city. Subsection B.1 defines public facilities as City offices, fire stations, libraries, police stations, community recreation centers, street improvements, and water and sewage facilities. Per Subsection C, revenue from building permits will be used to pay for design and construction of designated public facilities, program development, and overall maintenance.

Existing Conditions[2]

This section describes the fire protection service providers located within the EIR Study Area. The jurisdiction of each provider is shown in Figure 4-13.1.

Stockton Fire Department[3]

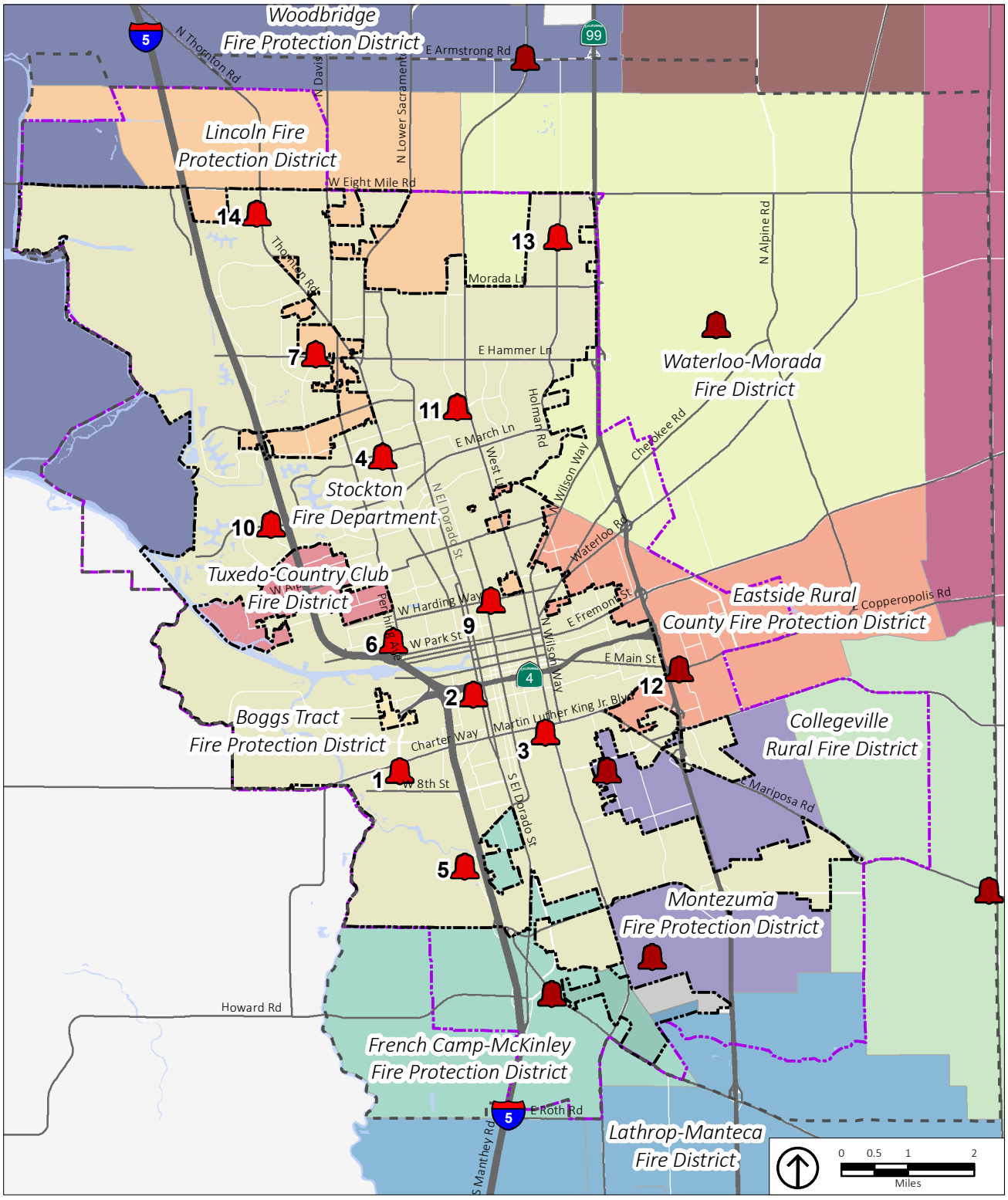
The SFD provides service to a 90-square-mile area serving a population of approximately 336,000 people within the City of Stockton and the Boggs Tract, Lincoln, Eastside, and Tuxedo-Country Club Fire Protection Districts.

SFD is organized into the following operational divisions:

- Administration: Responsible for personnel management, employee health and safety, record keeping, and various management duties.
- Operations: The largest division within the SFD; duties include fire suppression, emergency medical services (EMS), and responding to vehicle accidents, urban search and rescue, and water rescue incidents.
- Fire Prevention: Provides code enforcement, fire safety education, fire investigation, and special services such as plan checking and fire code operation permits.

[2] Unless otherwise noted, the information about rural fire protection districts in Sections B.4 through B.9 is sourced from: San Joaquin Local Agency Formation Commission (LAFCO), 2011. *Final Municipal Service Review, Rural Fire Protection Districts San Joaquin County.*

[3] Unless otherwise noted, the information in this section is from two sources: (1) City of Stockton, Fire Department, http://www.stocktongov.com/government/departments/fire/default.html, accessed April 20, 2016; and (2) Newman, Eric, Fire Chief, Stockton Fire Department. Personal communication with David J. Stagnaro, Planning Manager, Community Development Department, City of Stockton, April 12, 2016.



Source: City of Stockton; San Joaquin County; PlaceWorks, 2017

Fire Protection Service Providers and Districts

- Mokelumne Rural County Fire Protection District
- Linden-Peters Rural County Fire Protection District
- Tuxedo-County Club Fire Protection District
- Eastside Rural County Fire Protection District
- Lincoln Fire Protection District
- Boggs Tract Fire Protection District
- Stockton Fire Department
- Waterloo-Morada Fire District
- Collegeville Rural Fire District
- French Camp-McKinley Fire Protection District
- Lathrop-Manteca Fire Protection District
- Montezuma Fire Protection District
- Woodbridge Fire Protection District
- SFD Fire Station (Station ID #)
- Non-SFD Fire Station
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.13-1

Fire Protection Service Providers

- **Training:** Responsible for personnel training, recruitment, EMS training, and member program development.
- **Communications/Dispatch:** A Regional Fire and Emergency Medical Dispatch Center, responsible for handling all emergency dispatch services for the City of Stockton and the City of Manteca.

Other special programs within the SFD include the Hazardous Materials (Haz Mat) Team, Swift Water and Dive Rescue Team, and Urban Search and Rescue Team. The SFD mission is centered on providing emergency and non-emergency service through public education, prevention, and aggressive suppression and rescue activities. Accordingly, the SFD has implemented the following programs to reinforce their public service model:

- Community Emergency Response Team (CERT)
- Stockton Fire Explorers – Youth Volunteer Program
- Stockton Fire Auxiliaries – Adult Volunteer Program

The SFD has mutual aid agreements with the Lincoln, Tuxedo-Country Club, Boggs Tract, and Eastside Fire Districts.[4] In addition, the SFD has formal reciprocal agreements as follows:

- **Woodbridge Fire Protection District:** Automatic aid for reported vehicle accidents and vegetation fires on Interstate 5 north of Eight Mile Road to Highway 12.
- **City of Lodi Fire Department:** Automatic aid for engine and truck company services and/or station coverage for confirmed working fires within the City of Lodi.
- **Cosumnes Fire Department in Elk Grove:** Regional automatic aid for technical emergency response services, including, but not limited to, technical rescue, hazardous materials management, and dive/water rescue.

Staffing

The SFD is comprised of 180 sworn personnel, 30 civilian personnel, and 40 volunteer Auxiliary Firefighters. Given the 336,000 people that are served by the SFD, its current service ratio is 0.54 personnel per 1,000 residents.[5] Daily staffing consists of 51 fire suppression personnel, which reflects a 32-percent decrease since 2011. The SFD indicates that current staffing levels are not adequate to meet the community need. The SFD recommends reopening Truck Company #7 and reinstating the quick response squad program for Fire Stations 2, 3, 9, and 11. This would increase staffing by 12, bringing the daily staffing total to 63.

[4] City of Stockton. Adopted Annual Budget Fiscal Year 2015-2016, page E-3.

[5] Stockton Fire Department current service ratio: 180 sworn personnel / (336,000 residents / 1,000) = 0.54 sworn personnel per 1,000 residents.

PUBLIC SERVICE AND RECREATION

Facilities and Equipment

The SFD has 12 fire stations throughout the city, which house 12 three-person fire engine companies and three four-person truck companies. The Training and Communication Divisions are located at Station 2, which is the central fire station. The Haz Mat Team is housed at Station 10, the Swift Water and Dive Rescue Team is located at Station 6, and the Urban Search and Rescue Team is staffed by Station 2. The SFD stations and locations are listed in Table 4.13-1 and shown on Figure 4.13-1.

TABLE 4.13-1 SFD STATION LOCATIONS

Station	Address
Station 2	110 West Sonora Street
Station 3	1116 East First Street
Station 4	5525 Pacific Avenue
Station 5	3499 Manthey Road
Station 6	1501 Picardy Drive
Station 7	1767 West Hammer Lane
Station 9	550 East Harding Way
Station 10	2903 West March Lane
Station 11	1211 East Swain Road
Station 12	4010 East Main Street
Station 13	3606 Hendrix Drive
Station 14	3019 McNabb Street

Source: City of Stockton, Fire Department, http://www.stocktongov.com/government/departments/fire/neighb.html, accessed April 20, 2016.

According to the City's *Adopted Annual Budget 2015/2016*, SFD Stations 2, 4, and 6 are in need of repairs and improvements. Fire Station 2 needs a new burn room, Station 4 requires a new kitchen, and Station 6 needs an apparatus bay.[6] However, the repairs and improvements listed in the City's *Adopted Annual Budget 2015/2016* do not represent a comprehensive list of the SFD's needs. The SFD has indicated that Fire Station 1, located at 1818 Fresno Avenue, needs to be reopened. SFD's Station 1 served the Port of Stockton's heavy industrial and shipping district, west and southwest Stockton residential areas, and the Interstate 5 and Highway 4 corridor. In addition, the SFP projects the need for three additional fire stations to serve the growing population, particularly in the east and southeast areas of Stockton, where the City's station distribution models have identified that service delivery is lacking.

Call Volumes and Response Times

The SFD responded to an average of 37,522 calls annually between 2013 and 2015. In 2015, the most recent year for which data is available, the SFD responded to 38,275 incidents, including public assist calls to major emergency management incidents. Many of the calls required multiple fire apparatus.

The existing 2035 General Plan identifies a response time goal of responding within 4 minutes, 90 percent of the time, and the proposed General Plan identifies the following response time goals:

- 240 seconds or less travel time for the arrival of the first arriving engine company at a fire suppression incident.
- For other than high-rise, 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.

[6] City of Stockton. Adopted Annual Budget Fiscal Year 2015-2016, page E-4.

- For high-rise, 610 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.

In 2015, 90 percent of the SFD's Code 3 responses took 5 minutes, 43 seconds or less, so the SFD is currently not meeting its response time goal. The 4-minute response goal is met 62 percent of the time.

Collegeville Rural Fire District

The Collegeville Rural Fire District (CRFD), located at 13225 East Mariposa Road, was formed in 1962 and services 28 square miles within San Joaquin County, including a southeast portion of the EIR Study Area. In 2010, the CRFD service population included 711 residents. CRFD serves portions of the rural community of Collegeville, the Intermodal Rail Facility, the Burlington Northern and Santa Fe Railroad, an agricultural company, and the Northern California Youth Correction Center (NCYCC).

The CRFD provides fire protection, suppression, and prevention; hazardous materials-related services; and basic EMS. As of 2011, the CRFD staffed 11 on-call firefighters, of which one was a certified firefighter and six were certified emergency medical technicians. The CRFD provides in-house training for EMS, structural and wildland fire fighting, strategy and tactics, and equipment operation. The CRFD has a mutual aid agreement with the Farmington FPD.

The CRFD receives the least amount of calls among all the FPD's in San Joaquin County. In 2008, the CRFD responded to 101 incidents; of these, 60 were for EMS, 40 were for fire and hazardous materials services, and one was for a non-emergency call.

French Camp - McKinley Fire Protection District

The French Camp – McKinley Fire Protection District (FMFPD), located at 310 French Camp Road, was formed in 1946 and services 16 square miles within San Joaquin County, including a southwest portion of the EIR Study Area. The station is equipped with four apparatus that can carry 800 to 1,200 gallons of water. In 2010, the FMFPD service population included 7,272 residents.

The FMFPD provides fire protection, water rescue, suppression and prevention, hazardous materials-related service, and basic EMS. As of 2011, the FMFPD staffed 16 employees, of which seven were line staff and nine were reserve personnel. The FMFPD provides in-house training for EMS continuing education through an agreement with Montezuma Fire Protection District.

The FMFPD receives about 1,000 calls per year. In 2008, the FMFPD responded to 1,071 calls; of these, 791 were for EMS, 260 were for fire and hazardous materials services, and 20 were for non-emergency calls.

Lathrop-Manteca Fire Protection District[7]

The Lathrop-Manteca Fire Protection District (LMFPD) was formed in 1936 and services 85 square miles within San Joaquin County, including a southeast portion of the EIR Study Area. In 2010, the LMFPD service population included 25,197 residents. The LMFPD service area includes the City of Lathrop and the unincorporated area surrounding the City of Manteca.

The LMFPD provides fire protection, water rescue, suppression and prevention, hazardous materials-related service, and basic EMS. As of 2015, the LMFPD staffed 62 personnel, consisting of a fire chief, deputy chief, a fire inspector, a battalion chief, three acting battalion chiefs, nine captains, 18 firefighter/engineers, 25 reserve firefighters, and three administrative staff. The LMFPD has indicated that existing staffing levels are adequate to meet current service demands. The District provides in-house training for hazardous materials, dive rescue, urban search and rescue, and medical training. The LMFPD operates four fire stations; LMFPD Station 31 in Lathrop is nearest to the EIR Study Area. In addition, the LMFPD has automatic aid agreements with the Manteca Fire Department and the FMFPD. The LMFPD is also a partner agency to the San Joaquin County Regional Fire Dispatch Authority which includes the Cities of Stockton, Tracy, Manteca, and Lodi.

The District indicates that facility expansions are planned for the following areas: the River Islands Master Planned Development, the Central Lathrop Specific Plan, and the Lathrop Specific Plan. In 2015, the LMFPD responded to 2,624 calls; of these, 1,352 were for EMS, 238 were for fire, 42 were for hazardous conditions, 136 were service calls, 721 were good intent calls, 133 were false alarms, and two were no fire calls.

Montezuma Fire Protection District[8]

The Montezuma Fire Protection District (MFPD) was formed in 1958 and services approximately 10 square miles within San Joaquin County, all of which is located within the southeast portion of the EIR Study Area. In 2010, the MFPD service population included 5,796 residents.

The MFPD provides fire protection, suppression, and prevention; hazardous materials-related services; and basic EMS. As of 2016, the MFPD staffed one fire chief, two fire captains, three lieutenants, three engineers, two fire fighters, and 15 reserve fire fighters. The MFPD has indicated that existing staffing levels area adequate to me current demand. The MFPD has a mutual aid agreement and a Joint Fire Training Program with FMFPD. The MFPD stations are listed below:

- Station 181: 2405 South "B" Street
- Station 182: Stockton Metropolitan Airport

The District is planning to expand Station 181. In 2015, the MFPD responded to 1,390 response calls; of these, 834 were for EMS and 556 were for fire services.

[7] This section is supplemented with information from: Gene Neely, Fire Chief, Lathrop-Manteca Fire District. Personal communication with Claudia Garcia, Project Planner, PlaceWorks, April 13, 2016.

[8] This section is supplemented with information from: Martel, Edward O., Fire Chief, Montezuma-Morada Fire District. Personal communication with Claudia Garcia, Project Planner, PlaceWorks, April 11, 2016.

Waterloo-Morada Fire District

The Waterloo-Morada Fire District (WMFD) was formed in 1947 and services 36 square miles within San Joaquin County, including a northeast portion of the EIR Study Area. In 2010, the WMFD service population included 24,818 residents.

The WMFD provides fire protection, suppression, and prevention; hazardous materials-related service; and basic EMS. As of 2011, the WMFD staffed 19 full-time firefighters and eight on-call firefighters. The MFPD Stations are listed below:

- Station 15-1: 6925 East Foppiano Lane
- Station 15-2: 9373 Highway 99

In 2008, Station 15-1 responded to 763 calls and Station 15-2 responded to 949 calls.

Woodbridge Fire Protection District[9]

The Woodbridge Fire Protection District (WFPD) was formed in 1942 and services 192 square miles within San Joaquin County, including northwest portions of the EIR Study Area. In 2010, the WFPD service population included 101,364 residents. The WFPD provides services to the communities of Woodbridge, Acampo, Terminous, Collierville, and Flag City, as well as Lodi's White Sewer Treatment Plant. The WFPD has automatic aid agreements with SFD, WMFD, River Delta, Thornton, Mokelumne, and Liberty.

The WFPD provides fire protection, suppression, and prevention; hazardous materials-related service; and basic EMS. As of 2016, the WFPD staffed 32 employees, including full-time firefighters and administrators. The WFPD operates four fire stations; WFPD Station 72, located on 2691 East Armstrong Road in Lodi, is nearest to the EIR Study Area.

The District has no current plans to expand services outside of the existing boundary. In 2015, the WFPD responded to 1,636 calls for service, the majority of which were for EMS/rescue.

4.13.1.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact related to fire protection and emergency services if, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services, it would result in new or physically altered fire protection facilities, or the need for new or physically altered facilities, the construction of which could cause significant environmental impacts.

[9] This section is supplemented with information from: Butler, Steve. Fire Chief, Woodbridge Fire Protection District. Personal communication with Claudia Garcia, Project Planner, PlaceWorks. May 17, 2016.

4.13.1.3 IMPACT DISCUSSION

PS-1 **Implementation of the proposed project would not result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

It is projected that by 2040, the horizon year of the proposed General Plan, 40,900 new dwelling units would be developed, and the population would increase by 132,200 new residents. As shown in Figure 4.13-1, the EIR Study Area is currently served by seven fire protection districts: Stockton Fire Department (which serves residents in the City of Stockton and the Boggs Tract, Lincoln, Eastside, and Tuxedo-Country Club Fire Protection Districts), Collegeville Rural Fire District, French Camp Fire Protection District, Lathrop-Manteca Fire Protection District, Montezuma Fire Protection District, Waterloo-Morada Fire District, Woodbridge Fire Protection District, Linden-Peters Rural Fire Protection District, and Mokelumne Rural Fire District. However, any land currently outside of the city limit would not be developed under the proposed General Plan unless annexed by the City. Upon annexation, the SFD would be the service provider for new development.

As a result of projected population growth under the proposed General Plan, additional staff and equipment would be required to maintain or improve current response times. It is likely that new or expanded facilities would be required to support the additional staff and serve the new development.

The proposed General Plan contains the following actions that support fire protection and emergency medical response services to serve existing and new development:

- Action LU-6.1.G: Maintain adequate staffing levels to support achieving the City's service level goals for police and fire protection.
- Action SAF-1.2.A: Update the City's Design Guidelines and Development Code to require new and retrofitted development to support effective police and fire protection response and services by using the following principles of crime prevention through environmental design (CPTED):
  - Delineate private and public spaces
  - Enhance visibility
  - Control property access
  - Ensure adequate property maintenance
- Action SAF-2.2.A: Require new development to provide adequate access for emergency vehicles and evacuation routes, including by designing roadway systems to provide multiple escape routes in the event of a levee failure.
- Action SAF-2.2.C: Require new critical facilities, including hospitals, emergency operations centers, communications facilities, fire stations, and police stations, to be located, designed, and constructed to avoid or mitigate potential risks and ensure functional operation during flood events (i.e., avoid locating in the 100-year and 200-year floodplains), seismic and geological events, fires, and explosions.

- Action LU-6.3.A: Require development to mitigate any impacts to existing sewer, water, stormwater, street, fire station, park, or library infrastructure that would reduce service levels.

As indicated above, as new development occurs, it is likely that new or expanded fire protection facilities would be needed to support the associated population growth. The estimated timing or location of such required facilities or the exact nature of these facilities are not known, so future project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be specifically associated with physical development projects, and would therefore require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action 6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant*.

Significance Without Mitigation: Less than significant.

4.13.2 POLICE SERVICES

4.13.2.1 ENVIRONMENTAL SETTING

Regulatory Framework

Local Regulations

Stockton Municipal Code

Article XVII, Police Department

Article XVII of the Charter of the City of Stockton contains provisions that lay out the organizational structure, powers, and duties of the Stockton Police Department (SPD). Under Section 1701, the SPD is responsible for the enforcement of penal provisions of the municipal charter, the penal ordinances of the City, and the penal laws of the State of California. Section 1702 establishes the authority of the Police Chief over the control, management, and direction of the SPD. In addition, per Section 1702, the Chief of Police is held accountable to the City Manager.

Chapter 3.52, Funding for Police and Fire Protection Services

Chapter 3.52 of the Stockton Municipal Code was adopted to authorize the City of Stockton to impose a transaction and use tax per Bond Measure W, which was approved by Stockton voters in 2004. Per Section 3.52.010(e), revenue from the tax increase will provide funding to maintain the City's current level of police and fire protection services and undertake necessary capital projects to support these services. Section 3.52.040 imposes a ¼-cent (0.25 percent) retail tax upon all retail sales within the city.

Section 16.72.260, Public Facilities Fee

Section 16.72.260 of the Stockton Municipal Code establishes a public facilities fee on the issuance of permits for development within the city. Subsection B.1 defines public facilities as City offices, fire stations, libraries, police stations, community recreation centers, street improvements, and water and sewage facilities. Per Subsection C, revenue from building permits will be used to pay for design and construction of designated public facilities, program development, and overall maintenance.

Stockton Marshall Plan

The Stockton Marshall Plan is a violence-reduction plan adopted by the City Council in an effort to decrease crime and increase public safety. The Marshall Plan proposes a targeted system-based approach by establishing the following goals: stopping violence, preventing violence, and building violence-prevention system capacity. Each goal has a list of action items that provide a framework for violence reduction. Funding for the Marshall Plan is appropriated through Measure A, a general transaction and use tax measure approved by Stockton voters in 2013.

Existing Conditions

The EIR Area is served by the SPD and the San Joaquin County Sheriff. The jurisdiction of each provider is shown in Figure 4.13-2.

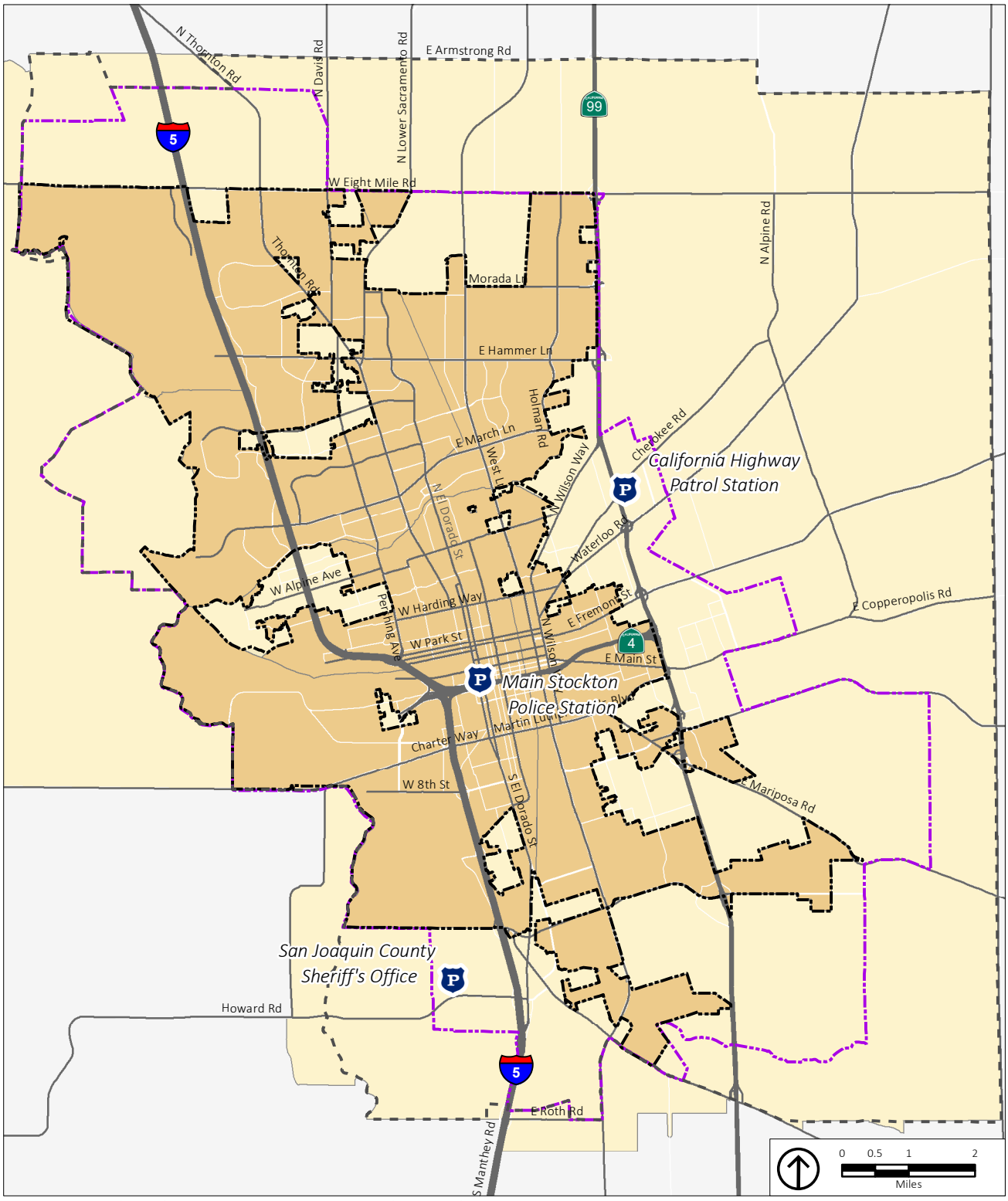
Stockton Police Department[10]

The SPD provides service to a 65-square-mile area serving the city limit. The SPD is organized into two bureaus: the Operations Bureau, which includes the Field Operations, Special Operations, Investigations Divisions, and the Logistics Bureau, which includes the Technical Services and Administrative Services Divisions. These divisions provide patrol, investigation, law enforcement, apprehension, and community programs within the city limit. Other special programs within the SPD include Special Weapons and Tactics Team (SWAT), Crisis Negotiations Team, Community Response Teams (CRT), Explosive Ordnance Disposal (EOD) Team, Mobile Field Force, and Canine Unit.[11] The animal service section is included as part of the Administrative Services Division, which provides contracted shelter services to San Joaquin County.

SPD's current Strategic Plan is based upon two pillars of Smarter Policing and Principled Policing. Smart Policing is the use of intelligence-led and evidence-based strategies and Principled Policing refers to the components used to increase the community's trust of their police department and officers. The two pillars are the foundation for SPD's current model to combat crime, which includes four tenets: prediction, prevention, pursuit, and partnerships. This model combines policing and enforcement strategies with

[10] Unless otherwise noted, the information in this section is from three sources: (1) City of Stockton, Stockton Police Department, http://stocktongov.com/government/departments/police/about.html, accessed March 18, 2016; and (2) Eric Jones, Police Chief, Stockton Police Department. Personal communication with David J. Stagnaro, Planning Manager, Community Development Department, City of Stockton, March 3, 2016; and (3) Erin Mettler, Director of Fiscal Affairs & Planning, Stockton Police Department. Personal communication with David J. Stagnaro, Planning Manager, Community Development Department, City of Stockton, July 25, 2017.

[11] City of Stockton. Adopted Annual Budget Fiscal Year 2015-2016, page 95.



Source: City of Stockton; San Joaquin County; PlaceWorks, 2017

Police Stations

Police Protection Services
- Stockton Police Department
- San Joaquin County Sheriff Department

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.13-2
Police Protection Service Providers

community involvement and engagement. Accordingly, the SPD has implemented the following strategic projects and programs to reinforce their policing model:

- Violence Reduction Initiative
- Community Response Teams
- Community Advisory Board
- Operation Ceasefire
- Neighborhood and Business Watch Programs
- Expanded Communications through social media
- Increased Law Enforcement Collaborations
- Expanded Outreach and Volunteer Programs

The SPD has memoranda of understanding with the Stockton Unified School District, San Joaquin Delta College, University of the Pacific, and San Joaquin County Sheriff regarding protocol for reporting criminal activity within the city limit.

Staffing

The staffing levels of the SPD have fluctuated over the last five years, and the City has experienced higher than typical vacancies in all of its police positions. As of June 2017, SPD is comprised of 443 police officers, 45 police tele-communicators, 163 civilian personnel, and 127 volunteers. The 443 police officers serve 320,600 people within the city limit. The national average service ratio for a city the size of Stockton is 2.2 officers per 1,000 residents. According to the Marshall Plan and a 2006 study from Harvard's Dr. Anthony Braga, Stockton should maintain an average service ratio of 2.0 officers per 1,000. The City's existing and proposed General Plans identify a staffing ratio goal of 1.5 officers per 1,000 residents.

As of June 2017, SPD's current service ratio is 1.4 officers per 1,000 residents,[12] which is below both the suggested service ratio outlined in the Marshall Plan and the General Plan staffing ratio goal. The SPD is currently authorized for 485 police officers through funding from Measure A, a general transaction and use tax measure. According to SPD, there are significant challenges in maintaining staffing levels due to issues related to retention of tenured officers.

If the SPD increases the number of sworn officers to 485, the service ratio standard would be 1.5 officers per 1,000 residents,[13] which would meet the General Plan goal but still be below the suggested Marshall Plan service ratio. Although Measure A provides funding for additional officers, it only covers a very limited number of civilian positions to support those officers. At the end of the 2016-2017 fiscal year, the SPD had fewer civilian positions compared to 2008, before the recession and staffing cuts. Therefore, even with the Measure A funding, there will be the need for additional officers to meet the Marshall Plan service standards and additional civilian staff to support them.

[12] Stockton Police Department current service ratio: 443 sworn officers / (320,600 residents / 1,000) = 1.4 sworn officers per 1,000 residents.

[13] Stockton Police Department proposed service ratio: 485 sworn officers / (320,600 residents / 1,000) = 1.5 sworn officers per 1,000 residents.

Facilities and Equipment

The SPD has three police stations in the city:

- **22 East Market Street:** Police Operations Facility
- **22 East Weber Avenue:** Police Administration and Support Building
- **3040 Navy Drive:** Police firing range training facility

According to SPD staff, the Department has outgrown its existing facilities and, given the number of new officers proposed under Measure A, significant renovations to increase capacity will likely be required. The current space allotted for the SPD is inadequate; in particular, the main SPD facility is in need of renovations and repair and the firing range is in need of expansion or relocation.

There is a current project underway to create a Master Space Plan for the Police Operations facility as well as the Police Administration and Support facility. Limited funding will require a phased approach to execution of this plan over a number of years. The SPD has received capital improvement funding to complete Phase I, which is a partial renovation of the Police Operations Facility basement to accommodate additional locker room space. Design is currently underway with expected completion in late 2018. The SPD has requested additional capital improvement funding to complete the remaining phases, however at this time funding has not been identified. The renovation contemplated at the firing range and training facility at 3040 Navy Drive is currently conceptual and does not have building plans or funds identified.

The SPD has a variety of transportation equipment to assist officers and personnel in conducting routine patrols, responding to emergencies, and facilitating community programs. The type and quantity of transportation equipment are listed in Table 4.13-2.

The SPD is actively working to upgrade and replace outdated vehicles, radios, computer equipment, and weapons, and is working to outfit officers with less lethal weapon options such as tasers. In addition, the volume of seized property and evidence required to be stored long-term has reached its capacity and SPD is actively seeking out additional space.

TABLE 4.13-2 STOCKTON POLICE DEPARTMENT TRANSPORTATION EQUIPMENT

Type of Transportation	Number of Units
Marked Vehicles	162
Unmarked Vehicles	130
Motorcycles	25
Evidence Vans	8
Bicycles	12
Animal Control	8
Miscellaneous	14
Total	**359**

Source: City of Stockton, Stockton Police Department, http://stocktongov.com/government/departments/police/about.html, accessed March 18, 2016.

Response Times

The existing and proposed General Plans identify a goal to maintain an average response time of 5 minutes or less for priority one calls. The average response time for priority one calls in Stockton is 5 to 6 minutes. Response times may exceed the 5 to 6 minute average depending on the nature of the call, the time of day, location, and the number of on-duty officers. Currently, the North Stockton area has the longest response times.

San Joaquin County Sheriff Department

The San Joaquin County Sheriff Department (SJC Sheriff) provides law enforcement services to the unincorporated areas of San Joaquin County, including portions of the EIR Study Area not within the city limit. The SJC Sheriff is organized into six divisions: Custody, Coroner's Office, Investigation Patrol, Professional Standards, Unified Court Services, and Lathrop Police Services. These divisions provide patrol, investigation, death classification, law enforcement, apprehension, and community programs within the county. Other special programs include Explosive Ordinance Detail, Boating Safety Unit, SWAT, Narcotics Unit, Agricultural Crimes Unit, Child Abuse and Sexual Assault Unit (CASA), and K-9 Unit. The Animal Service Division, which includes animal control, is part of the Patrol Division; the sheltering of animals is contracted with the SPD.

The SJC Sheriff's mission statement is focused on delivering quality service through the creation of community partnerships. The various community partnerships act as the foundation for enhancing the quality of life for county residents, investigating incidents, seeking solutions, and fostering a sense of security. Accordingly, the SJC Sheriff has implemented the following programs to reinforce their mission statement:[14]

- Explorer Program
- Sheriff's Team of Active Retired Seniors
- Inmate Programs
- Work Programs
- Community Revitalization and Abatement
- Community Car Program

The SJC Sheriff has a memorandum of understanding with SPD for reporting to criminal activity within the Stockton city limit.

Facilities

The SJC Sheriff facility is located at 7000 Michael Canlis Boulevard in French Camp. This location houses all of the SJC Sheriff divisions including the Coroner's Office.

4.13.2.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed General Plan and UMPS would have a significant impact related to police protection services if, in order to maintain acceptable service ratios, response times, or other performance objectives for police services, it would result in new or physically altered facilities, or the need for new or physically altered facilities, the construction or operation of which could cause significant environmental impacts.

[14] San Joaquin County Sheriff, http://www.sjgov.org/sheriff/default.htm, accessed April 20, 2016.

4.13.2.3 IMPACT DISCUSSION

PS-2 **Implementation of the proposed project would not result in the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

By 2040, the horizon year of the proposed General Plan, 40,900 new dwelling units are projected to be developed, and the population would increase by 132,200 new residents. As described above, the EIR Study Area includes the City of Stockton, which is currently served by the SPD, as well as land outside the city limit, which is currently served by the SJC Sheriff. However, land outside of the city limit would not be developed under the proposed General Plan unless annexed by the city. Upon annexation, the SPD would be the service provider for new development.

In order to meet the City's staffing ratio goal of 1.5 officers per 1,000 residents, the SPD would need about 680 officers, significantly more than its current authorization for 485 offers, along with support staff and associated equipment and vehicles. The Department would also need an additional facility to house this additional staff and equipment.[15]

The proposed General Plan contains the following actions that support police services to serve existing and new development:

- Action LU-6.1.G: Maintain adequate staffing levels to support achieving the City's service level goals for police and fire protection.
- Action SAF-1.2.A: Update the City's Design Guidelines and Development Code to require new and retrofitted development to support effective police and fire protection response and services by using the following principles of crime prevention through environmental design (CPTED):
  - Delineate private and public spaces
  - Enhance visibility
  - Control property access
  - Ensure adequate property maintenance
- Action SAF-2.2.A: Require new development to provide adequate access for emergency vehicles and evacuation routes, including by designing roadway systems to provide multiple escape routes in the event of a levee failure.
- Action SAF-2.2.C: Require new critical facilities, including hospitals, emergency operations centers, communications facilities, fire stations, and police stations, to be located, designed, and constructed to avoid or mitigate potential risks and ensure functional operation during flood events (i.e., avoid

[15] Erin Mettler, Director of Fiscal Affairs & Planning, Stockton Police Department. Personal communication with David J. Stagnaro, Planning Manager, Community Development Department, City of Stockton, July 25, 2017.

locating in the 100-year and 200-year floodplains), seismic and geological events, fires, and explosions.

As indicated above, new development allowed under the proposed General Plan would require additional staffing and equipment, along with a new facility to house them. However, the estimated timing or location of such facilities, if required, or the exact nature of these facilities are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be project-specific, and would require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action 6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant*.

Significance Without Mitigation: Less than significant.

4.13.3 PARKS AND RECREATION

4.13.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

The Quimby Act

The Quimby Act of 1975 authorizes cities and counties to pass ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act sets a standard park space to population ratio of up to 3 acres of park space per 1,000 persons. Cities with a ratio of higher than 3 acres per 1,000 persons can set a standard of up to 5 acres per 1,000 persons for new development.[16] The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for a recreation facility or park land, and the type of development project upon which the fee is imposed.

Local Regulations

Stockton Municipal Code

Chapter 12.56 of the Stockton Municipal Code guides park use in the city. Among the guidelines listed are laws that prohibit unlawful acts in public parks, open hours for parks, method of posting designated parks, and laws to prevent graffiti and destruction of public property. Exemptions to these rules are also listed in Chapter 12.56.

[16] California Government Code Section 66477, California Department of Parks and Recreation. *Quimby Act 101: An Abbreviated Overview,* http://www.parks.ca.gov/pages/795/files/quimby101.pdf, accessed May 2, 2017.

Chapter 16.76.060 of the Municipal Code provides for the dedication of land and/or the payment of fees to the City for park and recreational purposes and/or the construction of park and recreational facilities. The acreage required for dedication for a residential project is based on the number of dwelling units included in the project, and the expected average number of residents per unit, as determined by the Community Development Director.

Library and Recreation Special Tax

Measure M, the Library and Recreation Special Tax, is a 1/4-cent special transactions and use sales tax that was passed in the November 2016 General Election ballot. Measure M required approval by two-thirds of those who voted. It passed with over 73 percent of the vote. The Measure M tax will be implemented for 16 years and used to fund library and recreation services.

Existing Conditions

City Parks and Recreational Facilities

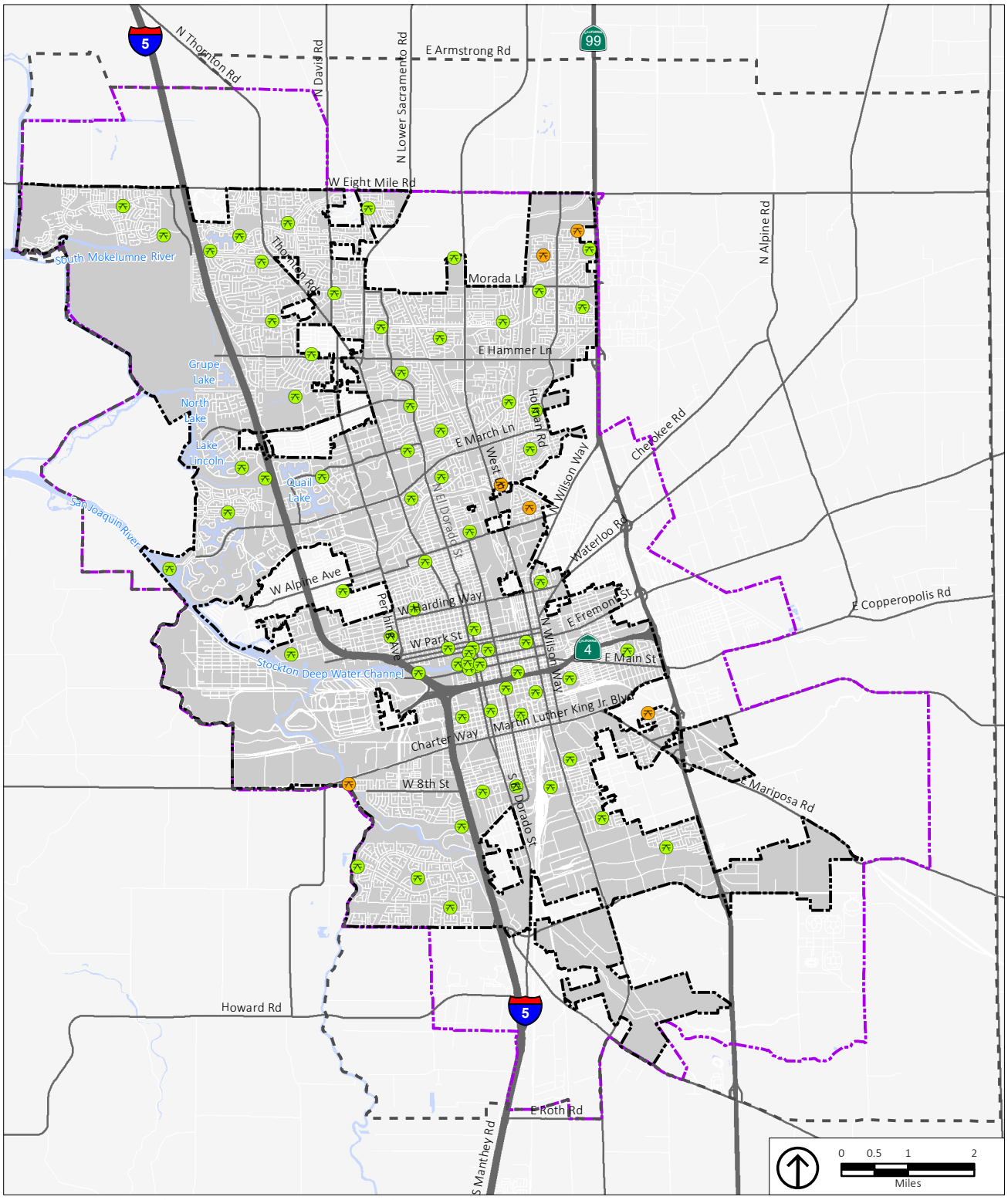
The City of Stockton owns and operates three categories of parks: neighborhood, community, and specialty parks. In addition, the City owns and operates accessible open space, special purpose facilities, and trails. The following sections define each park and recreation facility category. Existing parks are shown in Figure 4.13-3 and listed in Table 4.13-3.

Neighborhood Parks

Neighborhood parks serve as both the recreational and social focus of the neighborhood. Neighborhood parks should be accessible by the surrounding neighborhood through the use of bikeways, trails sidewalks, or local residential streets. Neighborhood parks may include, but are not limited to the following features:

- Open grassy area for informal sports activities (e.g., soccer)
- Basketball court
- Tennis court
- Playground and tot lot
- Picnic tables and small group picnic shelter
- Walking/jogging paths
- Ornamental security lighting

PUBLIC SERVICES AND RECREATION



Source: City of Stockton; San Joaquin County; PlaceWorks, 2017.

- Existing Parks
- Planned Parks
- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.13-3
Existing and Planned Parks

TABLE 4.13-3 CITY PARKS BY TYPE

Name	Location	Acres
Neighborhood Parks		
Atherton Park	1978 Quail Lakes Drive	10
Baxter Park	10410 Muir Woods Avenue	9
Brooking Park	4500 Nugget Avenue	3
Caldwell Park	3021 Pacific Avenue	3
Columbus Park	401 W. Worth Street	2
Constitution Park	1101 E. Lindsay Street	2
Corren Park	3525 A G Spanos Boulevard	1
Cortez Park	817 Erie Drive	5
Cruz Park	110 Segovia Lane	7
Dentoni Park	1430 Royal Oaks Drive	10
Eden Park	924 N. El Dorado Street	2
Fong Park (Phase I)	2525 Blossom Circle	5
Fremont Park	302 E. Fremont Street	2
Friedberger Park	1708 E. Walnut Street	2
Garrigan Park	3690 Iron Canyon Circle	6
Gibbons Park	1825 W. Hammer Lane	4
Gleason Park	535 E. Church Street	2
Harrell Park	2244 S. Lincoln Street	9
Holiday Park	614 Elaine Drive	2
Holmes Park	1718 Ralph Avenue	2
Iloilo Park	5920 Scott Creek Drive	6
Independence Park	802 E. Market Street	2
Lafayette Park	825 S. Hunter Street	2
Laughlin Park	2733 Estate Drive	5
Liberty Park	725 E. Jefferson Street	2
Loch Lomond	8477 N. El Dorado Street	5
Long Park	4535 Woodchase Lane	11
Nelson Park	3535 Brookview Drive	12
Parma Sister City Park	9127 Chianti Circle	4
Peterson Park	2429 S. Union Street	3
Pitts Park	510 Villa Point Drive	10

PUBLIC SERVICE AND RECREATION

TABLE 4.13-3 CITY PARKS BY TYPE

Name	Location	Acres
Sherwood Park	100 W. Robinhood Drive	6
Shropshire Park	4120 Pock Lane	6
Smith Park	2606 Wm Moss Boulevard	5
Sousa Park	2829 Yellowstone Avenue	3
Swenson Park	6803 Alexandria Place	9
Union Park	635 S. Pilgrim Street	2
Unity Park	5525 Rayanna Drive	5
Valverde Park	2418 Arden Lane	7
Weber Park	405 W. Oak Street	2
Weberstown-E Park	4750 Kentfield Road	5
Williams Brotherhood Park	2040 S. Airport Way	14
Total Neighborhood Park Acres		**215**
Community Parks		
Anderson Park	6201 N. El Dorado Street	11
Buckley Cove Park	4311 Buckley Cove Way	53
DeCarli Park	123 N. El Dorado Street	2
Equinoa Park (Phase I)	9499 Glacier Point Drive	6
Faklis Park	5250 Cosumnes Drive	16
Grupe Park	58518 Cumberland Place	21
King Plaza	555 N. El Dorado Street	2
Legion Park	1859 N. Baker Street	21
Louis Park	3201 Monte Diablo Avenue	60
McKinley Park	424 E. Ninth Street	22
McLeod Park	46 W. Fremont Street	4
Morelli Park	1025 W. Weber Avenue	4
North Seawall Park	306 W. Fremont Street	2
Oak Park	501 E. Alpine Avenue	61
Panella Park	5758 Lorraine Avenue	15
Sandman Park	8801 Don Avenue	16
South Seawall Park	Center & Weber-NW Corner	1
Stribley Park	502 Della Street	19
Van Buskirk Park	734 Houston Avenue	20

TABLE 4.13-3 CITY PARKS BY TYPE

Name	Location	Acres
Victory Park	1001 N. Pershing Avenue	22
Weber Point Event Center	235 N. Center Street	10
Weston, P.E.	3603 EWS Woods Boulevard	23
Total Community Parks Acres		**411**
Specialty Parks		
Barkleyville Dog Park	5505 Feather River Drive	3
Misasi Park	9820 Ronald McNair Way	11
Total Specialty Parks Acres		**14**

Note: Totals may not add up due to rounding.
Source: City of Stockton Community Services Department, 2015. *Parks and Facilities*.

Community Parks

Community parks are intended to meet the recreational needs of large sections of the community. These parks allow for larger group activities and recreational activities not suited for neighborhood parks. Community parks may include, but are not limited to the following features:

- Sports fields (baseball/softball and soccer) for practice and league activities
- Tennis courts
- Basketball court
- Handball court
- Playground and tot lot
- Group picnic area
- Walking/jogging paths
- Restroom facilities
- Sports lighting
- Ornamental security lighting

Specialty Parks

Special purpose facilities include buildings that house recreational programs and/or facilities targeted to meet the needs of a certain sector of the population or neighborhood. Most of these facilities are located within the boundaries of a park; however, others may be located on properties that may or may not be owned by the City, but operated by the Community Services Department and/or under contract to the Department for its programs.

Amenities

The City of Stockton has inventoried its park amenities. There are 12 amenity types in in City parks. There are no established service ratios for park amenities. Below is an inventory of the park amenities:

- 457 picnic tables
- 118 barbeques/campfires
- 71 tot lots/playground equipment
- 55 basketball courts
- 46 tennis courts
- 37 horseshoes
- 32 handball courts
- 31 group picnic areas
- 28 restrooms
- 22 softball fields
- 8 baseball fields
- 5 boat launches

Community Centers

The City of Stockton has a total of five community centers which all provide a variety of programs and services for residents of all ages. They include:

- Arnold Rue Community Center, 5758 Lorraine Avenue
- Stribley Community Center, 1760 E. Sonora Street,
- Van Buskirk Community Center, 734 Houston Avenue
- Seifert Community Center, 128 W. Benjamin Holt Drive (shared with Stockton Unified School District)
- Oak Park Senior Community Center, 730 E. Fulton Street

The existing and proposed General Plans establish a service standard of one City-owned community center per 50,000 residents and one combined City-/School District-owned community center per 30,000 residents. The four City-owned and one combined City-/School District-owned centers described above meet the standard for a total population of 230,000. The current Stockton population is approximately 320,600, so the City is currently deficient in meeting its community center standard by about two centers.

San Joaquin County Parks and Recreational Facilities

San Joaquin County owns and operates nine parks in the EIR Study Area. As outlined in the San Joaquin County General Plan, the parks fall into one of three categories of parks: neighborhood, community, and regional parks. San Joaquin County also designates a fourth park category – "mini park" – but there are no such facilities in the EIR Study Area. The following sections define each park and recreation facility category. Existing parks within the EIR Study Area are listed in Table 4.13-4.

Neighborhood Parks

A neighborhood park in San Joaquin County would typically be less than 15 acres and used for intense recreation activities such as field games, court games, crafts, playgrounds, and picnics. The service area for neighborhood parks is 1/2 mile and should be accessible to any car, bicycle, or pedestrian. There are seven San Joaquin County neighborhood parks in the EIR Study Area.

TABLE 4.13-4 COUNTY PARKS BY TYPE

Name	Location	Acres
Neighborhood Parks		
Boggs Tract Park & Center	533 S. Los Angeles Avenue	3
Eastside Park	5254 Ardelle Avenue	10
Garden Acres Park & Center	607 Bird Avenue	8
Gianone Park & Center	2885 E. Harding Way	15
Madison Park	2001 Michigan Avenue	4
Taft & Park Center	3202 Mourfield Avenue	11
West Jackson Park	Sanguinetti & Orwood Streets	1
Total Neighborhood Park Acres		**52**
Community Parks		
Kennedy Park & Center	2800 S. "D" Street	18
Total Community Parks Acres		**18**
Regional Park		
Oak Grove Regional Park	4520 W 8 Mile Road	180
Total Regional Park Acres		**180**

Source: San Joaquin County Parks, http://www.sjparks.com/, accessed July 28, 2017.

Community Park

A San Joaquin County community park is used for intense recreation facilities such as athletic fields, athletic complexes, swimming pools, picnic areas, and play areas. A community park is typically greater than 15 acres and its service area radius is 1 mile. Accessibility through arterial and collector roads for cars, bicycles, and pedestrians is required for a community park. There is one San Joaquin County community park within the EIR Study Area.

Regional Park

A regional park is defined as a nature-oriented outdoor recreation park that is between 15 and 200 acres. The service area for a regional park is a 1-hour drive time and serves several communities.

The only San Joaquin County regional park in the EIR Study Area is a large, 180-acre park situated in an oak forest setting. Oak Grove Regional Park is designed to serve the city's entire population and the greater Stockton region. It includes a wide variety of recreation opportunities and amenities, centered around a 10-acre lake and open fields. The park has a nature center that offers education programs and exhibits that detail the flora and fauna native to the San Joaquin Valley. There are two nature trails within the park, a 1.5-mile walk among old grove trees and another quarter-mile handicapped-accessible trail. Recreational amenities such as an 18-hole disc golf course, children's playgrounds, a boat house, and a

youth camping ground are available for residents to use. Additionally, outdoor picnic shelters, barbeque grills, and horseshoe pits are available for passive use of the park.

Parkland Provision Standard

The park service standards for the provision of parkland in the existing and proposed General Plans are based on the following ratios of net acres of parkland per 1,000 Stockton residents:

- 2 acres of neighborhood parkland per 1,000 residents
- 3 acres of community parkland per 1,000 residents
- 3 acres of regional parkland per 1,000 residents

With the existing population of 320,600 residents, the current ratios are provided below, inclusive of both City and County parks. The City is currently deficient in meeting its park service standards in all categories.

- 0.8 acres of neighborhood parkland per 1,000 residents
- 1.3 acres of community parkland per 1,000 residents
- 0.6 acres of regional parkland per 1,000 residents
- 2.8 acres of total parkland per 1,000 residents

In practice, an applicant for a large residential project might propose to meet these standards through setting aside land for one or more new parks, developing that park land, paying impact fees, or a combination of these. Small residential projects that do not cross the threshold of requiring a new park would typically only pay impact fees.

4.13.3.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed General Plan and UMPS would have a significant impact related to parks if it would:

- Result in new or physically altered park facilities, or the need for new or physically altered facilities, the construction or operation of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks and recreational facilities.
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.13.3.3 IMPACT DISCUSSION

PS-3	**Implementation of the proposed project would not result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

Under the park standards outlined in the proposed General Plan, the City aims to provide 2 acres of neighborhood parkland, 3 acres of community parkland, and 3 acres of regional parkland per 1,000 residents. As indicated in Section 4.13.3.1 above, the City is currently deficient in meeting these park service standards.

In 2040, the horizon year of the proposed General Plan, the proposed General Plan is projected to generate an additional 132,200 residents, resulting in a total population of 452,800 residents. These new residents would exacerbate the existing parkland deficiencies. Specifically, the parkland ratios in 2040 based on existing park acreages would be:

- 0.6 acres neighborhood parkland per 1,000 residents
- 1 acre community parkland per 1,000 residents
- 0.4 acres of regional parkland per 1,000 residents
- 2 acres of total parkland per 1,000 residents

To meet the City's parkland standards, an additional 639 acres of neighborhood parkland, 929 acres of community parkland, and 1,178 acres of regional parkland would be needed by 2040.

As shown in Figure 4.13-3, the proposed General Plan identifies additional parkland that is planned for future development. These additional parkland facilities would increase the City's parkland by approximately 14 acres of parkland, although exact acreages and park category cannot be known until the parks have been planned in greater detail. With these additional park acreages, the City would still fall short of the parkland standards.

As explained above, new residents from development allowed by the proposed General Plan would increase the demand for parks and recreational facilities, and park service standards would require the construction of new or expanded park facilities. Although the proposed General Plan identifies potential locations of future park facilities, the ultimate locations will be determined in the future as part of the proposed development.

The proposed General Plan includes the following policies and actions that support the provision of parkland:

- Policy LU-3.3: Maintain or expand the currently available amount of public park and open space area in each neighborhood.
    - Action LU-3.3.B: Pursue joint use recreational facilities where possible, including on school grounds and utility easements.
    - Action LU-3.3.D: Periodically review the City's Development Impact Fee requirements to determine whether they should be adjusted to reflect the City's priorities for parks, community centers, and libraries that serve the surrounding neighborhoods.
- Policy CH-1.1: Maintain walking and wheeling facilities and parks that are safe and accessible in all areas of Stockton.
    - Action CH-1.1.B: Prepare a parks master plan that assesses the quality and distribution of existing parks, facilities, and community centers throughout the city relative to the population served (i.e., within a set walking distance) and their needs (i.e., considering age, income, and abilities), and,

based on this information, identifies and prioritizes new, renovation, and expansion park and community center projects and describes funding means and timelines.

In addition, the proposed General Plan includes actions that would minimize the environmental impacts of new or expanded park facilities:

- Action LU-1.3-C: Require the incorporation of scenic views, including open space features like waterways, wetlands, natural landscapes, and parks, into design of the built environment.
- Action LU-3.3-A: Continue to improve and maintain park facilities and fields to address deficiencies and improve park sustainability, including lighting improvements, conversion to solar lighting, drinking fountain maintenance, and natural stormwater management.
- Action LU-5.1-B: Protect, preserve, and improve riparian corridors and incorporate them in the City's parks, trails, and open space system.
- Action LU-5.1-C: Require landscape plans to incorporate native and drought-tolerant plants in order to preserve the visual integrity of the landscape, conserve water, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.
- Action LU-6.3-D: Design public facilities and infrastructure to maintain and improve the visual quality of the urban environment, including through the following approaches:
  - Designing buildings and infrastructure to fit into and complement their ultimate surroundings.
  - Buffering buildings and infrastructure from their surroundings as appropriate to shield unsightly areas from public view.
  - Providing appropriate landscaping.

As indicated above, new residents from development allowed by the proposed General Plan would increase the demand for recreational opportunities and facilities, and park level-of-service standards would require the construction of new or expanded park facilities. The estimated timing or location such facilities or the exact nature of these facilities, if required, are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be project-specific, and would require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant*.

Significance Without Mitigation: Less than significant.

PS-4 Implementation of the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur, or be accelerated.

As described above, future development allowed by the proposed General Plan would result in increased population in Stockton, which would increase demands for parks and recreational facilities, and could

cause physical deterioration of park facilities. However, the proposed General Plan contains policies and actions that would support parkland goals, and, as described in Section 4.13.3.1, the Stockton Municipal Code establishes parkland dedication and/or fee requirements for new development, helping to ensure that individual park and recreation facilities are not overburdened by use.

In addition, proposed General Plan includes the following actions that protect the public's investment in park and recreation facilities:

- Action LU-3.3.A: Continue to improve and maintain park facilities and fields to address deficiencies and improve park sustainability, including lighting improvements, conversion to solar lighting, drinking fountain maintenance, and natural stormwater management.
- Action LU-3.3.C: Establish a citywide park maintenance assessment district.
- Action LU-3.3.D: Periodically review the City's Development Impact Fee requirements to determine whether they should be adjusted to reflect the City's priorities for parks, community centers, and libraries that serve the surrounding neighborhoods.
- Action SAF-1.3.A: Design and maintain parks, waterways, trail corridors, and other facilities to meet the recreational needs of the community, while maximizing public safety and access concerns, such as through the following approaches:
  - Locate facilities to ensure visibility along public roadways where appropriate;
  - Provide clear access points;
  - Maintain vegetation to maximize visibility and demonstrate active attention to the site; and
  - Use signage to clearly convey site ownership and rules.
- Action CH-1.1.B: Prepare a parks master plan that assesses the quality and distribution of existing parks, facilities, and community centers throughout the city relative to the population served (i.e., within a set walking distance) and their needs (i.e., considering age, income, and abilities), and, based on this information, identifies and prioritizes new, renovation, and expansion park and community center projects and describes funding means and timelines.

With implementation of the proposed General Plan policies and actions described above, combined with parkland dedication and/or fee requirements in the Stockton Municipal Code, impacts to parks and recreational services would be *less than significant*.

Significance Without Mitigation: Less than significant.

PS-5	**Implementation of the proposed project would not include recreational facilities and or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.**

In 2040, the proposed General Plan is projected to generate an additional 132,200 residents, resulting in a total population of 452,800 residents. These new residents would exacerbate the existing community center deficiency, assuming no new facilities are constructed. To serve the total anticipated 2040

population and meet the City's community center service standard, four new City-owned and one new combined City-/School District-owned community center would be required.

As explained in the discussion of Threshold PS-3, the proposed General Plan includes policies and actions that support the City's recreational goals, as well as actions that would minimize the environmental impacts of new or expanded recreational facilities.

As indicated above, new residents from development allowed by the proposed General Plan would increase the demand for recreational facilities, and recreational facility standards would require the construction of new or expanded recreation facilities. The estimated timing or location of such facilities or the exact nature of these facilities, if required, are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be project-specific, and would require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant*.

Significance Without Mitigation: Less than significant.

4.13.4 SCHOOLS

4.13.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

Senate Bill 50: Leroy F. Greene School Facilities Act

SB 50 (funded by Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding and whether the school district meets certain additional criteria involving bonding capacity, year-round school and the percentage of moveable classrooms in use.

California Government Code Section 65995 to 65998 (School Facilities)

The California Government Code Section 65996 specifies that an acceptable method of offsetting a project's effect on the adequacy of school facilities is the payment of a school impact fee prior to issuance of a building permit. Sections 65995 to 65998 set forth provisions for the payment of school impact fees by new development by "mitigating impacts on school facilities that occur (as a result of) the planning, use, or development of real property" [Section 65996(a)]. The legislation goes on to say that the payment of school impact fees "are hereby deemed to provide full and complete school facilities mitigation" under

CEQA [Section 65996(b)]. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code. In accordance with California Government Code Section 65996, developers pay a school impact fee to the school district to offset the increased demands on school facilities caused by their proposed residential development project.

Assembly Bill 1600: Mitigation Fee Act (California Government Code 66000-66008)

Enacted as Assembly Bill (AB) 1600, the Mitigation Fee Act has been in effect since 1989 and requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put.[17] The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied.

Stockton Municipal Code

Chapter 3.36 of the Stockton Municipal Code, known as the "School Facilities Mitigation Ordinance," serves as a method for new residential development to finance interim school facilities when development will result in overcrowded conditions. Per Section 3.36.050, "conditions of overcrowding" occur when the total enrollment, including the enrollment from the proposed development, will exceed the capacity of the school as determined by the school district board. The amount of fees to be paid or the amount of land to be dedicated by the developer is determined by the Planning Commission per Section 3.36.200 of the Municipal Code.

Existing Conditions

The EIR Study Area is served by six school districts: Stockton Unified School District (USD), Escalon USD, Linden USD, Lodi USD, Lincoln USD, and Manteca USD. Figure 4.13-4 shows the boundaries for each school district and the location of each school. Each school district's enrollment trends, capacity, and facility status are summarized below.

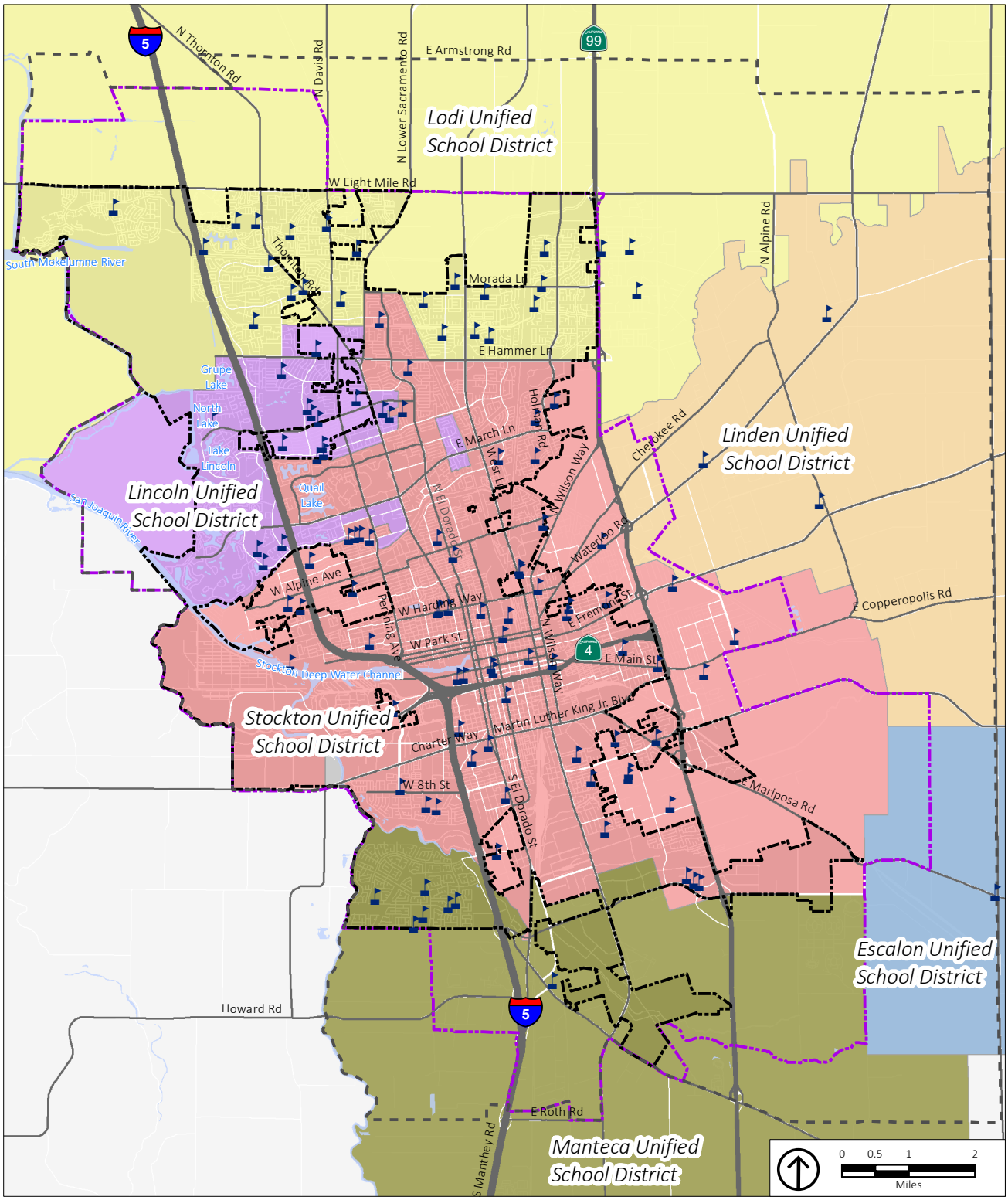
Stockton Unified School District[18]

The Stockton USD operates 54 schools within the EIR Study Area: 39 elementary schools, six high schools, and nine specialty schools. The total capacity at all Stockton USD schools is approximately 39,000 students; enrollment for the 2014-2015 school year was below capacity at 37,063 students.

In projecting enrollment, the Stockton USD does not use set rates for projections; instead, student generation estimates are calculated based on live birth totals from five years earlier and adjustments are made based on a number of other factors. Enrollment projections for the 2016-2017 school year indicated

[17] California Government Code, Sections 66000-66008, http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=66000-66008, accessed on December 8, 2015.

[18] Unless otherwise noted below, the information in this section is sourced from: Julie Penn, Interim Superintendent, Stockton Unified School District. Personal communication with Claudia Garcia, PlaceWorks, April 14, 2016.



Source: City of Stockton; San Joaquin County; PlaceWorks, 2017.

Existing Schools

School Districts

- Stockton Unified School District
- Escalon Unified School District
- Linden Unified School District
- Lodi Unified School District
- Lincoln Unified School District
- Manteca Unified School District

- City Limit
- Sphere of Influence/ EIR Study Area
- General Plan Planning Area

Figure 4.13-4

School Districts and Locations

a slight increase of 232 students, with an overall enrollment of 37,182 students. Any school nearing capacity is closely monitored, and any students wishing to attend a capped school are invited to attend a different school within the attendance zone.

The Stockton USD maintains an average teacher-to-student ratio of 1:24 for transitional kindergarten and kindergarten grades, 1:31 for first to third grades, 1:33 for fourth to sixth grades, 1:32 for seventh to eighth grades, 1:32 for comprehensive high school ninth to twelve grades, and 1:25 for alternative high school ninth to twelve grades.

The Stockton USD has sites reserved for planned schools near the following development areas: Origone Ranch Development (Holman Road/Windflower Lane), Oakmoore Development (Wilson Way/Newton Road), Eagle Crest Development (Carpenter Road/Polk Lane), and Mariposa Lakes Development (southeast Stockton). Plans to construct new schools within the aforementioned areas will only move forward if the projects are developed.

The development impact fee is the source of school capital improvement funding provided by new development. The Stockton USD is eligible to levy Level 1 development impact fees on new residential and commercial development. Development impact fees for SUSD are $5.51 per square foot of single-family residential development, $3.36 per square foot of multi-family residential development, and $0.54 per square foot of commercial/industrial development.[19]

Escalon Unified School District[20]

The Escalon USD operates four elementary schools, two high schools, and one specialty school. However, only a small portion of the EIR Study Area is located within the Escalon USD, and none of its schools are located within the study area. The nearest school to the EIR Study Area, Collegeville Elementary has a current enrollment of 130 students. The school is situated on a large site, and can be expanded to add new buildings to accommodate growth in Stockton. Middle school and high schools are located in the Escalon city limit. None of the schools currently exceed capacity, and the Escalon USD does not anticipate that enrollment will exceed capacity at any of the schools. Rather, there is a pattern of declining enrollment. Consequently, there are no plans to construct new or expanded facilities due to lack of need. However, there are ongoing maintenance issues because of aging facilities. A recent school bond is funding related improvement projects.

The Escalon USD aims to maintain a student-to-teacher ratio of 24 students to one teacher for elementary schools and 32 students to one teacher for grades 6 to 12.

The Escalon USD currently assesses development impact fees of $3.36 per square foot for residential development, and $0.36 per square foot for commercial development.

[19] Stockton Unified School District, http://www.stocktonusd.net/Page/402, accessed April 21, 2016.

[20] The information in this section is sourced from: Ron Costa, Superintendent, Escalon Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, August 7, 2017.

Linden Unified School District

The Linden USD operates three elementary schools, one middle school, and two high schools. Similar to the Escalon USD, only a small portion of the EIR Study Area is located within the Linden USD, and none of its schools are located within the study area.

Lodi Unified School District[21]

The Lodi USD operates 49 schools: 33 elementary schools, 7 middle schools, 6 comprehensive high schools, and 2 continuation high schools. Of these, 13 elementary schools, two middle schools, two comprehensive high schools, and one continuation school are located within the EIR Study Area. The total capacity at all Lodi USD schools is approximately 16,658 students; enrollment for the 2014-2015 school year was below capacity at 13,722 students. Long-term enrollment projections for the 2025-2026 school year indicate an increase in enrollment to 17,742 students, which would exceed the total current capacity. The Lodi USD indicates that there are no current plans for new or expanded schools.

The Lodi USD maintains an average teacher-to-student ratio of 1:20 for kindergarten grades, 1:24 for first to third grades, 1:30 for fourth to sixth grades, and 1:31 for seventh to twelve grades. The Lodi USD uses the following student generation rates: 0.281 for kindergarten to sixth grade, 0.080 for seventh to eighth grade, 0.162 for ninth to twelve grades, and 0.523 for all grades.[22]

The development impact fee is the source of school capital improvement funding provided by new development. The Lodi USD is eligible to levy Level 1 development impact fees on new residential and commercial development. Development impact fees for Lodi USD are $3.48 per square foot of single family residential development, and $0.56 per square foot of commercial development.

Lincoln Unified School District

The Lincoln USD operates 15 schools, all of which are within the EIR Study Area: three pre-kindergarten to eighth grade, four kindergarten to eighth grade, two elementary schools, one middle school, three high schools, and two specialty schools. The total enrollment for the 2015-2016 school year at all Lincoln USD schools was approximately 9,298 students.[23]

Manteca Unified School District[24]

The Manteca USD operates 31 schools: 20 kindergarten to eighth grade, five high schools, and six specialty schools. Of these, August Knodt Elementary, George Komure Elementary, Great Valley Elementary, and West Ranch High School are within the EIR Study Area. The total capacity at all Manteca

[21] Unless otherwise indicated, the information in this section is sourced from: Vickie Brum, Planning Analyst, Lodi Unified School District. Personal communication with Claudia Garcia, PlaceWorks. April 7, 2016.

[22] Warren Sun, Senior Director of Operations, Lodi Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, August 8, 2017.

[23] Education Data Partnership, http://www.ed-data.org/district/San-Joaquin/Lincoln-Unified, accessed September 18, 2017.

[24] Unless otherwise noted, the information in this section is sourced from: Chilo De Leon, Superintendent's Office, Manteca Unified School District. Personal communication with Claudia Garcia, PlaceWorks, April 28, 2016.

USD schools is approximately 5,153 students; enrollment for the 2015-2016 school year was below capacity at 4,261. Enrollment projections for the 2016-2017 school year indicated a slight increase of 37 students, with an overall enrollment of 4,298 students.

The District has an adopted 2014 Master Facilities Plan that outlines modernization, new construction, and major and deferred maintenance based on land use plans in place at the time it was developed. Four elementary schools, one high school, a technical academy, and a district support office are planned for future growth; however, the timing and location of the new schools are not specified.

The Manteca USD strives to maintain an average teacher-to-student ratio of 1:24 for transitional kindergarten to third grade and 1:34 for all other grades.[25]

The development impact fee is the source of school capital improvement funding provided by new development. The Manteca USD is eligible to levy Level 1 development impact fees on new residential and commercial development. Development impact fees for the Manteca USD are $3.48 per square foot of residential development and $0.56 per square foot of commercial development.[26]

4.13.4.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed General Plan and UMPS would have a significant impact related to school services if, in order to maintain acceptable service ratios or other performance objectives for school services, it would result in new or physically altered school facilities, or the need for new or physically altered facilities, the construction of which could cause significant environmental impacts.

4.13.4.3 IMPACT DISCUSSION

PS-6	**Implementation of the proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

By 2040, the horizon year of the proposed General Plan, 40,900 new dwelling units are projected to be developed, and the population would increase by 132,200 new residents. As shown in Figure 4.13-4, the EIR Study Area is currently served by five school districts. The number of housing units that are anticipated to be located within each school district is shown in Table 4.13-5. New housing in each school district would result in an increased student population, which could result in the need for new or altered school facilities.

[25] Erika Durrer, Facilities Planning Supervisor, Manteca Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, July 20, 2017.

[26] Erika Durrer, Facilities Planning Supervisor, Manteca Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, July 20, 2017.

TABLE 4.13-5 PROJECTED HOUSING UNITS AND SCHOOL DISTRICTS

School District	Single-Family Units	Multi-Family Units	Total
Stockton Unified	7,300	10,300	17,500
Lodi Unified	16,600	3,800	20,400
Escalon Unified	2,400	400	2,800
Linden Unified	400	100	500
Lincoln Unified	80	20	100
Manteca Unified	100	0	100

Source: PlaceWorks, 2017.

Stockton Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Stockton USD includes 7,300 single-family units and 10,300 multi-family units. Although there are no set generation rates for the Stockton USD, the anticipated residential in the district would likely require the Stockton USD to provide new teachers and facilities to maintain student-to-teacher ratios.

As described in Section 4.13.4.1, the Stockton USD has sites reserved for planned schools near the following development areas: Origone Ranch Development (Holman Road/Windflower Lane), Oakmoore Development (Wilson Way/Newton Road), Eagle Crest Development (Carpenter Road/Polk Lane), and Mariposa Lakes Development (southeast Stockton). Plans to construct new schools within the aforementioned areas will only move forward if the projects are developed.

Escalon Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Escalon USD includes 2,400 single-family units and 400 multi-family units, for a total of 2,800 new units. In projecting enrollment, the Escalon USD uses a ratio of 0.6 students per household,[27] which results in a projected new student population of 1,680.

According to District staff, additional staffing would be required to serve these new facilities, as well as potentially new or expanded facilities.[28]

[27] Ron Costa, Superintendent, Escalon Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, August 7, 2017.

[28] Ron Costa, Superintendent, Escalon Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, August 7, 2017.

Linden Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Linden USD includes 500 single-family units and 100 multi-family units. Although there are no set generation rates for Linden USD, the expected new dwelling units in the district could require the Linden USD to provide new teachers and facilities to maintain student-to-teacher ratios.

Lodi Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Lodi USD includes 16,600 single-family units and 3,800 multi-family units, for a total of 20,400 units. Using the District's total K-8 student generation factor of 0.523, this new housing could generate approximately 10,700 new students in the Lodi USD boundary. As discussed in Section 4.13.4.1, although there is currently available capacity within the Lodi USD overall, the District's projections indicate that enrollment will exceed capacity by the 2025-2026 school year. Therefore, new or expanded school facilities would be required to serve the new students.[29]

Lincoln Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Lincoln USD includes 80 single-family units and 20 multi-family units. Although there are no set generation rates for Lincoln USD, the expected new dwelling units in the district could require the Lincoln USD to provide new teachers and facilities to maintain student-to-teacher ratios.

Manteca Unified School District

As shown in Table 4.13-5, the 2040 projection of new housing units in the Manteca USD includes 100 single-family units and no multi-family units. Although there are no set generation rates for Manteca USD, District staff have indicated that the addition of new housing within the Manteca USD has the potential to impact staffing and require new or expanded facilities.[30]

Overall Impact Finding

The location and timing of new housing units constructed under the General Plan are not known at this time; thus it cannot be determined precisely how new students would affect existing school facilities. Some students will likely attend existing facilities in their attendance area within existing capacity, and other students may require additions to existing school facilities and classrooms. New students would also generate the need for new staffing, including new teachers and support staff.

[29] Sun, Warren. Senior Director of Operations, Lodi Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks. August 8, 2017.

[30] Erika Durrer, Facilities Planning Supervisor, Manteca Unified School District. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, July 20, 2017.

Additional funding for school improvement projects in all of the districts comes from developer impact fees. The payment of such fees is deemed to fully mitigate the impacts of new development on school facilities, per California Government Code Section 65996. Therefore, overall impacts related to school facilities would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.13.5 LIBRARIES

4.13.5.1 ENVIRONMENTAL SETTING

Regulatory Framework

Mello-Roos Communities Facilities Act of 1982

The Mello-Roos Community Facilities Act, Government Code Section 53311 et seq., provides an alternative method of financing certain public capital facilities and services through special taxes. This State law empowers local agencies to establish Community Facilities Districts (CFDs) to levy special taxes for facilities such as libraries. Such districts exist within Stockton.

Stockton Municipal Code

Section 16.72.260 of the Stockton Municipal Code establishes a public facilities fee on the issuance of permits for development within the city. Subsection B.1 defines public facilities as City offices, fire stations, libraries, police stations, community recreation centers, street improvements, and water and sewage facilities. Per Subsection C, revenue from building permits will be used to pay for design and construction of designated public facilities, program development, and overall maintenance.

Existing Conditions[31]

The Stockton-San Joaquin County Public Library (SSJCPL) currently operates five facilities in the city, as described below. All libraries are open five days per week.

- Cesar Chavez Central Library (605 North El Dorado Street). The library staff offers a variety of programs geared toward all age groups, including free computer classes, story time, a MakerSpace, and programs for youth in support of STEAM (Science, Technology, Engineering, Arts and Mathematics) learning. In addition, the public can reserve meeting rooms (100-person capacity). There are 10 full-time equivalent (FTE) employees staffing this library.
- Margaret K. Troke Branch Library (502 West Benjamin Holt Drive). The library staff offers a variety of programs geared toward all age groups, including free computer classes, story time, tutoring, and book clubs. In addition, the public can reserve meeting rooms (60-person capacity). There are seven FTE employees staffing this library.

[31] Information in this section is sourced from: Suzy Daveluy, Deputy Director of City Services/City Librarian, Stockton-San Joaquin Public Library. Personal communication with Jessica Setiawan, Project Planner, PlaceWorks, July 20, 2017.

- Maya Angelou Branch Library (2324 Pock Lane). The library staff offers a variety of youth events, including dance performances, video game days, and story time events. In addition, the public can reserve meeting rooms (84-person capacity). There are two FTE employees staffing this library.
- Fair Oaks Branch Library (2370 E Main Street). The library staff offers a variety of programs and services for all ages, including a MakerSpace room, bilingual story times, and spaces for community groups to meet. There are two FTE employees staffing this library.
- Weston Ranch Branch Library (1453 West French Camp Road). The library staff offers a variety of youth events including story time and craft events. In addition, the public can reserve meeting rooms (80-person capacity). There are two FTE employees staffing this library.

Collectively, the SSJPCL locations provide access to electronic resources, reference and readers' advisory materials, online learning platforms, free internet access, computers with Microsoft products, and printers. In addition to the branch locations listed above, the SSJPCL also provides mobile library services to remote and/or underserved areas throughout San Joaquin County. However, SSJPCL staff indicated that there are areas in Stockton where access to library service is limited and not sufficiently complemented with outreach needed to increase access to the library's electronic resources.

SSJPCL staff also has indicated that staffing levels at the SSJCPL Stockton locations are improving due to the passage of the Strong Communities Initiative (Measure M) in November 2016, a 1/4-cent sales tax for support of recreation and library services in the City of Stockton. City-owned parcels in northwest and northeast Stockton may be the sites of new combined recreation and library facilities. The City Council will approve a plan for Strong Communities revenues in 2017. Funding for construction would be provided by Measure M revenue.

4.13.5.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed General Plan and UMPS would have a significant impact related to library services if, in order to maintain acceptable service ratios or other performance objectives, the proposed project would result in new or physically altered facilities, or the need for new or physically altered facilities, the construction or operation of which could cause significant environmental impacts.

4.13.5.3 IMPACT DISCUSSION

PS-7	**Implementation of the proposed project would not result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

By 2040, the horizon year of the proposed General Plan, 40,900 new dwelling units are projected to be developed, and the population would increase by 132,200 new residents. New residents would utilize library services, which could impact library facilities.

The SSJCPL has long recognized the need for increased library services in Stockton, particularly in the northeast and northwest areas. As indicated in Section 4.13.5.1, the City owns two parcels in these areas that may be developed into new combined recreation and library facilities.

Because it is not known precisely where new housing will be constructed under the proposed General Plan, it cannot be determined how libraries would be utilized by future residents. It is expected that students attending local schools would have access to Stockton USD, Escalon USD, Linden USD, Lodi USD, Lincoln USD, and Manteca USD libraries. The availability of school library facilities would decrease the potential impact on SSJCPL library facilities.

The proposed General Plan contains the following policy and actions that seek to ensure that adequate services and facilities are funded to meet increasing demand:

- Action LU-3.3.D: Periodically review the City's Development Impact Fee requirements to determine whether they should be adjusted to reflect the City's priorities for parks, community centers, and libraries that serve the surrounding neighborhoods.
- Action LU-6.3.A: Require development to mitigate any impacts to existing sewer, water, stormwater, street, fire station, park, or library infrastructure that would reduce service levels.
- Policy CH-3.4: Foster innovation through access to quality community education and library services.

As new development occurs, expanded library facilities would likely be needed to support the associated population growth. The estimated timing or location of such facilities or the exact nature of these facilities, if required, are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be project-specific, and would require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action 6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant.*

Significance Without Mitigation: Less than significant.

4.14 TRANSPORTATION AND TRAFFIC

This section describes the regulatory framework and existing conditions in the EIR Study Area related to transportation and traffic, and evaluates the potential impacts to transportation and traffic associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). The impact discussion is based on a quantitative analysis. Cumulative impacts related to transportation and traffic consider regional transportation improvements identified in the regional traffic model.

The information in this section is based on the following technical reports:

- Existing Conditions Technical Memorandum: Transportation. Fehr & Peers Transportation Consultants, July 11, 2017.
- Existing and Future Transportation Data Technical Memorandum, Fehr & Peers Transportation Consultants, November 28, 2017.
- Model Development Technical Memorandum. Fehr & Peers Transportation Consultants, November 28, 2017.

Complete copies of these reports are included as Appendices C and E, and F to this Draft EIR.

4.14.1 ENVIRONMENTAL SETTING

4.14.1.1 REGULATORY FRAMEWORK

Federal Agencies and Regulations

Federal Highway Administration

The Federal Highway Administration (FHWA) is the agency of the United States Department of Transportation (DOT) responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary State highway network, such as Interstate 80 (I-80). FHWA funding is provided through the Moving Ahead for Progress in the 21st Century (MAP-21). MAP-21 can be used to fund local transportation improvements in Stockton, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the United States Access Board, an independent federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. The guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, pedestrian access to streets, sidewalks, curb ramps,

street furnishings, pedestrian signals, parking, and other components of public rights-of-way. The guidelines apply to all proposed roadways in the project area.

The City's ADA Coordinator works out of the Public Works Department to manage the City's efforts in complying with applicable accessibility regulations.

State Agencies, Regulations, and Policies

California Department of Transportation

The California Department of Transportation (Caltrans) is the primary State agency responsible for transportation issues. One of its duties is the construction and maintenance of the State highway system. Caltrans has established standards for roadway traffic flow and developed procedures to determine if State-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, Caltrans may recommend measures to mitigate the traffic impacts of such projects. Caltrans facilities within the EIR Study Area include Interstate 5 and State Routes 4, 26, 88, and 99, as well as the on- and off-ramps from these State facilities.

The following Caltrans procedures and directives are relevant to the project, particularly State roadway facilities:

- Level of Service Target. Caltrans maintains a minimum level of service (LOS) at the transition between LOS C and LOS D for all of its facilities.[1] Where an existing facility is operating at less than the LOS C/D threshold, the existing measure of effectiveness should be maintained.
- Caltrans Project Development Procedures Manual. This manual outlines pertinent statutory requirements, planning policies, and implementing procedures regarding transportation facilities. It is continually and incrementally updated to reflect changes in policy and procedures. For example, the most recent revision incorporates the Complete Streets policy from Deputy Directive 64-R1, which is detailed below.
- Caltrans Deputy Directive 64. This directive requires Caltrans to consider the needs of non-motorized travelers, including pedestrians, bicyclists, and persons with disabilities, in all programming, planning, maintenance, construction, operations, and project development activities and products. This includes incorporation of the best available standards in all of Caltrans' practices.
- Caltrans Deputy Directive 64-RI. This directive requires Caltrans to provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. Caltrans supports bicycle, pedestrian, and transit travel with a focus on "complete streets" that begins early in system planning and continues through project construction, maintenance, and operations.

[1] Level of service is explained further in Section 4.14.1.2, Existing Conditions.

- Caltrans Director's Policy 22. This policy establishes support for balancing transportation needs with community goals. Caltrans seeks to involve and integrate community goals in the planning, design, construction, and maintenance and operations processes, including accommodating the needs of bicyclists and pedestrians.
- Environmental Assessment Review and Comment. Caltrans, as a responsible agency under the California Environmental Quality Act (CEQA), is available for early consultation on projects to provide guidance on applicable transportation analysis methodologies or other transportation related issues, and is responsible for reviewing traffic impact studies for errors and omissions pertaining to the State highway facilities. In relation to this role, Caltrans published the Guide for the Preparation of Traffic Impact Studies (December 2002), which establishes the Measures of Effectiveness as described under "Level of Service Target" above. The Measures of Effectiveness are used to determine significant impacts on State facilities. The Guide also mandates that traffic analyses include mitigation measures to lessen potential project impacts on State facilities and to meet each project's fair share responsibilities for the impacts. However, the ultimate mitigation measures and their implementations are to be determined based on consultation between Caltrans, the City of Stockton, and the project proponent.

Complete Streets Act of 2008

The California Complete Streets Act (Assembly Bill 1358) requires cities and counties, when updating their general plans, to ensure that local streets meet the needs of all users.

California Transportation Commission

The California Transportation Commission (CTC) consists of nine members appointed by the Governor. The CTC is responsible for the programming and allocation of funds for the construction of highway, passenger rail, and transit improvements throughout the State, including in the EIR Study Area. The CTC is also responsible for managing the State Transportation Improvement Program (STIP) and the State Highway Operation and Protection Program (SHOPP) funding programs.

Assembly Bill (AB) 32

With AB 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resources Board (CARB) is coordinating the response to comply with AB 32.

In 2007, CARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, CARB defined its 1990 baseline level of emissions, and by 2011 it completed its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, took effect in 2012.

On December 11, 2008, CARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of Senate Bill (SB) 375 as the means for achieving regional transportation related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the State comply with AB 32.

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, building on legislative changes from SB 375, AB 32, and AB 1358, described above. SB 743 began the process to modify how impacts to the transportation system are assessed for purposes of CEQA compliance. These changes include the elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. SB 743 includes amendments that revise the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by congestion management programs (CMPs) and require the Office of Planning and Research (OPR) to update the CEQA Guidelines and establish criteria for determining the significance of transportation impacts of projects within transit priority areas.

As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." A preliminary discussion draft of alternative metrics was produced in the summer of 2014, with the final draft of changes to the CEQA Guidelines and an accompanying technical advisory document made available for public comment on January 20, 2016. Final guidelines were published on November 27, 2017; the final guidelines will require certification and adoption by the Secretary for Resources before they go into effect after a two-year opt-in period.

Local Regulations

San Joaquin Council of Governments (SJCOG)

The San Joaquin Council of Governments (SJCOG)[2] is responsible for regional transportation planning in San Joaquin County. SJCOG most recently updated its Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), a federally-mandated 20-year blueprint for the region, in 2014. RTPs must be developed in cooperation with State and local stakeholders and provide a clear vision of the regional transportation goals, policies, objectives, and strategies. This vision must be realistic and within fiscal constraints. Responsibility for approving and overseeing improvements to the State highway system rests with Caltrans, while each local jurisdiction (cities and County) is responsible for planning and implementing improvements to the streets within its boundaries.

The RTP/SCS set forth the following policies; each policy has associated supportive strategies to help guide implementation, and performance indicators by which the region can assess its progress.

- Enhance the Environment for Existing and Future Generations and Conserve Energy
- Maximize Mobility and Accessibility
- Increase Safety and Security
- Preserve the Efficiency of the Existing Transportation System

[2] The San Joaquin Council of Governments (SJCOG) is a Joint Powers Authority comprised of the County of San Joaquin and the Cities of Stockton, Lodi, Manteca, Tracy, Ripon, Escalon and Lathrop. SJCOG serves as the regional transportation planning agency and the Congestion Management Agency (CMA) for San Joaquin County.

- Support Economic Vitality
- Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts
- Maximize Cost-Effectiveness

City of Stockton Bicycle Master Plan

The City of Stockton recently updated the Bicycle Master Plan, which was adopted in December 2017. The Bicycle Master Plan identifies key low stress connections that should be implemented to allow people of all ages and abilities to connect across the city via a bicycle. The document also identifies programs and educational guidelines that encourage a greater shift in bicycle mode share within Stockton. More information can be found on the City's website[3].

City of Stockton Precise Road Plans

The City of Stockton has multiple Precise Road Plans which conform to the General Plan. These plans can be used to protect, preserve, and require dedications for planned roadway and/or transportation corridors as future development occurs. These plans should be updated for conformity with multi-modal complete streets principles and to ensure consistency with other recently updated plans.

City of Stockton Waterfront Connections Plan

The primary purpose of the Waterfront Connections Plan (WCP) is to preserve the opportunity to provide public access to the waterfront. The WCP creates economic and recreational opportunities, as well as alternative modes of transportation (walking and bicycling) from surrounding residential and commercial land uses to Downtown. The efforts to create a waterfront bike and pedestrian pathway on the shores of the Deep Water Channel began more than 30 years ago and have continued up to the present day. Numerous studies have been conducted over this period, design plans have been initiated, and land entitlements have been approved with the condition of providing for a future multi-use trail.

City of Stockton Climate Action Plan

The City of Stockton Climate Action Plan (CAP) was adopted in 2014 and identifies reduction targets to reduce GHG emissions. The CAP relies on voluntary measures for both existing and new development, and includes a number of mandatory measures where required by other State or local mandates and other City initiatives. Transportation strategies to reduce vehicle miles traveled (VMT) represent a considerable portion of the CAP measures.

4.14.1.2 EXISTING CONDITIONS

Transportation through and within Stockton is provided by a network of facilities stratified by travel mode, function, and capacity. Multiple agencies oversee the planning, development, operation, and funding of

[3] http://www.stocktongov.com/government/departments/publicworks/projBike.html

these facilities. Nationally, the US Department of Transportation (USDOT) ensures the safety and efficiency of the nation's interstate freeway system, airports, rail lines, and ports. Caltrans manages more than 45,000 miles of highway and freeway lanes as well as other transportation facilities across the state. At the regional level, SJCOG is responsible for developing and updating a variety of transportation plans and for allocating federal and State funds to implement them. San Joaquin Regional Transit District (RTD), Altamont Commuter Express (ACE), and Amtrak are transit transportation providers within the city.

The Federal Railroad Administration regulates freight railroads for the federal government by creating and enforcing national rail safety regulations. At the State level, the California Public Utilities Commission (CPUC) has jurisdiction over safety regulations for common carriers (including trucks and rail) and at-grade railroad crossings.

At the local level, the Stockton Public Works and Community Development Departments are responsible for overseeing the planning, design, construction, and maintenance of citywide transportation systems including roadways and bicycle, pedestrian, and transit facilities.

Roadway Network

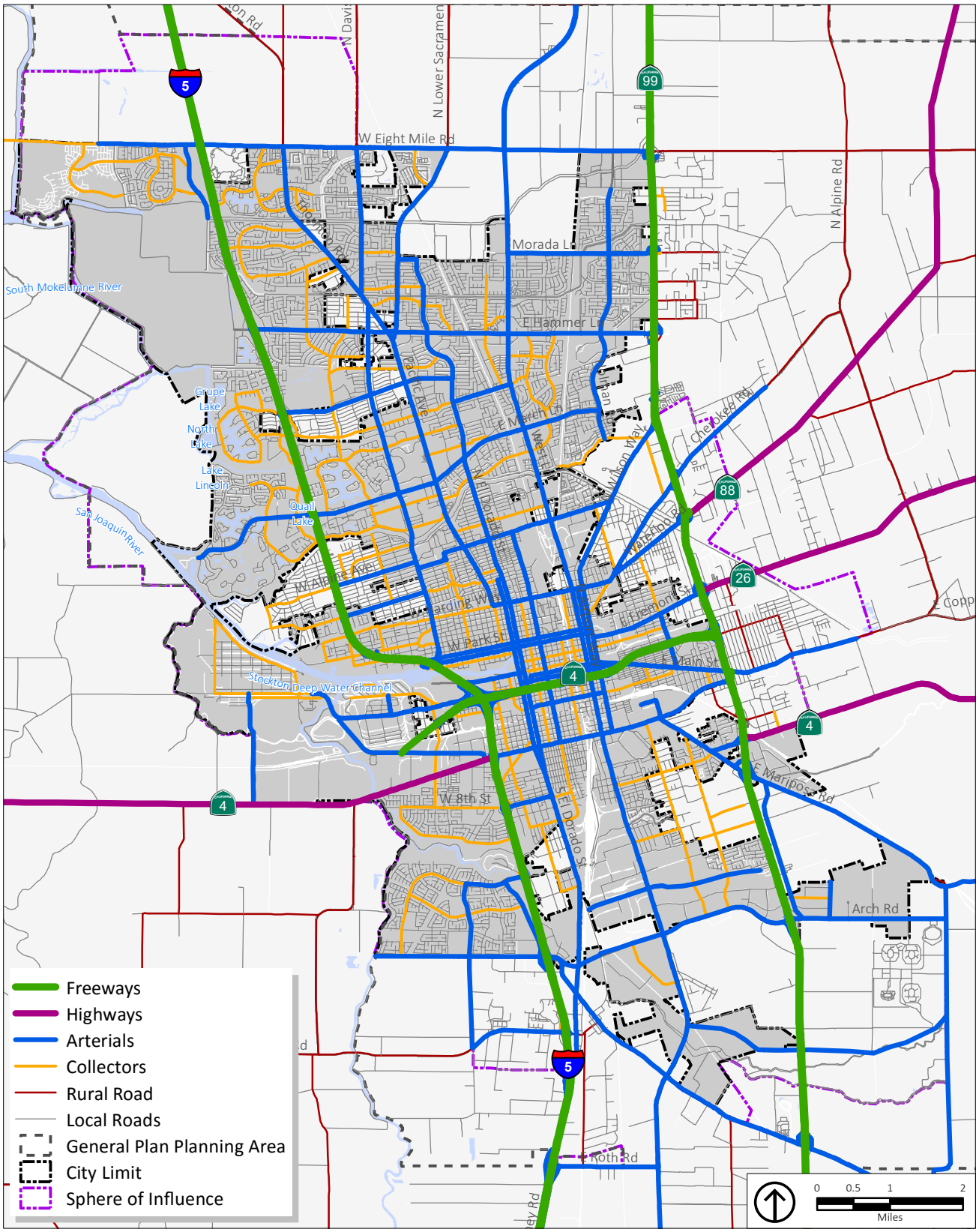
The roadway network in Stockton is made up of freeways, highways, arterials, collectors, and local streets. Each is described in detail below with the existing classification mapped on Figure 4.14-1.

Freeways and Highways

Interstate 5 (I-5) is a major north-south freeway in the western U.S. It runs through the western portion of the city, generally providing four travel lanes in each direction through the central portion of Stockton (between Dr. Martin Luther King Jr. Boulevard and Country Club Drive) and three lanes in each direction along the remaining segments. Widening to provide four lanes per direction is currently under construction between County Club Drive and Hammer Lane. Twelve interchanges are provided along the 14-mile stretch of I-5 within and adjacent to the city limit. Average daily traffic volumes on I-5 range between 80,000 in northern Stockton, over 140,000 throughout central Stockton, and approximately 110,000 in southern Stockton.

State Route 99 (SR-99) traverses the Central Valley, connecting Sacramento and points north with numerous Central Valley cities including Modesto, Merced, Fresno, and Bakersfield. Three travel lanes are provided in each direction north of SR-4, while the segments south of SR-4 include two lanes per direction, with on-going widening that would ultimately provide three travel lanes per direction through Stockton to SR-120 in Manteca. Twelve interchanges are provided along the 12-mile length of SR-99 within and adjacent to the city limit. Average daily traffic volumes on SR 99 range between 80,000 in the northern and southern portions of the city around Morada Lane and Mariposa Road to over 105,000 in the central Stockton area.

SR-4 functions as a freeway between I-5 and SR-99. Known as the Crosstown Freeway, it traverses the city in an east-west direction just south of Downtown. This four-mile section of SR-4 is accessed by four interchanges, excluding the freeway-to-freeway interchanges located at the eastern and western ends of the city. The Crosstown Freeway currently carries approximately 100,000 vehicles per day.



Source: Fehr & Peers, City of Stockton, 2016.

Figure 4.14-1
Existing Roadway Classification Map

Three highways also connect Stockton with points east and west of the city.

SR-4 connects with Contra Costa County to the west, and the Sierra foothills and mountains of Calaveras and Alpine Counties in the east. It carries approximately 20,000 vehicles per day west of I-5 and 10,000 vehicles per day east of SR-99.

SR-26 connects Stockton to Calaveras County, approximately 40 miles east. Daily traffic volumes on SR-26 are approximately 22,000 east of SR-99.

SR-88, connecting Stockton with Amador County and the Nevada state line to the east, is one of only three east-west, all-weather highways serving Northern California. East of SR-99, SR-88 carries approximately 26,000 vehicles per day.

Arterials

The primary function of arterial streets is to connect the regional roadway network with the local roadway network. Limited access is provided to abutting parcels in many cases. Arterial streets are typically high-volume, high-speed roadways generally serving between 20,000 and 50,000 vehicles per day with four to eight travel lanes. Some minor arterials serve fewer than 20,000 vehicles per day. Traffic signals on arterial roadways in Stockton are generally connected to the City's Traffic Management System, which provides signal coordination and incident response services. The following lists the key north-south and east-west arterials in the city:

North-South Arterials	East-West Arterials
Pershing Avenue	Eight Mile Road
Davis Road	Hammer Lane
Lower Sacramento Road	Benjamin Holt Drive
West Lane	Alpine Avenue
Pacific Avenue	Harding Way
El Dorado Street	Charter Way/Dr. MLK Jr. Boulevard
Center Street	Arch-Airport/Sperry Road
Wilson Way	Miner Avenue (West of Wilson Way)
Airport Way	March Lane
Thornton Road	Morada Lane
	East Weber Avenue

Collectors

Collector streets, which usually have two to four travel lanes, serve as principal traffic arteries within residential and commercial areas. These streets typically carry up to 10,000 vehicles per day.

Major key collectors include:

Swain Road	Carolyn Weston Boulevard
Quail Lakes Drive	Henry Long Boulevard

Bianchi Road
Tam O'Shanter Drive
8TH Street
B Street
Pock Lane
A.G. Spanos Boulevard
Country Club Boulevard (West of I-5)
Brookside Road
Miner Avenue (East of Wilson Way)
Fremont Street
Holman Road
McKinley Avenue
Industrial Drive
Fresno Avenue
Feather River Drive
Whistler Way
Kelly Drive
Montauban Avenue
Lorraine Avenue
Navy Drive

Existing Conditions and Deficiencies

The roadway network was evaluated to identify existing operational conditions and deficiencies considering peak hour intersection operations, daily roadway segment analyses, and accident data. The City of Stockton evaluates operations of intersections and roadway segments in terms of levels of service (LOS), a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity."

The City of Stockton has established a LOS standard to evaluate the operating conditions of roadway segments and intersections within the city. Stockton has historically strived to maintain LOS D or better for peak hour intersection and daily roadway segment operations. To encourage the development of a multi-modal transportation system and to acknowledge constraints in developed portions of the city, the current General Plan designates the standard as LOS E for intersections in the Downtown area (bounded by Harding Way, the Union Pacific railroad tracks, Dr. Martin Luther King Jr. Boulevard, I-5, and Pershing Avenue), permitting LOS F if improvements for vehicle travel could degrade the quality of the transportation system for other roadway users. Several other intersections and roadway segments are also exempt from the LOS D standard due to physical constraints.

Daily operations of roadway segments were evaluated by comparing the observed traffic volume on a roadway facility to the functional capacity of the roadway, based on the volumes presented on Figure 4.14-2; the existing functional classification, as presented in Appendix C; and the existing number of lanes. Overall, the city's roadway network functions within capacity, although some potential deficiencies were identified. Most of the roadway segments evaluated operate at LOS D or better. The following segments operate at LOS E or F:

- Interstate 5 between 8th Street and Dr. Martin Luther King Jr. Boulevard [LOS F] (LOS F may be acceptable when built to its ultimate planned right-of-way)
- Interstate 5 between Downing Avenue and French Camp Road [LOS E] (LOS E may be acceptable when built to its ultimate planned right-of-way)
- Eight Mile Road between Lower Sacramento Road and West Lane [LOS F] (LOS E may be considered acceptable for this roadway segment due to physical constraints when built to its ultimate planned right-of-way).

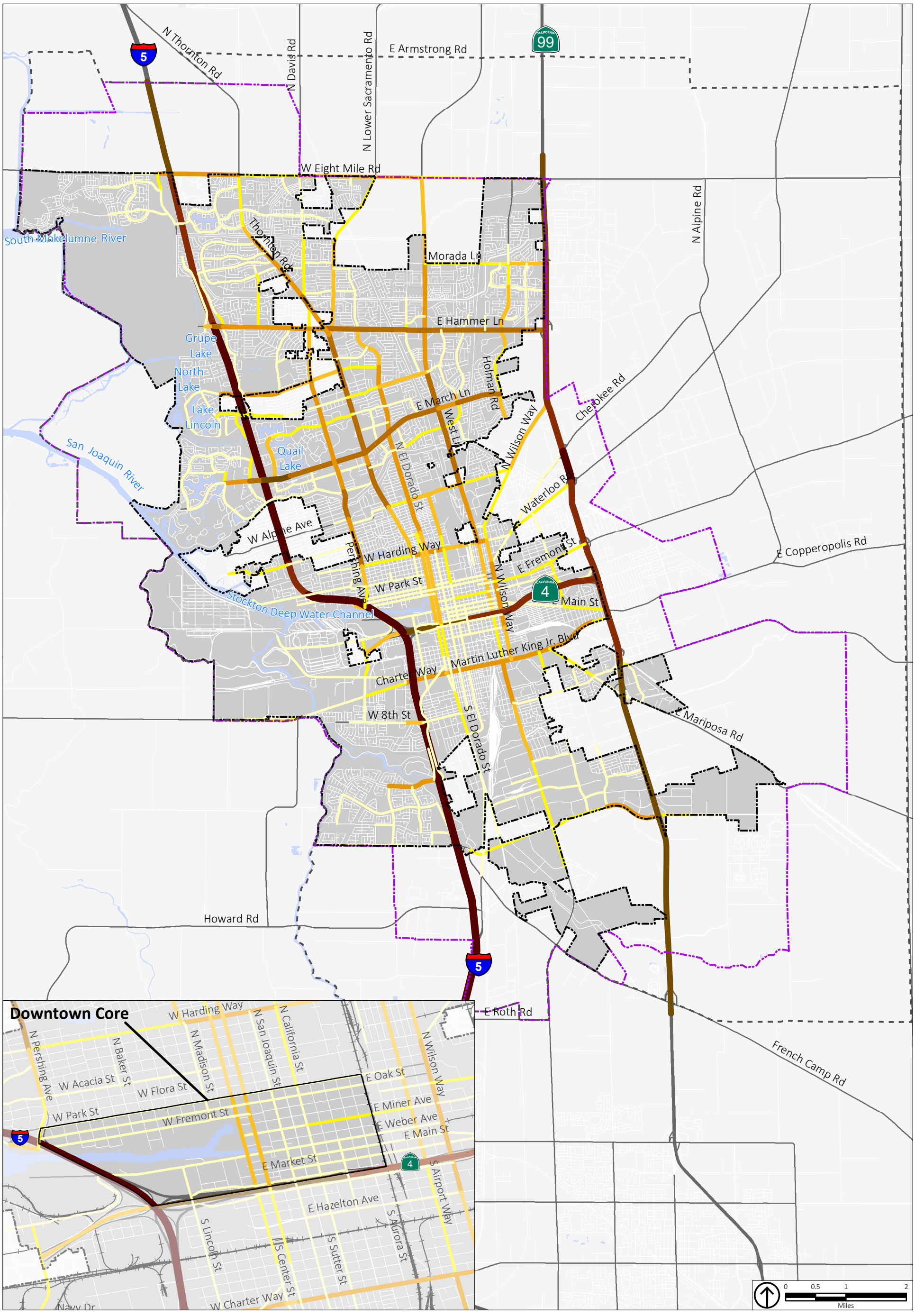
- Ben Holt Drive between Plymouth Road and Pacific Avenue (This roadway is exempt from City of Stockton LOS standards due to physical constraints that limit potential roadway improvements. Although a portion of the roadway is located within unincorporated San Joaquin County, the City of Stockton LOS standards prevail as this facility is within the City of Stockton Sphere of Influence.)
- Charter Way between Fresno Avenue and I-5 [LOS F]
- Dr. Martin Luther King Jr. Boulevard between I-5 and Lincoln Street [LOS E], and Mariposa Road and Golden Gate Avenue [LOS E]
- Arch-Airport Road between Airport Way and Pock Lane [LOS E]
- Thornton Road between Waudman Avenue and Davis Road [LOS F]
- Thornton Road between Davis Road and Pershing Avenue [LOS E] (LOS E may be considered acceptable for this roadway segment due to physical constraints)
- Davis Road between Thornton Road and Ponce De Leon Avenue [LOS E]
- Lower Sacramento Road between Eight Mile Road and Bear Creek [LOS E]
- West Lane between Swain Road and March Lane [LOS E]
- Pershing Avenue at Calaveras River [LOS E] (LOS E may be considered acceptable for this roadway segment due to physical constraints)
- Pacific Avenue at Calaveras River [LOS E] (LOS F may be considered acceptable for this roadway segment due to physical constraints)
- Fresno Avenue between Washington Street and Navy Drive [LOS E]
- B Street between Dr. Martin Luther King Jr. Boulevard and Fourth Street [LOS F]

Morning and evening peak hour intersection operations were also evaluated for 20 intersections throughout the city, as detailed in Appendix C, with existing peak hour traffic volumes presented on Figure 4-14-2. Several of the intersections operate beyond desired level of service ranges for either the morning or evening peak hour:

- West Lane at Eight Mile Road [LOS E, PM peak hour]
- West Lane at Hammer Lane [LOS E, PM peak hour]
- Feather River Drive at March Lane [LOS F, AM peak hour]
- Pacific Avenue at March Lane [LOS E, PM peak hour]

LOS for the 166 study roadway segments and 20 study intersection intersections are provided in the Traffic Impact Analysis included as Appendix C to this Draft EIR.

- Although the roadway facilities generally provide for vehicle travel, the LOS analysis does not capture the mobility experience of other roadway users. As part of the General Plan Update process, the City of Stockton may consider policies related to measuring the performance of other travel modes within the city.



Source: Fehr & Peers, 2016; City of Stockton, 2016; PlaceWorks, 2017.

Daily Traffic Volumes (2014)

- <10,000
- 10,001 - 15,000
- 15,001 - 20,000
- 20,001 - 30,000
- 30,001 - 50,000
- 50,001 - 80,000
- 80,001 - 100,000
- >100,000

- General Plan Planning Area
- City Limit
- Sphere of Influence/EIR Study Area

FIGURE 4.14-2
Traffic Volumes

Auto Collisions

Between 2009 and 2014, 3,945 motor vehicle collisions occurred within the City of Stockton. Of these collisions, 42 were fatal and 87 resulted in severe injuries. The most common types of collisions were broadside (42 percent of auto collisions) and rear-end collisions (44 percent of auto collisions). Approximately 82 percent of collisions occurred in daylight, while 18 percent occurred during dusk, dawn, or night conditions. The top 20 traffic collision locations in the city, and the primary causative factors in collisions are listed in the Existing Conditions Report, included as Appendix E to this Draft EIR.

Transit Network

Transit providers serving Stockton include bus and passenger rail.

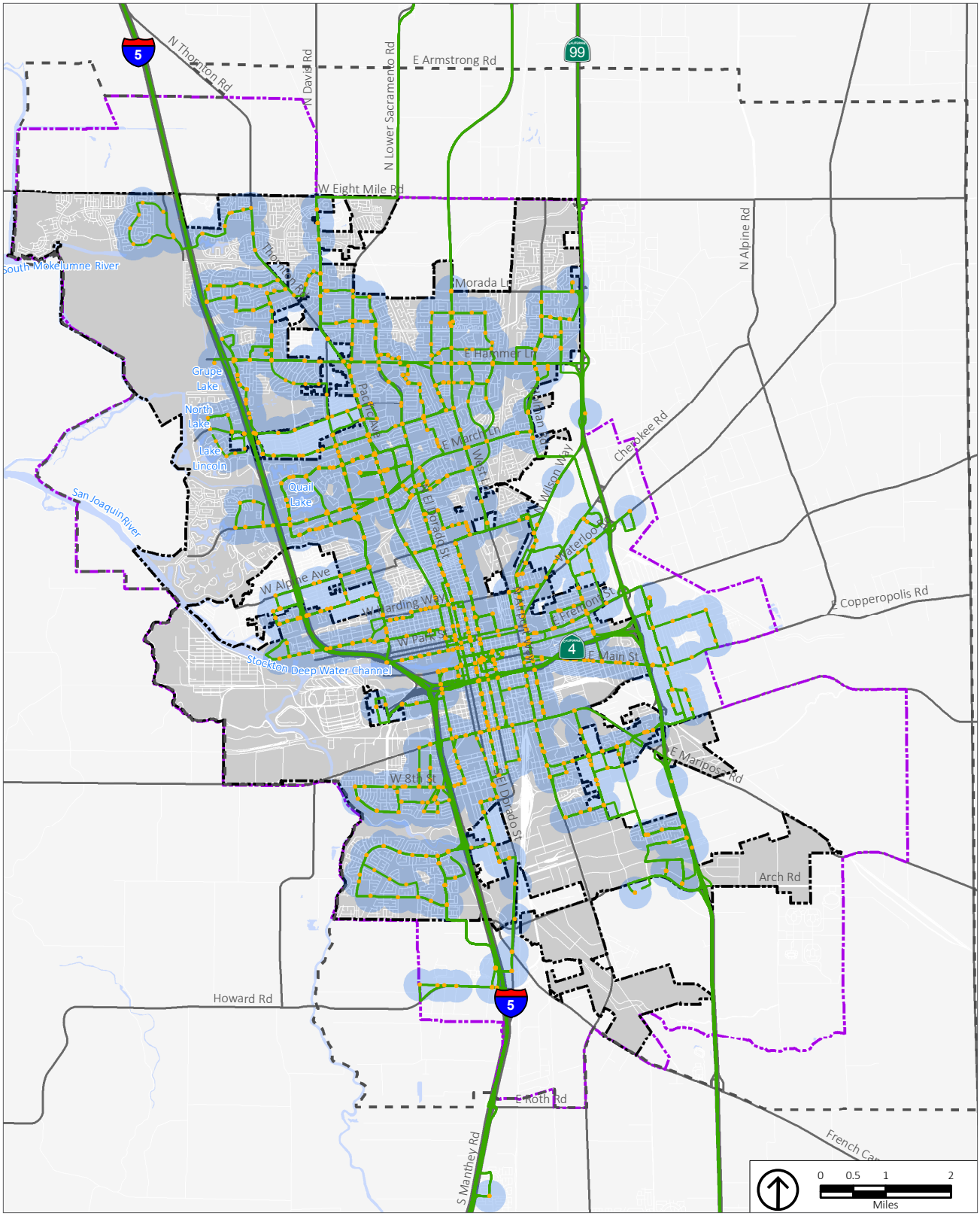
Bus Services

San Joaquin Regional Transit District (RTD)

The San Joaquin Regional Transit District (RTD) is the primary regional transit provider in San Joaquin County. San Joaquin RTD provides public transit services in the Stockton Metropolitan area, as well as intercity and rural transit services countywide. RTD routes are mapped on Figure 4.14-3 and described in Table 6 in the Existing Conditions Report, included as Appendix E to this Draft EIR.

RTD provides several types of bus services:

- Stockton Metropolitan Area service
  - Local bus routes (weekday service): 15 routes
  - Local bus routes (weekend service): 7 routes
  - Metro Express (7 days per week; 3 routes): includes some Bus Rapid Transit (BRT) features, including pre-boarding ticket vending machines at stops to reduce dwell time and more frequent peak hour service.
  - Limited: weekday peak hour: 10 routes
  - Metro Hopper (weekday service; 9 routes): deviated fixed route bus services which serve popular destinations throughout Stockton. There are eight Metro Hopper routes within the city limit that run approximately every hour. These lines can deviate from their route up to approximately one mile which increases transit coverage to approximately 75 percent of the Stockton Metro Area for Americans with Disabilities Act (ADA)-certified customers.
- Intercity and Interregional Services
  - County Hopper (weekday service): deviated-route services between Stockton, Tracy, Manteca, Ripon, Lodi, and Lathrop: 4 routes
  - Intercity (weekday service): Route 23 operates between Stockton and Lodi.



Source: Fehr & Peers, City of Stockton, 2016.

- Transit Stops
- Transit Routes
- Transit Stop 1/4 Mile Buffer
- General Plan Planning Area
- City Limit
- Sphere of Influence/ EIR Study Area

Figure 4.14-3
San Joaquin Regional Transit District (RTD) Route Map

- Weekend service: 2 routes
- Interregional Commuter (weekday commute trips): Eight routes consisting of six to Santa Clara and Alameda counties and two to Sacramento. These routes stop at park-and-ride lots in Stockton (five lots total).

Detailed descriptions of RTD bus routes are provided in Table 6 in the Existing Conditions Report, included as Appendix E to this Draft EIR.

- Dial-A-Ride: San Joaquin RTD has two types of Dial-A-Ride services including one for the general public and one for passengers with ADA certification. The general public service provides curb-to-curb service in areas not being served by RTD routes or other public transportation options. The Stockton Metro Area Dial-A-Ride (SMA-ADA) provides curb-to-curb service for passengers who have received ADA certification with San Joaquin RTD to qualify for paratransit services.

Calaveras Transit

The Calaveras Transit Delta Gold Line provides a connection from the San Andreas Government Center to the Stockton Downtown Transit Center. The Delta Gold Line also provides additional service within Stockton to Amtrak and San Joaquin Delta College. The service runs twice a day to and from Stockton.

Greyhound

Greyhound provides private bus services nationwide.

Rail Services

Altamont Commuter Express (ACE)

The Altamont Corridor Express (ACE Train) is a heavy rail service that connects the Central Valley with the San Francisco Bay Area. The ACE Train is managed under a Cooperative Services Agreement between the San Joaquin Regional Rail Commission, Alameda County Congestion Management Agency, and the Valley Transportation Authority. The San Joaquin Regional Rail Commission is the primary owner/operator of the ACE Train and contracts with Herzog Transit Services, Inc. to operate and maintain the service. The existing ACE route currently operates between Stockton and San Jose with four round-trip services per day (four westbound AM trains and four eastbound PM trains).

Amtrak

Amtrak provides nationwide passenger rail service. The Amtrak San Joaquin service between Bakersfield in the south and Sacramento and Oakland in the north and has two stops in Stockton.

Bicycle Network

Stockton's geographic barriers (e.g., waterways, railways, and freeways) pose unique challenges to bicycle circulation. In several locations across the city, crosstown circulation is limited to a few bridges and underpasses, constraining bicycle circulation. Stockton has seven bicycle-/pedestrian-only bridges across

the city, most of which provide more direct access than street alternatives. Bicyclists are generally accommodated on sidewalks along major street bridges and underpasses.

Bikeway Classifications

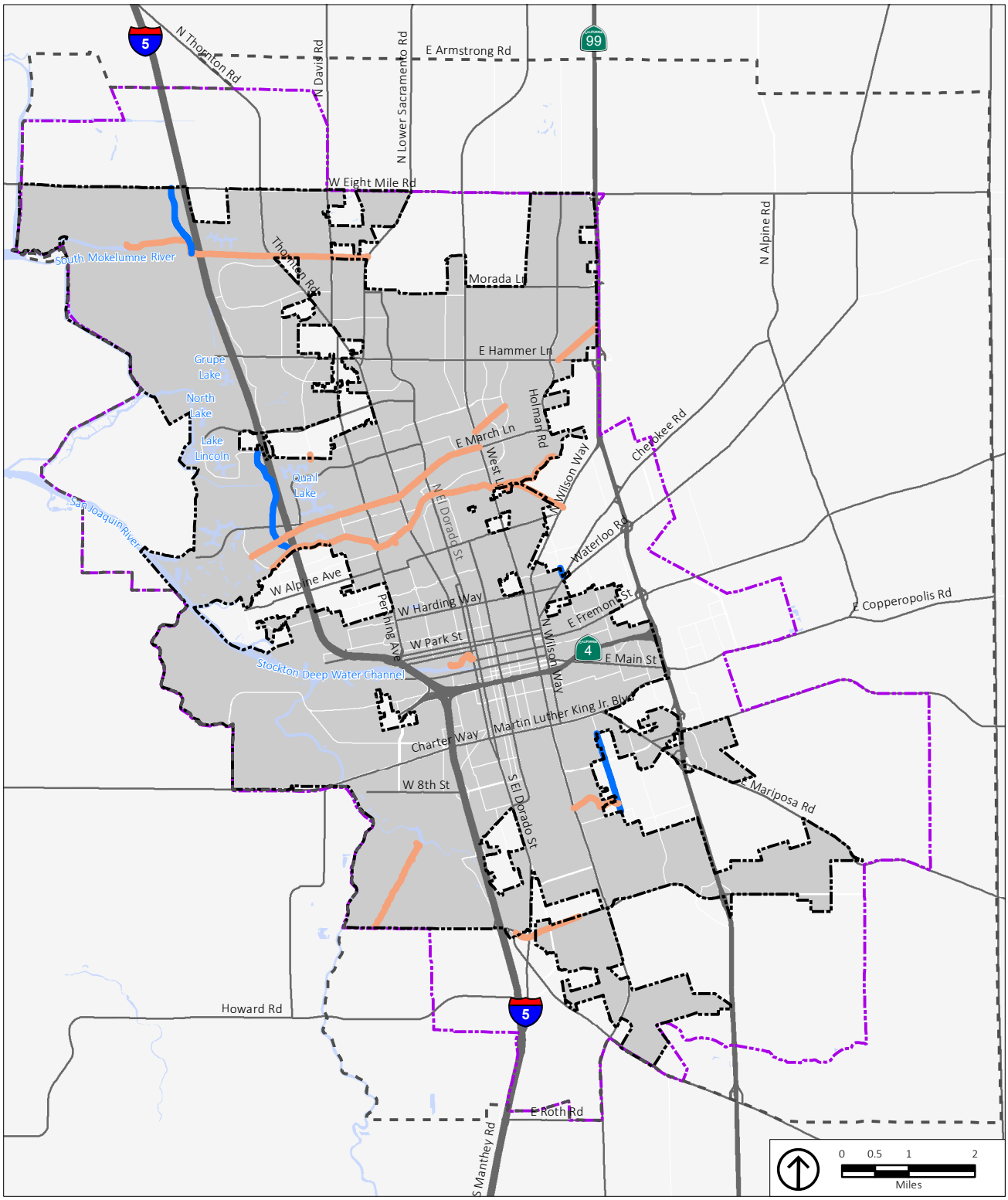
Four categories of bikeways are specified in the Caltrans Highway Design Manual and Sections 885.1 et seq. of the California Streets and Highways Code.

- Class I Bikeway (Bike Path) Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Stockton has many such paths located along creeks, canals, and rail lines.
- Class II Bikeway (Bike Lane) Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- Class III Bikeway (Bike Route) Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes by encouraging slow speeds and discouraging non-local vehicle traffic, often through the use of traffic calming. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.
- Class IV Bikeway (Separated Bikeway) Separated Bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separations may include grade separation, flexible posts, physical barriers, or on-street parking.

Existing Bicycle Network

The City of Stockton has approximately 117 miles of existing bikeways, including approximately 46 miles of bike paths, 36 miles of bike lanes, and over 35 miles of bike routes, mapped on Figure 4.14-4. However, the level of comfort and connectivity offered by these facilities vary. Overall, the citywide network is largely disconnected.

- Some neighborhoods have access to bicycle facilities that provide links between neighborhoods. However, barriers such as waterways, railways, freeways, and high-speed arterials limit access to other neighborhoods and destinations. In particular, access to Downtown Stockton is limited to one street with bicycle lanes in certain segments (California Street), and no facilities wholly span Downtown.
- North-south connectivity across the city is limited. West Lane provides the only designated north-south route from Downtown to north of the Calaveras River, yet few bicyclists are observed to use the street, likely because of its high-speed mixed traffic conditions.



Source: Fehr & Peers, 2017; PlaceWorks, 2017.

Class I (Bike Path)
Class II (Bike Lane)
City Limit
Sphere of Influence/ EIR Study Area
General Plan Planning Area

Figure 4.14-4
Existing Bicycle Network

- Many of Stockton's trails (such as the Calaveras River Trail) have limited connectivity to on-street facilities.
    - **Bike Paths (Class I):** Class I bike paths form the backbone of Stockton's existing bicycle network. Stockton contains 46 miles of bike paths along the city's rivers, creeks, and canals, mostly extending east-west. Popular bike paths include the Calaveras River, East Bay Municipal Utilities District (EBMUD) easement, March Lane, Bear Creek, and French Camp Slough trails. Additionally, Stockton includes several bicycle- and pedestrian-only bridges, including, but not limited to, two across the Calaveras River (at the University of Pacific campus and east of West Lane), across Smith Canal west of I-5, and across White Slough at Alexandria Place.
    - **Bike Lanes (Class (II):** Stockton contains 36 miles of bike lanes, mostly located in neighborhoods north of the Calaveras River as well as in Weston Ranch. Notable streets with bike lanes include portions of Carolyn Weston Boulevard, El Dorado Street, South B Street, California Street, Feather River Drive, Quail Lakes Drive, Hammer Lane, Holman Road, and Whistler Way.
    - **Bike Routes (Class III):** Stockton officially designates a network of approximately 35 miles of bike routes; however, these facilities are generally unsigned and do not include traffic calming features. These bike routes span a range of street types, from neighborhood streets like Baker Street to major arterials like West Lane. Due to their varied and inconsistent nature, Stockton's designated bike routes do not provide strong guidance toward bicycle-friendly corridors.
    - **Separated Bikeways (Class IV):** The City of Stockton does not have any separated bikeways.

Bicycle Collisions

Between 2009 and 2014, 404 vehicle-bicyclist collisions occurred within the City of Stockton. Nine of these collisions were fatal and ten resulted in severe injuries. Bicyclist-involved collisions accounted for approximately 8 percent of all traffic collisions, 5 percent of all serious traffic injuries, and 9 percent of all traffic fatalities within the city, all disproportionately higher than the city's 2014 bicycle mode share (0.6 percent of commute trips as presented in Table 4.14-1 below). Approximately 83 percent of bicycle involved collisions occurred in daylight, while 17 percent occurred during dusk, dawn, or night conditions.

The top seven vehicle-bicycle collision injury locations, types of collisions, and primary causative factors in bicycle collisions in Stockton are listed in the Existing Conditions Report, included as Appendix E to this Draft EIR.

Pedestrian Network

The pedestrian network environment generally consists of sidewalks and multi-use trails. Sidewalks are provided in most developed subdivisions and commercial areas. There are gaps in the sidewalk network within unincorporated county pockets. The City of Stockton does not currently have an inventory of sidewalk locations.

The City's *Street Design Guidelines* (November 2003) were developed to provide uniform facilities for pedestrian and bicycle travel within Stockton. The City developed *Pedestrian Safety and Crosswalk*

Installation Guidelines (November 2003), establishing standards for installing various crosswalk treatments for controlled intersections, unsignalized crossings, and mid-block locations.

Pedestrian Collisions

Between 2009 and 2014, 413 vehicle-pedestrian collisions occurred within the City of Stockton. Of these collisions, 33 were fatal and 43 resulted in severe injuries. Pedestrian-involved collisions accounted for approximately eight percent of all traffic collisions, 22 percent of all serious traffic injuries, and 31 percent of all traffic fatalities within the city, all disproportionately higher than the city's pedestrian mode share (1.4 percent of commute trips as presented in Table 4.14-1 below).

The top vehicle-pedestrian collision injury locations in Stockton are listed in the Existing Conditions Report, included as Appendix E to this Draft EIR.

Goods Movement

Freight transportation systems in the City of Stockton consist of rail, truck, air, and port facilities mapped on Figure 4.14-5.

Rail

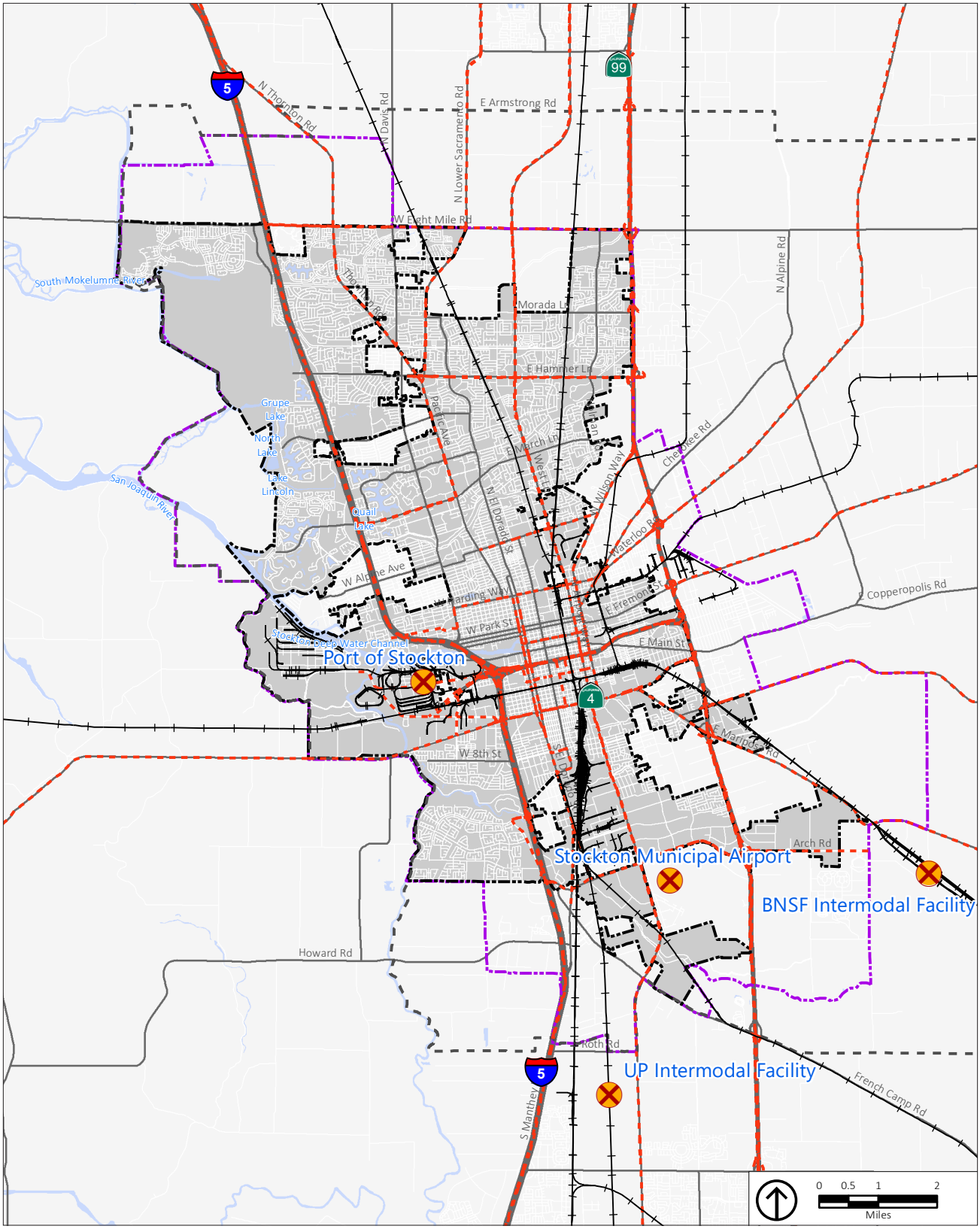
Two major transcontinental railroads (BNSF Railway and Union Pacific Railroad, or UPRR) operate within the Stockton area. BNSF serves 28 western states and operates from a 425-acre intermodal facility on the southeast edge of the city. UPRR serves 23 western states and operates a major intermodal facility and other terminal operations in southern Stockton. Both serve the Port of Stockton.

In addition to the major railroads, several short line railroads also operate in Stockton. The Central California Traction Company (CCT), jointly owned by BNSF and UPRR, operates 52 miles of freight service between Stockton and Lodi and is the short line operator for the Port of Stockton. The Stockton Terminal and Eastern (STE) Railroads run 25 miles from Stockton to Linden.

Truck

Truck routes in Stockton consist primarily of the State Highway system and the major arterials within the city (see Figure 4.14-5). Of particular importance are SR-99 and I-5, which are major truck routes connecting Central Valley cities to other metropolitan areas throughout the state. Truck traffic accounts for about 13 to 25 percent of traffic on these two inter-regional routes. The Crosstown Freeway (SR-4) and Arch-Airport Road also support crosstown truck circulation, as well as provide connections to the airport and BNSF intermodal facility. Many other truck routes focus on the Port of Stockton and Downtown areas, and the commercial and industrial corridors.

In addition to local truck routes, the City has also designated a number of roadway facilities for Surface Transportation Assistance Act (STAA) access. STAA trucks are longer than California legal trucks and require a larger turning radius than most local roadways can accommodate. In addition to SR 99, I-5, and the freeway portions of SR-4, other key STAA routes include Sperry Road-Arch-Airport Road-Arch Road between I-5 and the BNSF intermodal facility, French Camp Road between I-5 and SR 99, Airport Way



Source: Fehr & Peers, City of Stockton, 2016.

Goods Movement Points of Interest
Rail Lines
Freight Routes
General Plan Planning Area
City Limit
Sphere of Influence

Figure 4.14-5
Goods Movement Facilities

Additional details regarding local truck routes in Downtown Stockton can be found at: http://www.stocktongov.com/files/tRout.pdf

TABLE 4.14-1 COMMUTE TRIPS BY MODE

Mode	2000 Percent of Workers	2014 Percent of Workers
Car, Truck, or Van	91.6%	92.1%
Drove Alone	*73.6%*	*75.7%*
Carpooled	*18.0%*	*16.5%*
Public Transportation	1.9%	1.3%
Bus	*1.7%*	*1.1%*
Rail	*0.2%*	*0.2%*
Walked	3.1%	1.4%
Bicycle	0.8%	0.6%
Taxicab, Motorcycle, or Other Means	1.0%	1.1%
Worked at Home	2.4%	3.4%

Source: American Community Survey and Fehr & Peers, 2016.

between French Camp Road and Dr. Martin Luther King Jr. Boulevard, Dr. Martin Luther King Jr. Boulevard between I-5 and SR 99, Eight Mile Road between I-5 and SR 99, and facilities from SR-99 to terminal access locations, such as Wilson Way, Cherokee Road, and SR 26.

Port of Stockton

The Port of Stockton is a deep-water port 75 nautical miles east of the Golden Gate. The 4,200-acre port complex contains over 7.7 million square feet of warehousing facilities, 1.1 million square feet of dockside transit sheds and berthing space for approximately 19 vessels. Major imports include cement, liquid fertilizer, molasses, ammonia, and cottonseed, while major exports include rice, sulfur, wheat, and scrap steel. About 4.1 million metric tons of goods passed through the port in 2014. The Port of Stockton is also a Foreign Trade Zone. Foreign trade zone designation allows for some imports to be held within the zone without paying customs fees and provides other benefits to facilitate international trade. UPRR, BNSF, and CCT railways, as well as over 200 trucking companies serve the Port.

Air

The Stockton Metropolitan Airport is located at the city's southern limit between I-5 and SR-99. Air Transport Services Group Inc. currently provides air cargo service with intermodal connections to truck, rail, and the port.

Commute Trends in Stockton

Between 2000 and 2014, vehicle trips increased while bicycling, walking, and transit commute trips decreased slightly. The percent of Stockton residents working from home has increased by 50 percent since 2000 (see Table 4.14-1).

4.14.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact if it would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.14.2.1 ROADWAY SEGMENT IMPACT CRITERIA

Significance criteria are used to establish what constitutes a significant impact by a project. In addition to the above criteria from Appendix G, Environmental Checklist, of the State CEQA Guidelines, the following significance criteria for the City and surrounding jurisdictions were used to evaluate the transportation effects of the proposed plan.

City of Stockton

The LOS standard for daily and peak hour roadway operations in Stockton is LOS D or better, except where exceptions are identified in the General Plan, which includes a LOS E standard for all roadways in Downtown and LOS E or F standards for a number of roadways where physical constraints limit to ability to widen roadways, including:

- Benjamin Holt Drive, Plymouth Road to Gettysburg Place – LOS F
- Eight Mile Road, Trinity Parkway to I-5 – LOS E
- Eight Mile Road, Lower Sacramento Road to West Lane – LOS E
- Eighth Street, I-5 to El Dorado Street – LOS E
- Eighth Street, Airport Way to Mariposa Road – LOS E
- French Camp Road, Manthey Road to I-5 – LOS E
- French Camp Road, I-5 to Val Dervin Parkway- LOS F
- Hammer Lane, I-5 to Kelly Drive – LOS E
- Hammer Lane, West Lane to Holman Road – LOS E

- Otto Drive, I-5 to Thornton Road – LOS F
- Pacific Avenue, Harding Way to Castle Drive and Alpine Avenue to the Calaveras River – LOS F
- Pershing Avenue, I-5 to Brookside Road – LOS F
- Swain Road, I-5 to Pacific Avenue – LOS F
- Thornton Road, Davis Road to Pershing Avenue – LOS E
- West Lane, Hammer Lane to Morada Lane – LOS E
- Woods Boulevard, French Camp Road to Carolyn Weston Boulevard – LOS E

A significant impact would occur for vehicle traffic if either of the following occur:

- The LOS of the segment degrades from acceptable under existing conditions to unacceptable under proposed General Plan conditions; or
- For segments where the LOS is already deficient under existing conditions, the proposed General Plan increases traffic volumes.

RCMP Analysis Impact Criteria

SJCOG is the designated Congestion Management Agency (CMA) for San Joaquin County. As such, they are required to maintain the State-mandated Regional Congestion Management Program (RCMP) for roadways within the county. The LOS Standard for RCMP facilities is LOS D. If a CMP segment operates worse than LOS E (i.e., LOS F), then the jurisdiction in which the segment is located must prepare a deficiency plan.

RCMP facilities within the EIR Study Area include:

- Interstate 5
- State Route 99
- State Route 4
- State Route 88
- State Route 26
- Eight Mile Road
- Hammer Lane
- March Lane
- Sperry Road
- French Camp Road
- Trinity Parkway
- Thornton Road
- Pacific Avenue
- West Lane
- Airport Way
- Mariposa Road
- Austin Road

A significant impact would occur for vehicle traffic if either of the following occur:

- The LOS of the segment degrades from acceptable under existing conditions to unacceptable under proposed General Plan conditions; or
- For segments where the LOS is already deficient under existing conditions, the proposed General Plan increases traffic volumes.

Caltrans Facility Impact Criteria

As stated in the Caltrans Traffic Impact Study Guide, “Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities; however, Caltrans acknowledges that this

may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Effectiveness (MOE) should be maintained."

While the Caltrans Guide sets a LOS C standard, given the amount of through traffic on Caltrans facilities in Stockton, the City has set LOS D as the general LOS standard, with some locations exempted where physical constraints limit the ability to increase capacity, including:

- Interstate 5, Hammer Lane to Benjamin Holt Drive – LOS E
- Interstate 5, Benjamin Holt Drive to Downing Avenue – LOS F
- Interstate 5, Downing Avenue to French Camp Road – LOS E
- SR 4 (Crosstown Freeway), I-5 to SR 99 – LOS E (with exception of the segment from Stanislaus Street to Wilson Way, where the standard is LOS F)
- SR 99, Morada Lane to SR 4 (Crosstown Freeway) – LOS E (with the exception of the segments from Hammer Lane to March Lane and from Waterloo Road to SR 4, where the standard is LOS F)

The following criteria were used to evaluate potential freeway impacts:

- If a Caltrans facility is projected to operate acceptably without the project and the project is expected to cause the facility to operate at an unacceptable service level, the impact is considered significant.
- If a Caltrans facility is projected to operate unacceptably without project and the project is expected to increase vehicle density, the impact is considered significant.

4.14.3 IMPACT DISCUSSION

This section analyzes potential impacts of the proposed General Plan on transportation and traffic. For this assessment, daily roadway segment operations were analyzed under existing and proposed Plan conditions. Peak hour intersection levels of service were not assessed under proposed Plan conditions as this analysis is intended to provide a general assessment of transportation network capacity as identified in the Transportation Chapter of the proposed General Plan. More detailed analysis will be required for future development projects to identify project-specific impacts as well as roadway network improvements needed to support those developments, in combination with other planned and pending developments.

4.14.3.1 MODEL METHODOLOGY

This section documents the assumptions and approach used for the traffic forecast modeling as part of the transportation impact analysis.

To develop the model, Fehr & Peers started with the Three-County - San Joaquin, Stanislaus, and Merced (MIP 2) regional travel demand model, extracted the City of Stockton General Plan Planning Area, and refined land use and circulation networks within the Stockton General Plan area. The City of Stockton General Plan Planning Area was extracted from the larger three-county model to provide a more flexible, quick-response tool that is more sensitive to local land use and circulation changes than the three-county model, while maintaining the functionality and connection to the regional model for RTP/SCS consistency.

Refinements to land use inputs and roadway network characteristics within the Stockton model area were based on field observations, published reports, data compiled for the General Plan Update, and American Community Survey (ACS) data, as detailed in the model development documentation provided in Appendix F. The subarea model was validated to 2015/2016 conditions, and was used to forecast 2040 conditions with the proposed General Plan.

Approach

The Stockton model utilizes the Cube modeling software package developed by Citilabs and produces daily trip generation, mode share, and vehicle flows for the General Plan area based on comprehensive land use, transportation network and socioeconomic data (SED). The model follows a four-step process consisting of trip generation, trip distribution, mode choice, and assignment. Additional detail regarding the development and structure of the original model can be found in the Final Three-County Model VMIP 2 – Model Development Report.[4]

The travel demand model was used to estimate daily travel behavior in and around Stockton, including person trip generation and travel mode. Trips were then assigned to the roadway network by travel mode, including daily vehicle trips on a roadway segment level, vehicle miles of travel, and city-wide travel demand by mode, including automobile, transit, walking and bicycling.

The vehicle traffic assignments were used to analyze the effects of the proposed General Plan on traffic operations in the EIR Study Area and compare those operations to existing conditions.

Truck trips are accounted for in the traffic analysis for the proposed General Plan. Land use assumptions in the traffic model include truck trips in the fleet mix and the model distributes those truck trips on regional and local roadways according to the land uses. Therefore, the traffic analysis reflects projected future truck trips based on land use changes for the proposed General Plan.

Transportation-related project impacts were analyzed for the following scenario for daily conditions:

- Cumulative with Proposed Plan – Cumulative with proposed General Plan conditions are assumed to represent a 2040 horizon year for consistency with the other topic areas in the EIR. In this scenario, growth within Stockton, consistent with the proposed Plan, was added to projected growth outside of Stockton in the larger Central Valley region, which is based on SJCOG projections used for the RTP/SCS.

Land Use

Land uses projections for Travel Analysis Zones (TAZ's) within the General Plan Planning Area were coded into the model. For TAZs outside the Planning Area, data developed by SJCOG reflecting a 2040 planning horizon was used.

[4] SJCOG, 2017, *Final Three-County Model VMIP 2 – Model Development Report*.

Forecasts

To develop vehicle forecast on the study segments, the model was run for both the base year and with proposed General Plan conditions. The difference between the base year and future year model results was then added to the existing traffic volumes to estimate future year traffic volumes. This approach accounts for potential model error.

Roadway Network

An iterative process was used to develop the proposed Circulation network, starting with the circulation network of the adopted 2035 General Plan. Because the proposed General Plan scales back land use development assumptions through 2040, some of the roadway network improvements to support previously planned development, such as development north of Eight Mile Road, were not included in the proposed General Plan network. Specifically, the assumptions described below were made.

All surface streets were capped at a six-lane cross-section, including Eight Mile Road, Hammer Lane, March Lane, French Camp Road, Sperry Road/Arch Road, West Lane, and Airport Way, with further lane reductions on some facilities:

- French Camp Road from Wolfe Road to SR 99 – reduce to 4 lanes
- Mathews Road/Howard Road from El Dorado Street to Wolfe Road –no improvements
- Sperry Road from French Camp to Airport Way - reduce to 4 lanes
- Airport Way from Arch/Airport to French Camp – reduce to 4 lanes
- El Dorado from 4th Street to French Camp Road – reduce to 4 lanes
- Arch Road from Frontier to Newcastle – reduce to 4 lanes
- Mariposa Road from Austin to Carpenter – reduce to 4 lanes
- Hammer Lane from Lower Sacramento to Maranatha Drive – reduce to 6 lanes
- Holman Road from March Lane to Eight Might Road - reduce to 4 lanes
- Morada Lane from West lane to SR 99 - reduce to 4 lanes
- Lower Sacramento from Hammer Lane to Eight Mile Road - reduce to 4 lanes
- Thornton Road from Hammer Lane to Eight Mile Road - reduce to 4 lanes
- Eight Mile Road, west of Trinity Parkway - reduce to 4 lanes
- Eight Mile Road from Thornton Road to West Lane - reduce to 4 lanes
- Wilson Way from Dr. Martin Luther King Jr. Boulevard to SR 99 - reduce to 4 lanes
- Eighth Street, I-5 to El Dorado - reduce to 4 lanes

To support the provision of bicycle facilities, the following roadway changes were included to allow for the provision of bicycle lanes:

- California Street, Alpine to Oak - reduce from 4 to 2 lanes
- Alpine Avenue, Ryde Avenue to California Street - reduce from 4 to 2 lanes

The above lane reductions were considered in the modeling of proposed General Plan conditions as the City's currently adopted precise plans would need to be amended.

A new interchange was assumed on SR 99 at March Road with the planned March Lane extension from its current terminus at Holman Road to SR 99. As part of the construction of a new east-west roadway between Arch Road and French Camp Road (known as Dixon Road), a new interchange is proposed on SR

99. The completion of the Crosstown Freeway from Navy Drive to SR 4 was also reflected in the modeling effort. Although planned under the 2035 General Plan, this modeling effort did not include a new interchange on I-5 at Otto Drive or interchange upgrades at SR 99 and Morada Lane.

Consistent with the SJRTD Short Range Transit Plan, the following new bus rapid transit lines were coded in the model, with stops at major intersections and 10-minute headways during core service hours (matching existing BRT routes):

- Eight Mile Road
- West Lane
- Pacific Corridor
- Airport Corridor
- March Lane
- Downtown
- MLK
- Arch/Sperry

Forecast Uncertainty

The forecast model does not take into consideration some foreseeable travel changes, including increased use of transportation network companies, such as Uber and Lyft, nor the potential for autonomous vehicles. Although the technology for autonomous vehicles is expected to be available over the planning horizon, the federal and State legal and policy frameworks are uncertain. Initial modeling of an autonomous future indicates that with automated and connected vehicles, the capacity of the existing transportation system would increase as vehicles can travel closer together; however, these efficiencies are only realized when a high percentage of vehicles on the roadway are automated and connected. There is also the potential for vehicle travel to increase with zero-occupancy vehicles on the roadway. As the technology advances, and the federal and State legal and policy frameworks are developed, future studies may be conducted to assess the implications of autonomous travel on Stockton roadways.

TRAF -1	**Implementation of the proposed project would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit.**

This impact discussion focuses on vehicular transportation and covers roadway segment and freeway segment operations.

Impacts related to other modes of transportation are discussed under Impact TRAF-6 below.

Roadway Segment Levels of Service

This section describes the traffic conditions that would result with the addition of vehicle trips generated under the Cumulative with Proposed Plan conditions on the local roadway network, compared to traffic under Existing Conditions. The forecasts also consider potential traffic shifts that are expect to occur with the construction of new roadway facilities. For example, completion of the March Lane extension from Holman Road to a new interchange at State Route 99 is expected to shift some east-west travel from

Hammer Lane to March Road. Completion of the State Route 4 extension from Fresno Avenue to Charter Way (portion from Fresno Avenue to Navy Drive recently completed) would shift traffic from Charter Way, east of Fresno Avenue. Development in surrounding communities would increase interregional travel on State Highways, including State Route 99 and Interstate 5.

The results of the LOS analysis under the Cumulative with Proposed Plan scenario compared to the Existing Conditions scenario are presented in Table 4.14-2 for segments that are currently deficient or projected to be deficient; results for all 166 study segments are provided in Appendix C.

The results show that, of the 166 study segments, 20 segments operate at a potentially deficient level in the existing condition. The proposed General Plan would improve the operation of some roadway segments by improving roadway facilities, or providing parallel capacity, but would result in new deficiencies for a total of 22 potentially deficient roadway segments. Some of the deficient locations are exempt from the LOS D standard. All other study segments would operate at LOS D or better under the proposed General Plan condition, which is considered acceptable based on the various LOS criteria used to assess the transportation network performance.

As shown in Table 4.14-2, the proposed General Plan, in combination with regional growth, could result in significant impacts on the following roadway segments.

- Interstate 5 between Crosstown Freeway and Downing Avenue. This section of I-5 is projected to operate at LOS E or LOS F conditions on a daily basis in the Cumulative with Proposed Plan scenario. The City of Stockton LOS criteria for this freeway section is LOS F, recognizing that even with planned freeway improvements, congestion is still expected to occur and there are limited additional capacity enhancements that can be constructed. Based on the City of Stockton LOS criteria, this is a *less-than-significant* impact.
- State Route 99 between Fremont Street and Hammer Lane. This section of SR-99 is projected to operate at LOS F conditions on a daily basis in the Cumulative with Proposed Plan scenario. The City of Stockton LOS criteria for this freeway section is LOS F, recognizing that even with planned freeway improvements, congestion is still expected to occur and there are limited additional capacity enhancements that can be constructed. Based on the City of Stockton LOS criteria, this is a *less-than-significant* impact.
- State Route 99 between Fremont Street and Farmington Road. This section of SR-99 is projected to operate at LOS F conditions on a daily basis in the Cumulative with Proposed Plan scenario. The City of Stockton LOS criteria for this freeway section is LOS E, recognizing that even with planned freeway improvements, congestion is still expected to occur and there are limited additional capacity enhancements that can be constructed. Based on the City of Stockton LOS criteria, this is a *significant* impact.
- State Route 99 between Farmington Road and Mariposa Road. This section of SR-99 is projected to operate at LOS E conditions on a daily basis in the Cumulative with Proposed Plan condition. The City of Stockton LOS criteria for this freeway section is LOS E, recognizing that even with planned freeway improvements, congestion is still expected to occur and there are limited additional capacity enhancements that can be constructed. Based on the City of Stockton LOS criteria, this is a *less-than-significant* impact.

TABLE 4.14-2 POTENTIALLY DEFICIENT ROADWAY SEGMENT LEVELS OF SERVICE

Segment ID	Roadway	Between		City LOS Standard	Base Year				2040 Plus Project			
					ADT	Lanes	Classification	LOS	ADT	Lanes	Classification	LOS
9	I-5	Crosstown Fwy	Dr. Martin Luther King Jr. Blvd	F	143,310	8	Freeway	D	199,800	10	Freeway	E
10	I-5	Dr. Martin Luther King Jr. Blvd	8th Street	F	151,800	6	Freeway	F	223,000	10	Freeway	F
11	I-5	8th Street	Downing Ave.	F	113,640	6	Freeway	D	178,200	8	Freeway	F
12	I-5	Downing Ave	French Camp Rd	E	120,000	6	Freeway	E	145,600	8	Freeway	D
17	SR 99	Hammer Lane	Wilson Way	F	105,000	6	Freeway	D	174,300	8	Freeway	F
18	SR 99	Wilson Way	Cherokee Rd	F	98,120	6	Freeway	D	167,400	8	Freeway	E
19	SR 99	Cherokee Rd	Waterloo Rd	F	107,260	6	Freeway	D	213,700	8	Freeway	F
20	SR 99	Waterloo Rd	Fremont St	F	115,390	6	Freeway	D	222,600	8	Freeway	F
21	SR 99	Fremont St	Crosstown Fwy	E	114,000	6	Freeway	D	220,700	8	Freeway	**F**
22	SR 99	Crosstown Freeway	Dr. Martin Luther King Jr. Blvd	E	103,400	6	Freeway	D	192,300	8	Freeway	**F**
23	SR 99	Dr. Martin Luther King Jr. Blvd	Farmington Rd	E	95,700	6	Freeway	D	184,600	8	Freeway	**F**
24	SR 99	Farmington Rd	Mariposa Rd	E	80,300	6	Freeway	C	169,200	8	Freeway	E
35	Eight Mile Rd	Davis Rd	Lower Sacramento	E	16,930	2	Arterial	E	26,600	4	Arterial	C
36	Eight Mile Rd	Lower Sacramento	West Lane	E	20,420	2	Arterial	**F**	36,500	4	Arterial	D
51	Benjamin Holt Dr	Plymouth	Belmont	F	22,630	2	Arterial	F	21,500	2	Arterial	F
52	Benjamin Holt Dr	Vicksburg	Gettysburg	F	16,380	2	Arterial	E	15,200	2	Arterial	D
60	March Lane	At UPRR		D	38,800	6	Arterial	C	58,300	6	Arterial	**E**
61	March Lane	West Lane	Bianchi Road	D	28,720	8	Arterial	A	72,700	6	Arterial	**F**
84	SR 4	Navy Drive	Fresno	D	17,420	2	Arterial	**F**	7,420	2	Arterial	A
85	SR 4	I-5	Navy Drive	D	31,980	2	Arterial	**F**	18,300	2	Arterial	**E**
86	Dr. Martin Luther King Jr. Blvd	I-5	Lincoln	D	34,420	4	Arterial	**E**	48,800	4	Arterial	**F**

TABLE 4.14-2 POTENTIALLY DEFICIENT ROADWAY SEGMENT LEVELS OF SERVICE

Segment ID	Roadway	Between		City LOS Standard	Base Year				2040 Plus Project			
					ADT	Lanes	Classification	LOS	ADT	Lanes	Classification	LOS
87	Dr. Martin Luther King Jr. Blvd	California	Airport Way	D	30,000	4	Arterial	D	42,400	4	Arterial	**E**
89	Dr. Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	D	15,220	2	Arterial	**E**	17,300	4	Arterial	A
96	8th Street	Pock Lane	D St	D	8,190	2	Collector	C	12,500	2	Collector	**E**
100	Arch-Airport Rd	Airport	Pock Lane	D	16,680	2	Arterial	**E**	41,200	6	Arterial	C
101	Arch-Airport Rd	SR 99	Quantas Lane	D	27,070	4	Arterial	D	61,700	6	Arterial	**E**
107	Thornton Rd	Waudman	Davis	D	25,070	2	Arterial	**F**	22,400	4	Arterial	A
108	Thornton Rd	Aberdeen	Cortez	E	37,460	2	Arterial	**F**	34,400	4	Arterial	D
112	Davis Rd	Ponce De Leon	Thornton	D	15,400	2	Arterial	**E**	17,500	4	Arterial	A
114	Lower Sacramento	Bear Creek	Eight Mile	D	16,340	2	Arterial	**E**	22,300	4	Arterial	A
119	West Lane	Swain	March	D	37,470	4	Arterial	**E**	46,900	6	Arterial	D
125	Pershing Ave	At Calaveras River		E	35,990	4	Arterial	E	32,600	4	Arterial	D
129	Pacific Ave	At Calaveras River		F	33,150	4	Arterial	E	29,300	4	Arterial	C
131	Fresno Ave	Washington St	Navy Dr	D	11,850	2	Collector	**E**	2,370	2	Collector	A
142	California St	Alpine	Harding	D	18,070	4	Arterial	A	19,100	2	Arterial	**E**
143	California St	Harding Way	Park St	D	11,530	4	Arterial	A	21,700	2	Arterial	**F**
163	B St	Dr. Martin Luther King Jr. Blvd	Fourth St	D	13,530	2	Collector	**F**	14,400	2	Collector	**F**

Notes:
Bold indicates level of service exceeds standard. **Bold Shading** indicates potential significant impact.
ADT: Average Daily Trips

- Ben Holt Drive between Plymouth and Belmont. Ben Holt Drive currently operates at LOS E or F. Traffic volumes under the proposed General Plan are expected to decrease slightly as parallel capacity would be provided on other roadway facilities, potentially changing travel patterns. Even with the potential for traffic shifts to other roadways, Ben Holt Drive would continue to operate at LOS or F conditions. LOS F is the standard for this roadway; therefore, the impact is considered *less than significant*.
- March Lane at UPRR. This section of March Lane is projected to degrade to LOS E conditions in the Cumulative with Proposed Plan condition due to a combination of new traffic from land use development as well as traffic shifts from other roadways that is expected to occur once March Lane is extended to SR 99. Based on the City of Stockton LOS criteria, this is a *significant* impact.
- March Lane between West Lane and Bianchi Road. This section of March Lane currently provides four travel lanes in each direction plus turn pockets at intersections. The analysis of Cumulative with Proposed Plan conditions considered the potential for the elimination of a travel lane in each direction on the sections of March Lane that currently provide four travel lanes (three travel lanes plus turn pockets would be maintained) to reallocate existing right-of-way to other roadway users, potentially to provide exclusive bicycle or transit facilities. With a lane reduction and based on the City of Stockton LOS criteria, this is a *significant* impact.
- Charter Way between I-5 and Navy Drive. This section of Charter Way currently operates at LOS F; with implementation of the proposed General Plan and associated roadway improvements, daily operations are expected to improve from LOS F to LOS E. Although LOS E is considered deficient for this roadway section, conditions improve under the proposed General Plan. Based on the significance criteria, this is considered a *less-than-significant* impact.
- Dr. Martin Luther King Jr. Boulevard between I-5 and Airport Way. The section between I-5 and Lincoln Street currently operate at LOS E and is projected to degrade to LOS F in the Cumulative with Proposed Plan scenario. The section between California Street and Airport Way is expected to degrade from LOS D to E conditions. Based on the City of Stockton LOS criteria, this is a *significant* impact.
- 8th Street between Pock Lane and D Street. This roadway currently operates at a LOS C and would degrade to LOS E in the Cumulative with Proposed Plan scenario. Based on the City of Stockton LOS criteria, this is a *significant* impact.
- Arch Airport Road between SR 99 and Quantas Lane. This roadway currently operates at a LOS D and would degrade to LOS E in the Cumulative with Proposed Plan scenario. Based on the City of Stockton LOS criteria, this is a *significant* impact.
- California Street between Harding Way and Park Street. This roadway currently operates at a LOS A and would degrade to LOS E or F in the Cumulative with Proposed Plan scenario. The analysis of Cumulative with Proposed Plan conditions considered the potential for the elimination of a travel lane in each direction on the sections of California Street between Harding Way and Park Street (from four vehicle travel lanes to two vehicle travel lanes) to reallocate existing right-of-way to other roadway users, potentially to provide exclusive bicycle facilities. Based on the City of Stockton LOS criteria, this is a *significant* impact.

- B Street between Dr. Martin Luther King Jr. Boulevard and 4th Street. This roadway currently operates at a LOS E and would continue to operate at LOS E in the Cumulative with Proposed Plan scenario. As the proposed General Plan would increase traffic on this roadway segment, this is a *significant* impact.

Significance Without Mitigation: Significant.

Impact TRAF-1: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of local roadways and freeway segments. As shown in Table 4.14-2 and discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.

Mitigation Measure TRAF-1a: The City shall implement the following to reduce the severity of potential LOS impacts on the following City roadway segments:

- March Lane at UPRR. The adopted 2035 General Plan identifies an eight-lane cross section for this roadway from North El Dorado Street to State Route 99. The proposed General Plan envisions a six-lane cross-section through 2040. With an eight-lane cross-section, the roadway would operate within the established LOS policy. Therefore, to mitigate the impact, the City shall reserve sufficient right-of-way to accommodate an eight-lane cross-section, plus associated turn pockets at intersections. Construction of an eight-lane cross-section would result in an acceptable level of service for vehicles, but could preclude the provision of facilities that would encourage higher levels of transit ridership, walking and bicycling along the corridor.

  Prior to the construction of additional roadway improvements along the March Lane corridor, the City shall conduct a focused complete streets study to analyze and evaluate peak hour and daily operations of March Lane between I-5 and State Route 99 to identify the cross-section required to accommodate existing and planned growth. The complete streets study shall consider the potential mode shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the corridor. Should the complete streets study show that corridor operations would fall within the established level of service standard for the six-lane cross-section, an implementation program of the identified bicycle, pedestrian, and transit improvements shall be required. Alternatively, the mitigation measure is to provide an eight-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level.

- March Lane between West Lane and Bianchi Road. The adopted 2035 General Plan identifies an eight-lane cross section for this roadway from North El Dorado Street to State Route 99. The proposed General Plan envisions a six-lane cross-section through 2040. With an eight-lane cross-section, the roadway would operate within the established LOS policy. Therefore, to mitigate the impact, the City shall reserve sufficient right-of-way to accommodate an eight-lane cross-section, plus associated turn pockets at intersections.

  Prior to the construction of additional roadway improvements along the March Lane corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of March Lane between I-5 and State Route 99 to identify the cross-section required to accommodate existing and planned growth. The analysis shall consider the potential mode shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the

corridor. Should corridor operations fall within the established level of service standard with a six-lane cross-section, the study shall identify bicycle, pedestrian, and transit enhancements that are necessary to serve the corridor. Otherwise, the mitigation measure is to provide an eight-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level.

- Dr. Martin Luther King Jr. Boulevard between I-5 and Airport Way. This section of Dr. Martin Luther King Jr. Boulevard is built out to its ultimate capacity and no further improvements are planned. Provision of parallel capacity in the area would provide alternative travel choices within this area of South Stockton, but is not expected to result in LOS D operations in the Cumulative with Proposed Plan condition. Therefore, this impact would remain *significant and unavoidable*.
- 8th Street between Pock Lane and D Street. This roadway section currently provides one travel lane in each direction with on-street parking within a 60-foot curb-to-curb right-of-way. There is sufficient right-of-way to modify the roadway cross-section to maintain on-street parking (8 feet), provide bicycle lanes (6 feet), one travel lane in each direction (10 feet), and a center two-way left-turn lane (12 feet). With modifications within the existing right-of-way, vehicular capacity could increase, reducing the impact to a less-than-significant level. Therefore, to mitigate the impact, the City shall conduct a detailed engineering study of 8th Street between El Dorado Street and Mariposa Road to identify roadway improvements that can be implemented within the existing right-of-way to improve travel for all modes, especially considering the potential for a grade-separated crossing of the railroad tracks, which would provide an additional east-west connection in South Stockton. Implementation of this mitigation measure would reduce this impact to *a less-than-significant* level.
- Arch Airport Road between SR 99 and Quantas Lane. This section of Arch-Airport Road is built out to its ultimate capacity and no further improvements are planned. Provision of parallel capacity in the area would provide alternative travel choices within this area of South Stockton, but is not expected to result in LOS D operations in the Cumulative with Proposed Plan condition. Therefore, this impact would remain *significant and unavoidable*.
- California Street between Harding Way and Park Street. Prior to the construction of roadway improvements along the California Street corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of California Street from north of Harding Way to south of Park Street. The evaluation shall consider the effect of providing exclusive bicycle facilities on peak hour and daily operations along the corridor. The study shall also evaluate parallel roadway facilities that could potentially see an increase in vehicle traffic with a lane reduction on California Street.

  Should the study indicate vehicle operations would fall below the level of service standard for the facility, even considering potential traffic shifts to other roadways (and the secondary impact of those shifts), and the potential mode shift to non-auto travel modes, the mitigation measure is to retain the existing vehicle capacity and explore other alternatives for providing bicycle facilities through the corridor. Should the analysis indicate vehicle levels of service would remain within the City's standard for the roadway facility, the mitigation measure is to construct exclusive bicycle facilities within the existing cross-section. Implementation of this mitigation measure would reduce this impact to a *less-than-significant* level.

- B Street between Dr. Martin Luther King Jr. Boulevard and 4th Street. The City shall reserve sufficient right-of-way to accommodate a four-lane cross-section, plus associated turn pockets at intersections.

  Prior to the construction of additional roadway improvements along the B Street corridor, the City shall conduct a focused complete streets study to evaluate peak hour and daily operations of B Street between Dr. Martin Luther King Jr. Boulevard and Arch-Airport Road to identify the cross-section required to accommodate existing and planned growth. The analysis shall consider the potential mode shift under scenarios that provide additional bicycle, pedestrian, and transit facilities along the corridor. Should corridor operations fall within the established level of service standard with a two-lane cross-section, the study shall identify bicycle, pedestrian, and transit enhancements that are necessary to serve the corridor. Otherwise, the mitigation measure is to provide a four-lane cross-section for vehicles. Implementation of this mitigation measure would reduce the potential impact to a *less-than-significant* level.

Significance With Mitigation: Significant and unavoidable. While implementation of Mitigation Measure TRAF-1a would retain right-of-way to provide wider cross-sections than are envisioned under the proposed General Plan subsequent to detailed evaluation, parallel capacity and/or additional right-of-way is not available to mitigate some impacts, and the City cannot guarantee that funding would be available to conduct additional evaluations and construct identified improvements.

Mitigation Measure TRAF -1b: The City shall implement the following to reduce the severity of potential LOS impacts on the following freeway segment:

- State Route 99 between Farmington Road and Fremont Street. The Cumulative with Proposed Plan transportation analysis considers the widening of State Route 99 through Stockton to its ultimate planned width. No additional improvements have been identified. Implementation of the proposed General Plan and its associated policies are expected to provide alternative travel choices to Stockton residents and workers, shifting travel patterns and modes. However, deficient operations are expected to occur on State Route 99, and this impact would remain *significant and unavoidable*.

Significance With Mitigation: Significant and unavoidable.

TRAF-2	**Implementation of the proposed project would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.**

SJCOG has established a LOS D standard for regional roadway facilities, but also strives to develop a network of complete streets that accommodate all travel modes. The City of Stockton is supportive of the development of the roadway system identified in the SJCOG RTP/SCS. Additionally, the proposed General Plan includes a number of policies and actions that are supportive of the provision of regional transportation systems, including transit.

Development potential under the proposed General Plan would contribute to the need for improvements to the regional transportation system, including development of the expressway system identified by SJCOG and improvements to the freeway system. Should Tier I improvements identified in the SJCOG RTP/SCS not be constructed, roadway conditions could be worse than presented in Table 4.14-2.

The following regionally-designated facilities are projected to operate beyond the LOS standard established by SJCOG and Caltrans under Cumulative with Proposed Plan conditions:

- Interstate 5 between Downing Avenue and Dr. Martin Luther King Jr. Boulevard. This section of I-5 is projected to operate at LOS E or LOS F conditions on a daily basis in the Cumulative with Proposed Plan condition. Based on the Caltrans and SJCOG LOS criteria, this is a *significant* impact.
- State Route 99 between Mariposa Road and Hammer Lane. This section of SR-99 is projected to operate at LOS E or LOS F conditions on a daily basis in the Cumulative with Proposed Plan condition. Based on the Caltrans and SJCOG LOS criteria, this is a *significant* impact.
- March Lane at UPRR. This section of March Lane is projected to degrade to LOS E conditions in the Cumulative with Proposed Plan condition due to a combination of new traffic from land use development as well as traffic shifts from other roadways that are expected to occur once March Lane is extended to SR 99. Based on the SJCOG LOS criteria, this is a *significant* impact.
- March Lane between West Lane and Bianchi Road .This section of March Lane currently provides four travel lanes in each direction plus turn pockets at intersections. The analysis of Cumulative with Proposed Plan conditions considered the potential for the elimination of a travel lane in each direction on the sections of March Lane that currently provide four travel lanes (three travel lanes plus turn pockets would be maintained) to reallocate existing right-of-way to other roadway users, potentially to provide exclusive bicycle or transit facilities. Based on the SJCOG LOS criteria, this is a *significant* impact.
- Charter Way between Navy Drive and I-5. This section of Charter Way currently operates at LOS F; with implementation of the proposed General Plan and associated roadway improvements, daily operations are expected to improve from LOS F to LOS E. Although LOS E is considered deficient for this roadway section, conditions would improve under the proposed General Plan. Based on the significance criteria, this is considered a *less-than-significant* impact.
- Arch Airport Road between Quantas Lane and SR 99. This roadway currently operates at a LOS D and would degrade to LOS E in the Cumulative with Proposed Plan condition. Based on the SJCOG LOS criteria, this is a *significant* impact.

Significance Without Mitigation: Significant.

Impact TRAF-2: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of regional roadways and freeway segments. As discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.

Mitigation Measure TRAF-2: The City of Stockton shall continue to participate in planning efforts for regional transportation facilities.

Significance With Mitigation: Significant and unavoidable.

TRAF -3 Implementation of the proposed Plan would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The Stockton Metropolitan Airport is at the city's southern limit between I-5 and SR 99, with vehicle access from Airport Way and Arch-Airport Road. The Airport is served by an 8,690-foot long carrier-certified runway and a 4,458-foot long general aviation runway. Passenger service is provided from Stockton to Las Vegas, Nevada, Phoenix/Mesa, Arizona, and San Diego, California by Allegiant. Air Cargo service is provided from the Stockton Metropolitan Airport with intermodal connections to truck, rail, and the port.

Because the proposed General Plan and UMPS is a program-level planning effort, it does not directly address project-level effects on air traffic patterns. However, the proposed General Plan includes the following policy and action that would reduce substantial safety risks:

- Policy TR-1.1: Facilitate expanded port and airport operations, service, and development as travel and goods movement assets to the community and sources of employment growth.
- Action TR-1.3.A: Protect the Airport and related aviation facilities from encroachment by ensuring that all future development within the Airport Influence Area (AIA) is consistent with the policies adopted by the San Joaquin County Airport Land Use Commission (ALUC), except in cases where the City Council concludes that project approval would provide for the orderly development of the Airport and the areas surrounding it while protecting the public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards.

Therefore, the impact would be less than significant.

Significance Without Mitigation: Less than significant.

TRAF -4 Implementation of the proposed Plan would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Because the proposed General Plan and UMPS is a program-level planning effort, it does not directly address project-level design features or building specifications. However, the proposed General Plan includes the following policies and actions that would reduce hazards to the public from a design feature or incompatible uses:

- Policy TR-1.1: Ensure that roadways safely and efficiently accommodate all modes and users, including private, commercial, and transit vehicles, as well as bicycles and pedestrians and vehicles for disabled travelers.
- Action TR-1.1.A: Direct truck traffic to designated truck routes that facilitate efficient goods movement and minimize risk to areas with concentrations of sensitive receptors and vulnerable road users, like pedestrians and bicyclists.
- Action TR-1.1.B: Maintain and periodically update a schedule for synchronizing traffic signals along arterial streets and freeway interchanges to facilitate the safe and efficient movement of people and goods and to provide signal priority for transit vehicles at intersections.
- Action TR-1.1.C: Require roadways in new development areas to be designed with multiple points of access and to address barriers, including waterways and railroads, in order to maximize connectivity for all modes of transportation.
- Action TR-1.1.D: Update existing Precise Road Plans to reflect the 2040 General Plan, including changes in land use and level of service requirements, and a shift in priority from vehicular travel to travel by all modes through complete streets.
- Action TR-1.1.E: Work with local school districts to enhance pedestrian crossings near schools, encourage activities like a walking school bus, and create educational programs that teach students bicycle safety.

Future development under the proposed General Plan would increase both residential and non-residential land uses. As these land uses develop, construction and modifications of new and existing roadways would be necessary to support the growth. As with current practice, the improvements would be designed and reviewed in accordance to the City of Stockton Standard Specifications, which are developed by the Public Works Department and adopted by the City. Overall, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRAF -5 Implementation of the proposed Plan would not result in inadequate emergency vehicle access.

Because the proposed General Plan and UMPS is a program-level planning effort, it does not directly address project-level design features or building specifications; however, the proposed General Plan includes the following actions that would ensure efficient circulation and adequate access are provided, which would help facilitate emergency response:

- Action TR-1.1.C: Require roadways in new development areas to be designed with multiple points of access and to address barriers, including waterways and railroads, in order to maximize connectivity for all modes of transportation.
- Action TR-3.1.B: Where feasible and appropriate, reduce the width of existing streets using bulb-outs, medians, pedestrian islands, shade tree landscaping, and similar methods, while not jeopardizing emergency response.

- Action SAF-5.1.A: Require new development to provide adequate access for emergency vehicles and evacuation routes, including by designing roadway systems to provide multiple escape routes in the event of a levee failure.

Any new streets or development that would result from implementation of the proposed General Plan and UMPS would be subject to City engineering standards and the proposed General Plan actions. Therefore, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRAF-6	**Implementation of the proposed Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

Local Plans

As described in Section 4.14.1, the SJCOG Regional Transportation Plan & Sustainable Communities Strategy contains strategies designed to support alternative modes of transportation, including walking, bicycling and public transit. The San Joaquin Regional Transit District Short Range Transit Plan also identifies planned changes and enhancements to transit service within and connecting to Stockton. The City of Stockton Bicycle Master Plan identifies and prioritizes improvements to the bicycle environment.

The proposed General Plan identifies policies and actions that would build upon these other planning documents and ensure that adequate public transit, bicycle, and pedestrian facilities are provided within Stockton, including:

- Policy TR-2.1: Develop safe and interconnected bicycle and pedestrian facilities, including along "complete" streets that target multiple travel modes.
- Action TR-2.1.A: Require safe and secure bicycle parking facilities to be provided at major activity centers such as public facilities, employment sites, and shopping and office centers, along with showers and lockers for major employment sites.
- Action TR-2.1.B: Maintain and implement the City of Stockton Bicycle Master Plan.
- Policy TR-2.2: Connect housing and employment development in areas with good transit access.
- Action TR-2.2.A: Require major new development to incorporate design features to promote safe and comfortable access to transit, such as a circulation network that facilitates efficient and connected bus travel, clear pedestrian and bicycle routes connecting origins and destinations to transit stops, sheltered bus stops, park-and-ride facilities, and highly visible transit information and maps.
- Action TR-2.2.B: Obtain input from local and regional transit operators on major new development projects to ensure projects are designed to support transit and provide adequate transit service and access.

- Action TR-2.2.C: Request that public transit service providers expand routes and increase frequency and operational hours consistent with current short- and long-range transit planning, as financially feasible.
- Policy TR-2.3: Utilize natural features and routes with lower traffic volumes and speeds to encourage residents to walk and wheel more frequently.
- Action TR-2.3.A: Develop and maintain bikeways on separate rights-of-way (e.g., Calaveras River, East Bay Municipal Utility District easement, French Camp Slough, and Shima Tract Levee).
- Action TR-2.3.B: Require dedication of adequate right-of-way for bicycle use in new arterial and collector streets, and where feasible, in street improvement projects.
- Policy TR-3.1: Avoid widening existing roadways in an effort to preclude inducement of additional vehicle traffic.
- Action TR-3.1.A: Limit street widths to the minimum necessary to adequately carry the volume of anticipated traffic, while allowing for safe bicycle and pedestrian facilities, emergency access, and large vehicle access.
- Action TR-3.1.B: Where feasible and appropriate, reduce the width of existing streets using bulb-outs, medians, pedestrian islands, shade tree landscaping, and similar methods, while not jeopardizing emergency response.
- Action TR-3.1.C: Preserve right-of-way for transit and bicycle uses when designing new roadways and improving existing roadways.

With implementation of the proposed General Plan policies and actions, in combination with the proposed street network and land use patterns, the travel mode in Stockton is expected to shift to encourage more trips to occur via transit, bicycling and walking, as shown in Table 4.14-3.

Implementation of the proposed General Plan would therefore support and would not conflict with plans, programs, and policies regarding bicycle or pedestrian facilities, or decrease the performance and safety of such facilities. Therefore, related impacts from implementation of the proposed General Plan and UMPS would be *less than significant*.

Significance Without Mitigation: Less than significant.

Vehicle Miles Traveled and Senate Bill 743

As discussed in Section 4.14.1.1, SB 743 will eventually require impacts to transportation network performance to be viewed through a filter that promotes the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.

SB 743 identified possible alternative metrics, including VMT and VMT per capita, which can help identify how projects (land development and infrastructure) affect GHG emissions, but do not provide information about how the transportation network performs or functions with respect to efficiency or user experience. SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of

TABLE 4.14-3 PROJECTED TRAVEL MODE SHARE WITH PROPOSED PLAN – ALL TRIPS

	Base Year – Stockton Planning Area		Proposed Plan – Stockton Planning Area	
Mode	Person Trips	Percent Mode Share	Person Trips	Percent Mode Share
Drive Alone	593,100	38.4%	774,600	37.0%
Shared Ride 2	383,800	24.9%	523,100	25.0%
Shared Ride 3+	436,400	28.3%	576,800	27.6%
Transit	24,900	1.6%	53,100	2.5%
Walk	87,800	5.7%	134,400	6.4%
Bike	17,900	1.2%	30,400	1.5%
Total	1,543,900	100.0%	2,092,400	100.0%

Source: Stockton General Plan Model, 2017.

other plans (i.e., the general plan), studies, or on-going network monitoring, but once the new CEQA Guidelines are adopted, LOS metrics may no longer constitute the sole basis for CEQA impacts. However, there are no currently adopted guidelines, standards, or definitions of impact. Therefore, this section provides a VMT discussion for informational purposes only and not as part of the CEQA findings of significance discussion.

An origin-destination (OD) method tracks all vehicular trips generated by the City of Stockton across the entire regional network. Four types of trips are isolated:

- Internal-Internal (II) trips: Include all trips that begin and end within the City of Stockton.
- Internal-External (IX) trips: Include all trips that begin in within city limits and end outside city limits.
- External-Internal (XI) trips: Include all trips that begin outside city limits and end inside city limits.
- External-External (XX) trips: Trips that begin and end outside the City of Stockton are not included. The City of Stockton assumes no responsibility for External-External trip type VMTs.

To estimate VMT per service population, trips are multiplied by the trip distance for all trip types to estimate VMT and then divided by the sum of residential and working population of the City of Stockton. As shown in Table 4.14-4, land uses within the General Plan Planning Area generate approximately 12,473,000 vehicle miles of travel on a daily basis. With implementation of the proposed General Plan, vehicle miles of travel is expected to increase to approximately 16,234,000 miles per day.

To normalize vehicle miles of travel to other demographic factors, the VMT per service population was calculated as summarized below in Table 4-14-5. Within the General Plan Planning Area, VMT on a per capita basis is expected to decrease by approximately 6 percent. This is due to the provision of additional jobs within the Planning Area that would provide employment opportunities for existing and future City of

TABLE 4.14-4 VMT ORIGIN-DESTINATION METHOD (ENTIRE LENGTH OF TRIP)

	Base Year				General Plan			
	City of Stockton		Planning Area		City of Stockton		Planning Area	
Speed Bin	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0.00-7.50	3,500	0.0%	3,600	0.0%	20,000	0.1%	23,000	0.1%
7.51-12.50	7,400	0.1%	7,700	0.1%	29,600	0.2%	33,400	0.2%
12.51-17.50	23,100	0.2%	24,800	0.2%	24,600	0.2%	27,400	0.2%
17.51-22.50	77,000	0.7%	83,100	0.7%	103,900	0.7%	116,000	0.7%
22.51-27.50	395,200	3.5%	416,400	3.3%	556,400	3.9%	604,200	3.7%
27.51-32.50	1,010,700	8.9%	1,071,300	8.6%	1,379,700	9.7%	1,501,800	9.3%
32.51-37.50	761,200	6.7%	810,800	6.5%	944,700	6.7%	1,033,800	6.4%
37.51-42.50	1,135,900	10.0%	1,189,200	9.5%	1,443,100	10.2%	1,558,400	9.6%
42.51-47.60	1,057,700	9.3%	1,169,100	9.4%	1,380,100	9.7%	1,600,500	9.9%
47.61-52.50	437,600	3.9%	490,800	3.9%	623,300	4.4%	735,700	4.5%
52.51-57.50	154,900	1.4%	171,400	1.4%	411,700	2.9%	487,100	3.0%
57.51-62.50	255,300	2.3%	276,500	2.2%	613,000	4.3%	705,400	4.3%
62.51-67.50	6,023,900	53.1%	6,758,700	54.2%	6,675,200	47.0%	7,806,900	48.1%
67.51-72.50	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	**11,343,40**	**100.0%**	**12,473,40**	**100.0%**	**14,205,30**	**100.0%**	**16,233,60**	**100.0%**

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

TABLE 4.14-5 VEHICLE MILES OF TRAVEL BY SERVICE POPULATION

	Base Year		General Plan	
Trip Type	City of Stockton	Planning Area	City of Stockton	Planning Area
VMT (O-D)	11,343,400	12,473,400	14,205,300	16,233,600
Population	305,900	363,300	357,000	484,100
Employment	110,100	123,400	148,700	187,700
Service Population (sum of population and employment)	416,000	486,700	505,700	671,800
VMT per Service Population	27.27	25.63	28.09	24.16
Percent Change from Base Year			3%	-6%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

Stockton residents, as well as additional shopping and other services within a closer distance. The potential for some trips to occur via non-single occupant vehicle modes is also expected to contribute to the reduction in VMT per capita as compared to base year conditions. The net change in VMT for the Planning Area, as shown in Table 4-14-6, illustrates that new development is expected to generate VMT at a lower rate that existing development, as well as change some existing travel patterns.

TABLE 4.14-6 NET CHANGE IN VMT FOR PLANNING AREA

	Base Year	General Plan	
	Total	Total	Net Change
VMT (O-D)	12,473,400	16,233,600	3,866,900
Population	363,300	484,100	120,800
Employment	123,400	187,700	64,300
Service Population	486,700	671,800	185,100
VMT per Service Population	25.63	24.16	20.31
Net Change from Baseline		-5%	-21%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

The proposed General Plan includes policies and actions that are supportive of statewide efforts to reduce vehicle miles of travel, including:

- Policy TR-4.2: Replace LOS with: (1) vehicle-miles traveled (VMT) per capita; and (2) impacts to non-automobile travel modes, as the metrics to analyze impacts related to land use proposals under the California Environmental Quality Act, in accordance with SB 743.
- Action TR-4.2.A: To evaluate the effects of new development and determine mitigation measures and impact fees, require projects to evaluate per capita VMT and impacts to transit, bicycle, and pedestrian modes.
- Action TR-4.2.B: Amend the City's Transportation Impact Analysis Guidelines to include alternative travel metrics and screening criteria.
- Policy TR-4.3: Use the threshold recommended by the California Office of Planning and Research for determining whether VMT impacts associated with land uses are considered significant under State environmental analysis requirements.
- Action TR-4.3.A: Amend the City's Transportation Impact Analysis Guidelines to:
  - Establish a threshold of 15 percent below baseline VMT per capita to determine a significant transportation impact under the California Environmental Quality Act.
  - Identify screening criteria that will streamline certain types of development and/or development in certain areas by not requiring a VMT analysis.

4.15 UTILITIES AND SERVICE SYSTEMS

This section describes the regulatory framework and existing conditions in the EIR Study Area related to utilities and service systems, and uses a quantitative evaluation to identify the potential impacts to utilities and service systems associated with the proposed General Plan Update and Utility Master Plan Supplements (UMPS). Cumulative impacts related to utilities and service systems would be contiguous with the service area boundaries of the utility providers evaluated in this section.

4.15.1 WATER

4.15.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, which was passed in California in 1969 and amended in 2013, the State Water Resources Control Board (SWRCB) has authority over State water rights and water quality policy. This act divided the State into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The EIR Study Area is overseen by the Central Valley RWQCB (CVRWQCB).

California Urban Water Management Planning Act

Through the Urban Water Management Planning Act of 1983, the California Water Code (Division 6, Part 2.6, Sections 10610 through 10656) requires all urban water suppliers within California to prepare and adopt an urban water management plan and update it every five years. This requirement applies to all suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet (af)[1] of water annually. The act is intended to support conservation and efficient use of urban water supplies. The act requires that total project water use be compared to water supply sources over the next 20 years in five-year increments, that planning occur for single- and multiple-dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses. In September 2014, the act was amended by Senate Bill (SB) 1420 to require urban water suppliers to provide descriptions of their water demand management measures and similar information.[2]

[1] One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot.

[2] Department of Water Resources. About Urban Water Management, http://www.water.ca.gov/urbanwatermanagement/, accessed July 28, 2017.

Groundwater Management Act (1992)

The Groundwater Management Act of the California Water Code (Assembly Bill [AB] 3030), signed into law on September 26, 1992 and effective on January 1, 1993, provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMPs) in State-designated groundwater basins. The GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality.[3]

Sustainable Groundwater Management Act (2014)

The Sustainable Groundwater Management Act of 2014 (SGMA) consists of three legislative bills, SB 1168, AB 1739, and SB 1319. The legislation provides a framework for long-term sustainable groundwater management across California. Under the roadmap laid out by the legislation, local and regional authorities in medium and high priority groundwater basins will form Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local Groundwater Sustainability Plan (GSP). The City of Stockton, in combination with California Water Service Company (Cal Water), is authorized to serve as a GSA as of December 8, 2015.[4] Sustainability Plans will have to be in place and implementation begun sometime between 2020 and 2022. GSAs will have until 2040 to achieve groundwater sustainability.[5]

Water Conservation Act of 2009

The Water Conservation Act of 2009,[6] SB X7-7, requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita water by 20 percent by 2020, with an interim goal of a 10 percent reduction in per capita water use by 2015. Effective in 2016, urban retail water suppliers that do not meet the water conservation requirements established by this bill are not eligible for State water grants or loans. SB X7-7 requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified standards.

State Updated Model Landscape Ordinance

The updated Model Landscape Ordinance requires cities and counties to have adopted landscape water conservation ordinances by February 1, 2016 or to have adopted a different ordinance that is at least as effective in conserving water as the updated Model Ordinance. Stockton Municipal Code Section 16.56.040(c), *Compliance with State Model Water Efficient Landscape Ordinance*, requires projects to comply with the provisions include in the current version of the Model Landscape Ordinance as adopted by the City Council.

[3] Department of Water Resources Planning and Local Assistance Central District, Groundwater, *Groundwater Management*, http://www.cd.water.ca.gov/groundwater/gwab3030.cfm, accessed July 28, 2017.

[4] Department of Water Resources, Sustainable Groundwater Management Act, Formation Notification System, http://sgma.water.ca.gov/portal/gsa/print/137, accessed July 28, 2017

[5] UC Davis, Division of Agriculture and Natural Resources, 2014. Groundwater web page, http://groundwater.ucdavis.edu/SGMA/, accessed July 28, 2017.

[6] Department of Water Resources, Senate Bill SBX7-7 2009 Information, http://www.water.ca.gov/wateruseefficiency/sb7/, accessed June 26, 2017.

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") as part of the California Building Standards Code (Title 24, California Code of Regulations). CalGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in the Code, throughout the State of California. CALGreen established planning and design standards for sustainable site development, including water conservation measures and requirements that new buildings reduce water consumption by 20 percent. The mandatory provisions of the CalGreen Standards became effective January 1, 2011 and are enforced through the local building permit process. The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in water efficiency and conservation, amongst others.

California Plumbing Code

The California Plumbing Code (Part 5, Title 24, CCR) was adopted as part of the California Building Standards Code. The general purpose of the universal code is to prevent disorder in the industry as a result of widely divergent plumbing practices and the use of many different, often conflicting, plumbing codes by local jurisdictions. Among many topics covered in the code are water fixtures, potable and non-potable water systems, and recycled water systems. Water supply and distribution shall comply with all applicable provisions of the current edition of the California Plumbing Code.

Stockton Municipal Code

Water conservation requirements—including restrictions on outdoor watering—are set forth in Stockton Municipal Code Chapter 13.28, *Water Conservation*. Water shortage emergency regulations are set forth in Chapter 13.32, *Water Shortage Emergencies*. Chapter 13.32 defines five stages of water shortage emergency, each with mandatory water use restrictions. Stage 1 is Mandatory Water Conservation, in which conservation requirements in Chapter 13.28 are mandatory for all users. Stages 2 through 5 are water shortage emergencies with required water use reductions; for instance, reductions for residential customers range from 10 percent of water use during the base year in a Stage 2 shortage to 40 percent in a Stage 5 shortage.

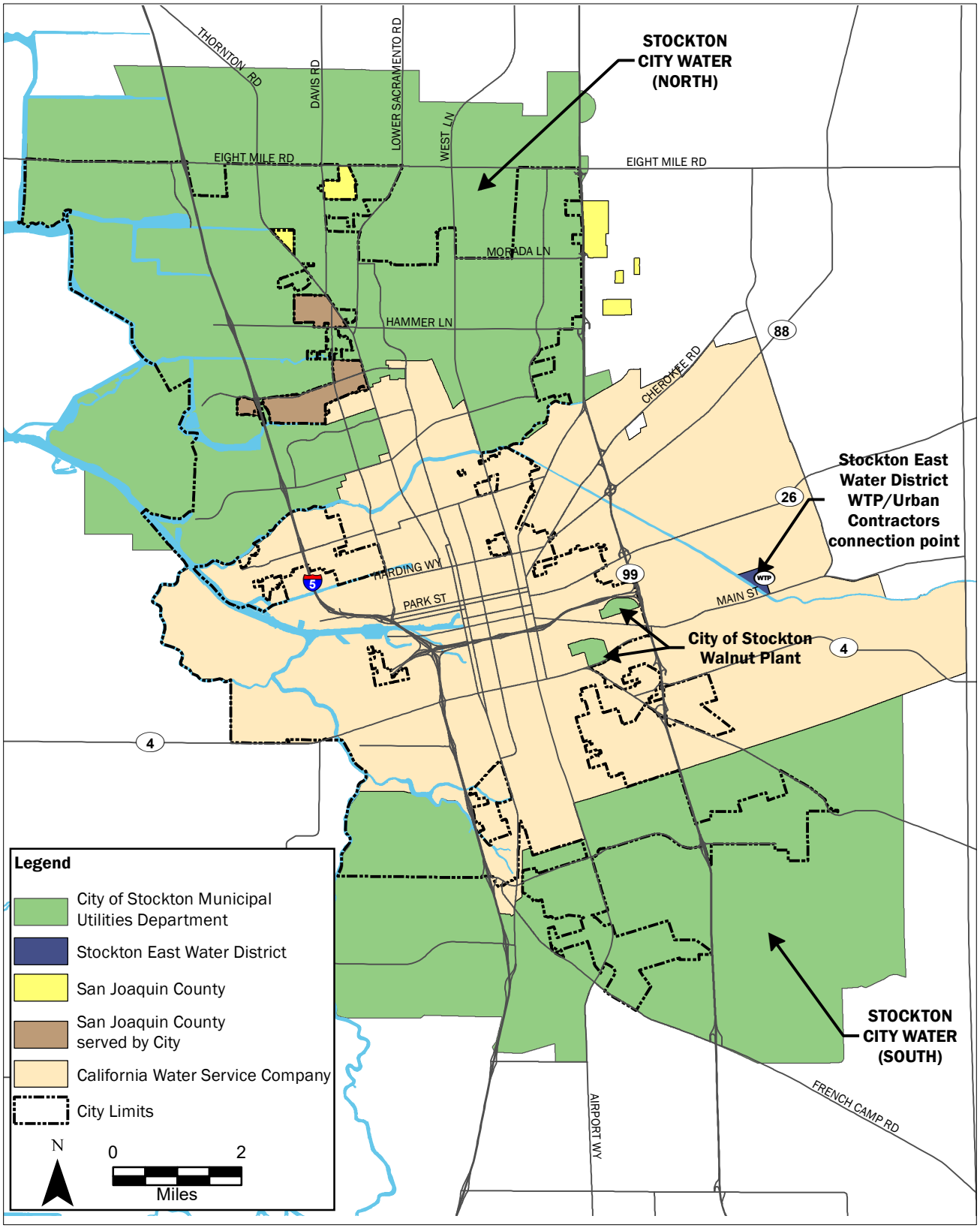
Existing Conditions

Water Supplies

Two water purveyors serve the EIR Study Area: California Water Service Company Stockton District (CWSC) and the City of Stockton Municipal Utilities Department (COSMUD).

California Water Service Company Stockton District

As shown on Figure 4.15-1, CWSC serves the central part of the EIR Study Area. CWSC water supplies consist of purchased water and groundwater. CWSC purchases water from the Stockton East Water



Source: City of Stockton 2015 Urban Water Management Plan, 2016.

Figure 4.15-1
Water Purveyors Service Areas

District (SEWD), which obtains supplies from the New Hogan Reservoir on the Calaveras River and the New Melones Reservoir on the Stanislaus River. Raw purchased water is treated at SEWD's treatment plant on the eastern boundary of the EIR Study Area, with 60 million gallons per day (mgd) capacity. The treatment facility may be approved for 65 mgd production in the near future.[7]

CWSC produces groundwater from the East San Joaquin Subbasin of the San Joaquin Valley Groundwater Basin. The San Joaquin Valley Groundwater Basin is considered to be critically overdrafted; annual overdraft is estimated at 70,000 acre-feet per year (afy).[8]

City of Stockton Municipal Utilities Department

COSMUD serves two service areas in the northern and southern parts of the EIR Study Area, totaling about 60 square miles (see Figure 4.15-1). COSMUD water supplies consist of purchased water, surface water, and groundwater.[9]

COSMUD purchases treated water from SEWD, consisting of water from New Hogan Dam, New Melones Dam, and groundwater. COSMUD also has a 40-year contract to purchase 6,500 afy of Mokelumne River water from the Woodbridge Irrigation District (WID).

COSMUD pumps groundwater from the East San Joaquin Subbasin of the San Joaquin Valley Groundwater Basin. The City estimates the sustainable groundwater yield to be approximately 50,000 afy.

COSMUD also obtains surface water from the San Joaquin Delta via the Delta Water Supply Project (DWSP) at the DWSP intake facility on the San Joaquin River west of the northern part of the EIR Study Area. The DWSP includes a water treatment plant with 30 mgd capacity. The DWSP is expected to be expanded to 90 mgd capacity by 2035, with annual production of about 44.6 mgd.[10]

Existing and forecast CWSC and COSMUD water supplies are shown in Table 4.15-1.

As shown in Table 4.15-2, between 2015 and 2040, purchased water is estimated to decrease from about 51 percent to 35 percent of water sources serving the EIR Study Area; surface (Delta) water is estimated to increase from about 20 percent to 41 percent; and groundwater is estimated to decrease from about 28 percent to 24 percent.

Water Treatment Facilities

Two water treatment facilities serve the EIR Study Area: SEWD's Water Treatment Plant with 60 mgd capacity, and COSMUD's DWSP water treatment facility with 30 mgd capacity, totaling 90 mgd capacity.

[7] California Water Service Company (CWSC) Stockton District, 2016. 2015 Urban Water Management Plan, https://wuedata.water.ca.gov/public/uwmp_attachments/6462918937/01%5FSTK%5F2015%5FUWMP%5FFINAL%2Epdf, accessed October 19, 0217.

[8] California Water Service Company (CWSC) Stockton District, 2016. 2015 Urban Water Management Plan.

[9] City of Stockton. 2016. 2015 Urban Water Management Plan, https://wuedata.water.ca.gov/public/uwmp_attachments/7188153922/Stockton%202015%20UWMP%5FFINAL%5FV3%2Epdf, accessed October 19, 2017.

[10] City of Stockton, 2016. 2015 Urban Water Management Plan.

TABLE 4.15-1 EXISTING AND FORECAST WATER SUPPLIES, AFY

Source	2015	2020	2025	2030	2035	2040
California Water Service Company Stockton District (CWSC)						
Purchased Water (SEWD; Calaveras and Stanislaus Rivers)	15,350	24,000	24,000	24,000	24,000	24,000
Groundwater	6,740	5,642	5,772	6,040	6,361	6,740
Subtotal	*22,090*	*29,642*	*29,772*	*30,040*	*30,361*	*30,740*
City of Stockton Municipal Utilities Department (COSMUD)						
Purchased Water (SEWD; Calaveras and Stanislaus Rivers)	4,159	6,000	6,000	6,000	6,000	6,000
Purchased Water (WID; Mokelumne River)	4,628	6,500	13,000	13,000	13,000	13,000
Surface Water (San Joaquin Delta)	9,428	33,600	33,600	33,600	50,000	50,000
Groundwater	6,628	23,100	23,100	23,100	23,100	23,100
Subtotal	*24,843*	*69,200*	*75,700*	*75,700*	*92,100*	*92,100*
Total	**46,933**	**98,842**	**105,472**	**105,740**	**122,461**	**122,840**

Sources:
California Water Service Company (CWSC) Stockton District. 2016. 2015 Urban Water Management Plan.
City of Stockton. 2016. 2015 Urban Water Management Plan.

TABLE 4.15-2 TOTAL WATER SUPPLIES BY SOURCE, CWSC PLUS COSMUD COMBINED

	2015		2040	
Source	Supplies, CWSC Plus COSMUD (afy)	Percent of Total Supplies	Supplies, CWSC Plus COSMUD (afy)	Percent of Total Supplies
Purchased water – Calaveras, Stanislaus, and Mokelumne rivers	24,137	51%	43,000	35%
Surface Water (San Joaquin Delta)	9,428	20%	50,000	41%
Groundwater	13,368	28%	29,840	24%

Sources:
California Water Service Company (CWSC) Stockton District. 2016. 2015 Urban Water Management Plan.
City of Stockton. 2016. 2015 Urban Water Management Plan.

The capacity of the SEWD facility may be approved to 65 mgd in the near future.[11] COSMUD projects that it will expand the DWSP treatment facility to 90 mgd by 2035.[12] If both those expansions are made, total water treatment capacity of the two facilities combined would be 155 mgd by 2035.

[11] California Water Service Company (CWSC) Stockton District, 2016. *2015 Urban Water Management Plan.*
[12] City of Stockton, 2016. *2015 Urban Water Management Plan.*

Water Storage Facilities

CWSC operates 12 water storage facilities with a total capacity of 38.4 million gallons (mg). COSMUD operates storage facilities with total capacity of 33.7 mg. Combined, the total water storage capacity for the EIR Study Area is 72.1 mg.

Pumping Facilities

The two water purveyors rely on booster pumps to pump water from storage tanks into their distribution systems during high water demands. Pumping facilities serving the EIR Study Area consist of COSMUD facilities with a total capacity of 88,592 gallons per minute (gpm), and CWSC facilities with total capacity of 47,012 gpm, for combined total pumping capacity of 135,604 gpm.

Water Demands

Existing water demands are shown in Table 4.15-3. Maximum day demands are estimated demands on the day of the year with the highest demands. Peak hour demands are estimated demands for the highest-demand hour during the year.

COSMUD and CWSC each forecast that they will have sufficient water supplies to meet demands in single-dry-year and multiple-dry-year conditions over the 2020 to 2040 period.[13]

Total supplies and demands for each of the two purveyors in single-dry-year conditions, and in the last year of three consecutive dry years, over the 2020 to 2040 period are shown in Table 4.15-4.

TABLE 4.15-3 EXISTING WATER DEMANDS, MGD

	Average Day Demand	Maximum Day Demand	Peak Hour Demand
Demands by Area			
Approved/Pending Projects	2.4	4.2	8.3
Remainder of EIR Study Area	46.3	81.0	129.0
Total EIR Study Area	*48.6*	*85.0*	*137.3*
Demands by Water Purveyor			
CWSC Total	23.4	40.9	64.7
COSMUD Total	25.3	44.1	72.6
Total EIR Study Area	48.7	85.0	137.3

Note: See Section 3.5 in Chapter 3, Project Description, of this EIR for an explanation of approved/pending projects.
Source: West Yost, 2017a.

4.15.1.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact related to water service if:

- There were insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements were needed.
- It would require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

[13] City of Stockton, 2016. *2015 Urban Water Management Plan*. California Water Service Company (CWSC) Stockton District, 2016. *2015 Urban Water Management Plan.*

TABLE 4.15-4 TOTAL WATER SUPPLIES AND DEMANDS, DRY-YEAR CONDITIONS

	2020	2025	2030	2035	2040
CWSC Single-Dry-Year Conditions[a]					
Total Supplies	30,883	31,018	31,297	31,632	32,028
Total Demands	30,883	31,018	31,297	31,632	32,028
Difference	*0*	*0*	*0*	*0*	*0*
Multiple-Dry-Year Conditions (Last Year of Three Consecutive Dry Years)[b]					
Total Supplies	30,883	31,018	31,297	31,632	32,028
Total Demands	30,883	31,018	31,297	31,632	32,028
Difference	*0*	*0*	*0*	*0*	*0*
COSMUD Single-Dry-Year Conditions[c]					
Total Supplies	65,200	69,700	69,700	86,100	86,100
Total Demands	34,654	36,856	39,217	41,749	44,465
Difference	*30,546*	*32,844*	*30,483*	*44,351*	*41,635*
Multiple-Dry-Year Conditions (Last Year of Three Consecutive Dry Years)[c]					
Total Supplies	65,200	69,700	69,700	86,100	86,100
Total Demands	34,654	36,856	39,217	41,749	44,465
Difference	*30,546*	*32,844*	*30,483*	*44,351*	*41,635*

a. Source: California Water Service Company (CWSC) Stockton District. 2016. 2015 Urban Water Management Plan.
b. Demands in first 2 years of 3-year multiple-dry-year events are same as third year for COSMUD and lower than third year for CWSC.
c. Source: City of Stockton. 2016. 2015 Urban Water Management Plan.

4.15.1.3 IMPACT DISCUSSION[14]

UTIL-1 Implementation of the proposed project would have sufficient water supplies available to serve the proposed project from existing entitlements and resources, and would not require new or expanded entitlements.

Average Day Demands

Development allowed by the proposed General Plan is forecast to increase water demands in the EIR Study Area by about 17.7 mgd to total 66.3 mgd, as shown in Table 4.15-5. The increase would be about 36 percent over existing water demands, which are approximately 48.6 mgd. About 82 percent of the net increase in water demands would occur in COSMUD's service area, that is, the northern and southern

[14] This impact analysis is based in part on the analysis in the Potable Water Master Plan Supplement, which is part of the proposed project.

parts of the EIR Study Area. COSMUD's service area also covers the majority of the approved and pending projects, which, as shown in Table 4.15-5, constitute the majority of the net increase in projected water demands that would occur in the SOI by GPU Horizon Year 2040.

TABLE 4.15-5 FORECAST AVERAGE DAY WATER DEMANDS, MGD

	Existing Demand	2040 Projected Demand	Net Increase
Demands by Area			
Approved/Pending Projects	2.4	14.8	12.4
Remainder of EIR Study Area	46.3	51.5	5.2
Total EIR Study Area	48.6	66.3	17.7
Demands by Water Purveyor			
CWSC Total	23.4	26.4	3.1
COSMUD Total	25.3	39.9	14.6

Source: West Yost, 2017a.

Maximum Day Demands and Peak Hour Demands

Maximum day demands and peak hour demands from development allowed by the proposed General Plan are shown in Table 4.15-6.

TABLE 4.15-6 AVERAGE DAY DEMANDS, MAXIMUM DAY DEMANDS, AND PEAK HOUR DEMANDS, MGD

Demands	Existing Demand	2040 Projected Demand	Net Increase
Average Day	48.6	66.3	17.7
Maximum Day	85.0	115.4	30.4
Peak Hour	137.3	196.1	58.8

Source: West Yost, 2017a.

Overall Impact Finding

Total water supplies available in the EIR Study Area are forecast to be about 122,840 afy—or approximately 109.6 mgd—in 2040. Thus, the two water purveyors forecast that they will have sufficient water supplies to meet the projected demands from development allowed by the proposed General Plan, and therefore would not require increased water supplies.

In addition, the proposed General Plan includes the following policies and actions that support access to sufficient water supplies through water conservation and efficiency requirements, directives regarding public utility infrastructure, and other strategies:

- Action LU-5.1.C: Require landscape plans to incorporate native and drought-tolerant plants in order to preserve the visual integrity of the landscape, conserve water, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.
- Policy LU-5.4: Require water and energy conservation and efficiency in both new construction and retrofits.
- Action LU-5.4.A: Require all new development, including major rehabilitation, renovation, and redevelopment, to adopt best management practices for water use efficiency and demonstrate specific water conservation measures.
- Policy LU-6.3: Ensure that all neighborhoods have access to well-maintained public facilities and utilities that meet community service needs.
- Action LU-6.3.A: Require development to mitigate any impacts to existing sewer, water, stormwater, street, fire station, park, or library infrastructure that would reduce service levels.

- Action LU-6.3.B: Ensure that public facilities, infrastructure, and related land area and other elements are designed and right-of-way is acquired to meet 2040 planned development requirements to avoid the need for future upsizing or expansion, unless planned as phased construction.
- Action LU-6.3.C: Coordinate, to the extent possible, upgrades and repairs to roadways with utility needs, infrastructure upgrades, and bicycle and pedestrian improvements (i.e., "dig once").
- Policy SAF-3.1: Secure long-term renewable contracts and related agreements to ensure that surface water rights will be available to meet projected demand.
- Action SAF-3.1.A: Actively participate in appropriate forums designed to discuss and solve regional water supply and quality issues.
- Policy SAF-3.2: Protect the availability of clean potable water from groundwater sources.
- Action SAF-3.2.A: Continue to cooperate with San Joaquin County and CalWater to monitor groundwater withdrawals and ensure that they fall within the target yield for the drinking water aquifer.
- Policy SAF-3.3: Encourage use of recycled ("gray") water for landscaping irrigation to reduce demand on potable supplies.
- Action SAF-3.3.A: Require new development to install non-potable water infrastructure for irrigation of large landscaped areas where feasible.
- Action SAF-3.3.B: Investigate and implement Code amendments to allow installation of dual plumbing and/or rainwater capture systems to enable use of recycled water and/or captured rainwater generated on- site.

Given that there are adequate water supplies to serve the anticipated water demands from development allowed by the proposed General Plan, and that the proposed General Plan includes policies and actions that support access to adequate water supplies, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

UTIL-2	**Implementation of the proposed project would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

Development allowed by the proposed General Plan would increase average daily demands to 66.3 mgd, a net increase of 17.7 mgd—or about 36 percent—over existing demands.

Water Treatment Facilities

The two existing water treatment facilities serving Stockton—COSMUD's DWSP treatment facility and SEWD's treatment facility—have a total existing capacity of 90 mgd. COSMUD plans to expand its facility from 30 mgd to 90 mgd capacity by 2035, and SEWD's facility may be approved for a capacity increase from 60 to 65 mgd soon. If both those expansions occur, total capacity would be 155 mgd by 2035. There is adequate existing and forecast water treatment capacity in the region for projected water demands by

2040 under the proposed General Plan; therefore, COSMUD and SEWD would not need to build new or expand existing facilities.

Water Storage Facilities

Development allowed by the proposed General Plan would require storage facilities totaling 97.5 mg capacity, which is a net increase of 25.4 mg over existing capacity. Nearly all of the net increase in required capacity would be in COSMUD's service area (see Table 4.15-7). COSMUD's 2008 Water Master Plan showed water storage tanks at three locations: two locations in the west part of COSMUD's northern service area, and one location in the western part of its southern service area.[15] The number of new tanks required is unknown. However, the Water Master Plan listed six tanks with capacities of either 3 or 3.4 mg each, and the average capacity of CWSC's 12 tanks is 3.2 mg. Thus, it is estimated that about eight tanks would be needed for the net increase of 25.4 mg in COSMUD's service area, with an average capacity per tank of about 3.175 mg. Specific locations for the additional tanks have not been identified.

TABLE 4.15-7 WATER STORAGE FACILITIES REQUIRED BY 2040, MG

	Capacity Required by 2040	Existing Capacity	Net Increase
COSMUD	58.6	33.7	24.9
CWSC	38.9	38.4	0.5
Total, COSMUD and CWSC combined	97.5	74.1	25.4

Source: West Yost, 2017a.

The needed increase in storage capacity in CWSC's service area, 0.5 mg, could be provided by replacing one tank with a tank with 0.5 mg added capacity. As existing tanks serving the EIR Study Area range from 3 to 3.4 mg capacity, no new tanks would be needed to provide the required capacity increase.

Pumping Facilities

As shown in Table 4.15-8, development allowed by the proposed General Plan would not require additional pumping facilities in COSMUD's service area. In CWSC's service area, development allowed by the proposed General Plan would require a net increase of 3,057 gpm pumping capacity, that is, about 6.5 percent of CWSC's existing capacity. Additional pumping facilities would be built next to existing CWSC water storage reservoirs.

TABLE 4.15-8 PUMPING FACILITIES REQUIRED BY 2040, GPM

	Capacity Required by 2040	Existing Capacity	Net Increase
COSMUD	85,416	88,592	None
CWSC	50,069	47,012	3,057

Source: West Yost, 2017a.

Water Distribution Mains

Development allowed by the proposed General Plan would require installation of new and/or expanded mains in areas of new development. Virtually all of the new mains are anticipated to be required in

[15] City of Stockton, 2008. Water Master Plan. http://www.stocktongov.com/files/water_master_plan.pdf, accessed October 2017.

COSMUD's service area; and no substantial installations of new water mains are expected to be needed in CWSC's service area.

Overall Impact Finding

As explained above, development allowed by the proposed General Plan would require new water tanks, a replacement water tank to expand capacity, additional pumping facilities, and new and/or expanded water mains. The proposed General Plan contains Policy LU-6.3 and Actions LU-6.3.A through LU-6.3.C (listed in the discussion for Impact UTIL-1 above) that support access to water utility infrastructure. The estimated timing or location of such required facilities or the exact nature of these facilities are not known, so future project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be specifically associated with physical development projects, and would therefore require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action 6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant.*

Significance Without Mitigation: Less than significant.

4.15.2 SANITARY WASTEWATER (SEWER)

4.15.2.1 ENVIRONMENTAL SETTING

Regulatory Setting

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) of 1977, as administered by the US Environmental Protection Agency (US EPA), seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the US EPA to implement water quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved State NPDES program. The US EPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

National Pollutant Discharge Elimination System

NPDES regulations are described in Section 4.9, Hydrology and Water Quality, of this Draft EIR. The RWQCB issues NPDES permits for discharges from municipal wastewater treatment plants to surface water bodies.

Discharge Limits for Industrial Discharges to Sanitary Sewers

Discharge limits for discharges from industrial land uses to sanitary sewers are set forth in Code of Federal Regulations Title 40 Sections 400-471.

State Regulations

State Water Resources Control Board

On May 2, 2006, the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than 1 mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSOs) by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system, prevent sanitary sewer waste from entering the storm sewer system, and develop a Sewer System Management Plan (SSMP). The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system.

The SWRCB has delegated authority to nine RWQCBs to enforce these requirements within their region. The Central Valley RWQCB (CVRWQCB) issues and enforces NPDES permits in Stockton. NPDES permits allow the RWQCB to regulate where and how the waste is disposed, including the discharge volume and effluent limits of the waste and the monitoring and reporting responsibilities of the discharger. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Central Valley Regional Water Resources Control Board

Wastewater treatment requirements for discharges from the Stockton RWCF to the San Joaquin River are set forth in CVRWQCB Order No. R5-2014-0070-03 issued by the CVRWQCB in 2014. Such Order specifies effluent limitations, and monitoring of RWCF influent, for several constituents.

Stockton Municipal Code

Limits for concentrations of pollutants discharged into City sewers are set forth in City of Stockton Municipal Code Sections 13.08.230, -240, and -250. Limits for discharges of fats, oils, and grease from food service establishments to the City's sewers are set forth in Municipal Code Sections 13.40.010 and 13.40.040.

4.15.2.2 EXISTING CONDITIONS

Wastewater Conveyance

The City's sewer system is shown on Figure 4.15-2, and includes approximately 914 miles of gravity sewers and force mains (pressure pipelines) ranging from less than 6-inches to 72-inches in diameter and 28 sewer pump stations. The sewer system generally flows from the north, east, and south to the Stockton Regional Wastewater Control Facility (RWCF), where it is treated and discharged to the San Joaquin River.

Wastewater Treatment

The Stockton RWCF consists of a main treatment plant with 48 mgd capacity, and a tertiary treatment plant with 55 mgd capacity. The tertiary treatment plant includes approximately 630 acres of oxidation ponds, an engineered wetland, disinfection facilities, and a river outfall discharge system. A major upgrade to the RWCF is currently in design that will improve the headworks and secondary treatment system as part of a long-term plan to address rehabilitation and replacement needs while improving treatment reliability and providing capacity to accommodate growth.

Wastewater Flows

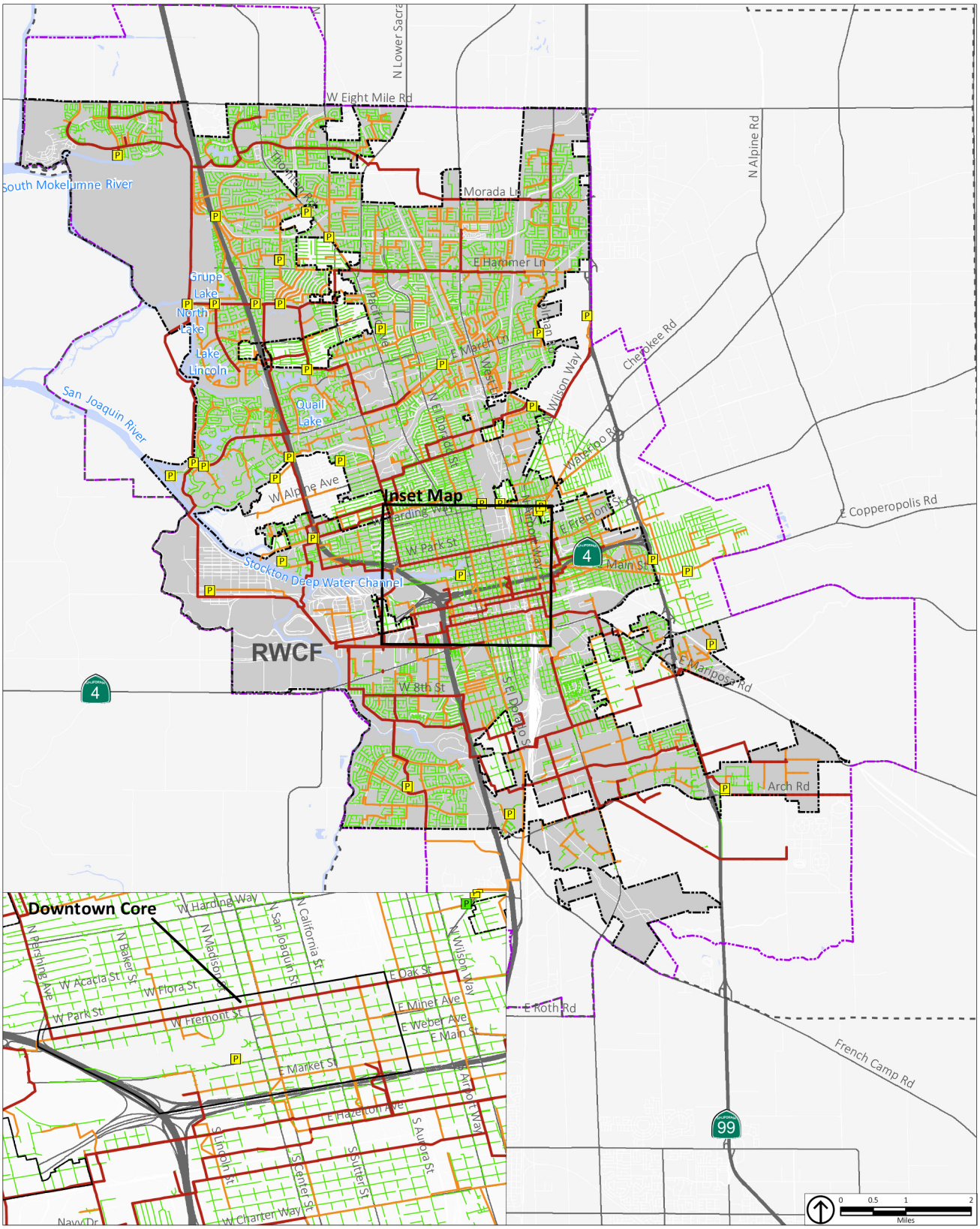
Average dry-weather flows (ADWF) in 2017 are about 27 mgd. ADWF in 2005 were about 35 mgd; the decrease between 2005 and 2017 is generally attributed to the recent drought, associated mandated water conservation, and the economic recession.

Peak-hour wet weather flows (PHWWF) at the RWCF are estimated at about 71.9 mgd; PHWWFs are used to design sewer pipelines and pump stations.

4.15.2.3 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact related to wastewater service if it would:

- Exceed wastewater treatment requirements of the CVRWQCB.
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.



Source: West Yost, 2017; PlaceWorks, 2017.

P Sanitary Pump Station

Existing Sewer Line (Diameter)

< 8 Inches

10 - 18 Inches

> 18 Inches

General Plan Planning Area

City Limit

Sphere of Influence

PLACEWORKS

Figure 4.15-2

City of Stockton Existing Sewer System

4.15.2.4 IMPACT DISCUSSION

UTIL-3 Implementation of the proposed project would not exceed wastewater treatment requirements of the CVRWQCB.

Wastewater treatment requirements for discharges from the Stockton RWCF are set forth in CVRWQCB Order No. R5-2014-0070-03 issued by the CVRWQCB in 2014. Discharges to sanitary sewers from industrial land uses and food service establishments are regulated so as not to damage the RWCF or exceed its treatment capacity. Discharges from industrial land uses are subject to federal regulation and City of Stockton ordinances, and discharges of fats, oils, and grease from food service establishments are regulated under City ordinances.

Development allowed by the proposed General Plan would include industrial and commercial space, some of which would consist of food service establishments. Such uses would be subject to discharge limits and other regulations, including Stockton Municipal Code provisions regulating discharges to City sewers, including regulations on industrial discharges and on discharges of fats, oils, and grease from food service establishments. Therefore, discharges from development allowed under the proposed General Plan would not cause exceedances of wastewater treatment requirements for effluent from the RWCF, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

UTIL-4 Implementation of the proposed project would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

The analysis of wastewater capacity impacts in Impact UTIL-5 below addresses COSMUD's entire service area. As indicated in that discussion, total wastewater generation under the proposed General Plan in 2040 is predicted to be about 59.7 mgd, including wastewater generation by existing development, generation by approved and pending projects, and generation by new developments that would be permitted under the proposed General Plan. The RWCF has adequate capacity for these flows.

The proposed Sewer UMPS identifies sewer system improvements needed to serve development anticipated by 2040 under the proposed General Plan, as well as improvements needed to remedy existing deficiencies identified in the Capital Improvement and Energy Management Plan (CIEMP), which was completed for the RCWF in 2011. Anticipated 2040 development under the proposed General Plan would require the City to build 16 new pump stations, replace one pump station, and replace pumps and controls at seven pump stations; see Table 4.15-9. Some of those improvements would be needed to remedy existing deficiencies and would not be required to serve net increases in development allowed by the General Plan, as shown in Table 4.15-9. In addition, new sewer mains would be required in some portions of the EIR Study Area, and upsizing of existing mains would be required in some other areas.

The estimated timing or location of required wastewater collection facilities or the exact nature of these facilities are not known, so future project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, impacts would be specifically associated with physical development projects, and would therefore require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action LU-6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant.*

TABLE 4.15-9 PUMP STATION IMPROVEMENTS NEEDED BY 2040

	Total Required for Proposed General Plan	Required to Remedy Existing Deficiencies	Net Increase Needed for Proposed General Plan
Construction: New Pump Stations	16	4	12
Construction: Replacement Pump Stations	1	0	1
Replacement of Pumps and Controls, Existing Pump Stations	7	6	1

Source: West Yost, 2017.

Significance Without Mitigation: Less than significant.

UTIL-5 The City of Stockton Municipal Utilities Department, which would serve the project, has sufficient wastewater treatment capacity to serve the project as well as existing developments in its service area.

Forecast Wastewater Generation

Wastewater generation resulting from development allowed by the proposed General Plan was estimated using sewer flow factors presented in Table 3 of the proposed Sewer UMPS. The flow factors are intended to predict flows greater than actual flows, to allow for a range of flow rates within a land use category (for instance, within the commercial land use category, restaurants generate more wastewater than storage uses). Existing wastewater ADWF as measured at the inflow to the Stockton RCWF is about 27 mgd; the existing generation of wastewater estimated using the above-mentioned flow factors is approximately 37.1 mgd.

Total wastewater generation under the proposed General Plan in 2040 is predicted to be about 59.7 mgd, as shown in Table 4.15-10. The forecast net increase in wastewater flow is approximately 22.5 mgd. About 68 percent of the net increase would be due to approved and pending projects, and the balance in other areas of the EIR Study Area.

TABLE 4.15-10 FORECAST ADWF WASTEWATER GENERATION BY GPU BUILDOUT, GPD

	Existing Conditions	2040	Net Increase
Demands by Area			
Approved/Pending Projects	148,539	15,501,784	15,353,245
Remainder of EIR Study Area	36,977,743	44,174,363	7,196,620
Total EIR Study Area	37,126,282	59,676,147	22,549,865

Source: West Yost, 2017.

The ADWF estimates discussed above are different than the ADWF estimates prepared for other City on-going treatment plant planning. For the other treatment plant planning (i.e., the CIEMP), the City has adopted a predicted ADWF of 40.2 mgd for 2035 and 46.3 mgd for 2045. The actual ADWF at 2040 will vary depending on the pace of development and changes in water conservation activities. The ADWF estimates above and the estimates from the other work are based on different land use projections, were prepared using different methodologies, and are intended for different purposes. These different flow estimates do not represent conflicting future flow estimate projections.

The wastewater generation forecast is conservative, as explained above.

Forecast Peak-Hour Wet-Weather Flows

Forecast peak-hour wet-weather flows at the RWCF under the proposed General Plan in 2040 is predicted to be about 104.1 mgd. Existing flows are approximately 71.9 mgd, for a net increase of approximately 32.2 mgd, or about 45 percent of existing flows.

As noted above, the City prepared a CIEMP for the RWCF in 2011, which predicted wastewater flows in 2035. The CIEMP is being implemented through a series of projects, and the projection of future flows was recently updated as part of the CIEMP implementation work. The flow projections are based on a population of 401,961 (from the San Joaquin Council of Governments [SJCOG]). The revised projected PHWWF is 104.5 mgd for 2035 and 120.5 mgd for 2045. Assuming linear growth from 2035 to 2045, the corresponding PHWWF for 2040 using the SJCOG population projection would be 112.5 mgd.[16] Therefore, the land uses anticipated under the proposed General Plan in 2040 would generate lower PHWWF than planned for under the separate CIEMP planning process that uses SJCOG data.

Overall Impact Finding

Forecast wastewater generation and peak-hour wet-weather flows are within the wastewater treatment capacity of the RWCF, resulting in a *less-than-significant* impact.

Significance Without Mitigation: Less than significant.

4.15.3 STORMWATER DRAINAGE SYSTEMS

4.15.3.1 ENVIRONMENTAL SETTING

Regulatory Setting

The regulatory setting for stormwater infrastructure is discussed in detail in Section 4.9, Hydrology and Water Quality, of this Draft EIR. The regulatory setting consists of:

[16] Stockton RWCF Design Build Project; "Advanced Package 3a & 3b" of the Basis of Design Report; AECOM, October 2017.

Federal

- Clean Water Act (CWA)
- National Pollution Discharge Elimination System (NPDES)
- Central Valley Regional Water Quality Control Board (CVRWQCB) region-wide MS4 Permit (Order No. R5-2016-0040), 2016
- National Flood Insurance Program

State

- SB 5 (Chapter 364, Statutes of 2007)
- AB 162 (Chapter 369, Statutes of 2007)

Regional

- Central Valley Flood Protection Plan
- Regional Flood Management Plan

Existing Conditions

The City's storm drainage system includes 620 miles of 4-inch to 96-inch storm drains. Multiple pump stations and lift stations are used to pump drainage into receiving waters. Major receiving waters include Pixley Slough, Bear Creek, Mosher Slough, Five Mile Slough, Calaveras River, Fourteen Mile Slough, Smith Canal, Stockton Deep Water Ship Channel, San Joaquin River, Walker/French Camp Slough, Duck Creek, and North Littlejohns Creek.

See Section 4.9, Hydrology and Water Quality, of this Draft EIR, for a description of the regional and local drainage patterns. As detailed in Section 4.9, the northern portion of the EIR Study Area is protected by levees, and drainage is typically pumped into receiving waters. The southern portion of the EIR Stud Area does not have many levees; much of that area is located within FEMA-designated flood zones, as shown in Section 4.9. A few of the waterways in the central and northern parts of the EIR Study Area, namely Bear Creek, Pixley Slough, Mosher Slough, and the Calaveras River, have sufficient capacity to handle buildout flows based on the 1990 General Plan, but do not have capacity to handle additional development beyond that. The creeks in the southeast portion of the EIR Study Area (North Littlejohns Creek, Weber Slough, South Littlejohns Creek, and Lone Tree Creek) do not have capacity to contain the existing 100-year flows, resulting in overbank flooding in much of those watersheds.

4.15.3.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in a significant impact related to stormwater drainage if it would:

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4.15.3.3 IMPACT DISCUSSION

UTIL-6	**Implementation of the proposed project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

The proposed Stormwater UMPS identifies additional stormwater drainage basin and pump station requirements to serve development anticipated by 2040 under the proposed General Plan. Outside of the approved/pending development projects, which will prepare their own separate stormwater plans, anticipated 2040 development under the proposed General Plan would require, in total, approximately 100 af of storage capacity and 88 cubic feet per second pumping capacity.

The estimated timing or location of required stormwater drainage and pumping facilities or the exact nature of these facilities are not known, so future project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, impacts would be specifically associated with physical development projects, and would therefore require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan Action LU-6.3.D directs the City to design public facilities to maintain and improve the visual quality of the urban environment. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant.*

Significance Without Mitigation: Less than significant.

4.15.4 SOLID WASTE[17]

4.15.4.1 ENVIRONMENTAL SETTING

Regulatory Setting

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (e.g., liners, leachate collection, run-off control), groundwater monitoring, and closure of landfills.

[17] The information in this section is based partly on a written questionnaire response by Grace Smith, Project Manager, City of Stockton Public Works Department, dated August 24, 2017.

State Regulations

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989, AB 939, subsequently amended by SB 1016, set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000 though source reduction, recycling, and composting. To help achieve this, the act required that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity.

As part of the California Integrated Waste Management Board's (CIWMB's) Zero Waste Campaign, regulations affect what common household items can be placed in the trash. As of February 2006, household materials including fluorescent lamps and tubes, batteries, electronic devices, and thermostats that contain mercury are no longer permitted in the trash.[18]

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. The CIWMB was replaced by the California Department of Resources Recycling and Recovery (CalRecycle) in 2010. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate. In 2013, the statewide residential per capita disposal rate was 4.4 pounds per resident per day, and the statewide employee per capita disposal rate was 10.2 pound per employee per day.[19]

Assembly Bill 341

In 2011, AB 341 (Chapter 476, Statutes of 2011) was passed that sets a State policy goal of not less than 75 percent of solid waste that is generated to be source reduced, recycled, or composted by the year 2020. CalRecycle was required to submit a report to the legislature by January 1, 2014 outlining the strategy that will be used to achieve this policy goal. This bill affects local governments in that each jurisdiction is required to implement a commercial solid waste recycling program that consists of education, outreach, and monitoring of businesses. An annual report of the progress of such efforts is required by the law. CalRecycle is responsible for reviewing each jurisdiction's commercial recycling program.

Assembly Bill 1826

AB 1826 (California Public Resources Code Sections 42649.8 et seq.) requires recycling of organic matter by businesses and multi-family residences of five of more units, generating such wastes in amounts over

[18] California Department of Resources, Recycling, and Recovery (Cal Recycle), http://www.calrecycle.ca.gov/homehazwaste, accessed February 26, 2015.

[19] CalRecycle, California's Statewide Per Resident, Per Employee, and Total Disposal Since 1989, www.calrecycle.ca.gov/lgcentral/GoalMeasure/DisposalRate/Graphs/Disposal.htm, accessed February 26, 2015.

certain thresholds. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Multi-family residences are not required to have a food waste diversion program.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act requires areas in development projects to be set aside for collecting and loading of recyclable materials. The act requires CalRecycle to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, providing for adequate areas in development projects for the collection and loading of recyclable materials.

Global Warming Solutions Act of 2006, Scoping Plan[20]

The California Global Warming Solutions Act of 2006 (also known as AB 32) Scoping Plan, which was adopted by CARB, included a Mandatory Commercial Recycling Measure. The Mandatory Commercial Recycling Measure focuses on diverting commercial waste as a means to reduce greenhouse gas (GHG) emissions, with the goal of reducing GHG emissions by 5 million metric tons of carbon dioxide equivalents (MTCO2e), consistent with the 2020 targets set by AB 32. To achieve the Measure's objective, the commercial sector will need to recycle an additional 2 to 3 million tons of materials annually by the year 2020.

CalRecycle adopted this Measure at its January 17, 2012 Monthly Public Meeting. The regulation was approved by the Office of Administrative Law on May 7, 2012 and became effective immediately. On June 27, 2012, the Governor signed SB 1018, which included an amendment requiring both businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residences with five or more units to arrange for recycling services. This requirement became effective on July 1, 2012.

CALGreen Building Code

As stated above in the Regulatory Framework for Section 4.15.1.1, the purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices related to material conservation and resource efficiency. The provisions of this Code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in this Code, throughout California.

Section 5.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. CalGreen requires the applicant to have a Waste Management Plan for on-site sorting or construction debris, which must be submitted to the City for approval.

[20] CalRecycle, http://www.calrecycle.ca.gov/Recycle/Commercial/, accessed February 26, 2015.

The Waste Management Plan does the following:

- Identifies the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
- Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identifies the diversion facility where the collected material can be taken.
- Identifies construction methods employed to reduce the amount of waste generated.
- Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both

Local Regulations

Stockton Municipal Code Section 8.28.060 requires diversion of at least 50 percent of solid waste generated by construction, demolition, or renovation.

Existing Conditions

Solid Waste Collection

Two franchisees, Republic Services and Waste Management, collect solid waste in the EIR Study Area under contract with the City. Residents of single-family homes, duplexes, and triplexes are provided with three carts – one for trash, one for recycling, and one for green/food waste.

Solid Waste Disposal

Solid waste disposal from Stockton in 2016 totaled 310,000 tons.[21] Solid waste from Stockton is taken to the Forward Landfill in Manteca or the North County Landfill in Lodi. During inclement weather, occasional loads are taken to the Lovelace Material Recovery Facility in Manteca. Solid waste from Lovelace is disposed at Foothill Landfill in Linden. Construction and demolition material and some commercial loads are processed at the East Stockton Transfer Station. Residuals from the East Stockton Transfer Station are disposed at Forward Landfill.

Capacities and disposal amounts for the three above-mentioned landfills are listed in Table 4.15-11.

Solid Waste Diversion

There are 50 solid waste diversion programs in Stockton, including: composting; facility recovery, such as transfer stations; household hazardous waste collection and education programs; recycling; source reduction programs, including business waste reduction programs; special waste materials, such as tires and concrete/asphalt/rubble; and waste to energy.

[21] California Department of Resources Recovery and Recycling (CalRecycle), 2017a. Jurisdiction Disposal by Facility, http://www.calrecycle.ca.gov/lgcentral/Reports/DRS/Destination/JurDspFa.aspx, accessed August 30, 2017.

TABLE 4.15-11 LANDFILL CAPACITIES AND DISPOSAL AMOUNTS

Facility and Nearest Community	Current Remaining Capacity (Cubic Yards)	Maximum Daily Disposal Capacity (Tons)	Average Daily Disposal, 2017 (Tons)	Residual Daily Disposal Capacity (Tons)	Estimated Close Date
Foothill Sanitary Landfill, Linden	125,000,000	1,500	670	830	2082
Forward Landfill, Manteca	22,100,000	8,668	2,704	5,964	2020
North County Landfill & Recycling Center, Lodi	35,400,000	825	558	267	2048
Total	**182,500,000**	**10,993**	**3,932**	**7,061**	N/A

Sources:
California Department of Resources Recovery and Recycling (CalRecycle), 2017a. Jurisdiction Disposal by Facility, http://www.calrecycle.ca.gov/lgcentral/Reports/DRS/Destination/JurDspFa.aspx, accessed August 30, 2017.
California Department of Resources Recovery and Recycling (CalRecycle), 2017b. Facility/Site Summary Details: Foothill Sanitary Landfill, http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0004/Detail/, accessed August 30, 2017.
California Department of Resources Recovery and Recycling (CalRecycle), 2017c. Facility/Site Summary Details: Forward Landfill, http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0015/Detail/, accessed August 30, 2017.
California Department of Resources Recovery and Recycling (CalRecycle), 2017d. Facility/Site Summary Details: North County Landfill & Recycling Center, http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0022/Detail/, accessed August 30, 2017.
California Department of Resources Recovery and Recycling (CalRecycle), 2017e. Landfill Tonnage Reports, http://www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/, accessed August 30, 2017.

Compliance with the solid waste diversion requirement in AB 939 is measured in part by comparing actual disposal rates to target rates; actual rates at or below target rates are consistent with AB 939. For 2015, the latest year for which data are available, target disposal rates for the City of Stockton were 6.9 pounds per day (ppd) per resident and 21.0 ppd per employee; and actual rates were 5.1 ppd per resident and 16.9 ppd per employee; thus, disposal rates in 2015 were consistent with AB 939.[22]

4.15.4.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact related to solid waste service if it would:

- Not be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Not comply with federal, State, and local statues and regulations related to solid waste.

4.15.4.3 IMPACT DISCUSSION

UTIL-7 Implementation of the proposed project would be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

[22] California Department of Resources Recycling and Recovery (CalRecycle), 2017. Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report, http://www.calrecycle.ca.gov/LGCentral/Reports/Jurisdiction/DiversionDisposal.aspx, accessed August 31, 2017.

Development allowed under the proposed General Plan is estimated to generate a net increase of about 1.06 million pounds of solid waste per day (see Table 4.15-12 below), or about 193,381 tons per year (tpy). Existing solid waste landfill disposal from the City of Stockton—after removal of recyclable and compostable materials—is about 310,000 tpy.

TABLE 4.15-12 ESTIMATED NET INCREASES IN SOLID WASTE GENERATION

			Solid Waste Generation (ppd)	
Land Use	Quantity	Units	Per Unit[a]	Total
2040 Development Under Proposed General Plan				
Residential	141,200	Dwelling Units	10	1,412,000
Commercial	44,200,000	Square Feet	0.013	574,600
Industrial	87,800,000	Square Feet	0.0132	1,158,960
Total				**3,145,560**
Existing Conditions				
Residential	100,300	Dwelling Units	10	1,003,000
Commercial	30,300,000	Square Feet	0.013	393,900
Industrial	52,200,000	Square Feet	0.0132	689,040
Total				**2,085,940**
Net Increase				**1,059,620**

Note: ppd = pounds per day
a. Source: California Department of Resources Recycling and Recovery (CalRecycle), 2017. Estimated Solid Waste Generation Rates, https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates, accessed August 31, 2017.

The three landfills serving the EIR Study Area have combined residual capacity of 7,061 tons per day (tpd), or nearly 2.6 million tpy. The net increase in solid waste disposal from development allowed under the proposed General Plan would be somewhat less than 193,381 tpy after removal of recyclable and compostable materials. Therefore, there is sufficient landfill capacity in the region for the estimated net increase in solid waste generation due to implementation of the proposed project, and the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

UTIL-8 Implementation of the proposed project would comply with federal, State, and local statutes and regulations related to solid waste.

Construction and renovation projects allowed under the proposed General Plan and UMPS would divert at least 50 percent of solid waste from construction, demolition, or renovation activities for recycling or reuse, in accordance with CALGreen Section 5.408 and Stockton Municipal Code Section 8.28.060.

Operation of development allowed under the proposed General Plan would involve recycling and composting of appropriate categories of solid waste, with total solid waste diversion of 50 percent or greater, by residential, multi-family residential, and commercial land uses, in accordance with AB 939, AB 341, and AB 1826.

In addition, the proposed General Plan includes the following policies and actions that support consistency with other solid waste regulations:

- Policy CH-5.2: Expand opportunities for recycling, re-use of materials, and waste reduction.
- Action CH-5.2.A: Use recycled materials and products for City projects and operations where economically feasible, and work with recycling contractors to encourage businesses to use recycled products in their manufacturing processes and encourage consumers to purchase recycled products.
- Action CH-5.2.B: Continue to require recycling in private and public operations, including construction/demolition debris.
- Action CH-5.2.C: Expand educational and outreach efforts to promote recycling by residents of multi-family housing.

Construction and operation of development allowed under the proposed General Plan and UMPS would not conflict with State and local regulations governing solid waste disposal and diversion, and the proposed General Plan includes policies and actions to promote consistency with other solid waste regulations. Therefore, the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.15.5 ENERGY CONSERVATION

4.15.5.1 ENVIRONMENTAL SETTING

Regulatory Setting

Federal Regulations

Energy Independence and Security Act of 2007

Signed into law in December 2007, this act is an energy policy law that contains provisions designed to increase energy efficiency and the availability of renewable energy. The act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. The act includes tax incentives for the following: energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and

construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, this policy is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

State Regulations

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the *Long Term Energy Efficiency Strategic Plan*, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. The *Long Term Energy Efficiency Strategic Plan* sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020;
- All new commercial construction in California will be zero net energy by 2030;
- Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the *Long Term Energy Efficiency Strategic Plan* notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five billion-plus square feet of space accounts for 38 percent of the state's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and colleges were in the top five facility types for electricity and gas consumption, accounting for approximately 10 percent of state's electricity and gas use.

The CPUC and the California Energy Commission (CEC) have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

- Goal 1: New construction will increasingly embrace ZNE performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- Goal 2: 50 percent of existing buildings will be retrofit to ZNE by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.

- Goal 3: The commercial lighting market will be transformed through technological advancement and innovative utility initiatives.

California Building Code

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continue to improve upon the previous 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively. Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve ZNE, they do get very close to the State's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California.[23]

CALGreen Building Code

As stated above in the Regulatory Framework for Section 4.15.1.1, the purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices related to energy efficiency. The provisions of this Code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in this Code, throughout California. Compliance with the CALGreen Code is not a substitution for meeting the certification requirements of any green building program. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally-regulated appliances and non-federally regulated appliances. Though these regulations are now widely accepted within the state as "business-as-

[23] California Energy Commission (CEC), 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions, http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf, accessed March 1, 2017.

usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

State Greenhouse Gas Regulations

The Governor's GHG Reduction Executive Order S-3-05 was signed on June 1, 2005, and set GHG reduction targets for the State. Soon after, AB 32 was passed by the California State legislature on August 31, 2006, to place the State on a course toward reducing its contribution of GHG emissions. In response to AB 32, CARB developed a *Scoping Plan* outlining California's approach to achieving the goal of reducing GHG emissions to 1990 levels by 2020. The final *Scoping Plan* was adopted by CARB on December 11, 2008. CARB approved the first five-year *Update to the Climate Change Scoping Plan* on May 22, 2014, as required by AB 32, and is currently underway with another update in 2017. For a detailed discussion on these regulations, see Section 4.6, Greenhouse Gas Emissions, of this Draft EIR.

Senate Bill X1-2

Signed into law in 2011, SB X1-2 directs CPUC's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, 25 percent by December 31, 2016, and 33 percent by December 31, 2020. SB X1-2 codifies the 33 percent by 2020 renewable portfolio standard (RPS) goal established pursuant to the Global Warming Solutions Act of 2006. This new RPS applies to all electricity retailers in the state, including publicly-owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the RPS goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020.

Senate Bill 350

SB 350 (Chapter 547, Statutes of 2015), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Local Regulations

Stockton Municipal Code provisions regarding energy efficiency and energy conservation are set forth in Chapters 15.72, Green Building Standards; 15.76, Residential Energy Efficiency Assessment and Retrofit; and 15.78, Small Rooftop Residential Solar Energy Systems; and Section 16.72.250, Energy Conservation (passive or natural heating or cooling building design for development requiring a tentative and final map).

Existing Conditions

Electricity

Pacific Gas & Electric (PG&E) provides electricity to the majority of the EIR Study Area; the Port of Stockton supplies electricity to the Port. PG&E's electricity service area spans most of northern and central California from Humboldt and parts of Shasta and Lassen counties on the north to parts of Santa Barbara and Kern counties on the south.[24] PG&E systemwide consumption in 2014 was 103,426 gigawatt-hours (GWh); 1 GWh is equivalent to 1 million kilowatt-hours. The forecast consumption in 2026 in the Mid demand scenario is 116,259 GWh.[25] PG&E electricity resources in 2015 consisted of 30 percent renewable energy, including 11 percent solar and 8 percent wind; 25 percent natural gas; 23 percent nuclear; and 17 percent unspecified.[26]

Existing electricity demands in the EIR Study Area are shown in Table 4.15-13.

TABLE 4.15-13 EXISTING ELECTRICITY DEMANDS IN THE EIR STUDY AREA

Land Use	Electricity Demands (kWh/yr)[a]
Residential	778,713,107
Commercial and Industrial	966,165,243
Total	**1,744,878,350**

Notes: kWh/yr = kilowatts per hour per year
The Port of Stockton provides electricity to the Port of Stockton; PG&E provides electricity to the remainder of the EIR Study Area.
a. Source: Pacific Gas & Electric (PG&E), 2017. Community-Wide GHG Inventory Report for Stockton 2005 to 2016. Received by email from Randy Herbst, Customer Relationship Manager, PG&E, August 23.
Source: California Energy Commission (CEC), 2015. California Electric Utility Service Areas: Electricity. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf, accessed November 1, 2017.

Natural Gas

PG&E provides natural gas to the EIR Study Area. PG&E's natural gas service area spans most of northern and central California from Humboldt and most of Shasta counties in the north to Monterey and most of Fresno counties in the south.[27] Total PG&E natural gas supplies in 2016 were forecast to be slightly under 3,123 million cubic feet per day (MMCF/day), while total consumption was forecast to be slightly under 2,545 MMCF/day. Total forecast supplies and demands in 2035 are slightly under 3,123 MMCF/day and 2,273 MMCF/day, respectively.[28]

[24] California Energy Commission (CEC), 2015, February 24. California Electric Utility Service Areas, http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf, accessed August 8, 2017.

[25] California Energy Commission (CEC), 2016, January. California Energy Demand 2016-2026 Revised Electricity Demand Forecast Volume 2: Electricity Demand by Utility Planning Area, http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207438_20160115T152222_California_Energy_Demand_20162026_Revised_Electricity_Demand_Fo.pdf, accessed August 8, 2017.

[26] California Energy Commission (CEC), 2017, January 3. Pacific Gas & Electric 2015 Power Content Label, http://www.energy.ca.gov/pcl/labels/2015_labels/Pacific_Gas_and_Electric_(PGandE).pdf, accessed August 8, 2017.

[27] California Energy Commission (CEC), 2015, February 24. California Natural Gas Utility Service Areas, http://www.energy.ca.gov/maps/serviceareas/natural_gas_service_areas.pdf, accessed August 8, 2017.

[28] California Gas and Electric Utilities (CGEU), 2016. 2016 California Gas Report, https://www.socalgas.com/regulatory/documents/cgr/2016-cgr.pdf, accessed August 8, 2017. The supply and demand forecasts include the service areas of two other utilities – Tuscarora (part of northeast California), and Southwest Gas (Lake Tahoe region) – serving regions with far less demand than PG&E; thus, the PG&E supply and demand forecasts are reported here as *slightly under.*

Existing natural gas demands in the EIR Study Area are shown in Table 4.15-14.

TABLE 4.15-14 EXISTING NATURAL GAS DEMANDS IN THE EIR STUDY AREA

Land Use	Natural Gas Demands (Therms)[a]
Residential	39,214,397
Commercial and Industrial	18,424,993
Total	**57,639,390**

a. One therm is equivalent to 100,000 British thermal units (BTU) or 97.1 cubic feet of natural gas; one BTU is approximately the amount of energy needed to heat 1 pound of water 1°F.
Source: Pacific Gas & Electric (PG&E), 2017. Community-Wide GHG Inventory Report for Stockton 2005 to 2016. Received by email from Randy Herbst, Customer Relationship Manager, PG&E, August 23.

4.15.5.2 STANDARDS OF SIGNIFICANCE

Appendix F, Energy Conservation, of the CEQA Guidelines, requires a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy; however, no specific thresholds of significance for potential energy impacts are published in the State CEQA Guidelines or are established by the City of Stockton. Therefore, this EIR analysis determined that impacts would be significant if the proposed project would result in a substantial increase in natural gas and electrical service demands that would require the new construction of energy supply facilities and transmission infrastructure or capacity-enhancing alterations to existing facilities, the construction of which would cause significant environmental effects, paralleling the threshold determinations for other utility and service systems under Appendix G. To further the intent of Appendix F, relevant, potential impacts listed in that appendix are also incorporated in the evaluation.

Appendix F lists the following possible impacts to energy conservation that should be considered to the extent they are applicable and relevant to a particular project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials maybe discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

4.15.5.3 IMPACT DISCUSSION

UTIL-9	**Implementation of the proposed project would not result in a substantial increase in natural gas and electrical service demands that would require new energy supply facilities and transmission infrastructure or capacity-enhancing alterations to existing facilities, the construction of which would cause significant environmental effects.**

Electricity Supplies

Development allowed by the proposed General Plan would demand approximately 2.81 billion kW/hr annually, that is, a net increase of about 1.07 billion kWh/yr (see Table 4.15-15). PG&E forecasts that the net increase in electricity consumption for its entire service area between 2014 and 2026 will be approximately 12.9 billion kWh/yr. PG&E forecasts that it will have adequate electricity supplies to meet the projected demands, including from development allowed under the proposed General Plan, to the PG&E forecast horizon year of 2026; therefore, development allowed under the proposed General Plan would not require PG&E to obtain new or expanded electricity supplies.

TABLE 4.15-15 FORECAST ELECTRICITY DEMAND IN 2040, KWH/YR

Land Use	Existing Conditions	2040 Conditions	Net Increase
Residential	778,713,107	1,096,254,144	317,541,037
Commercial and Industrial	966,165,243	1,718,155,925	751,990,682
Total	**1,744,878,350**	**2,814,410,070**	**1,069,531,719**

Source: Pacific Gas & Electric. 2017, August 23. Community Wide GHG Inventory Report for STOCKTON 2005 to 2016. Received by email from Randy Herbst, Customer Relationship Manager, PG&E.

Natural Gas Supplies

Development allowed by the proposed General Plan would demand approximately 88 million therms per year, a net increase of approximately 30.3 million therms per year, as shown in Table 4.15-16. PG&E forecasts that natural gas use within its service area will decline from about 2,545 MMCf/day in 2016 to approximately 2,273 MMCf/day in 2035, and that there will be a total residual supply of about 850 MMCF/day, or approximately 3.2 billion therms per year. Therefore, PG&E forecasts indicate that there are sufficient natural gas supplies to meet natural gas demands resulting from development allowed under the proposed General Plan, and new or expanded natural gas supplies would not be required.

TABLE 4.15-16 FORECAST NATURAL GAS DEMAND IN 2040, THERMS PER YEAR[a]

Land Use	Existing Conditions	2040 Conditions	Net Increase
Residential	39,214,397	55,205,113	15,990,716
Commercial and Industrial	18,424,993	32,765,627	14,340,634
Total	**57,639,390**	**87,970,741**	**30,331,351**

a. One therm is equivalent to 100,000 British thermal units (BTU) or 97.1 cubic feet of natural gas; 1 BTU is approximately the amount of energy needed to heat 1 pound of water 1°F.
Source: Pacific Gas & Electric, 2017. Community-Wide GHG Inventory Report for STOCKTON 2005 to 2016. Received by email from Randy Herbst, Customer Relationship Manager, PG&E, August 23.

Energy Facilities

As described above, development allowed under the proposed General Plan would increase demands for electricity and natural gas. Some of this development could occur in undeveloped areas and increase development intensity in already developed areas. Therefore, some new and/or expanded transmission and distribution lines and pipelines may be required to serve new development.

Overall Impact Finding

As discussed above, there are sufficient electricity and natural gas supplies to serve development allowed under the proposed General Plan. In addition, the proposed General Plan includes the following policies and actions that avoid and reduce inefficient, wasteful, and unnecessary energy consumption:

- Policy LU-5.4: Require water and energy conservation and efficiency in both new construction and retrofits.
- Action LU-5.4.B: Require all new development, including major rehabilitation, renovation, and redevelopment, to incorporate feasible and appropriate energy conservation and green building practices, such as building orientation and shading, landscaping, and the use of active and passive solar heating and water systems.
- Action SAF-4.1.A: Require the construction and operation of new development to implement best practices that reduce air pollutant emissions, including through installation of Energy Star-certified appliances.
- Action CH-3.3.C: Continue to work with community-based organizations that employ local Stockton youth to perform energy efficiency, alternative energy, and water conservation assessments and installations in local homes and businesses.

Furthermore, as discussed in Section 4.7, Air Quality, the proposed General Plan includes goals, policies, and actions that promote energy efficiency from the transportation sector. Specifically, policies and actions under Goals TR-1 and TR-2 encompass multi-modal and active transit improvements, including requiring new development to incorporate design features that would provide easier access to transit (Action TR-2.2.A), dedication of adequate bicycle and transit right-of-way on arterial and collector streets (Action TR-2.3.B), and developing guidelines for installation of electric vehicle charging stations for new developments (Action TR-3.2.B). Additionally, Policies LU-1.1 and LU-6 would support infill and mixed-use development, which would increase use of alternative transit options (i.e., walking, biking, and public transit) and decrease vehicle trips and the average trip distances traveled. Furthermore, Policy SAF-4.2 and Action SAF-4.2.A encourage new employers to participate in a transportation demand management program.

Although new and/or expanded transmission and distribution lines and pipelines may be required to serve development allowed by the proposed General Plan, the estimated timing or location of such required facilities or the exact nature of these facilities are not known, so future project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be specifically associated with physical development projects, and would therefore require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant.*

Significance Without Mitigation: Less than significant.

5. Alternatives to the Proposed Project

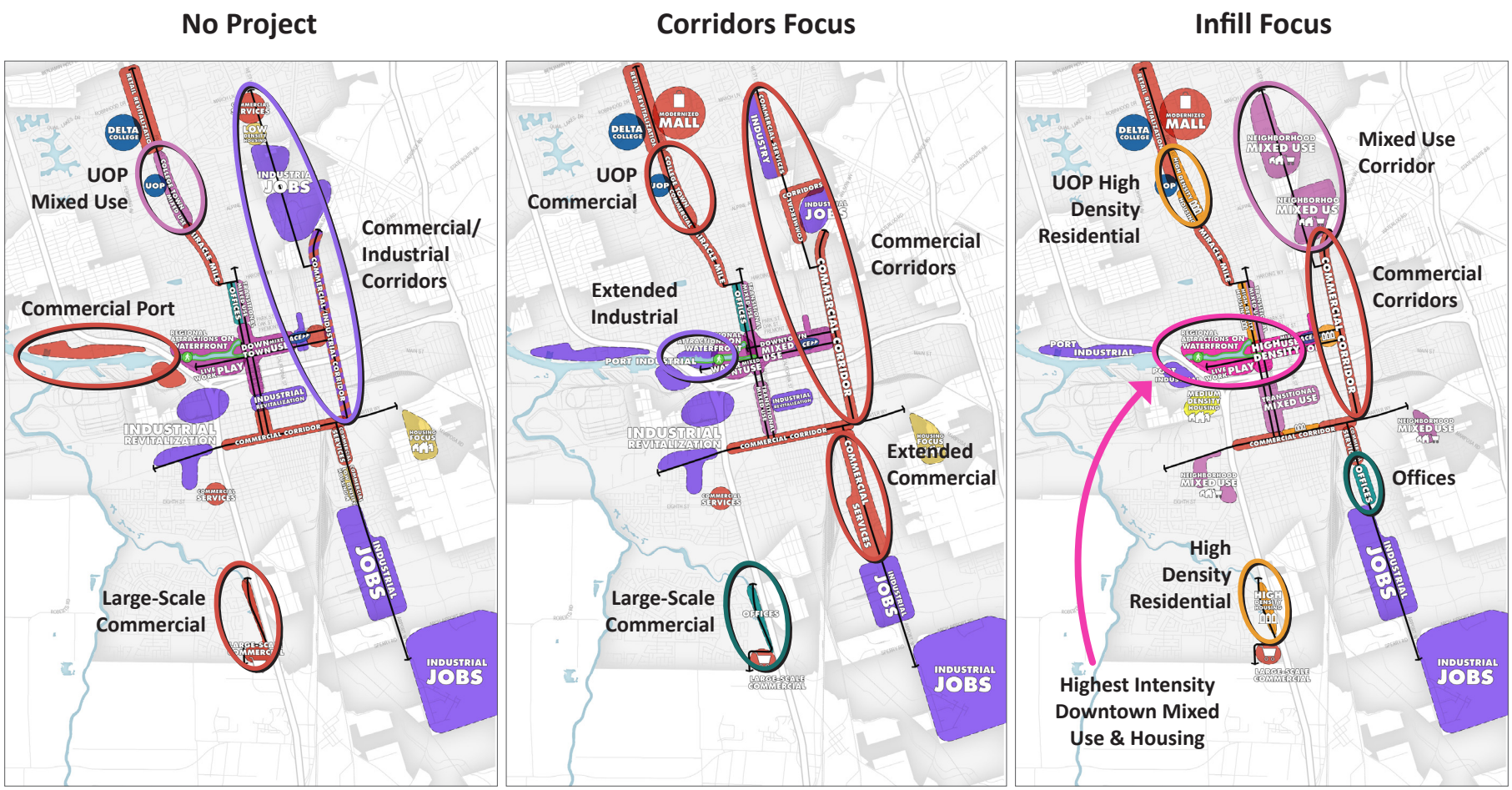
The following discussion is intended to inform the public and decision makers of feasible alternatives to the proposed project that would avoid or substantially lessen any of its significant effects. The CEQA Guidelines set forth the intent and extent of the alternatives analysis to be provided in an EIR. Section 15126.6(a) of the CEQA Guidelines states that:

> *An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.*

A "No Project" Alternative is required as part of the "reasonable range of alternatives" that could feasibly attain most or all of the project's objectives. Each alternative is analyzed against the significance thresholds considered in Chapter 4, Environmental Evaluation. This chapter assesses whether the impacts of the alternatives would be greater than, less than, or similar to those of the proposed General Plan and UMPS.

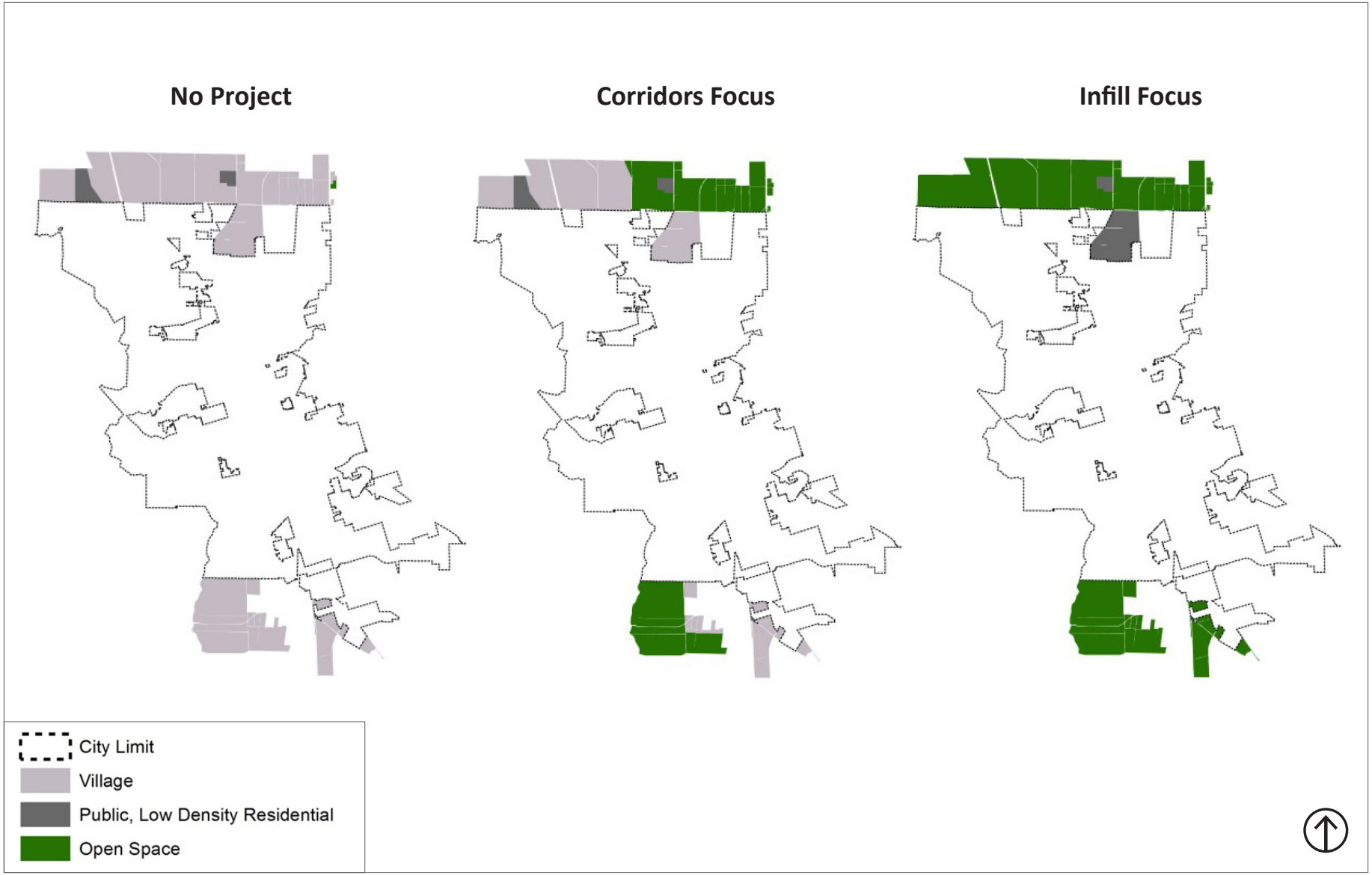
The alternatives evaluated in this EIR were developed during the visioning and land use alternatives phases of the Envision Stockton 2040 General Plan Update, which involved extensive public meetings. The alternatives to the proposed project are described below. Figures 5-1 and 5-2 show graphic comparisons of the three alternatives in the core part of the city and at the edges of the city, respectively. The proposed General Plan is most similar to the Infill Focus Alternative, with some differences described below.

- No Project Alternative. Under this alternative, the proposed General Plan and UMPS would not be adopted, and future development in Stockton would continue to be subject to existing policies, regulations, and land use designations as per the existing 2035 General Plan. Development would occur under the No Project Alternative as follows:
  - Most residential growth would be directed to "villages" at the edges of the city that would include a range of housing choices and neighborhood amenities in new communities, including in some locations beyond the current Sphere of Influence (SOI).
  - Interspersed commercial and industrial development would be allowed along key corridors.
  - Development at the Port would be commercial in nature.



Source: PlaceWorks, 2017.

Figure 5-1
Alternatives Land Use Map Comparison – City Core



Source: PlaceWorks, 2017.

Figure 5-2
Alternatives Land Use Map Comparison – City Edge

- Corridors Focus. Under the Corridors Focus Alternative, the policies and actions in the proposed General Plan would be adopted, but the land use map and the associated UMPS to plan for infrastructure to serve that land use pattern would be different. Development would occur under the Corridors Focus Alternative as follows:
  - Some residential growth would be directed to "villages" as described under the No Project Alternative above, but over a smaller area.
  - Retail development would be emphasized along major corridors, with industrial development shifted to outlying locations.
- Infill Focus. Under the Infill Focus Alternative, the policies and actions in the proposed General Plan would be adopted, but the land use map and the associated UMPS to plan for infrastructure to serve that land use pattern would be slightly different. The land use map under the Infill Focus Alternative would be different from the proposed land use map as follows:
  - This alternative would designate some areas proposed for Commercial along S Airport Way as Professional Office to promote medical office development.
  - This alternative would designate a large vacant area near Weston Ranch proposed for Professional Office as High Density Residential.
  - This alternative would not include any urban designations north of Eight Mile Road, whereas the proposed General Plan includes the Economic and Education Enterprise designation in the area north of Eight Mile Road that is within the SOI.

As described in Chapter 3, Project Description, the horizon-year development projections are based on the "probable planning period development," which represents the anticipated demand for new development in Stockton, based primarily on a market study. Because the existing inventory of vacant lands in the city has the capacity to accommodate a significant amount of development, all of the alternatives can accommodate the probable planning period development. Therefore, it is projected that all of the alternatives would result in the same amount of new development by 2040 as the proposed project, the only difference being the location of future development, as described above. The differences in the land use maps would not change the land use demand forecasts that determine the overall amount of new development anticipated by 2040.

A comparison of potential impacts of each alternative is provided in Table 5-1.

5.1 NO PROJECT ALTERNATIVE

This section analyzes the No Project Alternative in comparison to the proposed General Plan and UMPS.

5.1.1 PRINCIPAL CHARACTERISTICS

Under this alternative, the proposed General Plan and UMPS would not be adopted. Future development in Stockton would continue to be subject to existing policies, regulations, and land use designations as per the existing 2035 General Plan, and future infrastructure development would continue to be subject to

TABLE 5-1 COMPARISON OF IMPACTS FROM PROJECT ALTERNATIVES

Topic	No Project Alternative	Corridors Focus Alternative	Infill Focus Alternative
Aesthetics	>	>	<
Agricultural and Forestry Resources	>	>	<
Air Quality	>	>	<
Biological Resources	>	>	<
Cultural and Tribal Cultural Resources	>	>	<
Geology, Soils, Seismicity, and Mineral Resources	=	=	=
Greenhouse Gas Emissions	>	>	<
Hazards and Hazardous Materials	=	=	=
Hydrology and Water Quality	>	>	<
Land Use and Planning	>	=	=
Noise	>	>	<
Population and Housing	=	=	=
Public Services and Recreation	=	=	=
Transportation and Traffic	>	>	<
Utilities and Service Systems	>	>	<

< Reduced impact in comparison to the proposed project.
= Similar impact in comparison to the proposed project.
> Greater impact in comparison to the proposed project.

the current Utility Master Plans, which were crafted to support development under the existing 2035 General Plan.

As explained in the introduction to this chapter, it is estimated that this alternative would likely result in the same horizon-year development levels as the proposed project. The No Project Alternative would include the same level of growth within the General Plan horizon as the proposed project, but with an altered land use map, which is shown on Figure 5-3. As described above, the main differences in the land use map compared to the proposed General Plan are that residential growth would be directed to villages at the edges of the city, commercial and industrial development would be interspersed along key corridors, and future Port development would be commercial in nature.

5.1.2 IMPACT DISCUSSION

The No Project Alternative would have the following impacts relative to the proposed General Plan and UMPS.

5.1.2.1 AESTHETICS

As demonstrated below, the No Project Alternative would result in greater impacts in comparison to the proposed project.

Under the No Project Alternative, new development would occur under the existing 2035 General Plan. The proposed project would not have an adverse effect on a scenic vista, substantially damage scenic resources, degrade the area's existing visual character, or create new sources of light or glare. Unlike the proposed project, which emphasizes new and redevelopment in existing infill neighborhoods, the No Project Alternative would direct residential growth to villages at the edges of the city. As discussed in Section 4.1, Aesthetics, of this Draft EIR, the existing 2035 General Plan does not designate official scenic vistas; however, open space, agricultural fields, and riparian areas, particularly along the San Joaquin River and the Calaveras River, are identified as significant visual features. Given that, compared to the proposed project, the No Project Alternative would allow more development along the periphery of the city, which is largely characterized by its agricultural and rural nature; this alternative could result in *greater* impacts to scenic vistas.

5.1.2.2 AGRICULTURAL AND FORESTRY RESOURCES

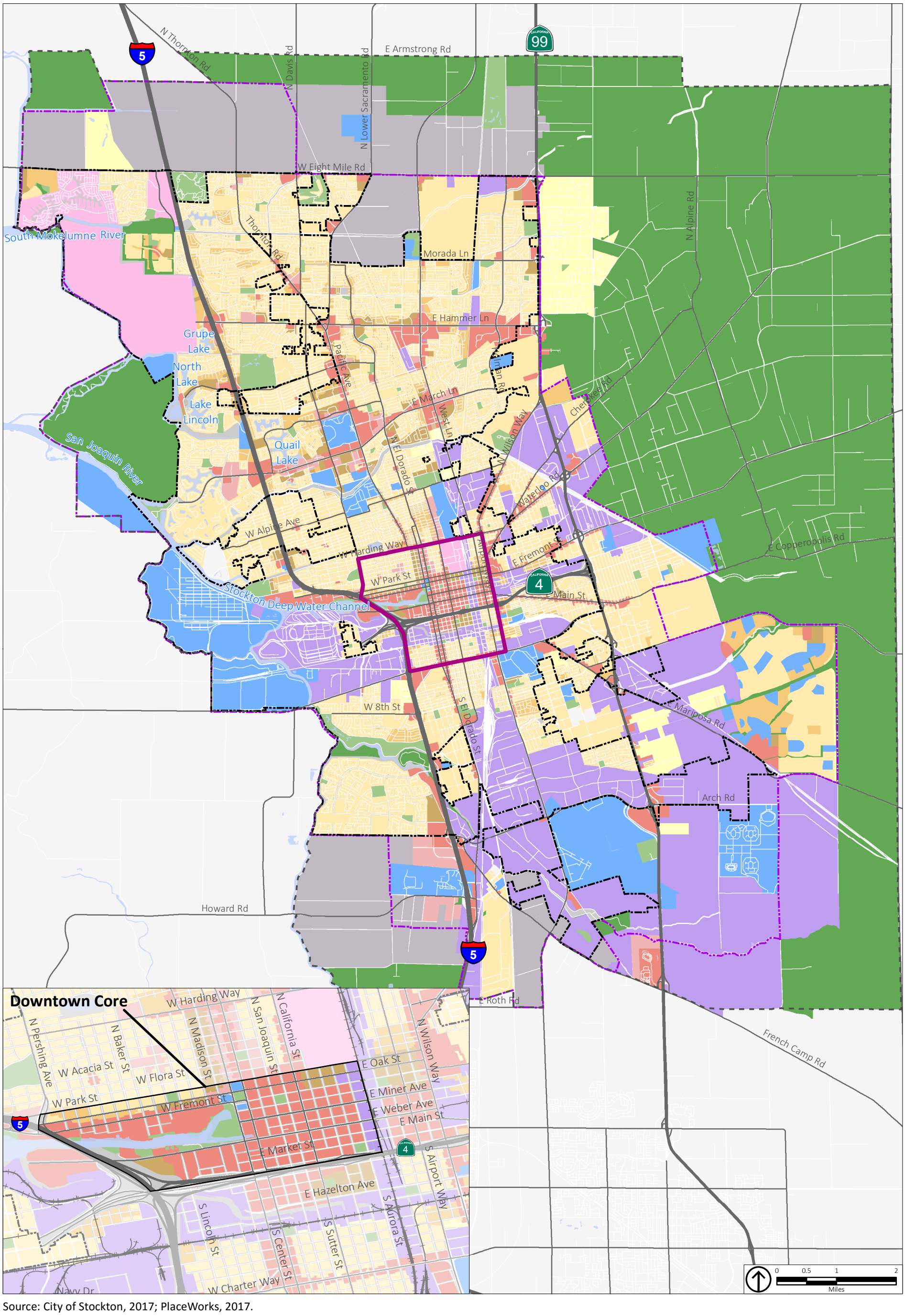
As demonstrated below, the No Project Alternative would result in greater impacts in comparison to the proposed project.

As discussed in Section 4.2, Agricultural and Forestry Resources, of this Draft EIR, Title 16, Development Code, of the Stockton Municipal Code, does not contain a zoning district for forests or timberlands. Accordingly, neither the proposed project nor the No Project Alternative would result in impacts to forest lands. However, the proposed project would convert farmlands of concern under CEQA and Williamson Act lands to non-agricultural uses; these impacts would be significant and unavoidable. Like the proposed General Plan, the No Project Alternative would allow new development in areas that are currently in agricultural use, but the amount of agricultural land designated for development would be greater. Therefore, the No Project Alternative would result in *greater* impacts to farmlands of concern when compared to the proposed project.

5.1.2.3 AIR QUALITY

As demonstrated below, the No Project Alternative would result in a greater impact in comparison to the proposed project.

The proposed project would result in significant and unavoidable air quality impacts resulting from the construction and operation of development allowed under the proposed General Plan and UMPS. While the horizon-year development levels anticipated for the No Project Alternative are the same as for the



Source: City of Stockton, 2017; PlaceWorks, 2017.

Residential Estate
Low Density Residential
Medium Density Residential
High Density Residential
Village
Mixed Use
Commercial
Administrative Professional
Industrial
Institutional
Parks and Recreation
Open Space/Agriculture
City Limit
Greater Downtown Boundary
General Plan Planning Area
Sphere of Influence

Figure 5-3
No Project Alternative Land Use Map

proposed project, the proposed General Plan supports a more sustainable development pattern than the existing 2035 General Plan, including through a land use map that reduces the potential for development at the periphery of the city and increases the density of development in the Downtown, and through goals, policies, and actions that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, which would help reduce mobile-source air pollutant emissions. Therefore, overall the No Project Alternative would result in *greater* air quality impacts when compared to the proposed project.

5.1.2.4 BIOLOGICAL RESOURCES

As demonstrated below, the No Project Alternative would result in a greater impact in comparison to the proposed project.

Under the proposed project, potential impacts to special-status plant and animal species, riparian habitat, wetlands, and biological resource plans and policies would be less than significant through compliance with existing federal and State regulations, participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), and implementation of proposed General Plan policies and actions. Unlike the proposed project, which emphasizes new and redevelopment in existing infill neighborhoods, the No Project Alternative would direct residential growth to villages at the edges of the city. As discussed in Section 4.4, Biological Resources, of this Draft EIR, the periphery of the city is largely characterized by open space, agricultural fields, and riparian areas, including sensitive natural communities such as coastal and valley freshwater marsh, great valley oak riparian forest, and valley oak woodland. Given that, compared to the proposed project, the No Project Alternative would allow more development in undeveloped areas along the periphery of the city; this alternative could result in *greater* impacts to sensitive natural resources and special status species.

5.1.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As demonstrated below, the No Project Alternative would result in a greater impact in comparison to the proposed project.

Although the horizon-year development levels anticipated for the No Project Alternative are the same as for the proposed project, such development could occur over a larger area, including areas that are currently undeveloped, compared to the proposed project. Ground-disturbing activities during construction, particularly in areas that are currently undeveloped, could affect archaeological, paleontological, tribal, and other cultural resources. While the proposed project and No Project Alternative include similar General Plan policies and actions and would be subject to the same set of federal and State regulations that protect archaeological, paleontological, tribal, and other cultural resources, the proposed General Plan would add new actions to protect tribal cultural resources.

On the other hand, the proposed project directs new and redevelopment to infill areas, including the Downtown, which could impact historic resources. However, both the proposed project and No Project Alternative include similar General Plan policies and actions and would be subject to the same set of federal and State regulations that protect historic resources.

Overall, due to the increased area of potential development and lack of new actions to protect tribal cultural resources, the No Project Alternative would result in *greater* impacts in comparison to the proposed project.

5.1.2.6 GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES

As demonstrated below, the No Project Alternative would result in similar impacts as the proposed project.

Under both the No Project Alternative and the proposed project, compliance with existing regulations, including the California Building Code (CBC), as new development occurs would ensure that impacts associated with geologic and seismic hazards would be less than significant. Therefore, the No Project Alternative would be *similar* to the proposed project.

5.1.2.7 GREENHOUSE GAS EMISSIONS

As demonstrated below, the No Project Alternative would result in greater impacts in comparison to the proposed project.

The proposed project would result in a significant and unavoidable GHG impact because it would not ensure that the City will be on track to reach the goal of Executive Order S-03-05 to reduce GHG emissions 80 percent below 1990 levels by 2050. While the horizon-year development levels anticipated for the No Project Alternative are the same as for the proposed project, the proposed General Plan supports a more sustainable development pattern than the existing 2035 General Plan, including through a land use map that reduces the potential for development at the periphery of the city and increases the density of development in the Downtown, and through goals, policies, and actions that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, which would help reduce GHG emissions. In addition, the No Project Alternative would not include proposed General Plan Action CH-5.1.B, which directs the City to update its Climate Action Plan (CAP). Furthermore, the No Project Alternative would lack some of the proposed General Plan policies and actions that support consistency with the California Air Resources Board's (CARB) Scoping Plan, the San Joaquin Council of Government's (SJCOG) 2014-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), the City's CAP, and the 2008 Settlement Agreement on the Stockton 2035 General Plan. Therefore, this alternative would result in a *greater* impact in comparison to the proposed project.

5.1.2.8 HAZARDS AND HAZARDOUS MATERIALS

As demonstrated below, the No Project Alternative would result in similar impacts as the proposed project.

Under the proposed project, consistency with the proposed General Plan policies and actions and compliance with existing regulations and procedures as new development occurs would ensure that impacts associated with hazards and hazardous materials would be less than significant. The existing 2035 General Plan contains similar policies and actions related to hazards as the proposed General Plan.

Because development would be required to comply with existing regulations and procedures and similar General Plan policies and actions related to hazardous and hazardous materials, the No Project Alternative would have *similar* hazards and hazardous materials impacts as the proposed project.

5.1.2.9 HYDROLOGY AND WATER QUALITY

As demonstrated below, the No Project Alternative would result in greater impacts in comparison to the proposed project.

Similar to the proposed project, the No Project Alternative would be subject to existing federal, State, and local regulations relating to hydrology and water quality. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality would be minimized as future development occurs. In addition, the existing 2035 General Plan includes policies related to water conservation, flooding, and storm drainage. Unlike the No Project Alternative, which would allow greater conversion of land from an undeveloped to a developed state, development under the proposed project would be directed to previously urbanized areas, which would reduce new impervious areas and allow more development to connect to existing drainage systems already in place. Therefore, the No Project Alternative would result in *greater* impacts when compared to the proposed project.

5.1.2.10 LAND USE AND PLANNING

As demonstrated below, the No Project Alternative would result in greater land use impacts in comparison to the proposed project.

As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed General Plan represents a substantial change in the policy framework for future development in Stockton compared to the existing 2035 General Plan. Specifically, the fundamental change is from one that concentrated growth in "outfill" areas located at the periphery of the city to one that emphasizes new and redevelopment in existing infill neighborhoods. Additionally, the proposed General Plan policies and actions emphasize infill development consistent with the Regional Smart Growth Transit Oriented Development Plan, RTP/SCS, and San Joaquin County Regional Blueprint. The No Project Alternative would promote outfill development and lack the proposed General Plan policies and actions that promote consistency with land use plans adopted for the purpose of avoiding or mitigating an environmental impact. Therefore, the No Project Alternative would result in a *greater* impact in comparison to the proposed project.

5.1.2.11 NOISE

As demonstrated below, the No Project Alternative would result in greater noise impacts in comparison to the proposed project.

The proposed project would result in a significant and unavoidable impact due to an increase in traffic-generated noise associated with projected development allowed by the proposed General Plan. While the horizon-year development levels anticipated for the No Project Alternative are the same as for the proposed project, the proposed General Plan supports a development pattern that would reduce vehicle use through a land use map that reduces the potential for development at the periphery of the city and

increases the density of development in the Downtown, and through goals, policies, and actions that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit. Therefore, vehicle miles traveled (VMT) would be reduced, as would associated noise from traffic on roadways, resulting in a *greater* noise impact when compared to the proposed project.

5.1.2.12 POPULATION AND HOUSING

As demonstrated below, the No Project Alternative would result in similar impacts to population and housing as the proposed project.

The proposed General Plan would induce substantial population growth in the EIR Study Area under horizon-year conditions, which would result in a significant and unavoidable impact. Since the No Project Alternative would include the same amount of horizon-year development as the proposed project, impacts associated with population growth would be *similar* to the proposed project.

5.1.2.13 PUBLIC SERVICES AND RECREATION

As demonstrated below, the No Project Alternative would result in similar impacts to public services and recreation as the proposed project.

The No Project Alternative would include the same amount of horizon-year development as the proposed General Plan. Therefore, the No Project Alternative would generate a similar demand for police, fire protection, school, library, and park and recreation services and facilities, and public service impacts would be *similar* to the proposed project.

5.1.2.14 TRANSPORTATION AND TRAFFIC

As demonstrated below, the No Project Alternative would result in greater transportation and traffic impacts in comparison to the proposed project.

In combination with regional growth, increased vehicle traffic from the proposed project would result in significant and unavoidable level of service impacts to local and regional roadways and freeway segments. While the horizon-year development levels anticipated for the No Project Alternative are the same as for the proposed project, the proposed General Plan supports a more sustainable development pattern than the existing 2035 General Plan, including through a land use map that reduces the potential for development at the periphery of the city and increases the density of development in the Downtown, and through goals, policies, and actions that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, which would help reduce vehicle use and associated traffic. Therefore, the No Project Alternative would result in *greater* transportation and traffic impacts when compared to the proposed project.

5.1.2.15 UTILITIES AND SERVICE SYSTEMS

As demonstrated below, the No Project Alternative would result in greater impacts in comparison to the proposed project.

The No Project Alternative would include the same amount of horizon-year development as the proposed project. Therefore, the No Project Alternative would generate a similar demand for water supply, wastewater, stormwater, solid waste, and energy supplies, services, and facilities. However, because the No Project Alternative would allow new development over a larger area than the proposed General Plan, it would require more extensive construction of new utilities and service systems to serve new development, resulting in *greater* impacts on utilities and services systems.

5.2 CORRIDORS FOCUS ALTERNATIVE

This section analyzes the Corridors Focus Alternative in comparison to the proposed General Plan and UMPS.

5.2.1 PRINCIPAL CHARACTERISTICS

Under this alternative, the policies and actions in the proposed General Plan would be adopted, but the land use map and the associated UMPS to plan for infrastructure to serve that land use pattern would be different, focusing residential development into village areas at the edge of the city and retail development along major corridors. The land use map for the Corridors Focus Alternative is shown on Figure 5-4. As explained earlier, it is estimated that this alternative would likely result in the same horizon-year development levels as the proposed project.

5.2.2 IMPACT DISCUSSION

The Corridors Focus Alternative would have the following impacts relative to the proposed General Plan and UMPS.

5.2.2.1 AESTHETICS

As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

The proposed project would not have an adverse effect on a scenic vista, substantially damage scenic resources, degrade the area's existing visual character, or create new sources of light or glare. Under the Corridors Focus Alternative, some residential growth would be directed to villages at the edges of the city, which would result in more development occurring in areas that are largely characterized by their agricultural and rural nature compared to the proposed project. As discussed in Section 4.1, Aesthetics, of this Draft EIR, the existing 2035 General Plan does not designate official scenic vistas; however, open space, agricultural fields, and riparian areas, particularly along the San Joaquin River and the Calaveras River, are identified as significant visual features. Given that the Corridors Focus Alternative could result in

more development in scenic areas along the periphery of the city compared to the proposed project, the Corridors Focus Alternative would result in *greater* impacts to scenic vistas.

5.2.2.2 AGRICULTURAL AND FORESTRY RESOURCES

As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

As discussed in Section 4.2, Agricultural and Forestry Resources, of this Draft EIR, Title 16, Development Code, of the Stockton Municipal Code does not contain a zoning district for forests or timberlands. Accordingly, neither the proposed project nor the Corridors Focus Alternative would result in impacts to forest lands. However, the proposed project would convert farmlands of concern under CEQA and Williamson Act lands to non-agricultural uses; these impacts would be significant and unavoidable. Like the proposed General Plan, the Corridors Focus Alternative would allow new development in areas that are currently in agricultural use, but the amount of agricultural land designated for development would be higher. Therefore, the Corridors Focus Alternative would result in *greater* impacts to farmlands of concern when compared to the proposed project.

5.2.2.3 AIR QUALITY

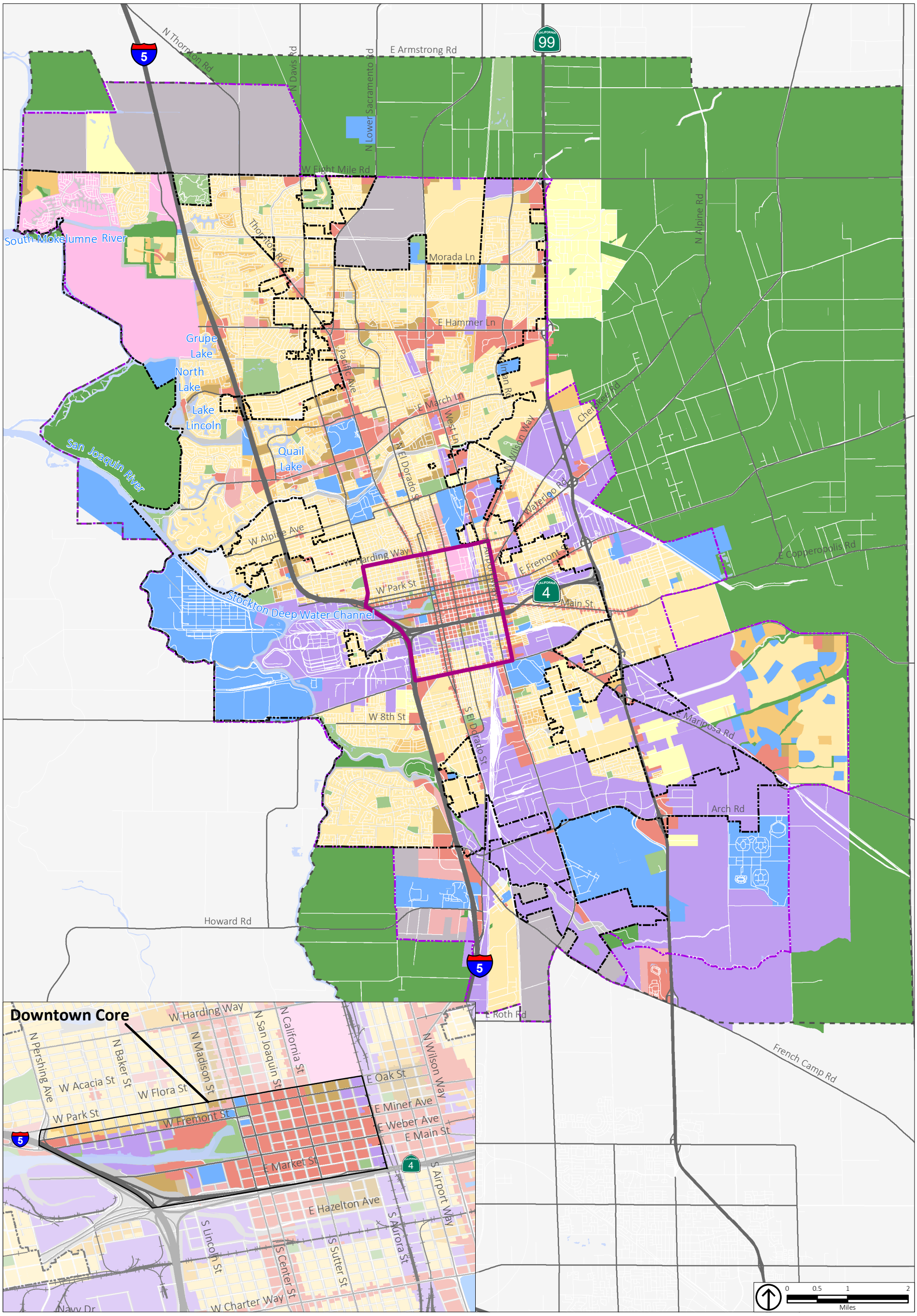
As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

The proposed project would result in significant and unavoidable air quality impacts resulting from the construction and operation of development allowed under the proposed General Plan and UMPS. While the horizon-year development levels anticipated for the Corridors Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, the land use map under the Corridors Focus Alternative would allow a more sprawling development pattern, which could increase operational air quality impacts from mobile source emissions. Therefore, overall the Corridors Focus Alternative would result in *greater* air quality impacts when compared to the proposed project.

5.2.2.4 BIOLOGICAL RESOURCES

As demonstrated below, the Corridors Focus Alternative would result in a greater impact in comparison to the proposed project.

Under the proposed project, potential impacts to special-status plant and animal species, riparian habitat, wetlands, and biological resource plans and policies would be less than significant through compliance with existing federal and State regulations, participation in the SJMSCP, and implementation of proposed General Plan policies and actions. Unlike the proposed project, which emphasizes new and redevelopment in existing infill neighborhoods, the Corridors Focus Alternative would direct some residential growth to villages at the edges of the city. As discussed in Section 4.4, Biological Resources, of this Draft EIR, the periphery of the city is largely characterized by open space, agricultural fields, and



Source: City of Stockton, 2017; PlaceWorks, 2017.

- Residential Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Village
- Mixed Use
- Commercial
- Administrative Professional
- Industrial
- Institutional
- Parks and Recreation
- Open Space/Agriculture
- City Limit
- Greater Downtown Boundary
- General Plan Planning Area
- Sphere of Influence

Figure 5-4
Corridors Focus Alternative Land Use Map

riparian areas, including sensitive natural communities such as coastal and valley freshwater marsh, great valley oak riparian forest, and valley oak woodland. Given that, compared to the proposed project, the Corridors Focus Alternative would allow more development in undeveloped areas along the periphery of the city, this alternative would result in *greater* impacts to sensitive natural resources and special status species.

5.2.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As demonstrated below, the Corridors Focus Alternative would result in a greater impact in comparison to the proposed project.

Although the horizon-year development levels anticipated for the Corridors Focus Alternative are the same as for the proposed project, such development could occur over a larger area, including areas that are currently undeveloped, compared to the proposed project. Ground-disturbing activities during construction, particularly in areas that are currently undeveloped, could affect archaeological, paleontological, tribal, and other cultural resources. The proposed project and the Corridors Focus Alternative would both support new and redevelopment in the Downtown, which would similarly impact historic resources, and they would include the same set of policies and actions and be subject to the same set of federal and State regulations that protect cultural resources. Overall, due to the increased area of potential development, the Corridors Focus Alternative would result in *greater* impacts in comparison to the proposed project.

5.2.2.6 GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES

As demonstrated below, the Corridors Focus Alternative would result in similar impacts as the proposed project.

Under both the Corridors Focus Alternative and the proposed project, compliance with existing regulations, including the California Building Code, as new development occurs would ensure that impacts associated with geologic and seismic hazards would be less than significant. Therefore, the Corridors Focus Alternative would be *similar* to the proposed project.

5.2.2.7 GREENHOUSE GAS EMISSIONS

As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

The proposed project would result in a significant and unavoidable GHG impact because it would not ensure that the City will be on track to reach the goal of Executive Order S-03-05 to reduce GHG emissions 80 percent below 1990 levels by 2050. The proposed project and the Corridors Focus Alternative would include the same policies and actions that would support consistency with CARB's Scoping Plan, SJCOG's 2014-2040 RTP/SCS, the City's CAP, and the 2008 Settlement Agreement on the Stockton 2035 General Plan; the same policies that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit; and the same action to update the City's CAP. However, while the horizon-year development levels anticipated for the Corridors Focus Alternative

are the same as for the proposed project, the land use map under the Corridors Focus Alternative would allow a more sprawling development pattern, which could increase GHG emissions. Therefore, the Corridors Focus Alternative would result in *greater* GHG impacts when compared to the proposed project.

5.2.2.8 HAZARDS AND HAZARDOUS MATERIALS

As demonstrated below, the Corridors Focus Alternative would result in similar impacts as the proposed project.

Under the proposed project, consistency with the proposed General Plan policies and actions and compliance with existing regulations and procedures as new development occurs would ensure that impacts associated with hazards and hazardous materials would be less than significant. Development under both the Corridors Focus Alternative and the proposed project would be required to comply with existing and proposed regulations and procedures related to hazardous and hazardous materials, reducing potential impacts to be less than significant. Therefore, the Corridors Focus Alternative would be *similar* to the proposed project.

5.2.2.9 HYDROLOGY AND WATER QUALITY

As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

Similar to the proposed project, the Corridors Focus Alternative would be subject to existing federal, State, and local regulations relating to hydrology and water quality. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality would be minimized as future development occurs. The Corridors Focus Alternative would allow greater conversion of land from an undeveloped to a developed state than the proposed project, which would increase new impervious areas and require more extensive drainage system infrastructure. Therefore, the Corridors Focus Alternative would result in *greater* impacts when compared to the proposed project.

5.2.2.10 LAND USE AND PLANNING

As demonstrated below, the Corridors Focus Alternative would result in similar noise impacts as the proposed project.

As demonstrated in Section 4.10, Land Use and Planning, of this Draft EIR, the proposed General Plan would not result in any land use impacts. Neither the proposed project nor the Corridors Focus Alternative would divide an established community or conflict with a habitat conservation plan. While the Corridors Focus Alternative would allow more development at the periphery of the city than the proposed project, it would still generally aim to focus on infill development based on the land use map and policies and actions that emphasize infill development, which would overall be consistent with the Regional Smart Growth Transit Oriented Development Plan, RTP/SCS, and San Joaquin County Regional Blueprint. Therefore, the Corridors Focus Alternative would result in *similar* impacts in comparison to the proposed project.

5.2.2.11 NOISE

As demonstrated below, the Corridors Focus Alternative would result in greater noise impacts in comparison to the proposed project.

The proposed project would result in a significant and unavoidable impact due to an increase in traffic-generated noise associated with projected development allowed by the proposed General Plan. While the horizon-year development levels anticipated for the Corridors Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would reduce vehicle use by promoting infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, the land use map under the Corridors Focus Alternative would allow a more sprawling development pattern, which could increase VMT and associated traffic noise. Therefore, overall the Corridors Focus Alternative would result in a *greater* noise impact when compared to the proposed project.

5.2.2.12 POPULATION AND HOUSING

As demonstrated below, the Corridors Focus Alternative would result in similar impacts to population and housing as the proposed project.

The proposed General Plan would induce substantial population growth in the EIR Study Area under horizon-year conditions, which would result in a significant and unavoidable impact. Since the Corridors Focus Alternative would include the same amount of horizon-year development as the proposed project, impacts associated with population growth would be *similar* to the proposed project.

5.2.2.13 PUBLIC SERVICES AND RECREATION

As demonstrated below, the Corridors Focus Alternative would result in similar impacts to public services and recreation as the proposed project.

The Corridors Focus Alternative would include the same amount of horizon-year development as the proposed General Plan. Therefore, the Corridors Focus Alternative would generate a similar demand for police, fire protection, school, library, and park and recreation services and facilities, and public service impacts would be *similar* to the proposed project.

5.2.2.14 TRANSPORTATION AND TRAFFIC

As demonstrated below, the Corridors Focus Alternative would result in greater transportation and traffic impacts in comparison to the proposed project.

In combination with regional growth, increased vehicle traffic from the proposed project would result in significant and unavoidable level of service impacts to local and regional roadways and freeway segments. While the horizon-year development levels anticipated for the Corridors Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes

and active transit, the land use map under the Corridors Focus Alternative would allow a more sprawling development pattern, which could increase vehicle travel and associated traffic. Therefore, the Corridors Focus Alternative would result in *greater* transportation and traffic impacts when compared to the proposed project.

5.2.2.15 UTILITIES AND SERVICE SYSTEMS

As demonstrated below, the Corridors Focus Alternative would result in greater impacts in comparison to the proposed project.

The Corridors Focus Alternative would include the same amount of horizon-year development as the proposed project. Therefore, the Corridors Focus Alternative would generate a similar demand for water supply, wastewater, stormwater, solid waste, and energy supplies, services, and facilities. However, because the Corridors Focus Alternative would allow new development over a larger area than the proposed General Plan, it would require more extensive construction of new utilities and service systems to serve new development, resulting in *greater* impacts on utilities and services systems.

5.3 INFILL FOCUS ALTERNATIVE

This section analyzes the Infill Focus Alternative in comparison to the proposed General Plan and UMPS.

5.3.1 PRINCIPAL CHARACTERISTICS

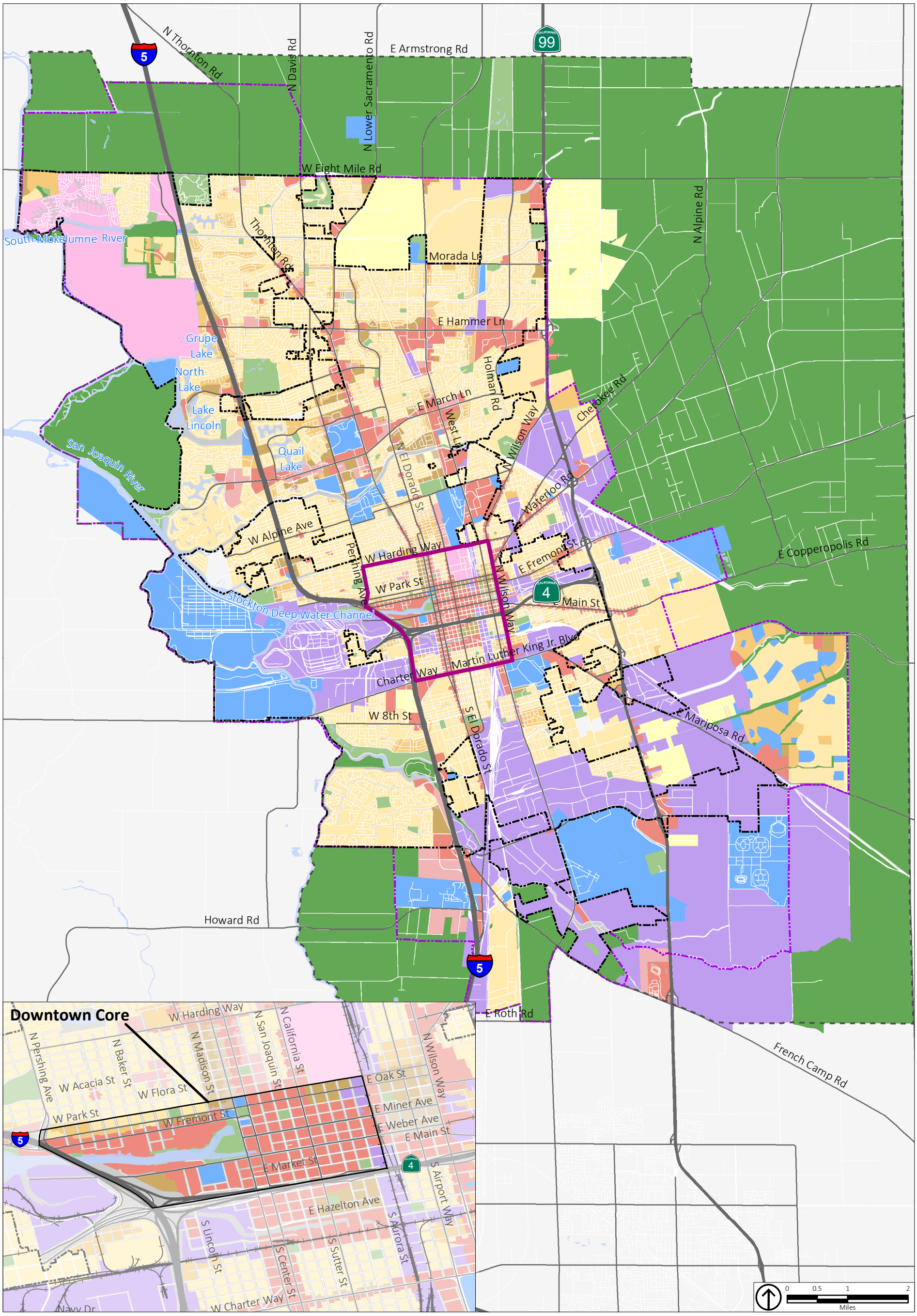
Under this alternative, the policies and actions in the proposed General Plan would be adopted, but the land use map and the associated UMPS to plan for infrastructure to serve that land use pattern would be slightly different. The most significant difference is that this alternative lacks the Economic and Education Enterprise designation in the area north of Eight Mile Road, and instead designates it primarily for Open Space and Agriculture. Within the core of the city, the Infill Focus Alternative would provide for more Professional Office uses along S Airport Way and more High Density Residential near Weston Ranch. The land use map for the Infill Focus Alternative is shown on Figure 5-5. As explained earlier, it is estimated that this alternative would likely result in the same horizon-year development levels as the proposed project.

5.3.2 IMPACT DISCUSSION

The Corridors Focus Alternative would have the following impacts relative to the proposed General Plan and UMPS.

5.3.2.1 AESTHETICS

As demonstrated below, the Infill Focus Alternative would result in reduced impacts in comparison to the proposed project.



Source: City of Stockton, 2017; PlaceWorks, 2017.

- Residential Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Village
- Mixed Use
- Commercial
- Administrative Professional
- Industrial
- Institutional
- Parks and Recreation
- Open Space/Agriculture
- City Limit
- Greater Downtown Boundary
- General Plan Planning Area
- Sphere of Influence

Figure 5-5
Infill Focus Alternative Land Use Map

Similar to the proposed project, the Infill Focus Alternative would emphasize new and redevelopment in existing infill neighborhoods, minimizing development in scenic agricultural and rural areas. However, unlike the proposed project, the Infill Focus Alternative would not include any urban designations north of Eight Mile Road, which is characterized by its agricultural and rural nature. As discussed in Section 4.1, Aesthetics, of this Draft EIR, the existing 2035 General Plan does not designate official scenic vistas; however, open space, agricultural fields, and riparian areas, particularly along the San Joaquin River and the Calaveras River, are identified as significant visual features. Given that the Infill Focus Alternative would concentrate development in infill areas and would not result in the conversion of land from an undeveloped to a developed state in the area north of Eight Mile Road, this alternative would result in in *reduced* impacts to scenic vistas when compared to the proposed project.

5.3.2.2 AGRICULTURAL AND FORESTRY RESOURCES

As demonstrated below, the Infill Focus Alternative would result in reduced impacts in comparison to the proposed project.

As discussed in Section 4.2, Agricultural and Forestry Resources, of this Draft EIR, Title 16, Development Code, of the Stockton Municipal Code does not contain a zoning district for forests or timberlands.

Accordingly, neither the proposed project nor the Infill Focus Alternative would result in impacts to forest lands. However, the proposed project would convert farmlands of concern under CEQA and Williamson Act lands to non-agricultural uses; these impacts would be significant and unavoidable. Like the proposed General Plan, the Infill Focus Alternative would allow new development in areas that are currently in agricultural use; however, the amount of agricultural land designated for development would be reduced given that this alternative would not include any urban designations north of Eight Mile Road. Therefore, the Infill Focus Alternative would result in *reduced* impacts to farmlands of concern when compared to the proposed project.

5.3.2.3 AIR QUALITY

As demonstrated below, the Infill Focus Alternative would result in reduced impacts in comparison to the proposed project.

The proposed project would result in significant and unavoidable air quality impacts resulting from the construction and operation of development allowed under the proposed General Plan and UMPS. While the horizon-year development levels anticipated for the Infill Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, the proposed General Plan land use map would allow more development at the periphery of the EIR Study Area through the Economic and Education Enterprise designation in the area north of Eight Mile Road, which could increase operational air quality impacts from mobile source emissions. Therefore, overall the Infill Focus Alternative would result in *reduced* air quality impacts when compared to the proposed project.

5.3.2.4 BIOLOGICAL RESOURCES

As demonstrated below, the Infill Focus Alternative would result in a reduced impact in comparison to the proposed project.

Under the proposed project, potential impacts to special-status plant and animal species, riparian habitat, wetlands, and biological resource plans and policies would be less than significant through compliance with existing federal and State regulations, participation in the SJMSCP, and implementation of proposed General Plan policies and actions. Similar to the proposed project, the Infill Focus Alternative emphasizes new and redevelopment buildout potential in existing infill neighborhoods; however, this alternative would not include any urban designations north of Eight Mile Road. As discussed in Section 4.4, Biological Resources, of this Draft EIR, the periphery of the city is largely characterized by open space, agricultural fields, and riparian areas including sensitive natural communities such as coastal and valley freshwater marsh, great valley oak riparian forest, and valley oak woodland. Given that, compared to the proposed project, the Infill Focus Alternative would allow less development in undeveloped areas along the periphery of the city, this alternative would result in *reduced* impacts to sensitive natural resources and special status species.

5.3.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As demonstrated below, the Infill Focus Alternative would result in a reduced impact in comparison to the proposed project.

Although the horizon-year development levels anticipated for the Infill Focus Alternative are the same as for the proposed project, this alternative would not include any urban designations in the undeveloped area north of Eight Mile Road. Ground-disturbing activities during construction, particularly in areas that are currently undeveloped, could affect archaeological, paleontological, tribal, and other cultural resources. The proposed project and the Infill Focus Alternative would both support new and redevelopment in the Downtown, which would similarly impact historic resources, and they would include the same set of policies and actions and be subject to the same set of federal and State regulations that protect cultural resources. Overall, due to the reduced area of potential development, the Infill Focus Alternative would result in *reduced* impacts in comparison to the proposed project.

5.3.2.6 GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES

As demonstrated below, the Infill Focus Alternative would result in similar impacts as the proposed project.

Under both the Infill Focus Alternative and the proposed project, compliance with existing regulations, including the California Building Code, as new development occurs would ensure that impacts associated with geologic and seismic hazards would be less than significant. Therefore, the Infill Focus Alternative would be *similar* to the proposed project.

5.3.2.7 GREENHOUSE GAS EMISSIONS

As demonstrated below, the Infill Focus Alternative would result in reduced impacts in comparison to the proposed project.

The proposed project would result in a significant and unavoidable GHG impact because it would not ensure that the City will be on track to reach the goal of Executive Order S-03-05 to reduce GHG emissions 80 percent below 1990 levels by 2050. The proposed project and the Infill Focus Alternative would include the same policies and actions that would support consistency with CARB's Scoping Plan, SJCOG's 2014-2040 RTP/SCS, the City's CAP, and the 2008 Settlement Agreement on the Stockton 2035 General Plan; the same policies that promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit; and the same action to update the City's CAP. However, while the horizon-year development levels anticipated for the Infill Focus Alternative are the same as for the proposed project, the proposed General Plan land use map would allow more development at the periphery of the EIR Study Area through the Economic and Education Enterprise designation in the area north of Eight Mile Road, which could increase GHG emissions. Therefore, the Infill Focus Alternative would result in *reduced* GHG impacts when compared to the proposed project.

5.3.2.8 HAZARDS AND HAZARDOUS MATERIALS

As demonstrated below, the Infill Focus Alternative would result in similar impacts as the proposed project.

Under the proposed project, consistency with the proposed General Plan policies and actions and compliance with existing regulations and procedures as new development occurs would ensure that impacts associated with hazards and hazardous materials would be less than significant. Development under both the Infill Focus Alternative and the proposed project would be required to comply with existing and proposed regulations and procedures related to hazardous and hazardous materials, reducing potential impacts to be less than significant. Therefore, the Infill Focus Alternative would be *similar* to the proposed project.

5.3.2.9 HYDROLOGY AND WATER QUALITY

As demonstrated below, the Infill Focus Alternative would result in reduced impacts compared to the proposed project.

Similar to the proposed project, the Infill Focus Alternative would be subject to existing federal, State, and local regulations relating to hydrology and water quality. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality would be minimized as future development occurs. The Infill Focus Alternative would allow less conversion of land from an undeveloped to a developed state than the proposed project, which would reduce new impervious areas and allow more development to connect to existing drainage systems already in place. Therefore, the Infill Focus Alternative would result in *reduced* impacts when compared to the proposed project.

5.3.2.10 LAND USE AND PLANNING

As demonstrated below, the Infill Focus Alternative would result in similar noise impacts as the proposed project.

As demonstrated in Section 4.10, Land Use and Planning, of this Draft EIR, the proposed General Plan would not result in any land use impacts. Neither the proposed project nor the Infill Focus Alternative would divide an established community or conflict with a habitat conservation plan, and they both include a land use map and policies and actions that promote infill development consistent with the Regional Smart Growth Transit Oriented Development Plan, RTP/SCS, and San Joaquin County Regional Blueprint. Therefore, the Infill Focus Alternative would result in *similar* impacts in comparison to the proposed project.

5.3.2.11 NOISE

As demonstrated below, the Infill Focus Alternative would result in reduced noise impacts as the proposed project.

The proposed project would result in a significant and unavoidable impact due to an increase in traffic-generated noise associated with projected development allowed by the proposed General Plan. While the horizon-year development levels anticipated for the Infill Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would reduce vehicle use by promoting infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, the proposed General Plan land use map would allow more development at the periphery of the EIR Study Area through the Economic and Education Enterprise designation in the area north of Eight Mile Road, which could increase VMT and associated traffic noise. Therefore, overall the Infill Focus Alternative would result in a *reduced* noise impact when compared to the proposed project.

5.3.2.12 POPULATION AND HOUSING

As demonstrated below, the Infill Focus Alternative would result in similar impacts to population and housing as the proposed project.

The proposed General Plan would induce substantial population growth in the EIR Study Area under horizon-year conditions, which would result in a significant and unavoidable impact. Since the Infill Focus Alternative would include the same amount of horizon-year development as the proposed project, impacts associated with population growth would be *similar* to the proposed project.

5.3.2.13 PUBLIC SERVICES AND RECREATION

As demonstrated below, the Infill Focus Alternative would result in similar impacts to public services and recreation as the proposed project.

The Infill Focus Alternative would include the same amount of horizon-year development as the proposed General Plan. Therefore, the Infill Focus Alternative would generate a similar demand for police, fire protection, school, library, and park and recreation services and facilities, and public service impacts would be *similar* to the proposed project.

5.3.2.14 TRANSPORTATION AND TRAFFIC

As demonstrated below, the Infill Focus Alternative would result in reduced transportation and traffic impacts in comparison to the proposed project.

In combination with regional growth, increased vehicle traffic from the proposed project would result in significant and unavoidable level of service impacts to local and regional roadways and freeway segments. While the horizon-year development levels anticipated for the Corridors Focus Alternative are the same as for the proposed project and they would include the same policies and actions that would promote infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, the proposed General Plan land use map would allow more development at the periphery of the EIR Study Area through the Economic and Education Enterprise designation in the area north of Eight Mile Road, which could increase vehicle travel and associated traffic. Therefore, the Infill Focus Alternative would result in reduced transportation and traffic impacts when compared to the proposed project.

5.3.2.15 UTILITIES AND SERVICE SYSTEMS

As demonstrated below, the Infill Focus Alternative would result in reduced impacts in comparison to the proposed project.

The Infill Focus Alternative would include the same amount of horizon-year development as the proposed project. Therefore, the Infill Focus Alternative would generate a similar demand for water supply, wastewater, stormwater, solid waste, and energy supplies, services, and facilities. However, because the Infill Focus Alternative would allow new development over a smaller area than the proposed General Plan, it would require less extensive construction of new utilities and service systems to serve new development, resulting in *reduced* impacts on utilities and services systems.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an environmentally superior alternative in an EIR. Based on the above analysis, which is summarized in Table 5-1, the Infill Focus Alternative is the Environmentally Superior Alternative. By focusing development in the core of the city and designating the area north of Eight Mile Road for Open Space and Agriculture, this alternative would be an improvement over the proposed project with respect to potential negative impacts associated with aesthetics, agricultural and forestry resources, air quality, biological resources, cultural and tribal resources, GHG emissions, hydrology and water quality, noise, transportation and traffic, and utilities and service systems.

ALTERNATIVES TO THE PROPOSED PROJECT

6. CEQA-Required Assessment Conclusions

As required by the California Environmental Quality Act (CEQA), this chapter provides an overview of the impacts of the proposed General Plan and Utility Master Plan Supplements (UMPS) based on the technical analysis presented in the EIR. The CEQA-mandated topics include growth inducement, unavoidable significant effects, and expected significant irreversible changes. A more detailed analysis of the effects the proposed General Plan and UMPS could have on the environment is provided in Chapter 4, Environmental Evaluation, of this Draft EIR.

6.1 GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth inducements might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or removal of major barriers to development. Not all growth inducement is necessarily negative. Negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Providing urban services to a site, and the subsequent development, can serve to induce other landowners in the vicinity to convert their property to urban uses. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by, or attracted to, a new project.

6.1.1 DIRECT IMPACTS

The proposed project (which includes already approved or pending development both within the city limits and outside the City's jurisdiction) would directly induce population, employment, and economic growth by allowing development and associated infrastructure in areas that are currently undeveloped. Implementation of the proposed project would result in the following growth in 2040 based on the buildout methodology described in Chapter 3, Project Description:

- 40,900 new dwelling units, including:
  - 26,300 new single-family units
  - 14,600 new multi-family units

- 132,200 new residents[1]
- 13.8 million square feet of new commercial and office space
- 35.6 million square feet of new industrial space

The primary mechanism for this growth within the city and Sphere of Influence (SOI) is the proposed General Plan land use map, which allows for some development in areas that are not currently developed. The anticipated locations of this growth are shown in Figures 3-3 and 3-5 in Chapter 3, Project Description.

The proposed General Plan land use map allows some development in areas of the EIR Study Area presently used as agriculture and vacant land. However, through the Open Space and Agriculture designation in the proposed land use map, combined with policies and actions enacted under the General Plan, the proposed project would control the geographical extent of growth and encourage sustainable patterns of urban land uses. In addition, the proposed General Plan commits the City to controlled and orderly use of its natural resources through policies to conserve agricultural land and promote compact growth.

Specifically, Policy LU-5.3 and Action LU-5.3.B direct the City to define discrete and clear city edges that preserve agriculture, open space, and scenic views, including through the development of a greenbelt or community separator around the city. Goal LU-2 and its associated actions and policies support compact growth by promoting development in the Downtown. Meanwhile, Policy 6.2 and its associated actions direct the City to prioritize development and redevelopment of vacant, underutilized, and blighted infill areas. Actions LU-6.1.B, LU-6.1.E, and LU-6.1.F promote orderly growth by directing the City to monitor the rate of growth to ensure that it does not overburden the City's infrastructure and services, ensure that there is adequate infrastructure to serve new development, and evaluate and implement adjustments to the Public Facilities Fee structure to encourage development in areas where infrastructure is already present and ensure that non-infill development pays its fair share of anticipated citywide capital facilities and operational costs. In addition, Policy LU-5.2 and its associated actions protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, and agricultural lands.

As a result, while the proposed project would result in increased local growth, the Open Space and Agriculture designation in the proposed land use map, combined with policies and actions included in the proposed General Plan, would reduce the potential for negative impacts associated with direct growth inducement to a less-than-significant level.

6.1.2 INDIRECT IMPACTS

While the proposed General Plan does allow growth, it also includes the Open Space and Agriculture designation in the proposed land use map and policies and actions that would control the geographical extent of growth and encourage sustainable patterns of urban land uses, as described above. The proposed General Plan land use map provides a mixture of housing, shopping, public, and employment

[1] Based on an assumption of 3.23 persons per household, as reported in: State of California, Department of Finance, 2017. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2017.*

opportunities so that as the number of residents increase, they do not have to pressure adjacent communities to provide new commercial and employment opportunities. As stated above, the General Plan commits to only allow development where infrastructure is in place or is planned. As a result, the proposed General Plan and UMPS would result in a less-than-significant indirect growth-inducing impact.

6.2 UNAVOIDABLE SIGNIFICANT EFFECTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. This section lists the impacts for the proposed project that were found to be significant and unavoidable. More information on these impacts is found in Chapter 4, Environmental Evaluation, of this Draft EIR.

Impact AG-1: Although the proposed General Plan includes policies and actions that would reduce and partially offset the conversion of farmland, it designates approximately 16,160 acres of farmlands of concern under CEQA for non-agricultural uses.

Impact AG-2: The proposed General Plan designates 2,464 acres of lands with active Williamson Act contracts for non-agricultural uses.

Impact AQ-1: Implementation of the proposed General Plan would result in the generation of substantial long-term criteria air pollutant emissions that would exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) regional significance thresholds and would therefore not be considered consistent with the existing Air Quality Management Plans.

Impact AQ-2: Construction activities associated with implementation of the proposed General Plan and UMPS could exceed the SJVAPCD regional significance thresholds.

Impact AQ-3: Operation of development projects allowed under the proposed General Plan would generate emissions that would exceed the SJVAPCD regional significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$.

Impact AQ-4: Development allowed under the proposed General Plan and UMPS could result in short- and long-term emissions that could cause or contribute to a violation of the ambient air quality standards.

Impact GHG-1: Implementation of the proposed General Plan would result in a substantial increase in greenhouse emissions.

Impact NOISE-3: Increased traffic from projected development allowed by the proposed General Plan would result in a significant increase in traffic noise levels compared to existing conditions along the following roadway segments:

1. SR-99 between Farmington Road and Mariposa Road
2. SR-4 west of I-5
3. Eight Mile Road between Mokelumne Drive and Trinity Parkway

4. Eight Mile Road between West Lane and SP Railroad
5. Eight Mile Road between SR-99 and west of Bear Creek
6. March Lane between West Land and Bianchi
7. French Camp Road between McDougald and E.W.S Wood
8. California Street between Park and Weber
9. California Street between Weber and Crosstown Freeway
10. Airport Way between Main and Market
11. Airport Way between Ninth and Tenth
12. Airport Way between Sperry and CE Dixon St
13. Mariposa Road between Stagecoach and SR-99
14. B Street between Ralph Avenue and Arch Airport

Impact POP-1: The proposed General Plan and UMPS would induce substantial employment growth within the EIR Study Area.

Impact TRAF-1: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of local roadways and freeway segments. As shown in Table 4-14.2 and discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.

Impact TRAF-2: Implementation of the proposed General Plan, in combination with regional growth, would result in increased vehicle traffic, which would affect the operation of regional roadways and freeway segments. As discussed above, the proposed General Plan would result in significant level of service impacts to roadway and freeway segments.

6.3 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires a discussion of the extent to which a proposed project will commit nonrenewable resources to uses that future generations will probably be unable to reverse. An example of such an irreversible commitment is the construction of highway improvements that would provide public access to previously inaccessible areas.

A project would generally result in a significant irreversible impact if:

- Primary and secondary impacts would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

6.3.1 CHANGES IN LAND USE THAT COMMIT FUTURE GENERATIONS

Development allowed by the proposed General Plan would result in the conversion of some agricultural and vacant lands to residential, commercial, and industrial uses, and the intensification of underutilized areas. In addition, intensification of land uses and development of currently undeveloped lands would contribute to traffic congestion, as described in Section 4.14, Transportation and Traffic. Development allowed under the proposed General Plan would constitute a long-term commitment to residential, commercial, industrial, parking, public, and other urban uses.

6.3.2 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS

Irreversible changes to the physical environment could occur from accidental release of hazardous materials associated with development activities. However, compliance with State and federal hazardous materials regulations and local emergency plans, as discussed in Section 4.8, Hazards and Hazardous Materials, would reduce this potential impact to a less-than-significant level. No other irreversible changes are expected to result from the adoption and implementation of the proposed General Plan and UMPS.

6.3.3 LARGE COMMITMENT OF NONRENEWABLE RESOURCES

Implementation of the proposed General Plan and UMPS would result in the commitment of limited, renewable resources such as lumber and water. In addition, development allowed by the proposed General Plan and UMPS would irretrievably commit nonrenewable resources for the construction and maintenance of buildings, infrastructure, and roadways. These non-renewable resources include mined materials such as sand, gravel, steel, lead, copper, and other metals. Development allowed under the proposed General Plan also represents a long-term commitment to the consumption of fossil fuels, natural gas, and gasoline. Increased energy demands would apply to construction, lighting, heating, and cooling of residences, and transportation of people within, to, and from the EIR Study Area. Proposed General Plan Policy LU-5.4 and Action LU-5.4.B promote energy conservation and efficiency, which could minimize or incrementally reduce the consumption of these resources.

CEQA-REQUIRED ASSESSMENT CONCLUSIONS

7. Report Preparation

This Draft EIR was prepared by the following agency representatives and consultants.

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Michael McDowell, Planning Manager
Kanoa Kelley, Assistant Planner

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PRIME CONSULTANT

PLACEWORKS

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APPENDIX A:
NOTICE OF PREPARATION AND SCOPING COMMENTS

NOTICE OF PREPARATION AND COMMENT LETTERS

Notice of Preparation
Environmental Impact Report
City of Stockton

Date: MAY 24, 2017

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202
(209) 937-8266

Subject: Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

Lead Agency: City of Stockton Planning and Engineering Division

Project Title: Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

The City of Stockton (Lead Agency) is preparing a program-level Environmental Impact Report (EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (project or proposed project) pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations Section 15060(d)). This program-level EIR will address the potential environmental impacts associated with implementation of the broad policies included in the proposed project. The EIR will not evaluate detailed, site-specific development projects that may occur in the future under the General Plan; therefore, the analysis will be more qualitative in nature than a project-level EIR. The project details are described below. Additional information regarding the 2040 General Plan Update is available at www.stocktonca.gov/envisionstockton.

The City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. With respect to the views of Responsible and Trustee agencies as to significant environmental issues, the City needs to know the scope and content of the environmental information that is germane to each agency's statutory responsibilities in connection with the proposed project.

A Scoping Meeting will be held on **Thursday, June 8, 2017** at **5:00 p.m.** at the **Jack Silva Conference Room** in the **City of Stockton Permit Center**, located at 345 N. El Dorado Street in Stockton. At the Scoping Meeting, the City will inform the public and interested agencies about the proposed project and solicit public comment on the scope of the environmental issues to be addressed in the EIR.

Comments on the NOP are due no later than the close of the 30-day review period at 5:00 p.m. on Friday, June 23, 2017. Please send your written comments to David Stagnaro, City of Stockton, at the address shown above or email to David.Stagnaro@stocktonca.gov with "Envision Stockton EIR" as the subject. Public Agencies providing comments are asked to include a contact person for the agency.

Project Location

As shown on Figure 1, Stockton is located east of the San Francisco Bay area near the center of San Joaquin County; nearby cities include Manteca, Tracy, and Lodi. Regional access is provided via Interstate 5 and State Route 99. The EIR Study Area for the 2040 General Plan Update is defined by the current Sphere of Influence (SOI), which is shown on Figure 1. The current SOI encompasses 115 square miles of incorporated and unincorporated land that the City may annex in the future.

Project Description

The City of Stockton is preparing a comprehensive update to its existing General Plan. The Update is expected to be completed in 2018 and will guide the city's development and conservation through 2040. The project also includes the preparation of Utility Master Plan Supplements (UMPS). The UMPS will consist of separate documents that will identify needed improvements to water, wastewater, and storm drainage facilities to serve anticipated development under the updated General Plan.

State law requires that the General Plan contain seven elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, and Conservation. The content of these elements is outlined in the California Government Code Section 65300. In addition to the State-mandated content, the proposed project will also address economic development, community design, public facilities and services, recreation, and health, among other topics.

The 2040 General Plan Update will include revisions to the policies of the existing General Plan and consider changes to land use designations within the EIR Study Area where change or enhancement of existing uses is desired through 2040. As shown in Figure 2, the draft revisions to the General Plan land use map will shrink the possible future footprint of the city by changing areas currently designated "Village," which allows a variety of urban uses, to Open Space/Agriculture, including within the Delta Secondary Zone, where development is subject to Delta Protection Commission review. The City's Housing Element was recently updated and adopted by the City Council on April 12, 2016, and is not included as part of the proposed project.

As described above, the Study Area for the proposed project is defined by the current SOI boundary. As shown on Figure 1, the project also identifies a Planning Area boundary, which, at approximately 191 square miles, is larger than the SOI. While the Planning Area does not give the City any regulatory power over the land, it signals to the County and to other nearby local and regional authorities that Stockton recognizes that development within this area may have an impact on the future of the city.

The overall purpose of the 2040 General Plan Update is to create a policy framework that articulates a vision for the city's long-term physical form and development, while preserving and enhancing the quality of life for Stockton's residents. The key components of this project will include broad community goals for the future of Stockton and specific policies and actions that will help meet the goals.

Probable Environmental Impacts of the Project

The program-level EIR will evaluate the range of environmental impacts that could result from adoption and implementation of the proposed 2040 General Plan Update and UMPS. Below is a list of environmental topics that will be examined in the proposed 2040 General Plan Update and UMPS.

- Aesthetics
- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources

- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Service Systems

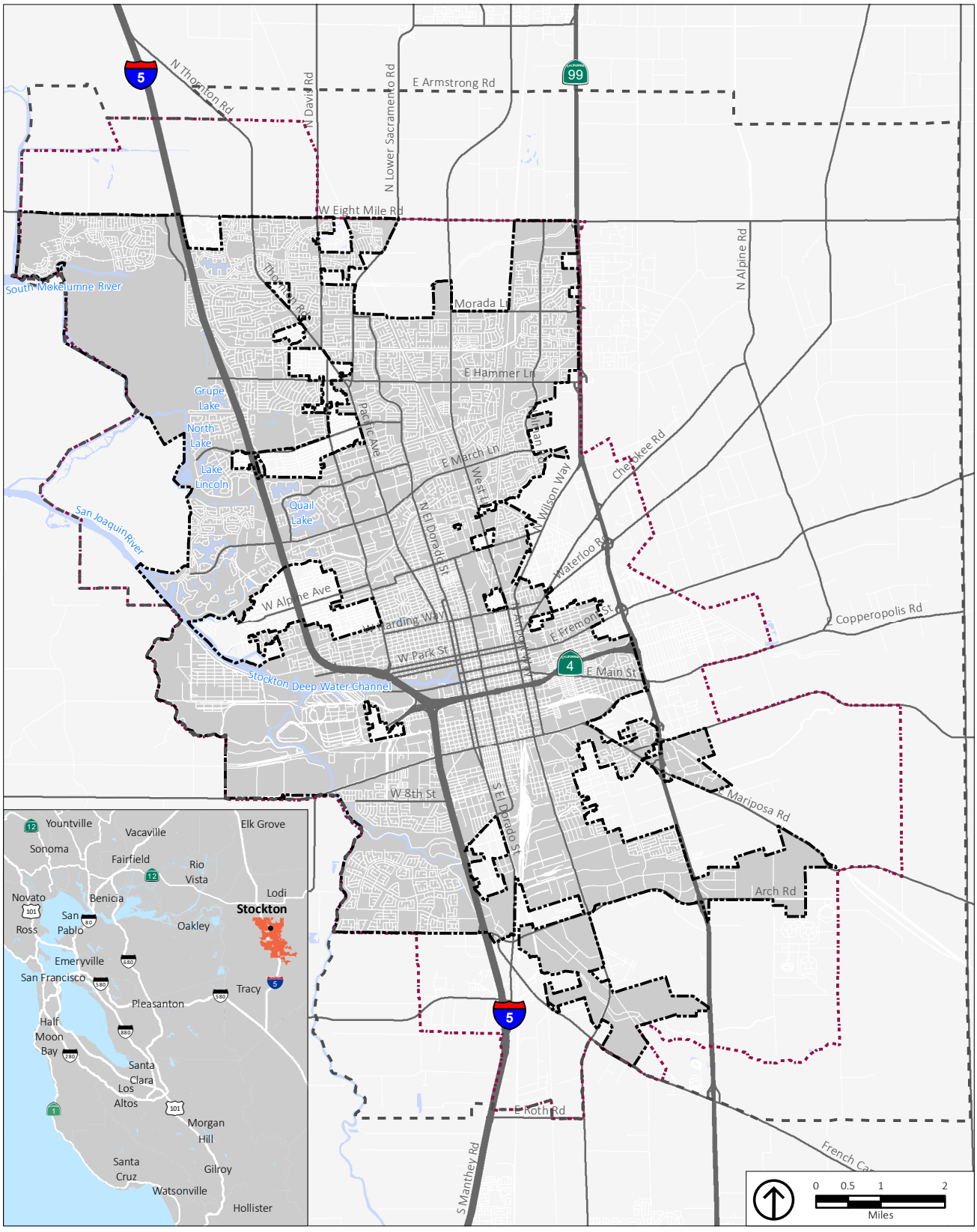
Attachments:

Figure 1: Regional and Vicinity Map
Figure 2: Proposed Urban to Open Space Land Use Changes

Date: 5/19/17

Signature: _____

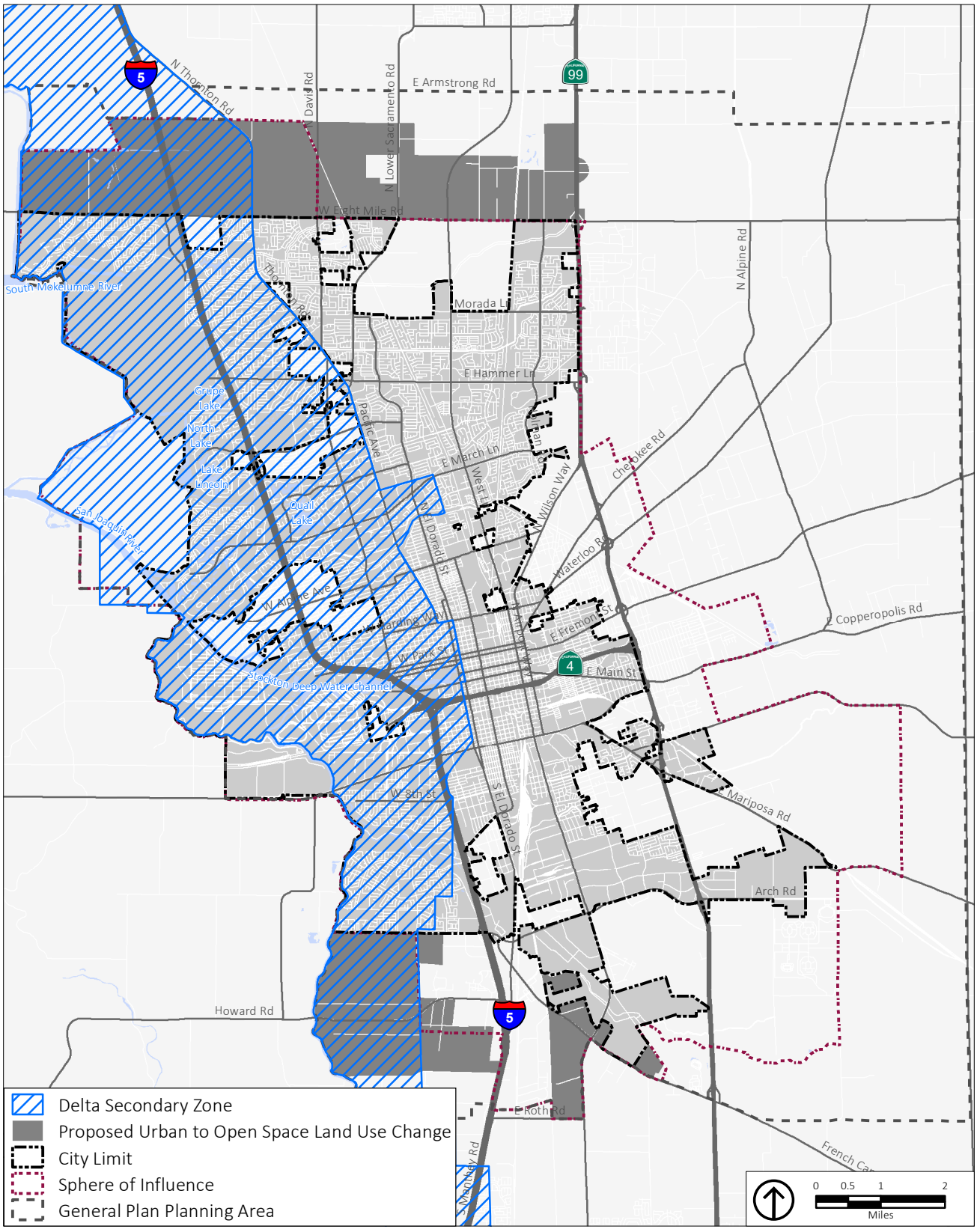
Title: Planning Manager



Source: City of Stockton, 2016; Placeworks, 2017.

City Limit
Sphere of Influence
General Plan Planning Area

Figure 1
Regional and Vicinity Map



Source: City of Stockton, 2016; Placeworks, 2017.

Figure 2
Proposed Urban to Open Space Land Use Changes

EAST BAY
MUNICIPAL UTILITY DISTRICT

June 19, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202

Re: Notice of Preparation of a Draft Environmental Impact Report – Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

Dear Mr. Stagnaro,

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements for the City of Stockton (City). EBMUD has the following comments.

RIGHT-OF-WAY

The City of Stockton is located outside of EBMUD's service boundary. EBMUD's Mokelumne Aqueducts (Aqueduct) right-of-way (owned in fee) is located through the City (see enclosed map EBMUD Aqueducts in Stockton). Any projects being planned within or immediately adjacent to EBMUD property will need to follow EBMUD's Procedure 718 – Raw Water Aqueduct Right-of-Way Non-Aqueduct Uses. A copy of the procedure is enclosed for your reference.

Design drawings for any project encroachment (roadway, utility, facility, etc.) or restoration projects crossing or within the Aqueduct right-of-way will need to be submitted to EBMUD for review of possible drainage, site grading, fencing, construction access, and other conditions that may impact EBMUD property. EBMUD requires a full set of drawings (full size or 11" x 17") as well as an electronic copy in PDF format. All submittals shall be sent to the attention of Vincent H. Pon, P.E., Superintendent of Aqueduct Section, 1804 West Main Street, Stockton, CA 95203. Additional information and an encroachment package are included in EBMUD's Procedure 718. Applications for non-EBMUD uses will not be processed unless accompanied by the appropriate application fees outlined in the current applicable Water and Wastewater System Schedule of Rates and Charges and Fees. Contractors must secure an encroachment permit from EBMUD Aqueduct Section prior to mobilizing and starting construction work. A pre-construction meeting with EBMUD is mandatory.

When a project involves the construction of a retaining wall and fence along the property line; these must be constructed completely outside of EBMUD property, including all footings. The project sponsor shall contact EBMUD's Survey Section to coordinate identifying, locating and marking correct property lines.

STOCKTON FIELD OPERATIONS CENTER

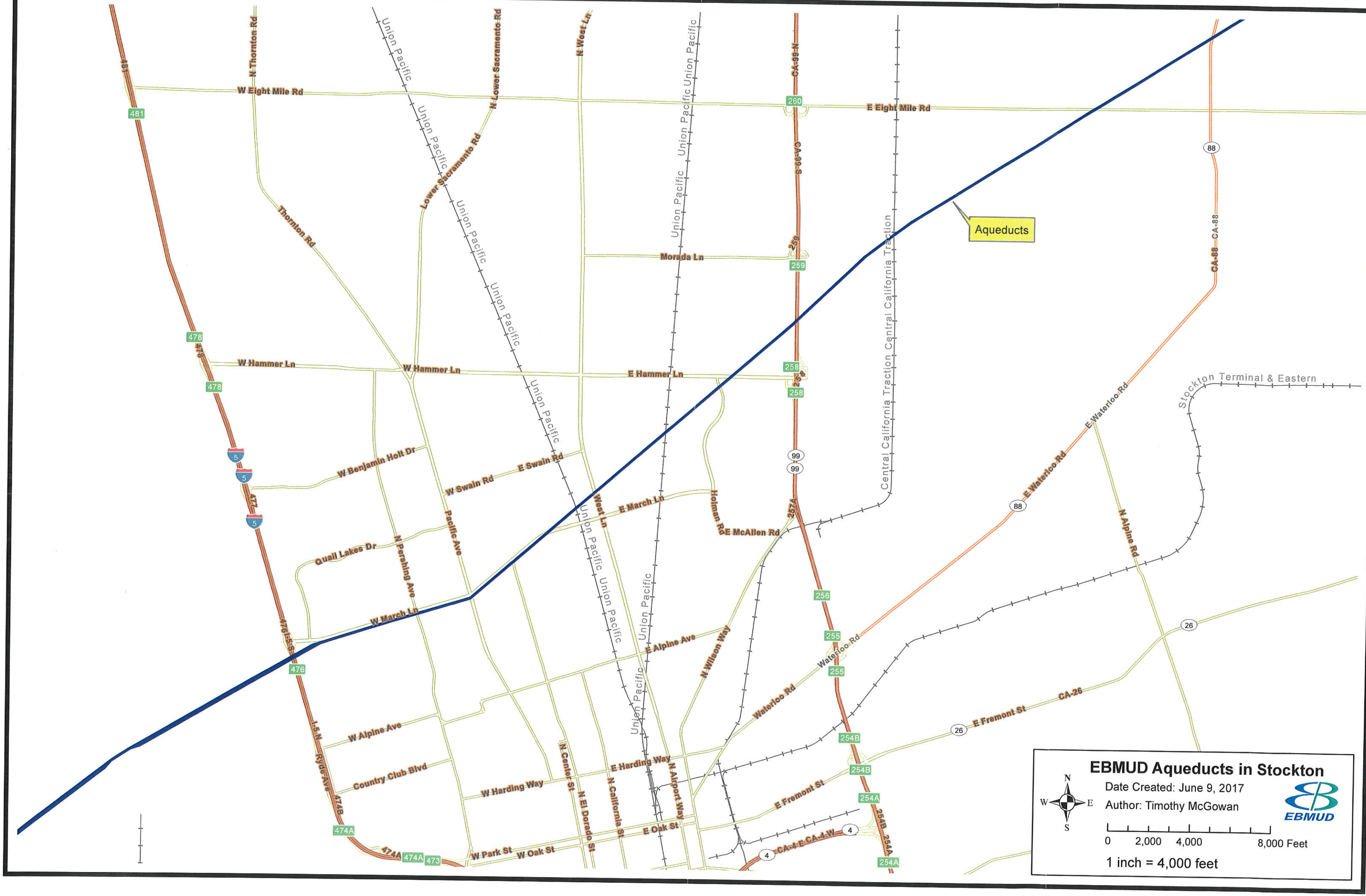
EBMUD owns a property, the Stockton Field Operations Center, located at 1804 West Main Street. The property is currently used as a maintenance yard, and EBMUD intends to continue maintenance operations at this location for the foreseeable future. The Draft Preferred Land Use Alternative dated April 17, 2017 indicates that this property is low density residential. Please revise the zoning for this property to industrial to reflect both its current and future use.

If you have any questions concerning this response, please contact Timothy R. McGowan, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-1981.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:SIR:nl
sb17_110


Aqueducts
W Eight Mile Rd
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N Thornton Rd
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N Lower Sacramento Rd
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N West Ln
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Union Pacific
CA-99-N
CA-99-S
Central California Traction
Morada Ln
W Hammer Ln
E Hammer Ln
W Benjamin Holt Dr
W Swain Rd
E Swain Rd
E March Ln
W March Ln
Quail Lakes Dr
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Pacific Ave
Holman Rd
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E Alpine Ave
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N Wilson Way
Waterloo Rd
E Waterloo Rd
N Alpine Rd
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Stockton Terminal & Eastern
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Ryde Ave
N Center St
N El Dorado St
N California St
N Airport Way
E Harding Way
W Harding Way
Country Club Blvd
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W Park St
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EBMUD Aqueducts in Stockton
Date Created: June 9, 2017
Author: Timothy McGowan
EBMUD
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4,000
8,000 Feet
1 inch = 4,000 feet

EBMUD

Procedure 718

EFFECTIVE 25 MAY 17
SUPERSEDES 21 AUG 15
LEAD DEPARTMENT O&M

RAW WATER AQUEDUCT RIGHT-OF-WAY NON-AQUEDUCT USES

PURPOSE – To establish procedures and criteria for review and authorization of overhead, surface and sub-surface use of District-owned property containing raw water aqueducts and raw water pipelines for purposes other than installation, maintenance, and operation of District raw water aqueducts.

Forms Used

L-14	Limited Land Use Permit
K-47	Work Request Agreement
N-15	Certificate of Public Liability Insurance
N-17	Certificate of Workers' Compensation Insurance
	Application for Use of EBMUD Property or Request for Information
	General Fund Receipts for Miscellaneous Payments

Authority and Responsibility

Use, development, and control of fee-owned rights-of-way for District and non-District uses must be consistent with water supply operation and security and the rights and obligations of the District. District and non-District uses of District-owned aqueduct rights-of-way may be permitted when they conform to Policy 7.01, Aqueduct Integrity and Rights-of-Way Maintenance.

- No use of District aqueduct properties by others will be permitted as a condition to meet city/county zoning requirements or to obtain any land use permit, approval, or entitlement affecting properties not owned by the District.
- No use of District properties by others will be permitted except under terms of a written agreement.
- Use of raw water aqueduct rights-of-way for District purposes shall have the concurrence of the Aqueduct Section Superintendent.
- Use of aqueduct rights-of-way for District treated water lines shall include all applicable aqueduct protections required for similar third-party utility water line crossings.
- The decision whether to authorize any party other than the District to use District-owned property containing raw water aqueducts and raw water pipelines for any non-District purpose is a legislative act undertaken in the sole discretion of District staff. No notice or hearing is required to consider an application for use of such property, and staff's decision is not subject to appeal.

For all raw water aqueducts and pipelines, acceptable long-term uses of the rights-of-way include but are not limited to: utility crossings, road crossings, limited agriculture, equestrian and pedestrian trails, parks, oil and gas leases, and District-owned ground water wells. Acceptable, long-term uses of rights-of-way and easements for future raw water aqueducts will be evaluated upon facility completion. Such uses will be authorized by letter, limited land use permits, revocable licenses, leases or easements, as appropriate. All approved uses will conform to the requirements and limitations described in Requirements for Entry or Use of Mokelumne, Lafayette, and Moraga Aqueducts and Raw Water Pipeline Rights-of-Way (Requirements for Entry or Use) (Supplement No.1 to Procedure 718) and all other conditions as specified in the written approval, permit or easement for each individual use.

The Water Supply Division is responsible for monitoring permitted uses and detecting and preventing unauthorized uses of raw water aqueduct rights-of-way. The Office of General Counsel and the Manager of Real Estate Services will be consulted when an unauthorized user will not voluntarily desist.

The Water Supply Division is responsible for coordinating the development of recommendations with respect to the terms and conditions to be stipulated when a District or non-District use of a raw water aqueduct right-of-way is to be permitted.

The Director of Engineering and Construction shall be consulted when needed to supply location analysis or to determine what structural, grading, drainage, corrosion protection or other engineering measures are required and to obtain estimates of engineering, design and inspection costs.

Inquiries and Applications for Use

For all raw water aqueducts and pipelines, applications and inquiries for use of raw water aqueduct rights-of-way shall be processed by the Water Supply Division. Applications for non-District uses will not be processed unless accompanied by the appropriate application fees outlined in the current applicable Water and Wastewater System Schedule of Rates and Charges and Fees.

The Water Supply Division is responsible for:

- Providing requirements for use of the District's raw water aqueduct rights-of-way to applicants and to other District departments requesting use of the right-of-way. See Supplement No. 1, Requirements for Entry or Use.
- Checking for completeness to ensure compliance with the requirements for entry or use of raw water aqueduct rights-of-way contained in Requirements for Entry or Use plus any other conditions applicable to the proposed use.
- Collecting engineering, plan review and construction inspection costs and documentation of insurance coverage, if necessary.
- Monitoring existing encroachments and inspection of the construction of new approved encroachments.
- Providing information to the Engineering and Construction Department for technical input regarding additional permit requirements or special restrictions that may be applicable (in addition to those outlined in Supplement No. 1, attached) and for update of District raw water aqueduct right-of-way drawings.
- Collecting application fees and charges associated with the preparation and execution of revocable licenses.
- Assuring proper environmental documentation.

Real Estate Services is responsible for:

- Advising the Manager of Water Supply Division, or designee, of any real estate matters which relate to a specific proposed use.
- Collecting application fees and charges, preparing and executing limited land use permits, leases, easements, and all other property-related agreements (except for revocable licenses and temporary entry permits) and recommending fees and charges appropriate to the property use allowed, and for securing payment. See the current applicable Water and Wastewater System Schedule of Rates and Charges and Fees.
- Maintaining records relating to rights-of-way crossings and use, and providing information to the Survey Section and Engineering Services Division for the update of District raw water aqueduct right-of-way drawings.

Types of Permit License or Easement

The Manager of Water Supply Division shall keep available the forms listing the general requirements set forth in Requirements for Entry or Use for each of the following:

Temporary Entry/Temporary Construction Permit

For temporary access to raw water aqueduct right-of-way such as for surveying, potholing, construction, for temporary access via the District's right-of-way to property adjacent to the right-of-way, and other similar short-term situations.

Revocable License and Revocable Landscape License

For pipelines, sewers, storm drains, overhead and underground cables, public trails, landscaping and other crossings or lateral encroachments.

Limited Land Use Permit

Provides for agricultural or other surface use of the right-of-way for a period not to exceed one year (vehicular parking is prohibited). These permits are renewable annually if inspection reveals satisfactory conformance to conditions of permit.

Easement

For streets, highways, large pipelines, canals and railroads, and other permanent publicly owned encroachments. Easements are officially recorded with the county having jurisdiction. The fee or consideration will be significant and based on the value of the property being encumbered.

The Manager of Water Supply Division shall request review of any proposed revisions to application forms and lists of requirements from the Engineering and Construction Department, Real Estate Services Division, Office of General Counsel, and the District's Pipe Committee.

Processing Applications

Temporary Entry Permits

The Manager of Water Supply Division, or designee, may issue temporary entry permits including standard and temporary conditions relating to the use. The Manager of Real Estate Services and the Office of General Counsel will be consulted regarding unusual circumstances.

Revocable Licenses

The Water Supply Division, if warranted, shall conduct a field investigation to determine requirements for aqueduct protection and, in consultation with the Design Division or the Pipeline Infrastructure Division, will set forth the engineering and operating requirements.

The Manager of Water Supply Division shall then specify any and all requirements, including special conditions to the applicant, discuss the terms and conditions of the license agreement as well as any processing, design and inspection costs and license fee. The Manager of Water Supply Division may then enter into a standard license agreement with relevant special conditions on behalf of the District. The Manager of Real Estate Services and the Office of General Counsel shall be consulted regarding any unusual circumstances.

Copies of all revocable licenses issued by the Water Supply Division shall be provided to the Manager of Real Estate Services.

Limited Land Use Permits

The Manager of Water Supply Division, or designee, shall convey the District's requirements to the applicant and investigate to determine any special conditions.

Real Estate Services shall prepare the Limited Land Use Permit (Form L-14) in duplicate, including special conditions or stipulations, accompanied by a District-prepared location sketch that will refer to aqueduct stationing and other appropriate location identifiers, including adjacent aqueduct structures.

Engineering and Construction shall prepare the District-prepared location sketch.

After payment of the stipulated consideration determined by Real Estate Services, the Manager of Water Supply Division shall review and execute the permit. These copies are then returned to the Manager of Real Estate Services, together with any stipulated consideration.

Forty-five days before expiration of a Limited Land Use Permit, the Manager of Real Estate Services shall notify the Manager of Water Supply Division, who shall investigate the permittee's operations. If renewal of the permit is recommended, the permit will be renewed by letter from the Manager of Real Estate Services.

Leases and Easements

The Manager of Water Supply Division shall conduct a field investigation to determine requirements for aqueduct protection and, in consultation with the Design Division or Pipeline Infrastructure Division, if necessary, will set forth the engineering and operating requirements.

If structural or corrosion protective facilities are required, the Manager of Water Supply Division, or designee, shall request the Manager of Design Division or Pipeline Infrastructure Division to proceed with the required design or plan reviews. (During design, the designer will communicate with the applicant's engineer.) Upon completion of design, the plans will be delivered to the applicant via the Manager of Water Supply Division, who will arrange for inspection as required.

The Manager of Real Estate Services shall discuss with the applicant the terms of the agreement and the amount of the consideration, including any processing, design, and inspection costs. Real Estate Services shall obtain an appraisal and engineering estimates, if necessary.

Upon agreement with the applicant, the Manager of Real Estate Services, shall draft, for review and approval by the Water Supply Division and Office of General Counsel, an agreement granting the applicant the property interest under the terms and for the consideration as approved. Real Estate Services shall assure that evidence of insurance is provided, if required. The lease or easement shall be submitted to the District's Board of Directors for approval, if required by Procedure 108. Two copies of the lease or easement shall be sent to the applicant with instructions to sign and return the copies, together with the consideration, to the Manager of Real Estate Services. Easements shall be recorded and the applicant shall provide the Manager of Real Estate Services with the recording data.

Approvals

District uses of the raw water aqueduct right-of-way shall be confirmed in writing listing any special conditions which may apply to the proposed use to the requesting District departments by the Manager of Water Supply Division.

Terminations

Any third-party use of the District's aqueduct property may be terminated in the District's sole discretion, so long as the termination is authorized by and done in a manner compliant with the terms and conditions of the permit, license, or lease that governs the use. If the Water Supply Division terminates any permit or license, the Manager of Real Estate Services and the Design Division shall be so notified by memo.

Terms and Conditions

The final determination of generally applicable terms and conditions appropriate for District uses of aqueduct properties rests with the Director of Operations and Maintenance.

A specific third party applicant for use of aqueduct property may be required, as a condition of approval of the application, to comply with the generally applicable terms and conditions, or with different or additional terms and conditions that are determined to be in the District's best interest. The decision to approve or deny an application, and the selection of terms and conditions of any approval, shall rest with the Director of Operations and Maintenance or his or her designee. There is no right to an administrative appeal or hearing, and the decision of the Director or designee is final.

Records

The Manager of Real Estate Services shall maintain a file containing copies of all documents relating to right-of-way crossings or uses and is responsible for the assignment of right-of-way crossing numbers to approved documents.

The Engineering Services Division of the Engineering and Construction Department shall maintain working sets of right-of-way prints for each District raw water aqueduct right-of-way. These prints shall be updated following:

1. Grant of Revocable License or Easement. Notice to be supplied by the Manager of Real Estate Services.

2. Completion of crossing construction covered by license or easement. Notice, including "as built" location data, to be supplied by the applicant to the Water Supply Division for transmittal to the Engineering and Construction Department. This notice will be routed through the Engineering and Construction Department, as necessary, then to the Manager of Real Estate Services. After right-of-way tracings are revised, new prints will be released to those having sets.

3. Termination of any raw water aqueduct right-of-way use. Notice to be supplied by the Manager of Real Estate Services.

Revised prints shall be released following all right-of-way drawing revisions.

Requirements and Fees

Requirements for use of raw water aqueduct right-of-way and fees for the processing of applications and documents related to such uses are included in the documents Requirements for Entry or Use and Fees and Documentation Charges, Use of Aqueduct Rights-of-Way by Others, respectively (see the current applicable Water and Wastewater System Schedule of Rates and Charges and Fees). The Manager of Water Supply Division is responsible for periodic review and updating of Requirements for Entry or Use. The Manager of Real Estate Services is responsible for review and updating of Fees and Documentation Charges, Use of Aqueduct Rights-of-Way by Others.

References

Policy 7.01 – Aqueduct Integrity and Rights-of-Way Maintenance
Procedure 108 – Real Estate Transactions
Procedure 436 – Miscellaneous Accounts Receivable and Cash Receipts
Requirements for Entry or Use of Mokelumne, Lafayette, and Moraga Aqueduct and Raw Water Pipeline Rights-of-Way (attached)
Water and Wastewater System Schedule of Rates and Charges and Fees Schedule of Rates and Charges to Customers of the East Bay Municipal Utility District – Real Property Use Application Fees – Resolution 33046-97

EBMUD

REQUIREMENTS FOR ENTRY OR USE OF MOKELUMNE, LAFAYETTE, AND MORAGA AQUEDUCTS and RAW WATER PIPELINE RIGHTS-OF-WAY

SUPPLEMENT NO. 1 TO PROCEDURE 718

East Bay Municipal Utility District

1. Requests for encroachment rights or for other uses of the District's raw water aqueduct and pipeline properties shall be directed to the Manager of Water Supply Division, 1804 West Main Street, Stockton, California 95203. Property uses shall only be permitted subject to appropriate written permit, license, easement, or lease agreement.

2. Requests for property uses shall be in writing and accompanied by a completed application, application fees, plan and profile drawings of the area and work involved. District aqueduct stationing and adjacent above-ground structures must be shown. Applicant's horizontal and vertical control must be correlated to the District's. Drawings and maps shall be ANSI D size (22x34 inch) or ANSI B size (11x17 inch) and must also be provided in electronic .pdf format. Application must include complete insurance documentation.

3. The applicant must agree to indemnify and hold harmless the District from any loss, claim, or liability which may arise by reason of applicant's use of District property and may be required to provide insurance coverage.

4. All requests for uses of District property must be consistent with requirements and limitations set forth by Procedure 718 and will be reviewed and approved on a case-by-case basis.

5. District land and facilities shall be restored to a condition as good as that which existed before applicant's entry on the right-of-way.

6. Applicant's use of property shall not increase District costs or interfere with District access, operations, maintenance, or repair of its facilities.

7. The applicant must pay the District the appraised value of the easement or lease, if appropriate, for the rights granted to the applicant. Appropriate environmental documentation must be completed in accordance with the California Environmental Quality Act before the rights can be granted. The District may require the applicant to prepare the documentation at its expense before the application will be considered for approval. The District may rely on any existing environmental documentation for the applicant's project if the District determines that the existing documentation is legally compliant and adequately describes and analyzes the impacts of the applicant's proposed use of District property.

8. For any District-approved encroachment, the applicant must pay the District for any of the following measures, as needed:

    a. Design of structural protective measures
    b. Design of fences or other structures
    c. Corrosion control protective measures
    d. District engineering, plan review, and inspection of activities
    e. Environmental documentation
    f. Application, permit or license fees.

9. The plan for the execution of the work must be approved by the District.

10. The type and weight of equipment working over the aqueduct must be approved by the District.

11. The use of vibratory compaction equipment is prohibited on the aqueduct right-of-way unless otherwise approved by EBMUD. Allowable compaction effort, allowable equipment, and maximum depth of each lift of fill shall be subject to District review and approval before start of construction.

12. A minimum of 48 hours notice must be given to the District before work commences. To contact the District by telephone, call the Aqueduct Section's Stockton Office at (209) 946-8000.

13. A preconstruction meeting is required prior to start of work.

14. No building or portions of buildings shall be constructed on the property. No other types of structures shall be constructed unless specific approval is given by the District.

15. No longitudinal encroachments such as drainage ditches; gas, phone, or electrical lines; pipelines, or roads will be permitted. All property line fences (including footings) must be located completely outside the aqueduct property lines.

16. No pile driving will be allowed within 100 feet of the aqueducts.

17. Railroad, freeway and highway crossings of the aqueduct right-of-way shall be on permanent bridges with a minimum vertical clearance of 14 feet 6 inches between the finished ground surface and the underside of the bridge. Crossings on grade will be over structurally-encased aqueducts with a sleeve for a fourth aqueduct.

18. Street and road crossings constructed on grade shall incorporate protection of the aqueducts. Protective measures will be designed by the District or by applicant's licensed engineer to District standards with specific District approval of each design.

19. Existing aqueduct protective measures such as concrete slabs shall not be cut, penetrated, or otherwise disturbed. If a protective measure is cut, penetrated, or disturbed, it shall be replaced with a new protective measure, designed by a District engineer or applicant's licensed engineer to District standards with specific District approval of design.

20. Traffic control fences or approved barriers shall be installed along each side of the street, road or trail before opening to the public.

21. Temporary construction fences and barricades shall be installed by contractor as directed by the District.

22. No geotechnical exploration such as drilling or boring shall be allowed on an Aqueduct right-of-way.

23. Any changes in finished grade must be approved by the Aqueduct Section. Earthfills or cuts on adjacent property shall not encroach onto District property except where authorized for vehicular crossings on grade and where the District determines that there will be no detrimental effect on the aqueducts or their maintenance.

24. Crossings shall be perpendicular to the aqueducts and on a constant grade across District property.

25. Sanitary sewers, water lines, petroleum product lines, or other lines crossing above the aqueducts must be encased in a steel, polyvinyl chloride (PVC), or reinforced concrete pipe conduit or be imbedded in reinforced concrete with a minimum vertical clearance of two (2) feet between the casing/embedment and the top of District aqueducts. The casing shall extend the entire width of the aqueduct right-of-way.

26. All pipelines crossing below the aqueducts must be encased in a steel or reinforced concrete conduit and provide a minimum of three (3) feet of clearance between the casing and the bottom of the District aqueducts.

27. Trenchless construction methods such as horizontal directional drilling or jack-and-bore between the top of the aqueducts and the bottom of the protective structure (slab) are prohibited.

28. On pressurized pipe crossings, shutoff valves shall be provided outside and adjacent to both sides of District property.

29. At the point of crossing, steel pipeline crossings and steel casings shall incorporate electrolysis test leads, bond leads, and leads necessary for interference testing. Corrosion control devices, when required, must be approved by the District.

30. Cathodic protection for steel encasements must be installed as follows:

    - Provide a dielectric coating to the exterior surface of the steel casing within the District's right-of-way, 16 mil epoxy or equivalent.

    - Provide galvanic protection to the portion of the steel casing within the District's right-of-way in accordance with the National Association of Corrosion Engineers RP-01-69.

    - If the carrier pipe is constructed of ductile iron or steel, provide electrical isolation between the carrier and casing using casing insulators; redwood skids are not permitted.

    - Provide test results to the District demonstrating the adequacy of the cathodic protection system, and the adequacy of the electrical isolation of the carrier (if metallic) from the casing. The District reserves the right to witness any such tests.

31. Gravity drainage of District property shall be maintained. Open channels constructed across the right-of-way shall be paved with reinforced concrete. Headwalls, inlets, and other appurtenances shall be located outside District property. Drainage facilities shall be provided outside the District's property at the top and/or toe of fill slopes or cuts constructed adjacent to District property to assure adequate drainage.

32. Overhead electrical power conductors across the property shall be a minimum of 30 feet above ground. Communication and cable TV crossings shall be a minimum of 20 feet above the ground. Supporting poles or towers shall be located outside the aqueduct right-of-way.

33. Buried electrical cables passing over the aqueducts shall be installed in PVC conduit and encased in red concrete across the entire width of the right-of-way. In some cases, PVC-coated steel conduit with a red concrete cap may be substituted. All other buried cables shall be installed in conduits and marked in the appropriate Underground Service Alert (USA) colored marking materials and with surface signs installed at 4-foot intervals that include the utility name, type, and emergency contact information across the entire width of the aqueduct right-of-way. The minimum vertical clearance between the conduit and the top of the District's aqueducts is two (2) feet.

34. Electrical or telecommunications cables passing under the aqueducts shall be encased in conduit and marked at both edges of the aqueduct right-of-way with the appropriate USA color coded markers. The minimum vertical clearance between the conduit and the bottom of the District's aqueducts is three (3) feet. For directional bored conduits the minimum vertical clearance is five (5) feet.

35. Vehicular parking and storage of equipment or material on aqueduct property are specifically prohibited.

36. Extraction of oil and gas from aqueduct properties may be permitted under appropriate lease agreements.

37. All District survey monuments and markers shall be undisturbed. If any District survey markers or monuments must be disturbed, they will be replaced or relocated by the District at applicant's expense prior to the start of any ground disturbing work.

38. All aqueduct crossings involving mechanical excavation on the right-of-way require potholing of all aqueducts at the site of the proposed crossing. Visible reference markings showing the aqueduct alignments and depths to top of pipe shall be maintained for the duration of any

mechanical excavation on District property. Excavations within two (2) feet of aqueducts shall be made by hand. Entry permits are required for pothole work.

39. All grading or excavating of the right-of-way requires USA notification and the maintenance of a current inquiry identification number.

40. Certified six-sack mix is the minimum acceptable concrete batch to be used on the aqueduct right-of-way. Concrete compression strength shall be 3,000 per square inch (PSI) or better at 28 days. If samples do not reach 3,000 PSI at 28 days, the entire section of slab or encasement related to that sample must be removed and replaced at applicant's expense.

41. Each truckload of concrete to be placed on the aqueduct right-of-way may be sampled by the District. No water may be added to the mix after sampling.

42. Maximum allowable slump is three inches. All concrete exceeding three inches will be rejected and cannot be used on the aqueduct right-of-way.

43. No traffic will be allowed over protective slabs until 3,000 PSI is reached.

44. All work areas shall be inspected by the District for final approval. As-built drawing submittals are required for District approval.

45. No work is allowed on weekends or District-recognized holidays unless otherwise authorized in the required permit.

Routing Sheet Checklist & Contact Information for Environmental Document Review

Document Title: Envision Stockton 2040 General Plan

WDPD Doc. Ref.: M0149

Assigned To: Sarah Reynolds

Received:

Comments Due to TRM: 6/9/17

Comments Due to DJR: 6/16/17

Comments Due to Agency: 6/23/17

Is your project located ... or does your project ...:

☐ 1. Within the service area boundaries of a recycled water project.
Contact: Linda Hu, Water Supply Improvements, x1691, MS #407
cc: Sam Abudayeh, Water Supply Improvements x1955 MS #407

☐ 2. Within the service area boundary of EBMUD's sanitary district.
Contact: Alicia Chakrabarti, Wastewater Planning, x2059, MS #702

☐ 3. Have potential for landscaping or large water use for industrial or manufacturing.
Contact: Mike Hazinski, Water Conservation, x1802, MS #48

☐ 4. Within industrial zone or near site identified through Vista search (http://database-info//cgi-bin/env_web_main_frame.htm)
Contact: Chandra R. Johannesson, Environmental Compliance, x0412, MS #704

☐ 5. Adjacent or near District watershed land.
Contact: Scott Hill, Watershed & Recreation, x2023, MS #57

☐ 6. Adjacent, near, or encroaching on District's aqueduct right-of-way.
Contact: Vincent H. Pon, (209) 946-8009 MS STN

☐ 7. Adjacent, near, or encroaching District right-of-way property, and/or pipeline.
Contact: Matt Elawady, Real Estate, x1248, MS #903

☐ 8. Require legal assistance.
Contact: Corine Darrow, Office of Legal Counsel, x0163, MS #904

☐ 9. Require annexation - USBR Issues.
Contact: Joe Tam, Water Resources Planning, x1389, MS #901

Notice of Preparation Environmental Impact Report City of Stockton

Date: MAY 24, 2017

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202
(209) 937-8266

Subject: Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

Lead Agency: City of Stockton Planning and Engineering Division

Project Title: Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

The City of Stockton (Lead Agency) is preparing a program-level Environmental Impact Report (EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (project or proposed project) pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations Section 15060(d)). This program-level EIR will address the potential environmental impacts associated with implementation of the broad policies included in the proposed project. The EIR will not evaluate detailed, site-specific development projects that may occur in the future under the General Plan; therefore, the analysis will be more qualitative in nature than a project-level EIR. The project details are described below. Additional information regarding the 2040 General Plan Update is available at www.stocktonca.gov/envisionstockton.

The City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. With respect to the views of Responsible and Trustee agencies as to significant environmental issues, the City needs to know the scope and content of the environmental information that is germane to each agency's statutory responsibilities in connection with the proposed project.

A Scoping Meeting will be held on **Thursday, June 8, 2017** at **5:00 p.m.** at the **Jack Silva Conference Room** in the **City of Stockton Permit Center**, located at 345 N. El Dorado Street in Stockton. At the Scoping Meeting, the City will inform the public and interested agencies about the proposed project and solicit public comment on the scope of the environmental issues to be addressed in the EIR.

Comments on the NOP are due no later than the close of the 30-day review period at 5:00 p.m. on Friday, June 23, 2017. Please send your written comments to David Stagnaro, City of Stockton, at the address shown above or email to David.Stagnaro@stocktonca.gov with "Envision Stockton EIR" as the subject. Public Agencies providing comments are asked to include a contact person for the agency.

Project Location

As shown on Figure 1, Stockton is located east of the San Francisco Bay area near the center of San Joaquin County; nearby cities include Manteca, Tracy, and Lodi. Regional access is provided via Interstate 5 and State Route 99. The EIR Study Area for the 2040 General Plan Update is defined by the current Sphere of Influence (SOI), which is shown on Figure 1. The current SOI encompasses 115 square miles of incorporated and unincorporated land that the City may annex in the future.

Project Description

The City of Stockton is preparing a comprehensive update to its existing General Plan. The Update is expected to be completed in 2018 and will guide the city's development and conservation through 2040. The project also includes the preparation of Utility Master Plan Supplements (UMPS). The UMPS will consist of separate documents that will identify needed improvements to water, wastewater, and storm drainage facilities to serve anticipated development under the updated General Plan.

State law requires that the General Plan contain seven elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, and Conservation. The content of these elements is outlined in the California Government Code Section 65300. In addition to the State-mandated content, the proposed project will also address economic development, community design, public facilities and services, recreation, and health, among other topics.

The 2040 General Plan Update will include revisions to the policies of the existing General Plan and consider changes to land use designations within the EIR Study Area where change or enhancement of existing uses is desired through 2040. As shown in Figure 2, the draft revisions to the General Plan land use map will shrink the possible future footprint of the city by changing areas currently designated "Village," which allows a variety of urban uses, to Open Space/Agriculture, including within the Delta Secondary Zone, where development is subject to Delta Protection Commission review. The City's Housing Element was recently updated and adopted by the City Council on April 12, 2016, and is not included as part of the proposed project.

As described above, the Study Area for the proposed project is defined by the current SOI boundary. As shown on Figure 1, the project also identifies a Planning Area boundary, which, at approximately 191 square miles, is larger than the SOI. While the Planning Area does not give the City any regulatory power over the land, it signals to the County and to other nearby local and regional authorities that Stockton recognizes that development within this area may have an impact on the future of the city.

The overall purpose of the 2040 General Plan Update is to create a policy framework that articulates a vision for the city's long-term physical form and development, while preserving and enhancing the quality of life for Stockton's residents. The key components of this project will include broad community goals for the future of Stockton and specific policies and actions that will help meet the goals.

Probable Environmental Impacts of the Project

The program-level EIR will evaluate the range of environmental impacts that could result from adoption and implementation of the proposed 2040 General Plan Update and UMPS. Below is a list of environmental topics that will be examined in the proposed 2040 General Plan Update and UMPS.

- Aesthetics
- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources

- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Service Systems

Attachments:

Figure 1: Regional and Vicinity Map
Figure 2: Proposed Urban to Open Space Land Use Changes

Date: 5/19/17

Signature:

Title: Planning Manager

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

Lead Agency: City of Stockton Planning and Engineering Division
Contact Person: David Stagnaro
Mailing Address: 425 N El Dorado St.
Phone: (209) 937-8266
City: Stockton
Zip: 95202
County: San Joaquin

Project Location: County: San Joaquin
City/Nearest Community: Stockton
Cross Streets: n/a
Zip Code:
Longitude/Latitude (degrees, minutes and seconds): ° ′ ″ N / ° ′ ″ W Total Acres:
Assessor's Parcel No.: n/a
Section: Twp.: Range: Base:
Within 2 Miles: State Hwy #: I-5, SR-99, SR-88, SR-12
Waterways: San Joaquin River, Calaveras River, San Joaquin Delta
Airports: Stockton Metro, Kingdon, Lod
Railways: UPRR, BNSF
Schools: Various

Document Type:

CEQA: ☒ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☐ Neg Dec (Prior SCH No.)
☐ Mit Neg Dec Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

☒ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: Utility Master Pla

Development Type:

☐ Residential: Units Acres
☐ Office: Sq.ft. Acres Employees
☐ Commercial: Sq.ft. Acres Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Fiscal ☒ Recreation/Parks ☒ Vegetation
☒ Agricultural Land ☒ Flood Plain/Flooding ☒ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☒ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☒ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Various

Project Description: *(please use a separate page if necessary)*

The City of Stockton is preparing a comprehensive update to its existing General Plan. The Update is expected to be completed in 2018 and will guide the city's development and conservation through 2040. The project also includes the preparation of Utility Master Plan Supplements (UMPS). The UMPS will consist of separate documents that will identify needed improvements to water, wastewater, and storm drainage facilities to serve anticipated development under the updated General Plan.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

- X Air Resources Board
- X Boating & Waterways, Department of
- X California Emergency Management Agency
- X California Highway Patrol
- X Caltrans District #10
- X Caltrans Division of Aeronautics
- X Caltrans Planning
- X Central Valley Flood Protection Board
- ___ Coachella Valley Mtns. Conservancy
- ___ Coastal Commission
- ___ Colorado River Board
- X Conservation, Department of
- ___ Corrections, Department of
- X Delta Protection Commission
- ___ Education, Department of
- ___ Energy Commission
- X Fish & Game Region #2 & 3
- ___ Food & Agriculture, Department of
- ___ Forestry and Fire Protection, Department of
- ___ General Services, Department of
- ___ Health Services, Department of
- X Housing & Community Development
- X Native American Heritage Commission
- X Office of Historic Preservation
- ___ Office of Public School Construction
- X Parks & Recreation, Department of
- ___ Pesticide Regulation, Department of
- ___ Public Utilities Commission
- X Regional WQCB #5
- X Resources Agency
- ___ Resources Recycling and Recovery, Department of
- ___ S.F. Bay Conservation & Development Comm.
- ___ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
- X San Joaquin River Conservancy
- ___ Santa Monica Mtns. Conservancy
- ___ State Lands Commission
- ___ SWRCB: Clean Water Grants
- X SWRCB: Water Quality
- ___ SWRCB: Water Rights
- ___ Tahoe Regional Planning Agency
- ___ Toxic Substances Control, Department of
- X Water Resources, Department of
- X Other: Delta Stewardship Council
- ___ Other: ___

Local Public Review Period (to be filled in by lead agency)

Starting Date 5/24/17 Ending Date 6/23/17

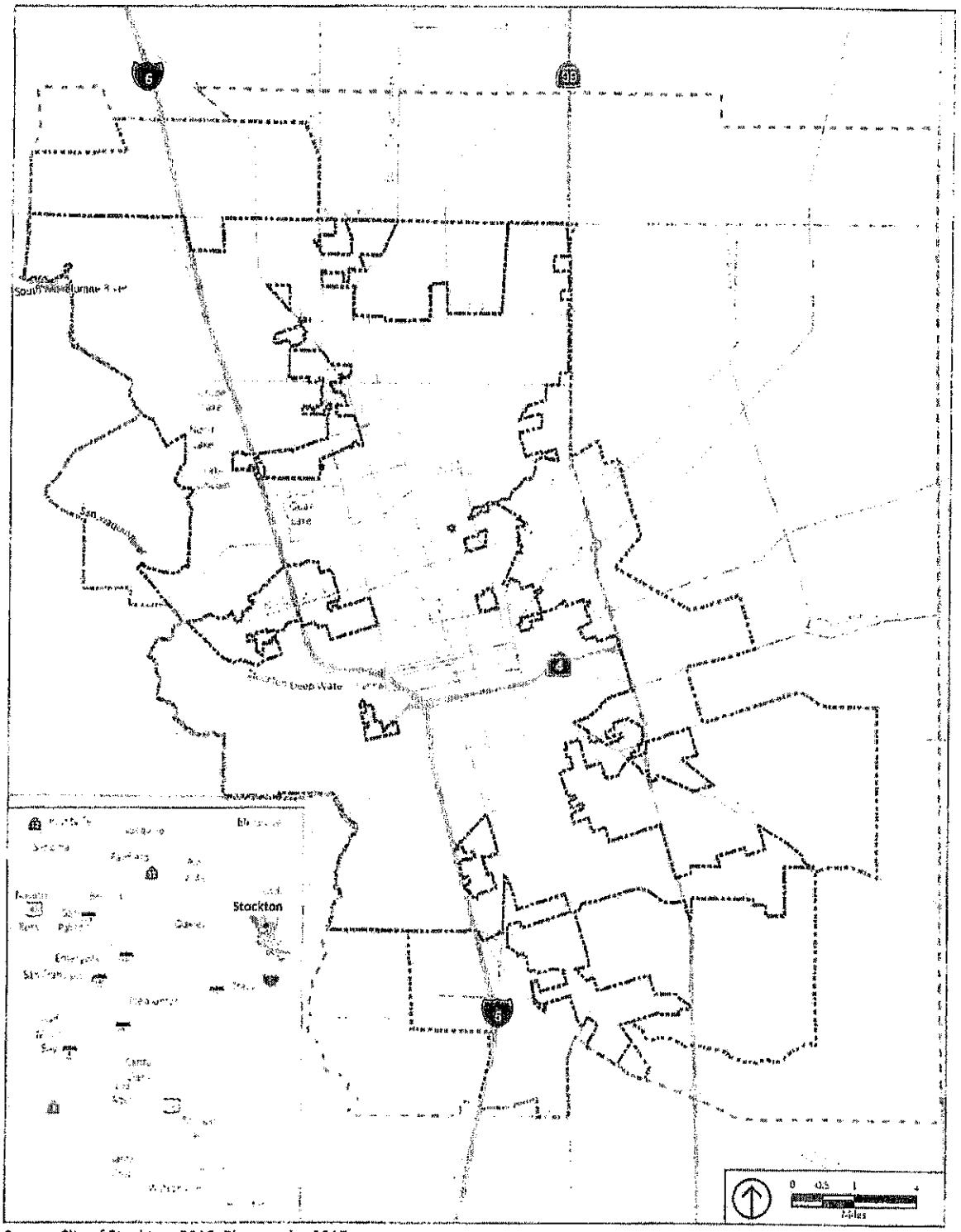
Lead Agency (Complete if applicable):

Consulting Firm: PlaceWorks
Address: 1625 Shattuck Ave., Suite 300
City/State/Zip: Berkeley, CA 94709
Contact: Tanya Sundberg
Phone: 510-848-3815

Applicant: City of Stockton
Address: 425 N El Dorado Street
City/State/Zip: Stockton, CA 95202
Phone: (209) 937-8266

Signature of Lead Agency Representative: [signature] Date: 5/19/17

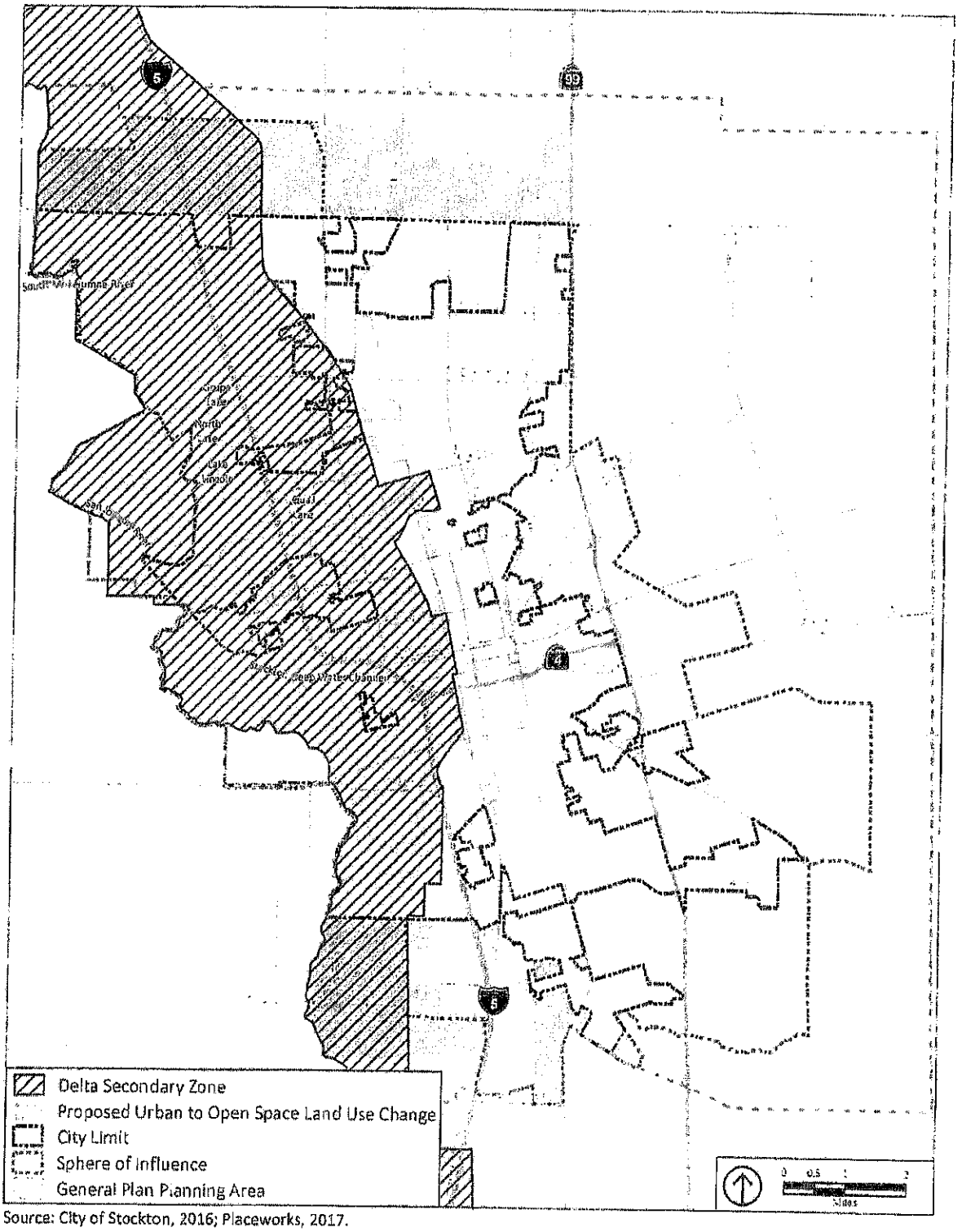
Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.



Source: City of Stockton, 2016; Placeworks, 2017.

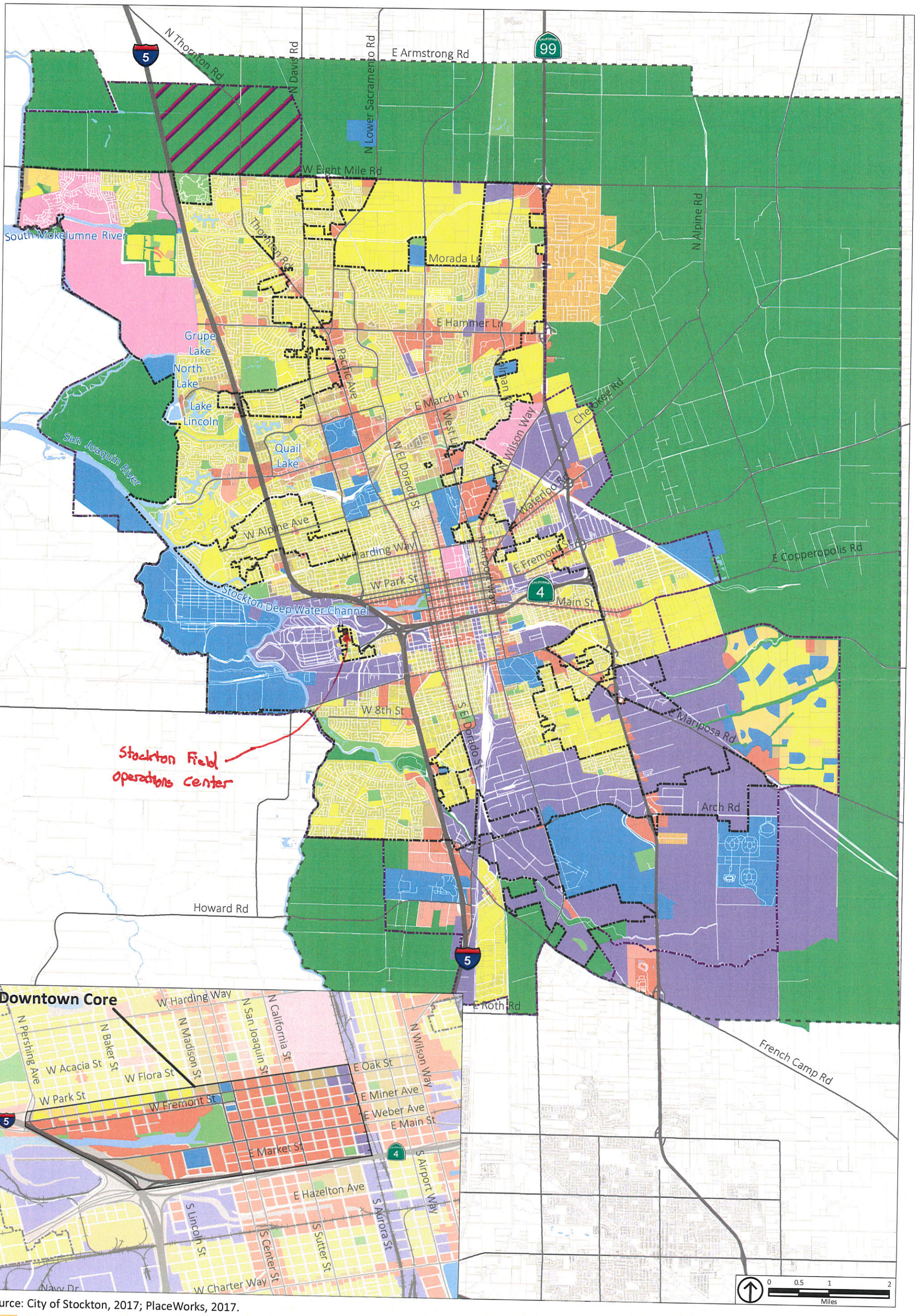
City Limit
Sphere of Influence
General Plan Planning Area

Figure 1
Regional and Vicinity Map



Source: City of Stockton, 2016; Placeworks, 2017.

Figure 2
Proposed Urban to Open Space Land Use Changes



Source: City of Stockton, 2017; PlaceWorks, 2017.

- Residential Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Village
- Mixed Use
- Commercial
- Administrative Professional
- Industrial
- Institutional
- Parks and Recreation
- Open Space/Agriculture
- Commercial/Industrial Economic Enterprise Overlay
- General Plan Planning Area
- City Limit
- Sphere of Influence

DRAFT - APRIL 17, 2017

Preferred Land Use Alternative

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

May 30, 2017

David Stagnaro, Planning Manager
Planning and Engineering Division
City of Stockton
425 N. El Dorado Street
Stockton, California 95202

Dear Mr. Stagnaro:

This is in response to your request for comments regarding the Notice of Preparation Environmental Impact Report for the City of Stockton, Project Title: Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements.

Please review the current effective countywide Flood Insurance Rate Maps (FIRMs) for the County of San Joaquin (Community Number 060299), Maps revised October 20, 2016 and City of Stockton (Community Number 060302), Maps revised October 16, 2009. Please note that the City of Stockton, San Joaquin County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Stockton floodplain manager can be reached by calling Ed N. Short, Senior Plans Examiner, at (209) 937-7630. The San Joaquin County floodplain manager can be reached by calling John Maguire, Engineering Services Manager, Flood Management Division-Public Works Department, at (209) 953-7617.

If you have any questions or concerns, please do not hesitate to call Brian Trushinski of the Mitigation staff at (510) 627-7183.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:
Ed N. Short, Senior Plans Examiner, City of Stockton
John Maguire, Engineering Services Manager, San Joaquin County
Ray Lee, WREA, State of California, Department of Water Resources, North Central Region Office
Brian Trushinski, NFIP Compliance Officer, DHS/FEMA Region IX
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

June 7, 2017

BVR 095

City of Stockton
Community Development Department
425 N. El Dorado Street
Stockton, CA 95202
Attn: David Stagnaro, Planning Manager

Re: Stockton 2040 General Plan Update and Utility Master Plan Supplements

Dear Mr. Stagnaro

The Buena Vista Rancheria of Me-Wuk Indians would like to thank you for the opportunity to review the Stockton 2040 General Plan Update and Utility Master Plan Supplements. We have reviewed the enclosed material and have no comments at this time.

Respectfully,

Robert Columbro
Tribal Historic Preservation Officer
Buena Vista Rancheria of Me-Wuk Indians

1418 20th Street, Ste. 200
Sacramento, CA 95811
Tel. 916.491.0011 Fax 916.491.0012
www.buenavistatribe.com

Montezuma Fire District

In San Joaquin County
Station 18-1, 2405 S. "B" St., Stockton, CA 95206
Station 18-2, Stockton Metro Airport

Administration
Business Phone:
(209) 464-5234
Fax (209) 466-2624

Board of Directors:

Linda A. Todd, *Chair Person*
Sue Heaton, *Director*
Jeff Hachman, *Director*

Edward Martel
Fire Chief
& Clerk to the Board

June 23, 2017

To: City of Stockton – David Stagnaro. Planning Manager
Community Development Department
425 North El Dorado St.
Stockton, Ca. 95202

From: Fire District Administration

Re: Notice of Preparation for EIR, Stockton 2040 General Plan update.

Dear Mr. Stagnaro

First of all the district appreciates the opportunity to comment on such important subject. The sole purpose of this letter is in regards to the impact the EIR 2040/General Plan update may cause to the district. I would like to remind you that when annexations occur the impact to the district is great. By the means of public safety, ability to provided service and financial impact. The districts request you consider such when updating this plan.
Thank you,

Edward O. Martel – Fire Chief

C; MFD File
LAFCo – Mr. Glaser
Board of Directors
Supervisor Villapudua
Supervisor Miller

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

June 22, 2017

Davis Stagnaro
City of Stockton

Sent via e-mail: David. stagnaro@stocktonca.gov

RE: SCH# 2017052062, Envision Stockton 2040 General Plan Update And Utility Master Plans, San Joaquin County

Dear Mr. Stagnaro:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or

tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.
b. The lead agency contact information.
c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
cc: State Clearinghouse

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202 • P 209.235.0600 • F 209.235.0438 • www.sjcog.org

San Joaquin County Airport Land Use Commission/Congestion Management Agency

June 22, 2017
David Stagnaro
Community Development Department
345 North El Dorado Street
Stockton, CA 95202

Re: Envision Stockton 2040 (Deadline: 6/23/17)

Dear David Stagnaro,

The San Joaquin Council of Governments (SJCOG), acting as the Airport Land Use Commission (ALUC) and Congestion Management Agency (CMA), reviewed a notice of preparation application for Envision Stockton 2040 for the City of Stockton. Envision Stockton 2040 is required to show consistency with all applicable regional transportation planning documents, such as:

- Regional Transportation Demand Management Plan
- Park-and-Ride Master Plan
- Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan
- Regional Smart Growth Transit Oriented Development Plan
- Regional Transit Systems Plan
- Regional Transportation Impact Fee Program
- 2014 Regional Transportation Plan/Sustainable Communities Strategy
- Interregional STAA Study for I-5 and SR-99
- 2016 Stockton Metropolitan Airport Land Use Compatibility Plan
- 2009 San Joaquin County Airport Land Use Compatibility Plan

SJCOG staff is available to assist with project specific guidance and narrowing the scope of the relevant regional plans that need to be included. Comments specific to the Congestion Management Plan and the Airport Land Use Compatibility Plans are included below.

CONGESTION MANAGEMENT AGENCY'S REVIEW

SJCOG recommends the City of Stockton review 2016 Updated Regional Congestion Management Program (RCMP) (http://www.sjcog-rcmp.org/_literature_231152/2016_RCMP_Update_Adopted_Report), as this document pertains to the Transportation and Circulation section of Envision Stockton's Environmental Impact Review (EIR). The purpose of the RCMP is to:

- Establish, alter, and monitor a network of roadways (see ATTACHMENT A), bicycle facilities, and multimodal corridors;
- Identify a level of service standard;
- Define performance measures for multimodal corridors;

- Address cumulative transportation impacts of new development or use within RCMP's regional transportation system; and
- Identify deficient regional roadways and develop plans to mitigate the deficiencies via capital improvement program or travel demand management.

Envision Stockton 2040 may emphasize future segments, intersections, and/or corridors within Stockton's sphere of influence (SOI), as the RCMP transportation system is updated every two years. Any deficient part of the RCMP transportation system, with LOS ranking of E or F, can become a capital improvement project (CIP). CIP can be allotted regional funding per Regional Transportation Impact Fee (RTIF) program.

. Additionally, SJCOG has completed updating the RCMP including traffic count data of all the segments and intersections on the CMP network (Fall 2015). SJCOG would be pleased to provide this data to the City and its consultants to assist in the traffic analysis for this project.

AIRPORT LAND USE COMMISION'S REVIEW

SJCOG recommends the City of Stockton review the 2016 Stockton Metropolitan Airport Land Use Compatibility Plan (ALUCP) (http://www.sjcog.org/DocumentCenter/View/1318) and 2009 San Joaquin County ALUCP (http://www.sjcog.org/DocumentCenter/View/17). Stockton's SOI is located within the airport influence area (AIA) of Stockton Metropolitan Airport, Lodi Airpark, and Kingdon Executive Airport. Stockton's current city limits are not within Lodi Airpark/Kingdon Executive Airport AIA. However, future growth, within the northern parts of Stockton, will be within Lodi Airpark/Kingdon Executive Airport AIA.

SJCOG reviewed the Stockton 2040 General Plan Update Existing Conditions Technical Memorandum: Hazards and Safety (S2040GPHS) (http://www.stocktongov.com/files/GP_UpdateHazards_Safety.pdf). Below are SJCOG's comments.

- LU-6.4 Infill Within Adopted AIA (PG. 15 of S2040GPHS) – SJCOG recommends the following additional text: "This exemption does not apply within Zone 1." (3-7 of Stockton ALUCP)
- LU-6.5 Avigation Easements within AIA. (PG. 15 of S2040GPHS) – Aviation easements are not required for every land use. Please refer to Table 3A – Safety Criteria Matrix (PG 3-23 to 24, 3-27 to 28 of Stockton ALUCP and included as ATTACHMENT B) and Table 3B – Noise Compatibility Criteria (PG 3-30 to 35 of Stockton ALUCP and included as ATTACHMENT C).
- 2. Existing Conditions (15 of S2040GPHS) – The zones are as follows:
    - Zone 1 – Runway Protection Zone
    - Zone 2 – Inner Approach / Departure Zone
    - Zone 3 - Inner Turning Zone
    - Zone 4 – Outer Approach / Departure Zone
    - Zone 5 – Sideline Zone
    - Zone 6 – Airport Property Zone
    - Zone 7a – Traffic Pattern Zone
    - Zone 7b - Traffic Pattern Zone
    - Zone 8 – Airport Influence Area
- LU-6.7 – Interior Noise within Adopted AIA (PG 15 of S2040GPHS) – SJCOG recommends the City refer to and Table 3B – Noise Compatibility Criteria (PG 3-30 to 35 of Stockton ALUCP and included

as ATTACHMENT C). Fair disclosure statements, aviation easement requirements, and sound insulation to reduce the interior to exterior noises levels by twenty-five decibels.

- SJCOG recommends language referencing FAA Advisory Circular (AC) 150/5200-33B, Hazardous Wildlife Attractants On or Near Airports and FAA Advisory Circular 150/5200-34A (Construction or Establishment of Landfills Near Public Airports) for further recommendations and potential restrictions related to landfills and other land uses and waterways with the potential to create a bird hazard-(see footnotes 6 and 7 to Table 3A, PG 3-28 of the Stockton ALUCP).

SJCOG would like to provide standards and project design conditions that comply with the Airport Land Use Compatibility Plan as a reference guide.

1. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:
    a. Glare or distracting lights which could be mistaken for airport lights. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs).
    b. Sources of dust, steam, or smoke which may impair pilot visibility.
    c. Sources of electrical interference with aircraft communications or navigation. No transmissions which would interfere with aircraft radio communications or navigational signals are permitted.
    d. Occupied structures must be soundproofed to reduce interior noise to 45 decibel(dB) according to State guidelines.
    e. Within the airport's influence area, ALUC review is required for any proposed object taller than 100 feet above ground level (AGL).

2. Regardless of location within San Joaquin County, ALUC review is required in addition to Federal Aviation Administration (FAA) notification in accordance with Code of Federal Regulations, Part 77, (https://oeaaa.faa.gov/oeaaa/external/portal.jsp) for any proposal for construction or alteration under the following conditions:

    a. If requested by the FAA.

    b. Any construction or alteration that is more than 200 ft. AGL at its site.

    c. Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

    d. 100 to 1 for a horizontal distance of 20,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway more than 3,200 ft.

    e. 50 to 1 for a horizontal distance of 10,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway no more than 3,200 ft.

    f. 25 to 1 for a horizontal distance of 5,000 ft. of the nearest take off and landing area of a public use heliport

    g. Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards

h. Any construction or alteration located on a public use airport or heliport regardless of height or location.

Thank you again for the opportunity to comment. Please contact CMA and ALUC staff Travis Yokoyama (209-235-0451 or yokoyama@sjcog.org) if you have any questions or comments.

Sincerely,

Travis Yokoyama

ATTACHMENT A - RCMP Transportation System
ATTACHMENT B - Noise Compatibility
ATTACHMENT C – Safety Criteria

Figure 2-3 . RCMP Roadway Intersections

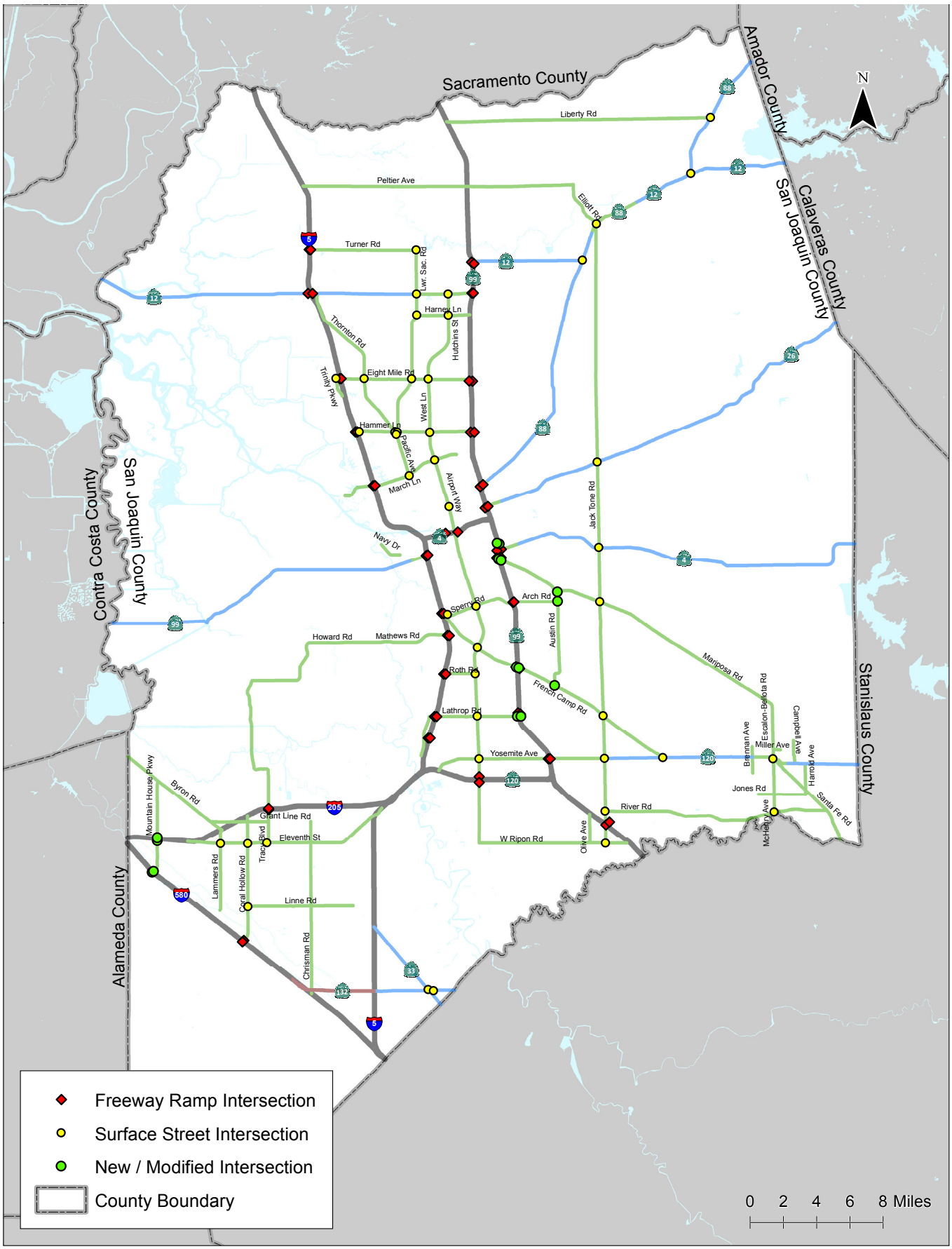


Figure 2-1. RCMP Roadway Network

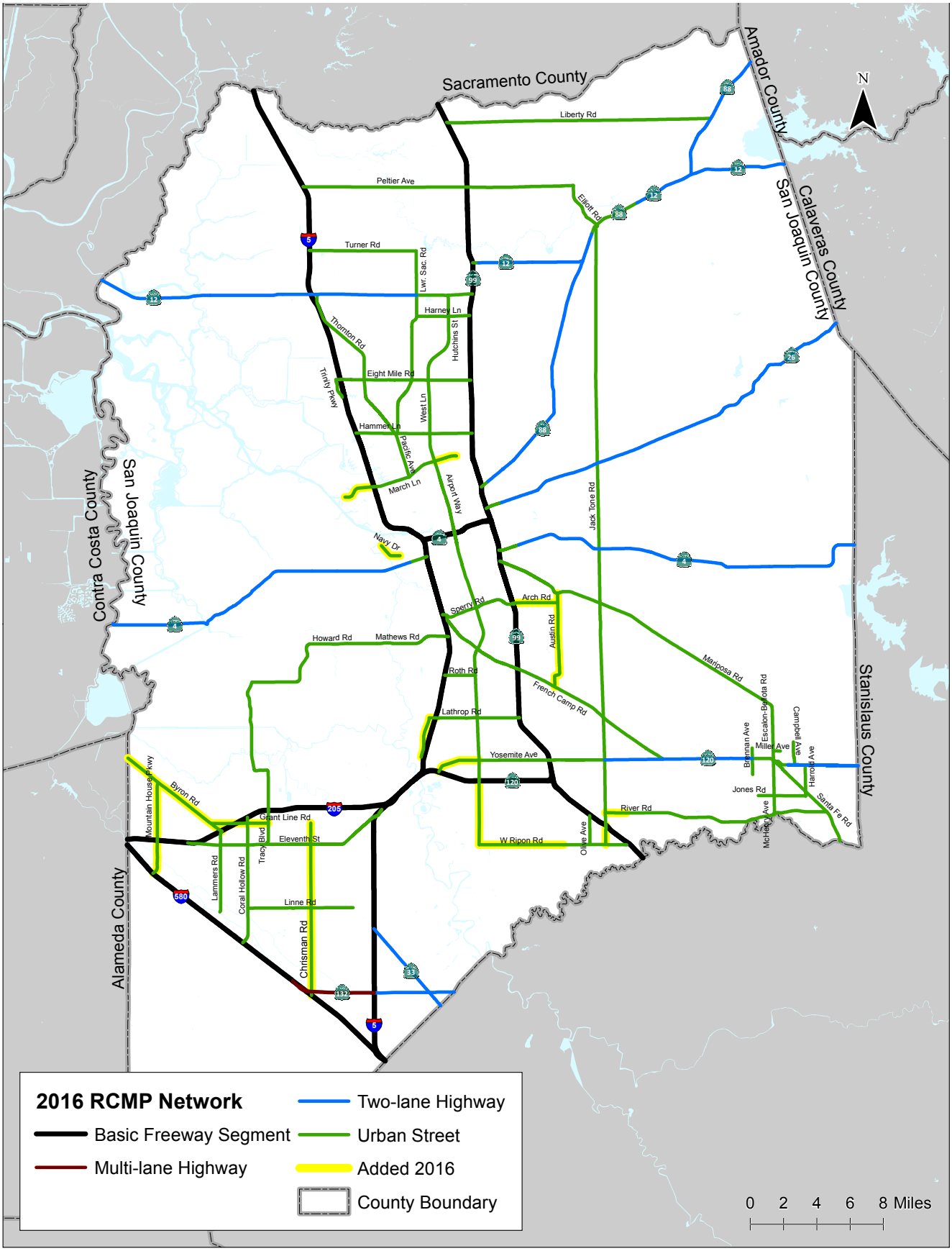


Figure 2-4. Regional Bicycle Network

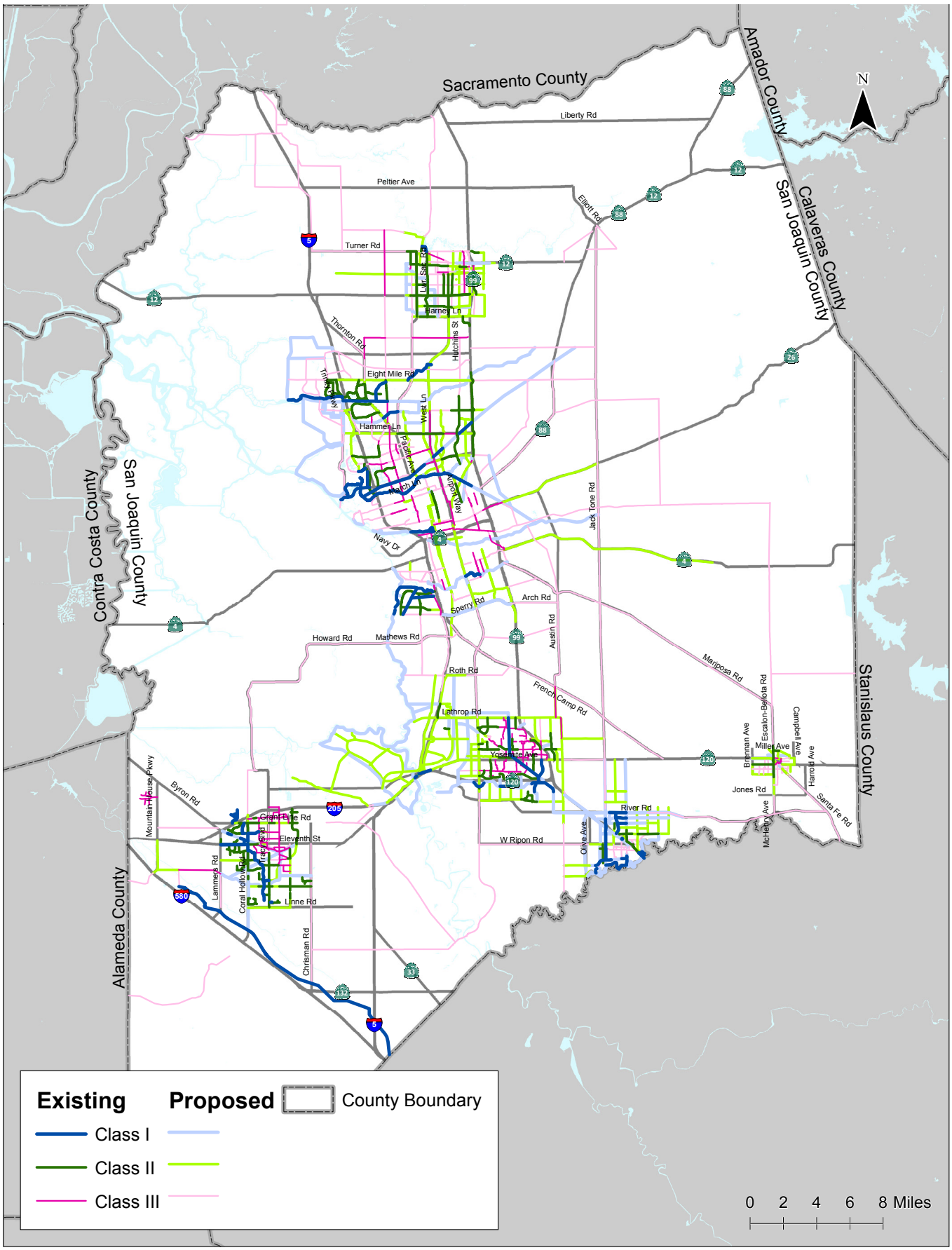
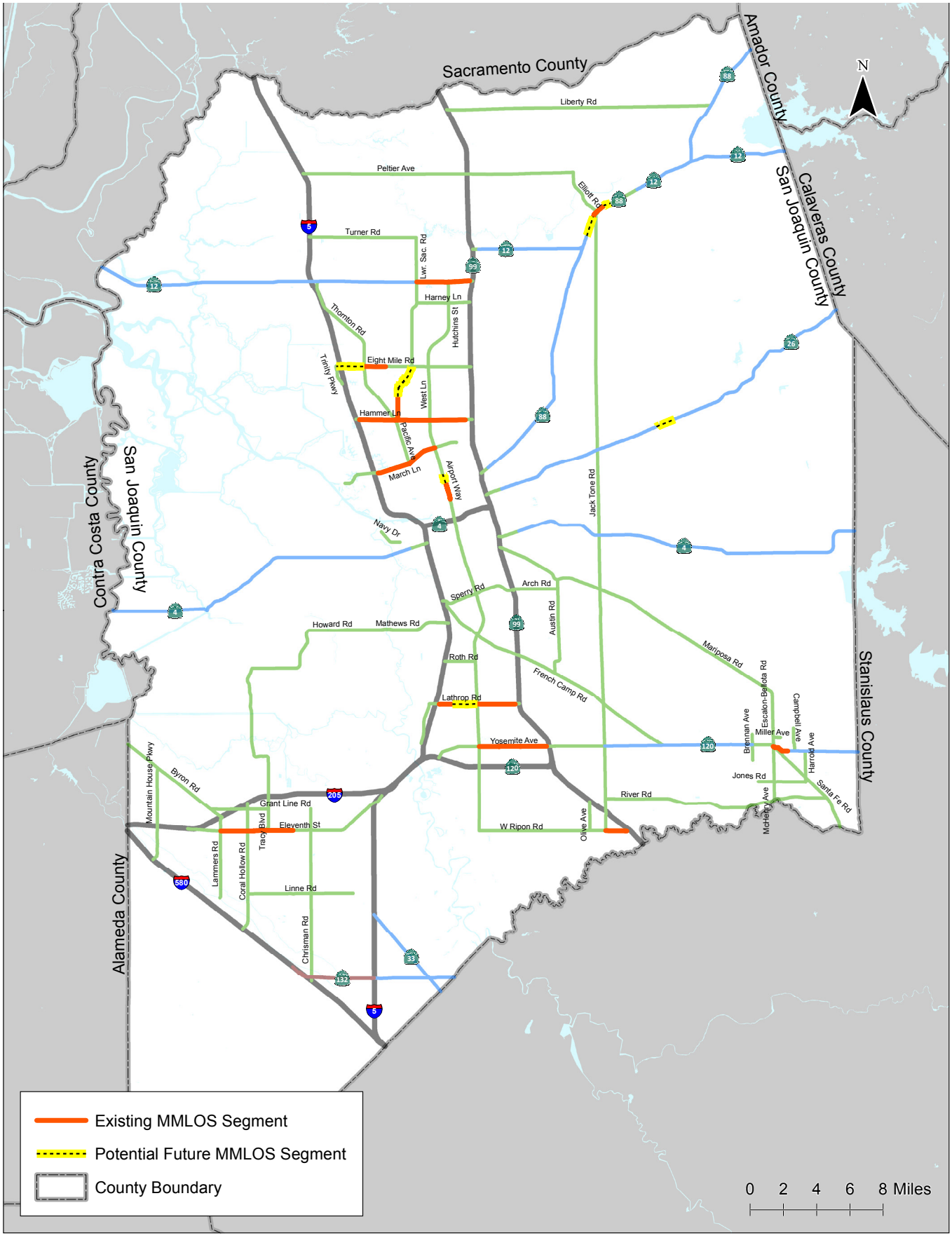


Figure 2-5. RCMP Multimodal Corridors



3.2.5 Ruling Conformation

3.2.5.1 *Subsequent Review:*

The ALUC often reviews airport master plans, development plans, general plans, specific plans, ordinances, and land use action documents when they are in draft form.

(a) The ALUC reserves the right to reconfirm determinations made on draft documents if material changes and/or modifications have been made before the document is finalized.

(b) If the ALUC or local agency deems material changes and/or modifications have been made between the draft and final versions of a plan/ordinance/land use action that may affect the ALUC determination, the document must be submitted to the ALUC for reconfirmation.

(c) ALUC reconfirmation should be completed by staff within 30 days of when a final document is submitted for reconfirmation.
(d) If the ALUC fails to reconfirm or make a new determination within the 30-day period, the ALUC determination on the draft document will remain valid.
(e) Regardless of ALUC action or failure to act, the plan/ordinance/land use action must comply with other applicable local, state, and federal regulations and laws.

3.3 LAND USE ACTION COMPATIBILITY CRITERIA

3.3.1 Safety and Compatibility Criteria

The criteria for assessing whether a land use plan, ordinance, or development proposal is to be judged compatible, with respect to safety, with a nearby airport are set forth in the Safety Criteria matrix, **Table 3A**. These criteria are to be used in conjunction with the safety zone map depicted on **Exhibit 3A**. The Safety Criteria matrix represents a compilation of compatibility criteria associated with each of the four types of airport impacts listed in Policy 3.1.7. For the purposes of reviewing proposed amendments to community land use plans and zoning ordinances, as well as in the review of individual development proposals, the safety criteria in the matrix are anticipated to suffice. ALUC may refer to the supporting criteria, as listed in Sections 3.3.2 and 3.3.3, to clarify or supplement its review of such actions.

3.3.1.1 *Safety and Compatibility Zones:*

There are eight safety zones defined for the airport which include:

(a) Zone 1, Runway Protection Zone. Runway protection zones are trapezoidal-shaped areas located at ground level beyond each end of a runway. Ideally, each runway protection zone should be entirely clear of all objects. Places of worship, schools, hospitals, office buildings, shopping centers, and other places of public assembly, as well as fuel storage facilities, should be prohibited. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 1.

(b) Zone 2, Inner Approach/Departure Zone. This zone encompasses areas overflown at low altitudes, typically only 200 to 400 feet above runway elevation. Residential uses except on large, agricultural parcels should be prohibited. Nonresidential uses to activities which attract people (uses such as shopping centers, most eating establishments, theaters, meeting halls, multi-story office buildings, and labor-intensive manufacturing plants) should be prohibited. In addition, children's schools, day care centers, hospitals, nursing homes, and hazardous uses (e.g., above-ground bulk fuel storage) should be prohibited. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 2.

TABLE 3A
Safety Criteria Matrix

	Maximum Densities/Intensities/ Required Open Land			Additional Criteria	
Zone	**Dwelling Units per Acre[1]**	**Maximum Non-residential Intensity[2]**	**Req'd Open Land[3]**	**Prohibited Uses[4]**	**Other Development Conditions[5]**
Zone 1 (RPZ)	None	None	All unused	• All structures except ones with location set by aeronautical function • Assemblages of people • Public & quasi-public services • Objects exceeding 14 CFR Part 77 height limits • Storage of hazardous materials • Chemicals and allied products & storage • Petroleum refining & storage • Electrical & natural gas generation & switching • Oil & gas extraction • Natural gas & petroleum pipelines[12] • Waterways that create a bird hazard[6] • Hazards to flight[6] • New dumps and landfills or the expansion of existing dumps or landfills subject to applicable law and implementing advisories[7]	• Avigation easement dedication[5]
Zone 2 (IADZ)	1 d.u. per 10 acres	50 persons per acre	30%	• Residential, except for very low density residential Manufacturing and industrial uses: • Chemicals and allied products & storage • Petroleum refining & storage • Rubber & plastics • Passenger terminals & stations • Radio, TV & Telephone centers • Electrical & natural gas generation & switching • Oil & gas extraction • Natural gas & petroleum pipelines[12] • Petroleum truck terminals Businesses & personal services: • Hotels, motels, restaurants Public & quasi-public services:	• Avigation easement dedication[5] • Locate structures maximum distance from extended runway centerline • Minimum NLR of 45 dB residences (including mobile homes) and office buildings[9] • Airspace review required for objects > 35 feet tall[10]

TABLE 3A (Continued)
Safety Criteria Matrix

	Maximum Densities/Intensities/ Required Open Land			Additional Criteria	
Zone	**Dwelling Units per Acre[1]**	**Maximum Non-residential Intensity[2]**	**Req'd Open Land[3]**	**Prohibited Uses[4]**	**Other Development Conditions[5]**
Zone 2 (IADZ)	1 d.u. per 10 acres	50 persons per acre	30%	• Children's schools, day care centers, libraries • Hospitals, nursing homes • Places of worship • Schools Recreational uses: • Athletic fields, playgrounds, & riding stables • Theaters, auditoriums, & stadiums Waterways that create a bird hazard[6] Hazards to flight[6] New dumps and landfills or the expansion of existing dumps or landfills subject to applicable law and implementing advisories[7]	• Avigation easement dedication[5] • Locate structures maximum distance from extended runway centerline • Minimum NLR of 45 dB residences (including mobile homes) and office buildings[9] • Airspace review required for objects > 35 feet tall[10]
Zone 3 (ITZ)	1 d.u. per 5 acres	120 persons per acre	20%	Same as Zone 2	• Same as zone 2
Zone 4 (OADZ)	1 d.u. per 5 acres	180 persons per acre	20%	• Children's schools, day care centers, libraries • Hospitals, nursing homes • Bldgs. with >3 aboveground habitable floors • Highly noise-sensitive outdoor non-residential uses[8] • New or expansion of existing dumps or landfills, other than those consisting entirely of earth & rock. • Waterways that create a bird hazard[6] • Hazards to flight[6] • New dumps and landfills or the expansion of existing dumps or landfills subject to applicable law and implementing advisories[7]	• Minimum NLR of 25 dB in residences (including mobile homes) and office buildings[9] • Airspace review required for objects >70 feet tall[11]
Zone 5 (SSZ)	1 d.u. per 2 acres	160 persons per acre	25%	• Same as Zone 2	• Same as Zone 2
Zone 6 (AP)	None	No Limit	No Requirement	• Hazards to flight[6]	• Airspace review required for objects >35 feet tall[11]
Zone 7a (TPZ)	No Limit	450 persons per acre	10%	• New or expansion of existing dumps or landfills, other than those consisting entirely of earth & rock. • Waterways that create a bird hazard[6] • Hazards to flight[6] • New dumps and landfills subject to applicable law and implementing advisories[7] • Outdoor stadiums	• Airspace review required for objects >100 feet tall[11]

TABLE 3A (Continued)
Safety Criteria Matrix

	Maximum Densities/Intensities/ Required Open Land			Additional Criteria	
Zone	**Dwelling Units Per Acre[1]**	**Maximum Non-residential Intensity[2]**	**Req'd Open Land[3]**	**Prohibited Uses[4]**	**Other Development Conditions[5]**
Zone 7b (TPZ)	No Limit	450 persons per acre	10%	• Hazards to flight[6] • New dumps and landfills subject to applicable law and implementing advisories[7] • Outdoor stadiums	• Airspace review required for objects >100 feet tall[11]
Zone 8 (AIA)	No Limit	No Limit	No Requirement	• Hazards to flight[6] • New dumps and landfills subject to applicable law and implementing advisories[7]	• Airspace review required for objects >100 feet tall[11]

Notes:

1 Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre (d.u./ac). Clustering of units is encouraged. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands.

2 Usage intensity calculations shall include the peak number of people per gross acre (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands.

3 Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects.

4 The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria, subject to applicable state or federal law. In addition to these explicitly prohibited uses, other uses normally permitted may not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.

5 As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. Easement dedication and deed notice requirements indicated for specific compatibility zones apply only to new development and to reuse if discretionary approval is required.

6 Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds or other wildlife hazards to increase is also prohibited. Such uses (e.g. stormwater management facilities, other waterways, golf courses) are further detailed in FAA Advisory Circular 150/5200-33B or subsequent advisory (Hazardous Wildlife Attractants On or Near Airports). See Appendix D.

7 New dumps or landfills and the expansion of existing dumps or landfills are subject to FAA notification and review and are further subject to restrictions and conditions outlined in U.S. Code Title 49, Subtitle VII, Part A, Subpart iii, Chapter 447, Section 44718; 40 CFR Section 258.10; FAA Advisory Circular 150/5200-34A or subsequent advisory (Construction or Establishment of Landfills Near Public Airports); FAA Advisory Circular 150/5200-33B or subsequent advisory, (Hazardous Wildlife Attractants On or Near Airports). See Appendix D.

8 Examples of highly noise-sensitive outdoor nonresidential uses that should be prohibited include amphitheaters and drive-in theaters. Caution should be exercised with respect to uses such as poultry farms and nature preserves.

9 NLR = Noise Level Reduction, the outside-to-inside sound level attenuation that the structure provides.

10 Objects up to 35 feet in height are permitted. However, the Federal Aviation Administration may require marking and lighting of certain objects.

TABLE 3A (Continued)
Safety Criteria Matrix

11 This height criterion is for general guidance. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not be obstructions.

12 Natural gas & petroleum pipelines less than 36 inches below the surface.

RPZ	Runway Protection Zone	SSZ -	Sideline Safety Zone
IADZ	Inner Approach/Departure Zone	AP -	Airport Property
ITZ	Inner Turning Zone	TPZ -	Traffic Pattern Zone
OADZ	Outer Approach/Departure Zone	AIA -	Airport Influence Area

(c) Zone 3, Inner Turning Zone. Encompasses locations where aircraft are typically turning from the base to final approach legs of the standard traffic pattern and are descending from traffic pattern altitude. Zone 3 also includes the area where departing aircraft normally complete the transition from takeoff power and flap settings to a climb mode and have begun to turn to their en route heading. Residential uses should be limited to one dwelling unit per five acres in Zone 3. Nonresidential uses having moderate or higher usage intensities (e.g., major shopping centers, fast food restaurants, theaters, and meeting halls) are unacceptable. Children's schools, large day care centers, hospitals, nursing homes, and hazardous uses (e.g., aboveground bulk fuel storage) should also be avoided in Zone 3. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 3.

(d) Zone 4, Outer Approach/Departure Zone. Zone 4 is situated along extended runway centerline beyond Zone 3. Approaching aircraft are usually at less than traffic pattern altitude in Zone 4. Residential uses should be limited to one dwelling unit per five acres in Zone 4. Children's schools, large day care centers, hospitals, nursing homes, and highly noise-sensitive nonresidential uses (amphitheaters, drive-in theaters, and nature preserves) should also be avoided in Zone 4. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 4.

(e) Zone 5, Sideline Safety Zone. Zone 5 encompasses close-in area lateral to runways, but not on airport property. The primary risk in Zone 5 is with aircraft losing directional control on takeoff. Prohibited land uses are similar to Zone 2. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 5.

(f) Zone 6, Airport Property Zone. This zone is further divided into Airport Building Areas and Aircraft Activity Areas. Airport Building Areas include terminal areas, fixed base operator buildings, hangars, tie-down areas, automobile parking areas, and areas planned for aviation uses. Airport buildings, aviation support facilities, hotels and motels, airport-related commercial uses, offices, light industrial uses, and sewage facilities if they are constructed so as not to constitute a hazard are permitted in the Airport Building Area. Aircraft Activity Areas include runways, taxiways, and associated safety areas and setbacks per FAA regulations. All uses within the Aircraft Activity Areas must meet FAA regulations or be approved by the FAA. **Table 3A** provides a complete list of prohibited uses and conditions for Zone 6.

(g) Zone 7, Traffic Pattern Zone. Zone 7 includes all other portions of regular aircraft traffic patterns and pattern entry routes. This zone is further divided into the TPZ area under the 14CFR Part 77 Horizontal Surface Area (7a) and the remainder of the TPZ (7b) which corresponds to the outer boundary of the 14 CFR Part 77 conical, approach, and outer transitional surfaces. Outdoor stadiums and similar uses with very high intensities should be prohibited. In addition, hazards to flight (physical [e.g., tall objects], visual, and electronic forms of interference with the safety of aircraft operations) are also prohibited. **Table 3A** provides a complete list of prohibited uses and conditions for Zones - 7a and 7b.

(h) Zone 8, Airport Influence Area (AIA). Properties within the AIA are routinely subject to over-flights by aircraft using public-use airports. Hazards to flight (physical [e.g., tall objects], visual, and electronic forms of interference with the safety of aircraft operations) are prohibited within the AIA. **Table 3A** provides a list of prohibited uses and conditions for the AIA.

3.3.2 Noise

The purpose of noise compatibility policies is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. Projected noise contours depicted on **Exhibit 3B** are calculated based upon forecasted aircraft activity as indicated in an airport master plan or that is considered by the ALUC to be plausible (refer to activity data in **Appendix B**). The ALUC or the entities that operate airports in San Joaquin County should periodically review these projected noise level contours and update them if appropriate.

The locations of CNEL contours are among the factors used to determine land use compatibility. The depicted noise contour boundaries, however, are not absolute determinants of the compatibility. The inherent variability of aircraft flight paths and pilot training that occur at the airport all influence noise emissions in the vicinity of airports. This variability in aircraft flight paths and training activity can create significant single event noise levels that can be disruptive to noise-sensitive land uses.

A commonly used method for determining the potential impact of single events on residential areas is to use sleep disturbance. The Federal Interagency Committee on Aviation Noise (FICAN) recommends using a 10 percent awakening value associated with indoor sound exposure levels (SEL) of 80 decibels (dB). The typical home with the windows closed attenuates exterior noise of approximately 15 dB. Therefore, the 95 dB SEL depicted on **Exhibit 3C** will be used to identify noise-sensitive areas (residential, hospitals, hotels, and motels) that require disclosure for potential of sleep disruption from aircraft overflights.

(g) Zone 7, Traffic Pattern Zone. Zone 7 includes all other portions of regular aircraft traffic patterns and pattern entry routes. This zone is further divided into the TPZ area under the 14CFR Part 77 Horizontal Surface Area (7a) and the remainder of the TPZ (7b) which corresponds to the outer boundary of the 14 CFR Part 77 conical, approach, and outer transitional surfaces. Outdoor stadiums and similar uses with very high intensities should be prohibited. In addition, hazards to flight (physical [e.g., tall objects], visual, and electronic forms of interference with the safety of aircraft operations) are also prohibited. **Table 3A** provides a complete list of prohibited uses and conditions for Zones - 7a and 7b.

(h) Zone 8, Airport Influence Area (AIA). Properties within the AIA are routinely subject to over-flights by aircraft using public-use airports. Hazards to flight (physical [e.g., tall objects], visual, and electronic forms of interference with the safety of aircraft operations) are prohibited within the AIA. **Table 3A** provides a list of prohibited uses and conditions for the AIA.

3.3.2 Noise

The purpose of noise compatibility policies is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. Projected noise contours depicted on **Exhibit 3B** are calculated based upon forecasted aircraft activity as indicated in an airport master plan or that is considered by the ALUC to be plausible (refer to activity data in **Appendix B**). The ALUC or the entities that operate airports in San Joaquin County should periodically review these projected noise level contours and update them if appropriate.

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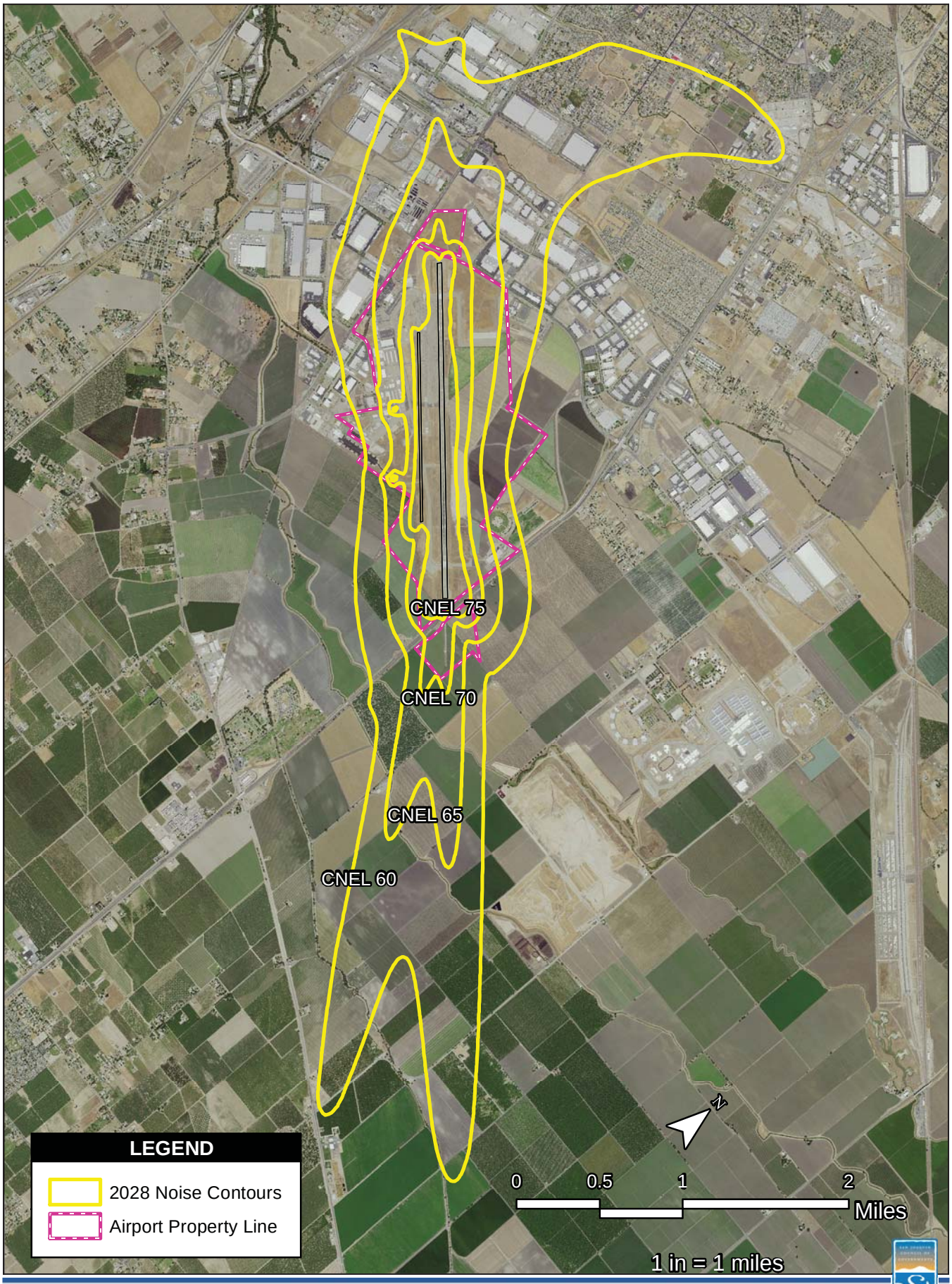

Exhibit 3B
LONG RANGE CNEL NOISE EXPOSURE CONTOURS

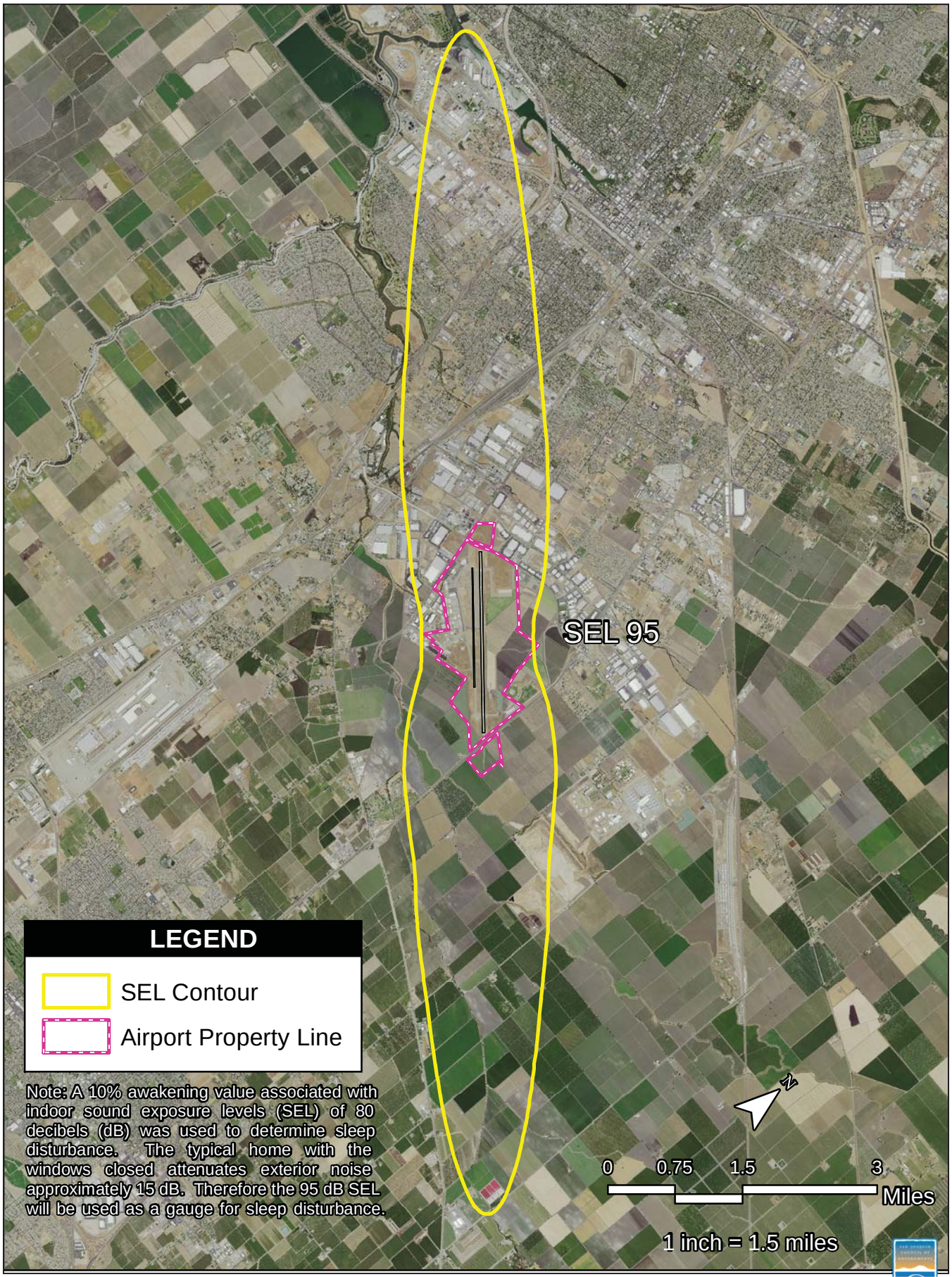

Exhibit 3C
SEL NOISE EXPOSURE CONTOURS

3.3.2.1 *Application of Noise Contours:*

The locations of CNEL contours are among the factors used to define compatibility zone boundaries and criteria. Because of the inherent variability of flight paths and other factors that influence noise emissions, the depicted contour boundaries on **Exhibit 3B** and **3C** are not absolute determinants of the compatibility or incompatibility of a given land use on a specific site or a portion thereof. Noise contours can only quantify noise impacts in a general manner.

3.3.2.2 *Noise Exposure in Residential Areas:*

Unless otherwise indicated in the airport-specific policies listed in the next section, the maximum CNEL considered normally acceptable for new residential land uses in the vicinity of the airports covered by this ALUCP is 60 CNEL. These standards shall be based upon noise contours calculated as described above.

3.3.2.3 *Noise Exposure for Other Land Uses:*

Noise level compatibility standards for other types of land uses shall be applied in the same manner as the above residential noise level criteria. The extent of outdoor activity associated with a particular land use is an important factor to be considered in evaluating its compatibility with airport noise. Examples of acceptable noise levels for other land uses in an airport's vicinity are presented in **Table 3B**.

TABLE 3B
Noise Compatibility Criteria

	SEL	CNEL		
	95	60-65	65-70	70-75
RESIDENTIAL				
Single family, duplex, multi-family, manufactured housing	Y[1]	Y[1,2,3]	N	N
Manufactured housing	Y[1]	N	N	N
PUBLIC FACILITIES				
Education facilities	Y	Y[1,2,3]	N	N
Religious facilities, libraries, museums, galleries, clubs and lodges	Y	Y[1,2,3]	N	N
Outdoor sport events, entertainment and public assembly except amphitheaters	Y	Y	N	N
Indoor recreation, amusements, athletic clubs, gyms and spectator events, parks, outdoor recreation: tennis, golf courses, riding trails, etc.	Y	Y	Y	Y
COMMERCIAL				
Hotels/motels	Y[1]	Y[1,2,3]	N	N
Hospitals and other health care Services	Y[1]	Y[1,2,3]	N	N
Services: finance, real estate, insurance, professional and government offices	Y	Y	Y[1]	Y[1]

TABLE 3B (Continued)
Noise Compatibility Criteria

	SEL	CNEL		
	95	60-65	65-70	70-75
Retail sales: building materials, farm equipment, automotive, marine, mobile homes, recreational vehicles and accessories	Y	Y	Y[1]	Y[1]
Restaurants, eating and drinking Establishments	Y	Y	Y[1]	Y[1]
Retail sales: general merchandise, food, drugs, apparel, etc.	Y	Y	Y[1]	Y[1]
Personal services: barber and beauty shops, laundry and dry cleaning, etc.	Y	Y	Y[1]	Y[1]
Automobile service stations	Y	Y	Y	Y
Repair services	Y	Y	Y	Y[1]
INDUSTRIAL				
Processing of food, wood and paper products; printing and publishing; warehouses, wholesale and storage activities	Y	Y	Y	Y
Refining, manufacturing and storage of chemicals, petroleum and related products, manufacturing and assembly of electronic components, etc.	Y	Y	Y	Y
Manufacturing of stone, clay, glass, leather, gravel and metal products; construction and salvage yards; natural resource extraction and processing, agricultural, mills and gins	Y	Y	Y	Y
AGRICULTURE				
Animal husbandry, livestock farming, breeding and feeding; plant nurseries (excluding retail sales)	Y	Y	Y	Y[1]
Farming (except livestock)	Y	Y	Y	Y

1 Fair disclosure statement required as a condition of development approval or building permit issuance.
2 Avigation easement required as a condition of development approval or building permit issuance.
3 Sound insulation required to reduce interior to exterior noise levels by at least 25dB.

3.3.2.4 *Interior Noise Levels:*

Land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria.

(a) The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is 45 dB CNEL in:

- Any habitable room of single or multi-family residences;
- Hotels and motels;
- Hospitals and nursing homes;

- Religious, meeting halls, theaters, and mortuaries;
- Office buildings; and
- Schools, libraries, and museums.

(b) The noise contours depicted in Chapter Two of this ALUCP shall be used in determining compliance with these criteria. The calculations should assume that windows are closed.
(c) When reviewed as part of a general plan or zoning ordinance amendment or as a major land use action, evidence that proposed structures will be designed to comply with the above criteria shall be submitted to the ALUC under the following circumstances:

(1) Any single or multi-family residence situated within an airport's 60 CNEL contour. [Wood frame buildings constructed to meet current standards for energy efficiency typically have an average NLR of approximately 20 dB with windows closed.]

(2) Any hotel or motel, hospital or nursing home, church, meeting hall, office building, religious facility, school, library, or museum situated with an airport's 65-dB CNEL contour.

3.3.2.5 *Construction of New or Expanded Airports or Heliports:*

Any proposed construction of a new airport or heliport or expansion of facilities at an existing airport or heliport which would result in a significant increase in cumulative noise exposure (measured in terms of CNEL) shall include measures to reduce the exposure to a less-than-significant level. For the purposes of this plan, a noise increase shall be considered significant if:

(a) In locations having an existing ambient noise level of less than 60 CNEL, the project would increase the noise level by 5.0 CNEL or more.

(b) In locations having an existing ambient noise level of between 60 and 65 CNEL, the project would increase the noise level by 3.0 CNEL or more.

(c) In locations having an existing ambient noise level of more than 65 CNEL, the project would increase the noise level by 1.5 CNEL or more.

3.3.3 Airspace Protection

Tall structures, trees, and other objects, particularly when located near airports or on high terrain, may constitute hazards to aircraft in flight. Federal regulations establish the criteria for evaluating potential obstructions. These regulations also require that the Federal Aviation Administration be notified of proposals for creation of certain such objects. In response to filing FAA Form 7460-1, Notice of Proposed Construction or Alteration, the FAA conducts aeronautical studies of these objects and determines whether they would be hazards, but it does not have the authority to prevent their creation. The purpose of ALUC airspace protection policies, together

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works

Kris Balaji, Director of Public Works

Fritz Buchman, *Deputy Director/Development*
Michael Selling, *Deputy Director/Engineering*
Jim Stone, *Deputy Director/Operations*
Najee Zarif, *Interim Business Administrator*

June 23, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202

SUBJECT: NOTICE OF PREPARATION OF THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ENVISION STOCKTON 2040 GENERAL PLAN UPDATE AND UTILITY MASTER PLAN SUPPLEMENTS

Dear Mr. Stagnaro,

The San Joaquin County Department of Public Works has reviewed the Notice of Preparation of the Draft Environmental Impact Report for the above referenced project and has no comments at this time. However, the County does request to be included on the circulation list for any additional project documents.

Thank you for the opportunity to review and comment. Should you have questions please contact me at atmcginnis@sjgov.org or (209) 468-3085.

Sincerely,

ASHLEN MCGINNIS
Environmental Coordinator

AM:as
c: Firoz Vohra, Senior Engineer

SAN JOAQUIN
COUNTY
Greatness grows here.

General Services Department

Marcia Cunningham, Director

Capital Projects · Facilities Management · Office of Emergency Services · Parks and Recreation

June 23, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202

SUBJECT: Notice of Preparation of the Draft Environment Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

1. Provide a copy of the Draft Environmental Impact Report for review to San Joaquin County Department of General Services, attn.: David Castagna.

2. Provide detailed information if the cost of improvements to upgrade utilities will impact current service receivers.

If you have any questions, you may contact me at (209) 953-7639 or ssharma@sjgov.org.

Very truly yours,

Sejal Sharma

Engieer III

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

June 16, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 N. El Dorado Street
Stockton, CA 95202

Project: Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

District CEQA Reference No: 20170639

Dear Mr. Stagnaro:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation for the project referenced above. The project includes a comprehensive update to the City of Stockton's existing General Plan to guide the city's development and conservation through the year 2040 and to articulate a vision for the city's long-term physical form and development. The Envision Stockton 2040 General Plan Update is a program level project and, while project-specific data may not be available until specific approvals are being granted, the Environmental Impact Report (EIR) should include a discussion of policies, which when implemented, will reduce or mitigate impacts on air quality at the individual project level. To aid the Lead Agency in addressing project specific issues at the program level the District offers the following comments and recommendations:

Land Use Planning

1. Nearly all development projects within the San Joaquin Valley Air Basin, from general plans to individual development projects have the potential to generate air pollutants, making it more difficult to attain state and federal ambient air quality standards. Land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence transportation needs and motor vehicle emissions are the largest source of air pollution. Land use decisions and project design elements such as preventing urban sprawl,

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Executive Director/Air Pollution Control Officer

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encouraging mix-use development, and project designs that reduce vehicle miles traveled (VMT) have proven benefit for air quality. The District recommends that the Envision Stockton 2040 General Plan Update include or incorporate by reference, policies that will reduce or mitigate VMT impacts to the extent feasible. VMT can be reduced through encouragement of mixed-use development, walkable communities, etc. Recommended design elements can be found on the District's website at:

http://www.valleyair.org/ISR/ISROnSiteMeasures.htm.

To aid agencies in addressing VMT impacts the District has prepared the following guidance documents: *Air Quality Guidelines for General Plans*, and *AB 170 Requirements for General Plans*. These documents provide general information and recommendations for policies that are effective in reducing impacts from growth and development projects. These documents are available on the District's web site at:

http://www.valleyair.org/transportation/Guidelines_for_General_Plans.htm.

Emissions Analysis

1) At the federal level for the National Ambient Air Quality Standards (NAAQS), the District is currently designated as extreme nonattainment for the 8-hour ozone standards; nonattainment for the PM2.5 standards; and attainment for the 1-Hour ozone, PM10 and CO standards. At the state level, the District is currently designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 California Ambient Air Quality Standards (CAAQS). The District recommends that the Air Quality section of the Environmental Impact Report (EIR) include a discussion of the following impacts:

   a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-project emissions.

      i) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separate from operational emissions. The District recommends preparation of an Environmental Impact Report (EIR) if annual construction emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

         - *Recommended Mitigation:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the project to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations.

This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

ii) Operational Emissions: Operational Emissions: Permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. The District recommends preparation of an Environmental Impact Report (EIR) if the sum of annual permitted and the sum of the annual non-permitted emissions each cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

iii) Recommended Model: Project related criteria pollutant emissions should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com .

b) **Nuisance Odors:** The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

c) **Health Impacts:** Toxic air contaminants (TACs) are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust fumes that are emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

i) The location of development projects is a major factor in determining whether they will result in localized air quality impacts. The potential for adverse air quality impacts increase as the distance between the source of emissions and receptors decrease. From a health risk perspective there are two types of land use projects that have the potential to cause long-term public health risk impacts: those that locate new toxic sources in the vicinity of existing receptors and those that locate new receptors in the vicinity of existing toxics sources.

Accurate quantification of health risks and operational emissions requires detailed site specific information, e.g. type of emission source, proximity of the source to sensitive receptors, and trip generation information.

The required level of detail is typically not available until project specific approvals are being granted. Therefore, the District recommends that potential health risks be further reviewed when approving future projects. This recommendation includes projects that would otherwise appear to be exempt from CEQA requirements, such as projects that could be categorically exempt or allowed land uses under current zoning.

ii) Various tools exist to perform a screening level analysis for emissions from new stationary sources, such as prioritization charts, SCREEN3, and various spreadsheets available from the District's website. For projects being impacted by existing emission sources, one screening tool is contained in the ARB Handbook: *Air Quality and Land Use Handbook: A Community Health Perspective.* The document includes a table with recommended buffer distances associated with various types of common sources. The ARB handbook can found on the ARB's website at:

http://www.arb.ca.gov/ch/landuse.htm.

If the screening level analysis indicates that TACs are a concern, the District recommends that a more detailed HRA be performed. If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 20 in a million.

More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at:

http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

2) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for any modeling referenced in the EIR.

b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

i) The following policies/mitigation measures are recommended to reduce or mitigate impacts from criteria pollutant emissions:

(1) Use of off-road construction fleets that can achieve fleet average emissions equal to or less than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. The District recommends incorporating, as a condition of project approval, a requirement that off-road construction equipment used on site achieve fleet average emissions equal to or less than the Tier III emissions standard of 4.8 NOx g/hp-hr. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

(2) For projects exceeding the applicability thresholds identified in Section 2.0 of District Rule 9510, a condition of project approval requiring demonstration of compliance with Rule 9510 prior to the issuance of grading and/or building permits.

(3) Air quality impacts from projects exceeding the District's thresholds of significance for criteria pollutants after the implementation of mitigation measures can be mitigated to less than significant through payment of funds into an emissions reduction program. The District recommends incorporating, as a condition of project approval, demonstration of participation in a Voluntary Emission Reduction Agreement (VERA) with the District prior to the issuance of grading and/or building permits. More information regarding participation in a VERA can be obtained by calling (559) 230-6000 and asking to speak to a District CEQA staff member.

(4) For projects subject to District permitting requirements, demonstration of compliance with District Rule 2201, such as a copy of the Authority to Construct (ATC), before issuance of the first building permit, be made a condition of project approval.

ii) The following policies/mitigation measures are recommended to mitigate potential health impacts of individual projects:

(1) Development projects resulting in toxic air contaminant emissions will be located an adequate distance from residential areas and other sensitive receptors in accordance to ARB's *Air Quality and Land Use Handbook: A Community Health Perspective.*

(2) A health risk screening and/or assessment will be performed to assess potential risks to sensitive receptors for the following projects:

a. Projects whose proposed locations are within the established buffer distances identified in ARB's handbook;

b. Projects whose land uses are not specifically identified in ARB's handbook (such as shopping centers), but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants; and

c. Projects that would otherwise appear to be exempt from CEQA requirements, but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants, such as industrial use projects allowed by right.

d) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at:

http://valleyair.org/aqinfo/attainment.htm.

District Rules and Regulations

3) Individual development projects would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out the project would include or exceed any one of the following:

- 50 dwelling units
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space; or
- 9,000 square feet of educational space; or
- 10,000 square feet of government space; or
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payments of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit.

The District recommends that a mitigation measure be included that requires, for any project within the scope of this EIR subject to Rule 9510, demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval.

District ISR staff is available to meet with the Lead Agency or project proponent to further discuss the requirements of Rule 9510 for individual development projects. More information on District Rule 9510 can be obtained by:

- Calling the District's ISR staff at (559) 230-6000;
- E-mailing inquiries to: ISR@valleyair.org; or
- Visiting the District's website at: http://www.valleyair.org/ISR/ISRHome.htm.

4) Particulate Matter 2.5 microns or less in size (PM2.5) from under-fired charbroilers (UFCs) pose immediate health risk. Since the cooking of meat can release carcinogenic PM2.5 species like polycyclic aromatic hydrocarbons (PAH), controlling emissions from under-fired charbroilers will have a substantial positive impact on public health.

Charbroiling emissions occur in populated areas, near schools and residential neighborhoods, resulting in high exposure levels for sensitive Valley residents. The air quality impacts on neighborhoods near restaurants with UFCs can be significant on days when meteorological conditions are stable, when dispersion is limited and emissions are trapped near the surface within the surrounding neighborhoods. This potential for neighborhood-level concentration of emissions during evening or multi-day stagnation events raises environmental concerns.

In addition, the cooking emissions source category is one of the largest single contributors of directly emitted PM2.5 in the Valley. Photochemical modeling conducted for the 2012 PM2.5 Plan showed that reducing commercial charbroiling emissions is critical to achieving PM2.5 attainment in the Valley.

The District committed to amend Rule 4692 (Commercial Charbroiling) in 2016, with a 2017 compliance date, to add emission control requirements for UFCs, as committed to in the District's 2012 PM2.5 Plan. Installing charbroiler emissions control systems during construction of new facilities is likely to result in substantial economic benefit compared to costly retrofitting.

Therefore, the District strongly recommends that your agency require new restaurants that will operate UFCs to install emission control systems during the construction phase. To ease the financial burden for Valley businesses that wish to install control equipment before it is required, the District is offering incentive funding during the time leading up to the amendment to the rule. Restaurants with UFCs may be eligible to apply for funding to add emission control systems. Please contact the District at (559) 230-5858 for more information.

5) Individual development projects may also be subject to District regulations including, but limited to: Regulation VIII (Fugitive PM10 Prohibitions), District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 4002 (National Emission Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). To avoid potential delays in project development, the District strongly encourages project proponents contact the District's Small Business Assistance (SBA) Office early in the planning phase to discuss whether an Authority to Construct (ATC) and Permit to Operate (PTO) are required, and to identify other District rules or regulations that apply to their project.

   The District recommends that a mitigation measure be included that requires, for any project within the scope of this EIR that is subject to District permits, demonstration of compliance with District permitting requirements, such as a copy of the ATC, before issuance of the first building permit, be made a condition of project approval.

6) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888. Current District rules can be found online at the District's website at:

   www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Stephanie Pellegrini at (559) 230-5820.

Sincerely,

Arnaud Marjollet
Director of Permit Services

for Brian Clements
Program Manager

AM: sp

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

June 16, 2017

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b) **Nuisance Odors:** The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

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i) The location of development projects is a major factor in determining whether they will result in localized air quality impacts. The potential for adverse air quality impacts increase as the distance between the source of emissions and receptors decrease. From a health risk perspective there are two types of land use projects that have the potential to cause long-term public health risk impacts: those that locate new toxic sources in the vicinity of existing receptors and those that locate new receptors in the vicinity of existing toxics sources.

Accurate quantification of health risks and operational emissions requires detailed site specific information, e.g. type of emission source, proximity of the source to sensitive receptors, and trip generation information.

The required level of detail is typically not available until project specific approvals are being granted. Therefore, the District recommends that potential health risks be further reviewed when approving future projects. This recommendation includes projects that would otherwise appear to be exempt from CEQA requirements, such as projects that could be categorically exempt or allowed land uses under current zoning.

ii) Various tools exist to perform a screening level analysis for emissions from new stationary sources, such as prioritization charts, SCREEN3, and various spreadsheets available from the District's website. For projects being impacted by existing emission sources, one screening tool is contained in the ARB Handbook: *Air Quality and Land Use Handbook: A Community Health Perspective.* The document includes a table with recommended buffer distances associated with various types of common sources. The ARB handbook can found on the ARB's website at:

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More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
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2) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for any modeling referenced in the EIR.

b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

i) The following policies/mitigation measures are recommended to reduce or mitigate impacts from criteria pollutant emissions:

(1) Use of off-road construction fleets that can achieve fleet average emissions equal to or less than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. The District recommends incorporating, as a condition of project approval, a requirement that off-road construction equipment used on site achieve fleet average emissions equal to or less than the Tier III emissions standard of 4.8 NOx g/hp-hr. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

(2) For projects exceeding the applicability thresholds identified in Section 2.0 of District Rule 9510, a condition of project approval requiring demonstration of compliance with Rule 9510 prior to the issuance of grading and/or building permits.

(3) Air quality impacts from projects exceeding the District's thresholds of significance for criteria pollutants after the implementation of mitigation measures can be mitigated to less than significant through payment of funds into an emissions reduction program. The District recommends incorporating, as a condition of project approval, demonstration of participation in a Voluntary Emission Reduction Agreement (VERA) with the District prior to the issuance of grading and/or building permits. More information regarding participation in a VERA can be obtained by calling (559) 230-6000 and asking to speak to a District CEQA staff member.

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c. Projects that would otherwise appear to be exempt from CEQA requirements, but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants, such as industrial use projects allowed by right.

d) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at:

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District Rules and Regulations

3) Individual development projects would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out the project would include or exceed any one of the following:

- 50 dwelling units
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space; or
- 9,000 square feet of educational space; or
- 10,000 square feet of government space; or
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payments of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit.

The District recommends that a mitigation measure be included that requires, for any project within the scope of this EIR subject to Rule 9510, demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval.

District ISR staff is available to meet with the Lead Agency or project proponent to further discuss the requirements of Rule 9510 for individual development projects. More information on District Rule 9510 can be obtained by:

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4) Particulate Matter 2.5 microns or less in size (PM2.5) from under-fired charbroilers (UFCs) pose immediate health risk. Since the cooking of meat can release carcinogenic PM2.5 species like polycyclic aromatic hydrocarbons (PAH), controlling emissions from under-fired charbroilers will have a substantial positive impact on public health.

Charbroiling emissions occur in populated areas, near schools and residential neighborhoods, resulting in high exposure levels for sensitive Valley residents. The air quality impacts on neighborhoods near restaurants with UFCs can be significant on days when meteorological conditions are stable, when dispersion is limited and emissions are trapped near the surface within the surrounding neighborhoods. This potential for neighborhood-level concentration of emissions during evening or multi-day stagnation events raises environmental concerns.

In addition, the cooking emissions source category is one of the largest single contributors of directly emitted PM2.5 in the Valley. Photochemical modeling conducted for the 2012 PM2.5 Plan showed that reducing commercial charbroiling emissions is critical to achieving PM2.5 attainment in the Valley.

The District committed to amend Rule 4692 (Commercial Charbroiling) in 2016, with a 2017 compliance date, to add emission control requirements for UFCs, as committed to in the District's 2012 PM2.5 Plan. Installing charbroiler emissions control systems during construction of new facilities is likely to result in substantial economic benefit compared to costly retrofitting.

Therefore, the District strongly recommends that your agency require new restaurants that will operate UFCs to install emission control systems during the construction phase. To ease the financial burden for Valley businesses that wish to install control equipment before it is required, the District is offering incentive funding during the time leading up to the amendment to the rule. Restaurants with UFCs may be eligible to apply for funding to add emission control systems. Please contact the District at (559) 230-5858 for more information.

5) Individual development projects may also be subject to District regulations including, but limited to: Regulation VIII (Fugitive PM10 Prohibitions), District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 4002 (National Emission Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). To avoid potential delays in project development, the District strongly encourages project proponents contact the District's Small Business Assistance (SBA) Office early in the planning phase to discuss whether an Authority to Construct (ATC) and Permit to Operate (PTO) are required, and to identify other District rules or regulations that apply to their project.

   The District recommends that a mitigation measure be included that requires, for any project within the scope of this EIR that is subject to District permits, demonstration of compliance with District permitting requirements, such as a copy of the ATC, before issuance of the first building permit, be made a condition of project approval.

6) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888. Current District rules can be found online at the District's website at:

   www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Stephanie Pellegrini at (559) 230-5820.

Sincerely,

Arnaud Marjollet
Director of Permit Services

for Brian Clements
Program Manager

AM: sp

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

14 June 2017

David Stagnaro
City of Stockton
425 North El Dorado Street
Stockton, CA 95202

CERTIFIED MAIL
91 7199 9991 7036 6990 6934

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, ENVISION STOCKTON 2040 GENERAL PLAN UPDATE AND UTILITY MASTER PLAN SUPPLEMENTS PROJECT, SCH# 2017052062, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 24 May 2017 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan

amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to

restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Caltrans Phase I MS4 Permit, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance (i.e., discharge of dredge or fill material) of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

Land Disposal of Dredge Material

If the project will involve dredging, Water Quality Certification for the dredging activity and Waste Discharge Requirements for the land disposal may be needed.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's

Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

DELTA STEWARDSHIP COUNCIL
A California State Agency

980 NINTH STREET, SUITE 1500
SACRAMENTO, CALIFORNIA 95814
HTTP://DELTACOUNCIL.CA.GOV
(916) 445-5511

June 22, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202
David.Stagnaro@stocktongov.com

RE: Notice of Preparation of a Draft Environmental Impact Report for the City of Stockton Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (SCH# TBD)

Dear Mr. Stagnaro:

Delta Stewardship Council (Council) staff has reviewed the City of Stockton Notice of Preparation (NOP) to prepare a program-level Environmental Impact Report (EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (project or proposed project).

We appreciate the opportunity to comment on the NOP, which was circulated to obtain input regarding the scope and content of the EIR from interested agencies, organizations, and individuals. We also look forward to reviewing the project's draft EIR and the proposed 2040 General Plan policies, to ensure the consistency between the City's 2040 General Plan and the Delta Plan. State law specifically directs the Council to provide "advice to local and regional planning agencies regarding the consistency of local and regional planning documents with the Delta Plan" (Water Code sec 85212).

The Delta Plan, adopted by the Council in 2013, is an enforceable plan to further the achievement of the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem, in a manner that protects and enhances the unique values of the Delta as an evolving place (Water Code section 85054).

The Council was granted specific regulatory and appellate authority over certain actions that take place in whole or in part in the Delta. To do this, the Delta Plan contains a set of regulatory policies with which State and local agencies are required to comply. The Delta Reform Act specifically established a certification process for compliance with the Delta Plan. This means that State and local agencies that propose to carry out, approve, or fund a qualifying action in whole or in part in the Delta, called a "covered action," must certify that this

covered action is consistent with the Delta Plan and must file a certificate of consistency with the Council that includes detailed findings.

More information on "covered actions" and the certification process can be found on the Council website, http://deltacouncil.ca.gov/covered-actions. Council staff is happy to provide assistance to the City in determining whether the proposed 2040 General Plan meets the statutory definition of a "covered action" and, as such, would require a certification of consistency. We encourage you to consult with Council staff to better understand the covered action process and how this project may or may not be consistent with the Delta Plan.

San Joaquin Council of Governments RTP/SCS

The Delta Reform Act establishes specific criteria and categories for exempting actions from the Council's regulatory authority. One of these exemptions is for actions within the Secondary Zone of the Delta that a metropolitan planning organization determines are consistent with its sustainable communities strategy (SCS). Such proposed actions are *not* "covered actions" regulated by the Council (Water Code Section 85057.5(b)(4)).

The Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) adopted by the San Joaquin Council of Governments (SJCOG) in 2014 contains a land use forecast that reflects the development activities described in the general plans and specific plans adopted by the local jurisdictions. The City may request an evaluation of the project's consistency with SJCOG's 2014 RTP/SCS. If SJCOG determines that it is consistent, the proposed project would be exempt from the Council's covered action process. Currently, with respect to land use, the 2014 RTP/SCS is consistent with the Delta Plan.

SJCOG is currently updating its RTP/SCS, and the process should be completed in 2018. Should the final RTP/SCS be adopted prior to adoption of Envision Stockton 2040, the City's 2040 General Plan would need to be consistent with the updated RTP/SCS to qualify for the exemption.

Comments on the NOP

Based on our review of the NOP, we recommend the following matters be discussed or included in the draft EIR for the project:

- **Inconsistencies with the Delta Plan**. The draft EIR should discuss any inconsistencies between the proposed project and applicable regional plans, such as the Delta Plan, as required by section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines. Please note that the CEQA Guidelines' Appendix G indicates that a project that is inconsistent with any applicable land use plan, policy, or regulation may result in a finding of significant impact on the environment. Should any inconsistencies be identified that result in significant impacts, please consider including the applicable mitigation measures of the Delta Plan Mitigation and Monitoring Reporting Program to avoid, minimize, or mitigate those impacts. These mitigation measures can be found in the Delta Plan Mitigation and Monitoring Reporting Program (http://deltacouncil.ca.gov/sites/default/files/documents/files/Agenda%20Item%206a_attach%202.pdf).

- **Land Use and Planning.** Council staff is pleased to see in the NOP that the 2040 General Plan Update will re-designate areas depicted as "Villages" in the current general plan to Open Space/Agriculture, including those areas within the Secondary Zone of the Delta (as shown in Figure 2 of the NOP). We support this proposed change, which will contribute to ensuring consistency between the General Plan, the RTP/SCS, and the Delta Plan.

  As you know, any new residential, commercial, or industrial development must be limited to areas designated for development in city or county general plans as of the date of the Delta Plan's adoption (May 16, 2013), as reflected in Appendix 7 of the Delta Plan regulations, in order to be consistent with **Delta Plan Policy DP P1, Locate New Urban Development Wisely** (23 Cal. Code of Regs. section 5010). This policy is intended to strengthen existing Delta communities while protecting farmland and open space, reserving land for ecosystem restoration needs, and reducing flood risk.

  In the draft EIR, please cite Delta Plan Policy DP P1. Should any significant impacts to land use and planning be identified during the environmental analysis, please consider including in the draft EIR the applicable Land Use and Planning mitigation measures of the Delta Plan Mitigation and Monitoring Reporting Program to avoid, minimize, or mitigate those impacts. (See Mitigation Measures 6-1, 6-2.)

  Please note, Page 2 of the NOP indicates that development within the Delta Secondary Zone is subject to review by the Delta Protection Commission. Actually, land use authority within this zone rests solely with the Delta Stewardship Council, which also shares some land use authority with the Delta Protection Commission for the Primary Zone of the Delta.

Council staff looks forward to working with you to ensure consistency between 2040 General Plan and the Delta Plan, so that the two plans are complementary and serve to protect the Delta. I encourage you to contact Ron Melcer at Ronald.Melcer@deltacouncil.ca.gov or (916) 445-5339 with your questions, comments, or concerns.

Sincerely,

for Cassandra ENOS-Nobriga

Cassandra Enos-Nobriga
Deputy Executive Officer
Delta Stewardship Council

Recirculated Notice of Preparation and Comment Letters

CITY OF STOCKTON

COMMUNITY DEVELOPMENT DEPARTMENT
City Hall • 425 N. El Dorado Street • Stockton, CA 95202-1997 • 209 / 937-8444 • Fax 209 / 937-8893
www.stocktongov.com

DATE August 30, 2017

TO State Clearinghouse
C/O Scott Morgan
1400 Tenth Street
Sacramento, CA 95814

FROM David Stagnaro

SUBJECT Recirculated Notice of Preparation for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements, EIR State Clearinghouse #2017052062

To whom it may concern:

On August 23, 2017, the City of Stockton submitted a Recirculated Notice of Preparation (NOP) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements program-level Environmental Impact Report (EIR). Two corrections are required to the second paragraph of the Recirculated NOP:

- The public scoping meeting was held on June 8, 2017.
- The City Council provided guidance to staff about refinements to the land use map.

Please find attached a copy of the amended Recirculated NOP with corrected text. Underlined text represents language that has been added to the Recirculated NOP; text with strikethrough has been deleted from the Recirculated NOP.

Sincerely,

David Stagnaro
Planning Manager

cc: David Kwong
Tom Pace

Recirculated Notice of Preparation Environmental Impact Report City of Stockton

Date: AUGUST 30, 2017

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202
(209) 937-8266

Subject: **Recirculated Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements**

Lead Agency: City of Stockton Planning and Engineering Division

Project Title: Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

The City of Stockton (Lead Agency) is preparing a program-level Environmental Impact Report (EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements (project or proposed project) pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations Section 15060(d)). This program-level EIR will address the potential environmental impacts associated with implementation of the broad policies included in the proposed project. The EIR will not evaluate detailed, site-specific development projects that may occur in the future under the General Plan; therefore, the analysis will be more qualitative in nature than a project-level EIR.

The City initially circulated a Notice of Preparation (NOP) for the project on May 24, 2017 through June 23, 2017. The City held a public scoping meeting on June 8, 2017 ~~2018~~ to inform the public and interested agencies about the proposed project and solicit public comment on the scope of the environmental issues to be addressed in the EIR. After the close of the scoping period, at a public meeting on July 25, 2017, the Stockton City Council provided guidance to ~~directed~~ City staff to refine the proposed land use map, which affects the project description as it was presented in the previous NOP. Specifically, Figure 2 from the previous NOP needed to be adjusted. Therefore, the City is recirculating the NOP.

The project details are described below. The only change to the project description from the previous NOP is to Figure 2. Additional information regarding the 2040 General Plan Update is available at www.stocktonca.gov/envisionstockton.

The City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. With respect to the views of Responsible and Trustee agencies as to significant environmental issues, the City needs to know the scope and content of the environmental information that is germane to each agency's statutory responsibilities in connection with the proposed project.

Comments on the recirculated NOP are due no later than the close of the 30-day review period at 5:00 p.m. on Friday, September 29, 2017. Please send your written comments to David Stagnaro, City of Stockton, at the

address shown above or email to David.Stagnaro@stocktonca.gov with "Envision Stockton EIR" as the subject. Public Agencies providing comments are asked to include a contact person for the agency.

Project Location

As shown on Figure 1, Stockton is located east of the San Francisco Bay area near the center of San Joaquin County; nearby cities include Manteca, Tracy, and Lodi. Regional access is provided via Interstate 5 and State Route 99. The EIR Study Area for the 2040 General Plan Update is defined by the current Sphere of Influence (SOI), which is shown on Figure 1. The current SOI encompasses 115 square miles of incorporated and unincorporated land that the City may annex in the future.

Project Description

The City of Stockton is preparing a comprehensive update to its existing General Plan. The Update is expected to be completed in 2018 and will guide the city's development and conservation through 2040. The project also includes the preparation of Utility Master Plan Supplements (UMPS). The UMPS will consist of separate documents that will identify needed improvements to water, wastewater, and storm drainage facilities to serve anticipated development under the updated General Plan.

State law requires that the General Plan contain seven elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, and Conservation. The content of these elements is outlined in the California Government Code Section 65300. In addition to the State-mandated content, the proposed project will also address economic development, community design, public facilities and services, recreation, and health, among other topics.

The 2040 General Plan Update will include revisions to the policies of the existing General Plan and consider changes to land use designations within the EIR Study Area where change or enhancement of existing uses is desired through 2040. As shown in Figure 2, the draft revisions to the General Plan land use map will shrink the possible future footprint of the city by changing areas currently designated "Village," which allows a variety of urban uses, to Open Space/Agriculture, including within the Delta Secondary Zone, where development is subject to Delta Protection Commission review. The City's Housing Element was recently updated and adopted by the City Council on April 12, 2016, and is not included as part of the proposed project.

As described above, the Study Area for the proposed project is defined by the current SOI boundary. As shown on Figure 1, the project also identifies a Planning Area boundary, which, at approximately 191 square miles, is larger than the SOI. While the Planning Area does not give the City any regulatory power over the land, it signals to the County and to other nearby local and regional authorities that Stockton recognizes that development within this area may have an impact on the future of the city.

The overall purpose of the 2040 General Plan Update is to create a policy framework that articulates a vision for the city's long-term physical form and development, while preserving and enhancing the quality of life for Stockton's residents. The key components of this project will include broad community goals for the future of Stockton and specific policies and actions that will help meet the goals.

Probable Environmental Impacts of the Project

The program-level EIR will evaluate the range of environmental impacts that could result from adoption and implementation of the proposed 2040 General Plan Update and UMPS. Below is a list of environmental topics that will be examined in the proposed 2040 General Plan Update and UMPS.

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Service Systems

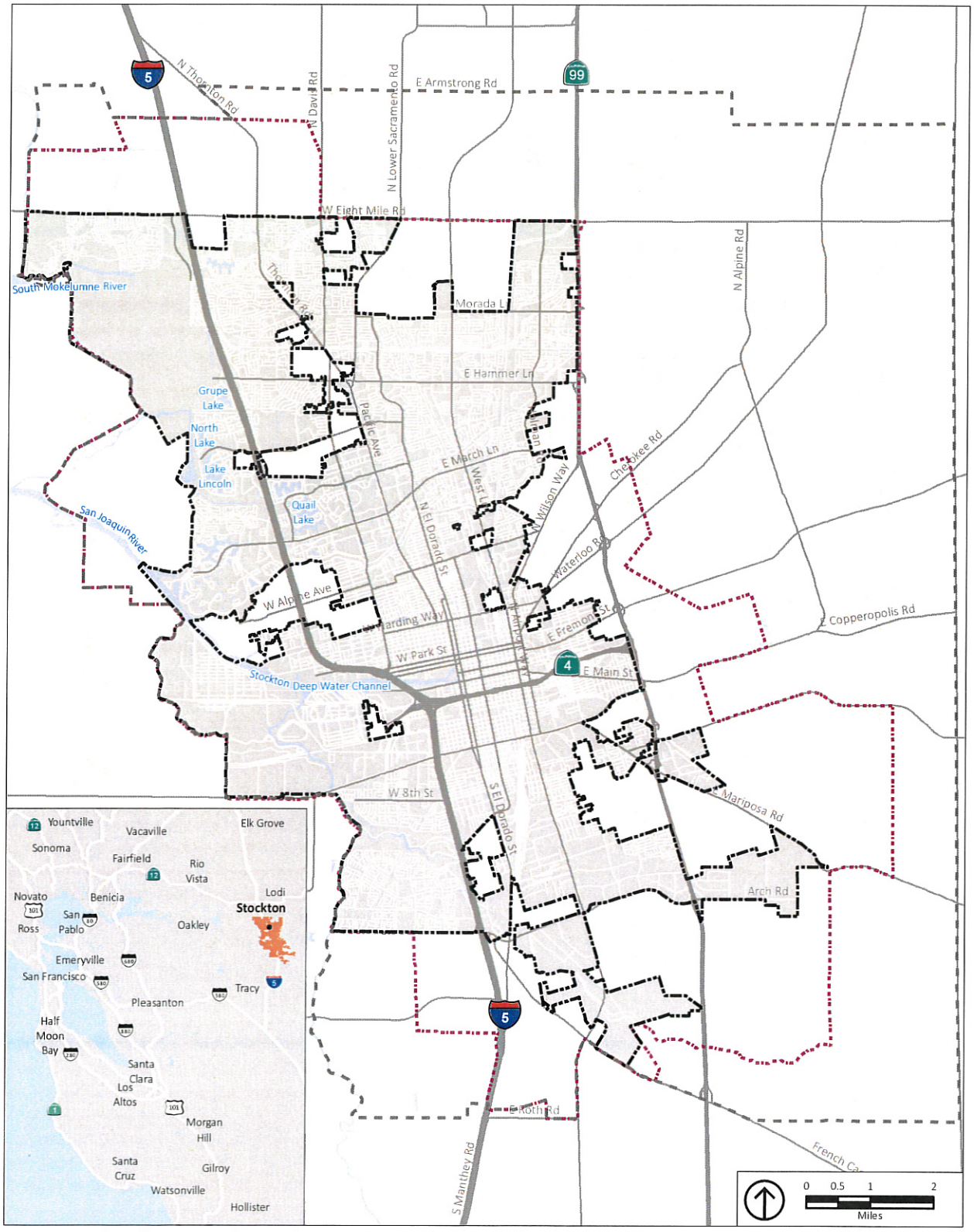
Attachments:

Figure 1: Regional and Vicinity Map
Figure 2: Proposed Urban to Open Space Land Use Changes

Date: 8-30-17

Signature: _____

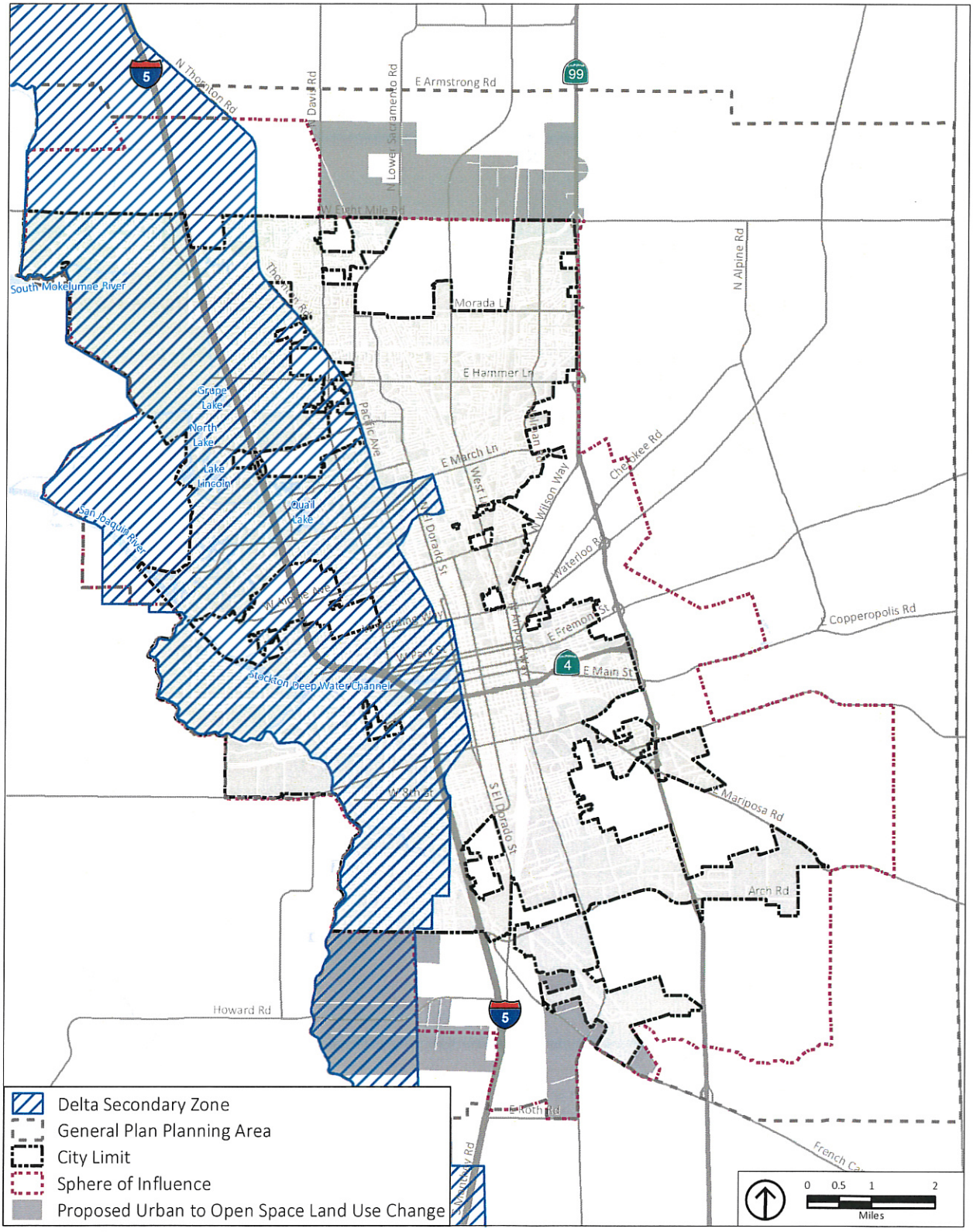
Title: Planning Manager



Source: City of Stockton, 2016; Placeworks, 2017.

City Limit
Sphere of Influence
General Plan Planning Area

Figure 1
Regional and Vicinity Map



Source: City of Stockton, 2016; Placeworks, 2017.

Figure 2
Proposed Urban to Open Space Land Use Changes

Montezuma Fire District

In San Joaquin County
Station 18-1, 2405 S. "B" St., Stockton, CA 95206
Station 18-2, Stockton Metro Airport

Administration
Business Phone:
(209) 464-5234
Fax (209) 466-2624

Board of Directors:

Linda A. Todd, *Chair Person*
Sue Heaton, *Director*
Jeff Hachman, *Director*

Edward Martel
Fire Chief
& Clerk to the Board

To: City of Stockton – David Stagnaro. Planning Manager
Community Development Department
425 North El Dorado St.
Stockton, Ca. 95202

September 5th, 2017

From: Fire District Administration

Re: Notice of Preparation for Draft EIR, Stockton 2040 General Plan update.

Dear Mr. Stagnaro

First of all, once again the district appreciates the opportunity to comment on such important subject. The sole purpose of this letter is in regards to the impact the EIR 2040/General Plan update may cause to the district. I would like state that when annexations occurs the impact to the district is great.
By the following means of public safety;

1.) Ability to provided service
2.) Financial impact to the district
3.) Duplication of service

The district requests you consider such when updating this plan.

Thank you,

Edward O. Martel – Fire Chief

C; MFD File
LAFCo – Mr. Glaser
Board of Directors
Supervisor Villapudua
Supervisor Miller

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

September 19, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202

Project: Recirculated Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements

District CEQA Reference No: 20170996

Dear Mr. Stagnaro:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above consisting of the recirculation of a Notice of Preparation (NOP) for the Draft Environmental Impact Report (Draft EIR) for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements, for the purpose of refining the proposed land use map, specifically Figure 2 from the previous NOP, which changes areas currently designated "Village" for urban uses, to "Open Space/Agricultural." The District has previously commented on this Draft EIR and has no additional comments at this time.

District staff is available to meet with you and/or the applicant to further discuss the regulatory requirements that are associated with this project. If you have any questions or require further information, please call Stephanie Pellegrini at (559) 230-5820.

Sincerely,

Arnaud Marjollet
Director of Permit Services

for Brian Clements
Program Manager

AM: sp

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

WATERLOO MORADA FIRE DISTRICT
6925 E Foppiano Lane
Stockton, CA 95212
(209) 931-3107

September 18, 2017

David Stagnaro
Planning Manager
City of Stockton
425 N El Dorado Street
Stockton, CA 95202

Mr. Stagnaro,

We are in receipt of the Recirculated Notice of Preparation Environmental Impact Report sent by your office to the Board of Directors. We have been made aware of the 30-day public review period commencing on September 29, 2017.

The Board of Directors currently have the following concerns related to this proposed Sphere of Influence (SOI) of the property served by the Waterloo Morada Fire District (WMFD)

Our annual budget is approximately $2.9 million dollars, 87% of those funds come from property taxes. As stated in the Waterloo Morada Rural County Fire Protection District Financial Statements and Independent Auditors' Report of June 2016, the District is in a negative fund balance of $320,583.00.

Our current staffing is at the 2003 levels of service. Any further reductions due to the District's deficit will cause us to only staff fire engines with one person. Due to annexations by the City of Stockton we have closed our Station 2, without the financial ability to replace it, causing delayed responses into that area. We are attempting to find creative ways of re-opening the much needed station and increase staffing.

- The area of land proposed for the SOI and subsequent annexations will cause a loss of property tax revenue to the fire district of thousands of dollars annually.

The proposed SOI and subsequent detachment from the Fire District will result in a substantial financial impact on the District and will impact the ability of the district to provide services to the remaining properties. This impact could result in an adverse physical impact on the environment in that the provision of fire services will be adversely impacted. The impact is also cumulatively considerably in light of other proposed projects. This impact must be mitigated or the report must indicate that the impact is significant and unavoidable.

WATERLOO MORADA FIRE DISTRICT
6925 E Foppiano Lane
Stockton, CA 95212
(209) 931-3107

We, as Board Members have the responsibility to provide the best level of fire and EMS services that we can with the revenues provided to us by our customers.

Respectfully,

Clay Titus
Board President

cc: SJC LAFCo

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works
Kris Balaji, Director of Public Works
Fritz Buchman, *Deputy Director/Development*
Michael Selling, *Deputy Director/Engineering*
Jim Stone, *Deputy Director/Operations*
Najee Zarif, *Interim Business Administrator*

September 28, 2017

David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, CA 95202

SUBJECT: RECIRCULATED NOTICE OF PREPARATION OF THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ENVISION STOCKTON 2040 GENERAL PLAN UPDATE AND UTILITY MASTER PLAN SUPPLEMENTS

Dear Mr. Stagnaro,

The San Joaquin County Department of Public Works has reviewed the Recirculated Notice of Preparation of the Draft Environmental Impact Report for the above referenced project and has no comments at this time. However, the County does request to be included on the circulation list for any additional project documents.

Thank you for the opportunity to review and comment. Should you have questions please contact me at aspitzer@sjgov.org or (209) 468-8494.

Sincerely,

AMY SPITZER
Associate Planner

AS:jl

c: Firoz Vohra, Senior Engineer

City Lathrop

Community Development Department
Planning Division

390 Towne Centre Drive– Lathrop, CA 95330
Phone (209) 941-7290 – Fax (209) 941-7268
www.ci.lathrop.ca.us

September 29, 2017

City of Stockton Community Development Dept.
Attn: David Stagnaro, Planning Manager
425 North El Dorado Street
Stockton, CA 95202

Re: Recirculated Notice of Preparation of the Draft EIR for the Envision Stockton 2040 General Plan Update

Mr. Stagnaro:

The City of Lathrop is in receipt of the recirculated Notice of Preparation (NOP) for the above referenced project and would like to submit the comments below for the record and your consideration.

1. Based on Figure 1 (Regional and Vicinity Map) included in the NOP, it appears that the Stockton General Plan Planning Area overlaps with the City of Lathrop's Area of Interest and Sphere of Influence boundaries. Please see attached Lathrop SOI Map for reference.
2. The City of Lathrop formally request to be notified and receive a copy of the Draft Environmental Impact Report when it becomes available.

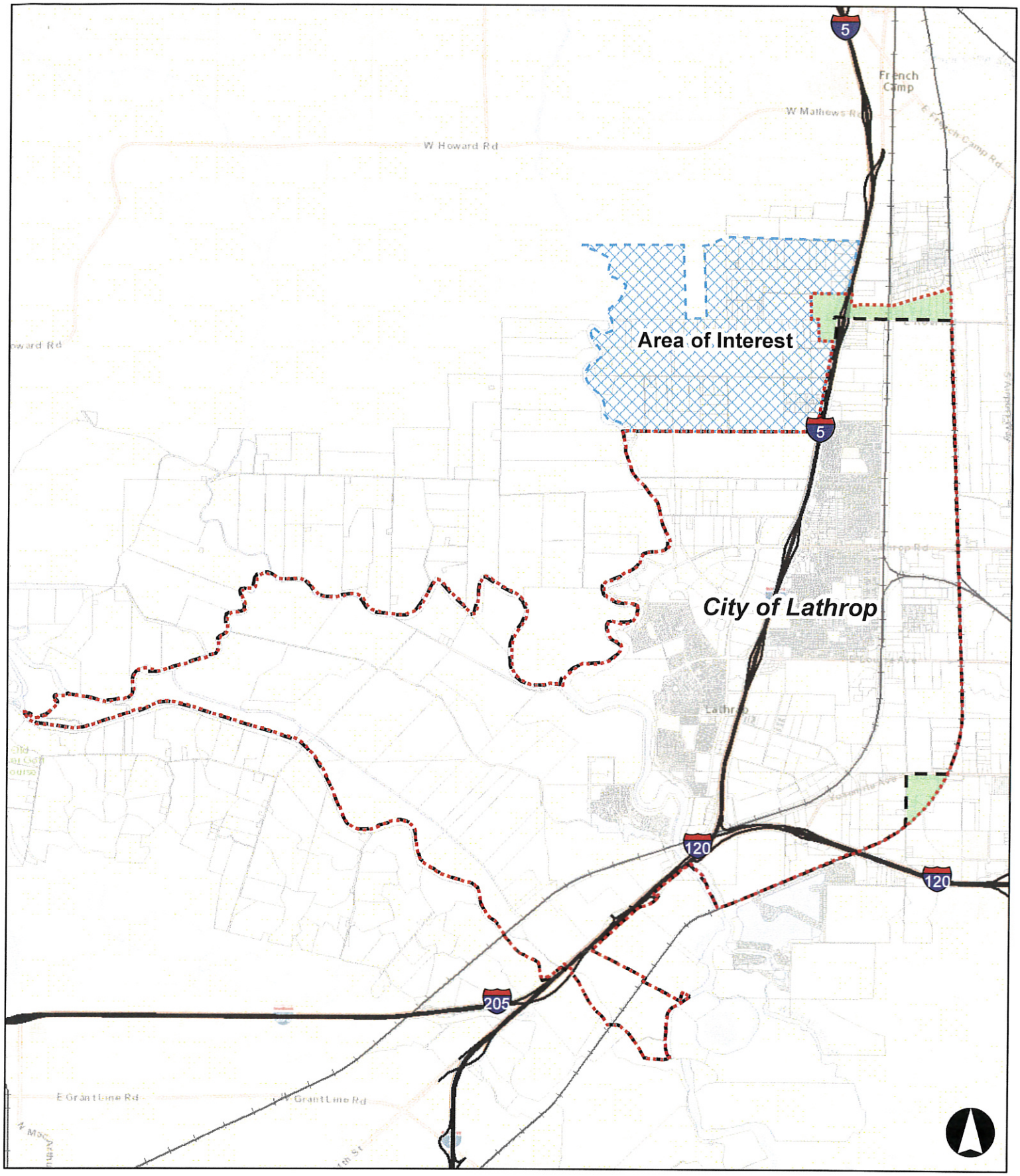
The City of Lathrop appreciates the opportunity to comment on the NOP. If you have any questions please call me at (209) 941-7290 or email at rschmidt@ci.lathrop.ca.us.

Sincerely,

RSchmidt

Rebecca Schmidt, AICP
Community Development Director

Encl: City of Lathrop SOI Map



Sphere of Influence and 10-Year Horizon

City of Lathrop

Sphere of Influence
Area Of Interest
City Limits
10-Year Horizon
Parcels

0 0.5 1 2 Miles

Disclaimer: Data shown may not be accurate and is for mapping purposes only. Contact the City for more information.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **EDMUND G. BROWN JR.**, GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682

October 6, 2017

Mr. David Stagnaro, Planning Manager
City of Stockton
Community Development Department
425 North El Dorado Street
Stockton, California 95202

Subject: Recirculated Notice of Preparation of the Draft Environmental Impact Report for the Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements prepared by City of Stockton

Dear Mr. Stagnaro,

The Central Valley Flood Protection Board (Board) staff received the Notice regarding the General Plan Update from the City of Stockton's Planning and Engineering Division.

Board staff would like to draw your attention to several bills enacted in 2007 by California Legislature to improve flood management in the Sacramento-San Joaquin Valley that the proposed General Plan update may be subject to.

California Government Code (CGC) Sections 65865.5, 65962 and 66474.5 place restrictions on development of property located within a flood hazard zone unless the city or county has made a finding related to an urban level of flood protection.

Additionally, CGC Section 65302.7 requires each city or county located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the California Water Code to submit the draft safety element of the General Plan to the Board at least 90 days prior to the adoption of the General Plan.

If you have any questions, please contact Mr. Ali Porbaha at (916) 574-2378, or via email at Mohammad.Porbaha@CVFlood.ca.gov.

Sincerely,

Michael C. Wright, PE
Chief, Plan Implementation and Compliance Branch

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

October 31, 2017

David Stagnaro
City of Stockton
425 N El Dorado Street
Stockton, CA 95202

RE: SCH#2017052062, Envision Stockton 2040 General Plan Update and Utility Master Plan, San Joaquin County

Dear Mr. Stagnaro:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.

b. The lead agency contact information.
c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources

Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

cc: State Clearinghouse

SCOPING MEETING SUMMARY

Envision Stockton 2040 General Plan Update
Environmental Impact Report
Scoping Meeting Summary
June 8, 2017

On June 8, 2017, the City of Stockton hosted a scoping meeting to receive comments from community members on issues the Environmental Impact Report (EIR) should address. The input received during the scoping meeting will aid in identifying key environmental issues that should be evaluated in the EIR. The meeting began with a presentation by City staff and consultants describing the overall progress on the General Plan Update, an overview of the environmental review process under the California Environmental Quality Act (CEQA), the EIR process, and next steps.

Participants offered input by providing verbal suggestions for issues that each of the environmental topics covered in the EIR should address. The input received at the scoping meeting is summarized below organized by topic area.

Air Quality and Greenhouse Gas Emissions

- Participants suggested the EIR provide specifics about potential issues with industrial land uses concentrated in low-income areas.
- The EIR should focus on multi-modal transportation options to reduce greenhouse gas emissions, provide an inventory of bicycle facilities, and require new development to provide additional bicycle facilities.
- New development should include tree varieties that can improve air quality.

Biological Resources

- Provide information on frequently observed wildlife, wildlife corridors, and the urban-wildlife interface.
- Include a sustainability plan to revitalize and maintain the urban forest.

Cultural Resources

- Provide information on recent archeological studies and Native American history.

Hazards and Hazardous Materials

- Identify hazardous materials sites and contaminated areas. Be mindful of open grates and potential for injury.
- Evaluate impacts of future brownfields due to future gas station closures.

Hydrology and Water Quality

- Identify groundwater recharge areas and provide opportunities for on-site drainage.
- Evaluate how proposed new land uses such as urban agriculture and cannabis cultivation will impact water quality.
- Evaluate impacts of sea level rise due to climate change with respect to potential land uses in the Delta area.

Land Use and Planning

- Evaluate impacts of new land uses that will allow liquor stores and cannabis cultivation.

Population and Housing

- Provide housing opportunities for all income levels.

Recreation

- Provide recreation opportunities for residents of all ages to build a strong sense of community.

Transportation and Circulation

- Evaluate infrastructure improvements such as sidewalks, bus pull-outs, general maintenance, and road crowning.
- Provide an inventory of drive-thru facilities in low-income areas.
- Provide multi-modal options to make it easier for all modes of travel.
- Provide options for improved public transportation systems.
- Incentivize electric charging stations throughout the city.

Other Non-CEQA issues

- Require that new development complies with the City's Design Guidelines in order to ensure its compatibility with neighborhood character.
- Re-evaluate the permit renewal process for types of industries that dominate a particular area.
- Provide re-development options for deteriorating shopping malls.

APPENDIX B:
CRITERIA AIR POLLUTANT AND GHG EMISSIONS WOKSHEETS

General Plan: Criteria Air Pollutant and GHG Emissions Worksheets

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CITY OF STOCKTON - CRITERIA AIR POLLUTANT INVENTORY

EXISTING BASELINE	2017 - lbs/day					
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Transportation	793	6,420	18,523	62	799	358
Energy - Residential (Natural Gas)	116	990	421	6	80	80
Energy - Nonresidential* (Natural Gas)	54	495	416	3	38	38
Energy sub-total	*170*	*1,485*	*837*	*9*	*118*	*118*
Area Sources (Landscaping, Light Commercial Equipment)	915	484	14,684	1.35	61	60
Area Source - Consumer Products	5,845	0	0	0	0	0
Other (Construction and Agricultural Equipment) **	323	2,316	2,319	4	106	105
Total	8,046	10,704	36,364	77	1,084	641

	2017 - tons/year					
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Transportation	138	1,114	3,214	11	139	62
Energy - Residential (Natural Gas)	21	181	77	1.15	15	15
Energy - Nonresidential* (Natural Gas)	10	90	76	0.54	7	7
Energy sub-total	*31*	*271*	*153*	*1.70*	*21*	*21*
Area Sources (Landscaping, Light Commercial Equipment)	167	88	2,680	0.25	11	11
Area Source - Consumer Products	1,067	0	0	0.00	0	0
Other (Construction and Agricultural Equipment) **	56	402	402	0.70	18	18
Total	1,458	1,875	6,449	13	190	113

EXISTING w/2040 EMISSION RATES	2040 Existing Land Uses - lbs/day					
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Transportation	249	1,186	5,195	38	725	294
Energy - Residential (Natural Gas)	116	990	421	6	80	80
Energy - Nonresidential* (Natural Gas)	54	495	416	3	38	38
Energy sub-total	170	1,485	837	9	118	118
Area Sources (Landscaping, Light Commercial Equipment)	915	484	14,684	1.35	61	60
Area Sources - Consumer Products	5,845	0	0	0	0	0
Other (Construction and Agricultural Equipment) **	323	2,316	2,319	4	106	105
Total	7,502	5,470	23,036	52	1,010	577
Net Change from Baseline (2017)	-544	-5,234	-13,328	-25	-74	-64
	2040 Existing Land Uses - tons/year					
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Transportation	43	206	901	7	126	51
Energy - Residential (Natural Gas)	21	181	77	1.15	15	15
Energy - Nonresidential* (Natural Gas)	10	90	76	0.54	7	7
Energy sub-total	31	271	153	1.70	21	21
Area Sources (Landscaping, Light Commercial Equipment)	167	88	2,680	0.25	11	11
Area Source (Construction and Agricultural Equipment) **	56	402	402	0.70	18	18
Area Source - Consumer Products	1,067	0	0	0.00	0	0
Total	1,364	967	4,136	9	177	102
Net Change from Baseline	-94	-908	-2,312	-4	-13	-11

CITY OF STOCKTON - CRITERIA AIR POLLUTANT INVENTORY

FORECAST YEAR 2040	2040 Land Uses - lbs/day						
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	
Transportation	386	2,136	7,804	57	1,081	438	
Energy - Residential (Natural Gas)	163	1,394	593	8.90	113	113	
Energy - Nonresidential* (Natural Gas)	97	880	739	5.28	67	67	
Energy sub-total	260	2,274	1,332	14.18	180	180	
Area Sources (Landscaping, Light Commercial Equipment)	1,345	787	22,472	2.12	98	97	
Area Source (Construction and Agricultural Equipment) **	317	2,277	2,257	3.97	104	103	
Area Sources - Consumer Products	9,062	0	0	0.00	0	0	
Total	11,370	7,474	33,865	77	1,462	818	
Net Change from Baseline (2040 Existing)	3,869	2,004	10,829	25	452	241	
	2040 Land Uses - tons/year						
SECTORS	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	
Transportation	67	371	1,354	10	188	76	
Energy - Residential (Natural Gas)	30	254	108	1.62	21	21	
Energy - Nonresidential* (Natural Gas)	18	161	135	0.96	12	12	
Energy sub-total	47	415	243	2.59	33	33	
Area Sources (Landscaping, Light Commercial Equipment)	246	144	4,101	0.39	18	18	
Area Source (Construction and Agricultural Equipment) **	55	395	392	0.69	18	18	
Area Source - Consumer Products	1,654	0	0	0.00	0	0	
Total	2,069	1,324	6,090	14	256	144	1,973
Net Change from Baseline	**705**	**358**	**1,953**	**4**	**79**	**43**	

Notes:

Transportation. EMFAC2014 and Fehr and Peers.

Emissions forecasts estimated based on changes in population (residential energy), employment (nonresidential energy), or service population (transportation)

Energy. Based on a three-year average (2014-2016) of natural gas data as provided by PG&E.

Area Sources. OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment) for City of Stockton as a percentage of San Joaquin County. Does not include emissions from wood-burning fireplaces.

Other Sources. OFFROAD2007. Agricultural equipment emissions are based the proportion of farmland within the City of Stockton compared to San Joaquin County. Construction emissions estimated based on housing permit data for San Joaquin County and City of Stockton from the US Census. **Excludes fugitive emissions from construction sites.

Excludes Permitted Sources: Because the reductions associated with the Industrial sector are regulated separately by SJVAPCD and are not under the jurisdiction of the City of Stockton, these emissions are not included in the emissions inventory.

CITY OF STOCKTON - COMMUNITY GHG EMISSIONS INVENTORY

	$MTCO_2e$			
SECTORS	**2017**	**Percent of Total**	**2040**	**Percent of Total**
Transportation	1,000,387	67%	919,262	57%
Residential (Natural Gas and Electricity)	165,012	11%	222,265	14%
Nonresidential* (Natural Gas and Electricity)	188,223	13%	318,993	20%
Solid Waste (Waste Commitment)	48,698	3%	72,380	4%
Water/Wastewater	19,767	1%	27,824	2%
Other - Offroad Equipment	72,107	5%	56,706	4%
Total Community Emissions	1,494,195	100%	1,617,431	100%
Service Population	401,800		597,200	
$MTCO_2e$/SP	3.72		2.71	
SJVAPCD GHG GP Threshold (PROGRAM LEVEL)	NA		2.61	

Notes: Based on IPCC's Fourth Assessment Report GWPs

Emissions forecast based on changes in population (residential energy), employment (nonresidential energy), or service population (City energy, waste, water/wastewater, transportation).

Transportation. EMFAC2014, and Fehr and Peers.

Energy. Energy use utilizes a three-year (2014-2016) average annual electricity and natural gas consumption average based on data provided by Pacific Gas and Electric (PG&E), respectively. Emissions from electricity utilizes an CO_2e intensity factor based on the PG&E CO_2 intensity factor reported for year 2015 identified in the Climate Registry and the CH_4 and N_2O intensity factors from the latest US EPA eGRID data. Electricity and natural gas use from industrial and permitted facilities may be included with the overall amounts for non-residential uses as the 15/15 Rule was triggered.

Water/Wastewater. Includes fugitive emissions from wastewater processing and energy associated with water/wastewater treatment and conveyance. Water use is estimated based on data provided by West Yost Associates, Consulting Engineers.

Waste. Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on three year average (2014-2016) waste commitment for the City of Stockton obtained from CalRecycle and adjusted to include solid waste from the SOI. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Consequently, the highest CH_4 emissions from waste disposal in a given year are reported and have been adjusted to utilize IPCC's Fourth Assessment global warming potential assigned for CH_4.

Other Sources. OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment)for the City of Stockton as a percentage of San Joaquin County. Excludes SJVAPCD permitted sources. Agricultural equipment emissions are based on the proportion of farmland within the City of Stockton compared to San Joaquin Valley. Construction is estimated based on housing permit data for the City of Stockton and County of San Joaquin. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Industrial Sector are "point" sources that are permitted by SJVAPCD and are not under the jurisdiction of the City of Stockton; and therefore, not included in the City of Stockton's community GHG emissions inventory.

CITY OF STOCKTON - GHG EMISSIONS INVENTORY COMPARISON

Substantial Increase

	Change from 2017 $MTCO_2e$	
SECTORS	**2040 Buildout**	**Percent Change from 2017**
Transportation	(81,125)	-8%
Residential (Natural Gas and Electricity)	57,252	35%
Nonresidential* (Natural Gas and Electricity)	130,770	69%
Waste	23,682	49%
Water/Wastewater	8,057	41%
Other - Offroad Equipment	(15,400)	-21%
Total Community Emissions	123,236	8.2%

Model Inputs

	Baseline Year 2017			Proposed GP 2040
	City	SOI	Total	Total
Households	85,429	14,871	100,300	141,200
Non-Residential Square Footage[1]	82,559,618		82,559,618	131,993,588
Population	273,066	47,534	320,600	452,800
Employment	72,236	8,964	81,200	144,400
Service Population	**345,302**	**56,498**	**401,800**	**597,200**

Notes:

[1] Based on the City of Stockton's land use database, which tracks ground floor area. The ground floor area was multiplied by the number of floors on each parcel to estimate total square footage of the use.

Growth Rates from Baseline	SOI + City	2040
Housing Growth Rate	1.00	1.41
Population Growth Rate	1.00	1.41
Employment Growth Rate	1.00	1.78
Service Population Growth Rate	1.00	1.49

	City+SOI	Proposed GP 2040
ELECTRICITY	2017	2040
Residential Electricity (kWh)	778,713,107	1,096,254,144
Nonresidential Electricity (kWh)	966,165,243	1,718,155,925
Total Electricity (kWh)	1,744,878,350	2,814,410,070
NATURAL GAS	2017	2040
Residential Natural Gas (Therms)	39,214,397	55,205,113
Nonresidential Natural Gas (Therms)	18,424,993	32,765,627
Total Natural Gas (Therms)	57,639,390	87,970,741
TRANSPORTATION	2017	2040
VMT/Day	6,582,189	9,699,344
WATER	2017	2040
Water (AF/year)	54,476	74,285
Water (gallons/year)	17,750,953,385	24,205,975,465
WASTEWATER	2015	2035
Wastewater (AF/year)	41,591	66,850
Indoor Water as a Percent of Total Water Use	76%	90%
Wastewater (gallons/year)	13,552,450,000	21,783,200,000
SOLID WASTE	2017	2040
Waste Generation (tons/year)	334,117	496,602
Waste Generation ADC (tons/year)	4,313	6,411
Total Waste Disposal (tons/year)	338,430	503,012

Sources:

Electricity and nantural gas data provided by Pacific Gas & Electric based on 3-year average (2014-2016). Forecasts in energy are based on the change in households.

VMT provided by Fehr and Peers and adjusted for Population and Employment. Adjusted daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Total water demand and wastewater generation based on rates provided by West Yost Associates, Consulting Engineers. Year 2040 forecast is adjusted for increases in population and employment.

Waste generation based on waste commitment for the City of Stockton is obtained from CalRecycle. Forecasts are based on an average 2014-2016 disposal rate and adjusted for increases in population and employment for the City and SOI.

GHG Emissions Target Setting - Forecasting the 2040 Efficiency Target

2020 Scoping Plan Emissions Inventory

Source: CARB 1990 Inventory. California Air Resources Board. 2007, November. California Greenhouse Gas Inventory (millions of metric tonnes of CO2 equivalent) — Summary by Economic Sector.

1990 End Use Sector	MTCOe2	Notes
Electricity	96,100,000	Removed Industrial
Transportation	137,990,000	On-Road Only
Landfills	6,260,000	Landfill Extracted from Industrial
Wastewater	3,170,000	Wastewater Treatment Extracted from Industrial
Commercial	13,860,000	Removed National Security
Residential	29,660,000	Includes all
TOTAL LAND USE	**287,040,000**	

2030 Scoping Plan Emissions Inventory

Source: Pathways Main Outputs Final (Jan 2017). California Air Resources Board. 2017, January 20. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

End Use Sector 2030	MMTCO2e				
	Reference Scenario	Scoping Plan Scenario	Change	Percent Change	Sector Definition
Residential	47.6	38.4	-9.2	-19.3%	Residential final energy consumption
Commercial	37.2	26.8	-10.4	-27.8%	Commercial final energy consumption
Transportation	123.1	104.1	-19	-15.5%	Transportation energy consumption
Industrial*	32.2	27.7	-4.5	-14.0%	Industrial manufacturing final energy consumption,
Oil & Gas Extraction*	11.6	11.2	-0.4	-3.4%	Energy used in the extraction of oil and gas
Petroleum Refining*	42.8	36.8	-5.9	-13.9%	Energy used in petroleum Refining
Agriculture	7.9	6	-1.9	-24.1%	Energy use of physical infrastructure of agriculture, like buildings and pumps
Transportation Communications and Utilities	5.7	4.3	-1.4	-23.8%	Transportation Communications and Utilities (TCU) energy supports public infrastructure, like street lighting and waste treatment facilities
Non-Energy GHGs*	84.3	49.4	-34.9	-41.40%	Examples of non-energy GHG emissions include methane and N2O emissions from agriculture and waste, refrigerant F-gases, and emissions from cement production
Solid Waste Non-Energy GHGs	10.73	9.17	-1.56	-14.54%	Isolated the Solid Waste Subsector
Unspecified	0	0	0	n/a	
	392.4	304.8	-87.6	-22.30%	
GAP* Cap-and-Trade (Industrial Sectors)	-132.4	-44.8			
*Cap-and-Trade & new 20% Industrial Measure to Cover GAP					

GHG Emissions Target Setting - Forecasting the 2040 Efficiency Target

STATEWIDE SERVICE POPULATION CALCULATIONS

Population	
2020	40,619,346
2030	44,085,600
2035	45,747,645
2040	47,233,240
2050	49,779,362

California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments). http://www.dof.ca.gov/Forecasting/Demographics/Projections/

CALIFORNIA SERVICE POPULATION (ESTIMATE)

Employment

	Total Employment	Farm Employment	Natural Resources and Mining Employment	Manufacturing Employment	Employment w/o Industrial and Agricultural Sectors
2020	17,511,810	417,750	25,690	1330860	15,737,510
2030	19,210,760	420,010	25,790	1370380	17,394,580
2035	20,027,660	421,330	25,980	1388630	18,191,720
2040	20,848,900	422,660	26,180	1407190	18,992,870
2050	22,595,640	425,320	26,590	1445270	20,698,460

California Department of Transportation. 2016. Long-Term Socio-Economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

Service Population (SP)

	Total Employment	Employment w/o Industrial and Agricultural Sectors
2020	58,131,156	56,356,856
2030	63,296,360	61,480,180
2035	65,775,305	63,939,365
2040	68,082,140	66,226,110
2050	72,375,002	70,477,822

Project Horizon Year Estimate	2040
2040 population	47,233,240
2040 employment (w/o industrial & Ag)	18,992,870
2040 GP	66,226,110

GHG Emissions Target Setting - Forecasting the 2040 Efficiency Target

2030 Scoping Plan - Efficiency Metric

Year 2020 Plan-Level			
2020 Target (Plan-Level)	MMTCO2e	431	
2020 Per Capita Target	MTCO2e/pc	10.6	
2020 Per Service Population Target (Plan-Level)	MTCO2e/sp	7.6	
Year 2020 Project-Level			
2020 Target (Project-Level)	MMTCO2e	287.0	
2020 Per Capita Target	MTCO2e/pc	7.1	
2020 Per Service Population Target (Project-Level)	MTCO2e/sp	5.1	
Year 2030 Plan-Level			
2030 Target (Plan-Level)	MMTCO2e	260	
2030 Per Capita Target	MTCO2e/pc	5.9	
2030 Per Service Population Target (Plan-Level)	MTCO2e/sp	4.2	
Year 2030 Project-Level			
Land Use Inventory (Project-Level)	MMTCO2e	182.8	
2030 Per Capita Target	MTCO2e/pc	4.1	
2030 Per Service Population Target (Project-Level)	MTCO2e/sp	3.0	
Year 2050 Plan-Level			
2050 Target estimated (Plan-Level)	MMTCO2e	86	
2050 Per Capita Target	MTCO2e/pc	1.7	
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	1.2	
Year 2050 Project-Level			
2050 Target estimated (Plan-Level)	MMTCO2e	57	
2050 Per Capita Target	MTCO2e/pc	1.2	
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	0.8	
Project Horizon Year Estimate	2040		
Land Use Inventory (Plan-Level)	MMTCO2e	173.1	-40%
2040 Per Service Population Target (Project-Level)	MTCO2e/sp	2.61	

General Plan: Criteria Air Pollutant and GHG Emissions Energy

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Electricity and Natural Gas Use Consumption for City of Stockton

Pacific Gas & Electric Electricity Use

	Annual KWH			
	2014	2015	2016	Average 2014-2016 Annual KWH
Residential	676,774,134	661,984,908	651,009,151	663,256,064
Commercial + Industrial + Agricultural	866,998,507	861,195,679	850,323,060	859,505,749
	1,543,772,641	1,523,180,587	1,501,332,211	1,522,761,813

Pacific Gas & Electric Natural Gas Use

	Annual Therms			
	2014	2015	2016	Average 2014-2016 Annual Therms
Residential	32,497,221	33,894,372	33,809,058	33,400,217
Commercial + Industrial	16,569,139	16,232,021	16,371,755	16,390,972
	49,066,360	50,126,393	50,180,813	49,791,189

Sphere of Influence (SOI) and Planning Area Outside City and SOI

Area	Population	Employment
City fo Stockton	273,066	72,236
SOI	47,534	8,964

*Electricity**

Residential Annual KWH/Resident:	2,429	kWH/resident
Non-Residential Annual KWH/Employee:	11,899	kWH/employee

** Annual use divided by residents/employees within the City of Stockton boundaries.*

Area	Residential Annual kWH	Commercial + Industrial Annual kWH
SOI	115,457,042	106,659,495

*Natural Gas**

Residential Annual Therms/Resident:	122	kWH/resident
Non-Residential Annual Therms/Employee:	227	kWH/employee

** Annual use divided by residents/employees within the City of Stockton boundaries.*

Area	Residential Annual Therms	Commercial + Industrial Annual Therms
SOI	5,814,180	2,034,021

Disclaimer. The 15/15 Rule is intended to protect customer confidentiality by reducing the possibility of identifying customers through the release of usage information. Pacific Gas & Electric apply the 15/15 Rule in releasing aggregated customer information. The rule was initially implemented by the California Public Utilities Commission during Direct Access proceedings in 1997 and was adopted through D. 97-10-031. The 15/15 rule requires that any aggregated information provided by the Utilities must be made up of at least 15 customers, and a customer's load must be less than 15% of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15% of the total data, categories (e.g., rate classes) must be combined before the information is released. The rule further requires that if the 15/15 rule is triggered for a second time after the data has been screened once already using the 15/15 rule, then the customer is dropped from the information provided.

Energy

Natural Gas Emission Factors

Natural Gas	Intensity factor			CO_2e
	$MTCO_2$/Therm	CH_4 MT/Therm	N_2O MT/Therm	MT/Therm
All Years	0.00053	5.E-07	1.E-08	**0.00055**

Source: CO_2 intensity based on PG&E Natural Gas Emissions Factor (11.70 lbs/therm). CH_4 and N_2O intensity based on Table G.3 of the LGOP for residential and non-residential (CH_4: 0.005 kg/MMBtu; N_2O: 0.0001 kg/MMBtu)

PG&E

	WCI -WECC Region Intensity factor			CO_2e
	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
2015	0.183483	0.000015	0.000002	0.184

[1] Based on PG&E CO_2 intensity factor of 404.51 lbs/MWh for Year 2015 as reported to the Climate Registry. The Climate Registry. 2017, March 15. The 2017 Default Emission Factors.

[2] United State Environmental Protection Agency. 2017, February 27. eGRID2014v2 Annual Output Emission Rates, WECC California Region. https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_ghgoutputrates_v2.pdf (CH_4 = 33.1 lbs/GWH & N_2O = 4.0 lbs/GWH)

ABAU Carbon Intensity for PG&E Energy

	2015	2020	CO_2e
Assumed Percent Renewable[1]	29.5%	33%	MTons/MWh
CO_2e MTons/Mwh without Renewable	0.2615584		0.175

[1] Based on year 2015 RPS for PG&E. California Public Utilities Commission. 2017. California Renewables Portfolio Standard (RPS). http://www.cpuc.ca.gov/rps/. Accessed August 18, 2017.

GHG Emissions from Energy Use

	2017	Proposed Project 2040	Proposed Project 2040 ABAU
Electricity			**$MTCO_2e$/Year**
Residential Electricity	143,594	202,148	192,112
Commercial + Industrial	178,160	316,826	301,097
Total	321,753	518,973	493,209

	2017	Proposed Project 2040	Proposed Project 2040 ABAU
Natural Gas			
Residential Electricity	21,419	30,153	30,153
Commercial + Industrial	10,064	17,896	17,896
Total	31,482	48,049	48,049

Summary	2017	Proposed Project 2040	Proposed Project 2040 ABAU
Residential Total	165,012	232,300	222,265
Commercial Total	188,223	334,722	318,993
Total	353,235	567,022	541,258

General Conversion Factors

lbs to kg	0.4536
kg to MTons	0.001
Mmbtu to Therm	0.1
Therms to kwh	29.30711111
kilowatt hrs to megawatt hrs	0.001
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

	Global Warming Potentials (GWP)
CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

Criteria Air Pollutants from Natural Gas

Rate	lbs/MBTU					
Natural Gas	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	0.01078431	0.09215686	0.03921569	0.00058824	0.00745098	0.00745098
Non-Residential	0.01078431	0.09803922	0.08235294	0.00058824	0.00745098	0.00745098
Source: CalEEMod Version 2016.3.1						

Natural Gas	2017 lbs/day					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	116	990	421	6	80	80
Nonresidential	54	495	416	3	38	38
Total	170	1485	837	9	118	118

Natural Gas	Project 2040 lbs/day					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	163	1394	593	9	113	113
Nonresidential	97	880	739	5	67	67
Total	260	2274	1332	14	180	180
Increase from Baseline	90	789	495	5	62	62

General Conversion Factors	
Mmbtu to Therm	0.1
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

General Plan: Criteria Air Pollutant and GHG Emissions Water/Wastewater

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Water and Wastewater

Water Demand/Wastewater Generation Calculations

Source: West Yost Associates, Consulting Engineers. 2017.

Year	Water Demand (acre-feet/year)	Water Demand (gallons/year)
	Total	Total
2017	54,475.60	17,750,953,385
2040	74,285.31	24,205,975,465

Year	Wastewater Generation (acre-feet/year)	Wastewater Generation (gallons/year)
	Total	Total
2017	41,590.89	13,552,450,000
2035	66,850.10	21,783,200,000

Wastewater, Percent of total Water Use: 76%

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

CH_4 - Microorganisms can biodegrade soluble organic material in wastewater under aerobic (presence of oxygen) or anaerobic (absence of oxygen) conditions. Anaerobic conditions result in the production of CH_4.

N_2O - Treatment of domestic wastewater during both nitrification and denitrification of the nitrogen present leads to the formation of N_2O, usually in the form of urea, ammonia, and proteins. These compounds are converted to nitrate through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into dinitrogen. N_2O can be an intermediate product of both processes, but more often is associated with denitrification.

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification for combustion of biogas.

Anaerobic digesters produce methane-rich biogas which is typically combusted on-site. In some cases the biogas is combusted simply for the purpose of converting methane to CO_2, which has a lower global warming potential than methane. In many cases, a cogeneration system is used to harvest the heat from combustion and use it to generate electricity for on-site energy needs. In both cases, inherent inefficiencies in the system result in incomplete combustion of the biogas, which results in remaining methane emissions. Excludes biogenic emissions from combustion of biogas.

LGOP Version 1.1. Equation 10.1.

CH_4 = Wastewater x Digester Gas x FCH_4 x $Þ_{CH4}$ x (1-DE) x 0.0283 x 10^-3 x 10^-3

	CEQA Baseline	Proposed Project	2020 AB32 Target	Current GP
wastewater (gallons)=	13,552,450,000	21,783,200,000	0	0

Digester gas	0.01	ft^3 biogas/gallon wastewater
FCH_4	0.65	fraction of CH4 in biogas
$Þ_{CH4}$	662.00	g/m^3; density of CH_4 at standard conditions
DE	0.99	CH4 destruction efficiency
0.0283 =	0.0283	m^3/ft^3; conversion factor
10^-3 =	1.00E-03	MT/kg conversion factor
10^-3 =	1.00E-03	kg/g conversion factor

	CEQA Baseline	Proposed Project	2020 AB32 Target	Current GP
	MTons		MTons	
CH_4 =	16.50	26.53	0.00	0.00
CO_2e =	413	663	0	0

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the digester gas, which is assumed to be 0.1 cubic feet of biogas per gallon of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2016. California Emissions Estimator Model (CalEEMod), Version 2016.3.1. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Buildout Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification from discharge into aquatic environments

LGOP Version 1.1. Equation 10.9.

N_2O = Wastewater x 10^-6 x Nload x 44/28 x EF effluent x 10^3

	2017	2040	2020	Current GP
wastewater (Liters)=	51,296,023,250	82,449,412,000	0	0

10^-6 =	1.00E-06	conversion factor; kg/mg
N Load	26.00	mg/L of wastewater
44/28	1.57	Ratio of molecular weights for N_2O and N_2
EF effluent	0.005	kg/N_2O/kg N
10^-3 =	1.00E-03	conversion factor: MTons/kg

	2017	2040	2020	Current GP
	MTons		MTons	
N_2O	10.48	16.84	0	0.00
CO_2e =	3,123	5,019	0	0

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the Nitrogen Load, which is assumed to be 26 mg of N per Liter of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2016. California Emissions Estimator Model (CalEEMod), Version 2016.3.1. Appendix A. USEPA 2013. California Statewide average. USEPA Database at http://cfpub.epa.gov/dmr/ez_search.cfm.

Total Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

	2017	2040		
CO_2e =	3,535	5,682	0	0

Wastewater Modeling assumes 0% septic treatment for years 2017 and 2035.

Water and Wastewater

Energy for Water Conveyance, Treatment, Distribution, and Wastewater Treatment (Northern California)

Water Supply and Conveyance	Water Treatment	Water Distribution	Total Water	Wastewater Treatment (Tertiary)
	kWhr/million gallons			
2,117	111	1,272	3,500	1,911

Source: California Energy Commission (CEC). 2006, December. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.

PG&E

	WCI -WECC Region Intensity factor			CO_2e
	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
2015	0.183483	0.000015	0.000002	0.184

[1] Based on PG&E CO_2 intensity factor of 404.51 lbs/MWh for Year 2015 as reported to the Climate Registry. The Climate Registry. 2017, March 15. The 2017 Default Emission Factors.

[2] United State Environmental Protection Agency. 2017, February 27. eGRID2014v2 Annual Output Emission Rates, WECC California Region. https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_ghgoutputrates_v2.pdf (CH_4 = 33.1 lbs/GWH & N_2O = 4.0 lbs/GWH)

ABAU Carbon Intensity for PG&E Energy

	2015	2020	CO_2e
Assumed Percent Renewable[1]	29.5%	33%	MTons/MWh
CO_2e MTons/Mwh without Renewable	0.2615584		0.175

[1] Based on year 2015 RPS for PG&E. California Public Utilities Commission. 2017. California Renewables Portfolio Standard (RPS). http://www.cpuc.ca.gov/rps/. Accessed August 18, 2017.

GHG Emissions from Energy Associated with Water/Wastewater

	2017	2040
Energy Associated with Water Use	**MwH/Year**	
Water	62,128	84,721
Wastewater	25,899	41,628
Total Water/Wastewater	88,027	126,349

Wastewater Modeling assumes 0% septic treatment for years 2017 and 2040.

GHG Emissions from Energy Associated with Water Use/Wastewater Generation	2017	2040
	$MTCO_2e$/Year	
Water	11,456	14,847
Wastewater	4,776	7,295
Total Water/Wastewater	16,232	22,142

Total GHGs

	2017	2040
GHG Emissions from Water/Wastewater Use	**$MTCO_2e$/Year**	
Water	11,456	14,847
Wastewater	8,311	12,977
Total Water/Wastewater	19,767	27,824

General Conversion Factors

lbs to kg	0.4536
kg to MTons	0.001
Mmbtu to Therm	0.1
Therms to kwh	29.30711111
kilowatt hrs to megawatt hrs	0.001
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

General Conversion Factors

	Global Warming Potentials (GWP)
CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

gallons to Liters	3.785
killowatt hrs to megawatt hrs	0.001
gallons to AF	325851.4290

General Plan: Criteria Air Pollutant and GHG Emissions Solid Waste

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Solid Waste Disposal

Source: CalRecycle Disposal By Facility - City of Stockton (Disposal Reporting System)

Waste Generated Within City Limits

Year	Interstate Tons + Transform Tons	ADC+AIC	Total
2014	265,852	1,139	266,992
2015	283,064	1,771	284,835
2016	312,491	8,209	320,700
2016 (Average 2014-2016)	287,136	3,707	290,842
Disposal Rate / SP	0.832	0.011	0.842
Adjusted 2017 (City+SOI)	**334,117**	**4,313**	**338,430**
Year 2040 Buildout	**496,602**	**6,411**	**503,012**
Increase from 2017	162,485	2,097	164,582

Average 3-year disposal used to forecast waste disposal in 2040

Source: CalRecycle, 2016, Disposal Reporting System, Jurisdiction Reporting by Facility, http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx

Landfill Emission Tool (version 1.3) Model Results using the Methane Commitment Method (~50 years of decomposition)

	MT CH_4 in CO_2e	$MTCO_2e$ w/LFG Capture		$MTCO_2e$ w/LFG Capture	
Year	2017 Disposal	2017 Disposal	2017 Disposal (AR4 GWPs)*	2040 Disposal	2040 Disposal (AR4 GWPs)*
1	2,890	722	860	1,074	1,278
2	5,704	1,426	1,697	2,119	2,523
3	5,591	1,398	1,664	2,077	2,473
4	5,480	1,370	1,631	2,036	2,424
5	5,371	1,343	1,599	1,996	2,376
6	5,265	1,316	1,567	1,956	2,329
7	5,161	1,290	1,536	1,918	2,283
8	5,059	1,265	1,506	1,880	2,238
9	4,958	1,240	1,476	1,842	2,193
10	4,860	1,215	1,446	1,806	2,150
11	4,764	1,191	1,418	1,770	2,107
12	4,670	1,167	1,390	1,735	2,066
13	4,577	1,144	1,362	1,701	2,025
14	4,456	1,114	1,326	1,656	1,971
15	4,354	1,089	1,296	1,618	1,926
16	4,252	1,063	1,265	1,580	1,881
17	4,149	1,037	1,235	1,542	1,836
18	4,047	1,012	1,204	1,504	1,790
19	3,945	986	1,174	1,466	1,745
20	3,842	961	1,144	1,428	1,700
21	3,740	935	1,113	1,390	1,654
22	3,638	909	1,083	1,352	1,609
23	3,535	884	1,052	1,314	1,564
24	3,433	858	1,022	1,276	1,519
25	3,331	833	991	1,238	1,473
26	3,228	807	961	1,200	1,428
27	3,126	782	930	1,162	1,383
28	3,024	756	900	1,124	1,338
29	2,921	730	869	1,086	1,292
30	2,819	705	839	1,048	1,247
31	2,717	679	809	1,009	1,202
32	2,614	654	778	971	1,157
33	2,512	628	748	933	1,111
34	2,410	602	717	895	1,066
35	2,307	577	687	857	1,021
36	2,205	551	656	819	975
37	2,103	526	626	781	930
38	2,000	500	595	743	885
39	1,898	475	565	705	840
40	1,796	449	534	667	794
41	1,693	423	504	629	749
42	1,591	398	474	591	704
43	1,489	372	443	553	659
44	1,386	347	413	515	613
45	1,284	321	382	477	568
46	1,182	295	352	439	523
47	1,079	270	321	401	477
48	977	244	291	363	432
49	875	219	260	325	387
50	772	193	230	287	342
51	670	168	199	249	296
52	568	142	169	211	251
53	465	116	139	173	206
54	363	91	108	135	161
55	261	65	78	97	115
56	158	40	47	59	70
57	56	14	17	21	25
TOTAL	**163,625**	**40,906**	**48,698**	**60,799**	**72,380**

*Landfill Emissions Tool Version 1.3 is based on the IPCC Second Assessment Report global warming potential. The numbers in this column are the CO_2e emissions from CH_4 based on IPCC's Fourth Assessment GWPs.

Conversion

SAR GWP CH4:*	21
AR4 GWP CH4:**	25

*Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.

**Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

Waste. Landfill Emissions Tool Version 1.3 and CalRecycle. Biogenic CO_2 emissions are not included.
Notes

LFG capture Efficiency 0.75

Waste generation based on three year average (2014-2016) waste commitment for the City of Stockton obtained from CalRecycle. This sector captures only the waste that is generated by the City of Stockton residents in the inventory year. This sector does not include historically generated waste disposal.

This method assumes that the degradable organic component (degradable organic carbon, DOC) in waste decays slowly throughout a few decades, during which CH_4 and biogenic CO_2 are formed. If conditions are constant, the rate of CH_4 production depends solely on the amount of carbon remaining in the waste. As a result emissions of CH_4 from waste deposited in a disposal site are highest in the first few years after deposition, then gradually decline as the degradable carbon in the waste is consumed by the bacteria responsible for the decay. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer.

Decomposition based on an average annual rainfall of 13.76 inches per year average in Stockton (anaerobic decomposition factor (k) of 0.020) (Western Regional Climate Center. 2017. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8558).

The Landfill Gas Estimator only includes the landfill gas (LFG) capture in the landfill gas heat output and therefore the reduction and emissions from landfill gas capture are calculated separately. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.
Biogenic CO_2 emissions are not included.

California Air Resources Board's Implementation of IPCC's Mathematically Exact First-Order Decay Model

Release date: November 14, 2011

This tool is designed to estimate greenhouse gas emissions from a landfill in support of the Local Government Operations Protocol.

Please follow these steps to estimate emissions:

1) Read the ***Methodology*** page to become familiar with the equations and the assumptions underlying the calculations.

2) Enter the landfill specific data on the ***Landfill Model Inputs*** page. **This is the only page where data needs to be added or modified.**

Data Type	Field or Column Name	Description
Landfill Specific Data	k Value	Decay factor (see ***Methodology*** page).
	State/Country	State or country where the landfill is located. Will determine the waste characterization data used.
Waste Deposit Data	Year	Year of the data entry values.
	Waste Deposited (Tons)	Amount of waste deposited in that year.
	Waste Deposited (% ANDOC)	Percent of the waste that is degradable, based on waste characterization data.
	Greenwaste & Compost - Daily Cover (Tons)	Amount of daily cover materials of the given type used in that year.
	Greenwaste & Compost - Daily Cover (% ANDOC)	Percent of the daily cover that is degradable, based on waste characterization data.
	Sludge - Daily Cover (Tons)	Amount of daily cover materials of the given type used in that year.
	Sludge - Daily Cover (% ANDOC)	Percent of the daily cover that is degradable, based on waste characterization data.
Note: Required data fields on the **Landfill Model Inputs** page are highlighted in rose		

The rose colored field names indicate which fields require data entry, all others have defaults that will be used in the calculations.

3) If you wish to overwrite the default % ANDOC value with your own value, you can use the calculator on the ***Landfill Specific ANDOC Values*** page (the last page in this tool) and then type your calculated landfill specific value over the default ANDOC% value.

4) Estimates of the emissions reflecting the current inputs are listed on the ***Landfill Emissions Output*** page and estimates of captured gas heat are available on the ***Landfill Gas Heat Output*** page.

Data Input: Lanfill Characteristics

Landfill Name: Temple City Landfill
State/Country: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
Click for lists of k values
k Value: 0.020
M Value:

Data Input: Waste Deposit History

Year	Waste			Daily Cover			
	Waste Deposited			Greenwaste & Compost		Sludge	
	Tons	% ANDOC		Tons	% ANDOC	Tons	% ANDOC
1900							
1901							
1902							
1903							
1904							
1905							
1906							
1907							
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1951							

Data Input: Lanfill Characteristics

Landfill Name: Temple City Landfill
State/Country: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
Click for lists of k values
k Value: 0.020
M Value:

Data Input: Waste Deposit History

	Waste			Daily Cover			
	Waste Deposited			Greenwaste & Compost		Sludge	
Year	Tons	% ANDOC		Tons	% ANDOC	Tons	% ANDOC
1952							
1953							
1954							
1955							
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2001							
2002							
2003							

Data Input: Lanfill Characteristics

Landfill Name:	Temple City Landfill	**Year Opened:**		Click for lists of k values	
State/Country:	CA	**If Closed, Year:**		**k Value:**	0.020
City/County:	San Joaquin County			**M Value:**	

Data Input: Waste Deposit History

	Waste			Daily Cover			
	Waste Deposited			Greenwaste & Compost		Sludge	
Year	Tons	% ANDOC		Tons	% ANDOC	Tons	% ANDOC
2004							
2005							
2006							
2007							
2008	334,117	7.52%		4,313	6.24%		
2009							
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							

Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Methane and Carbon Dioxide Emissions (metric tonnes of CO_2 equivalent)

Year	CH_4	CO_2
1900		
1901		
1902		
1903		
1904		
1905		
1906		
1907		
1908		
1909		
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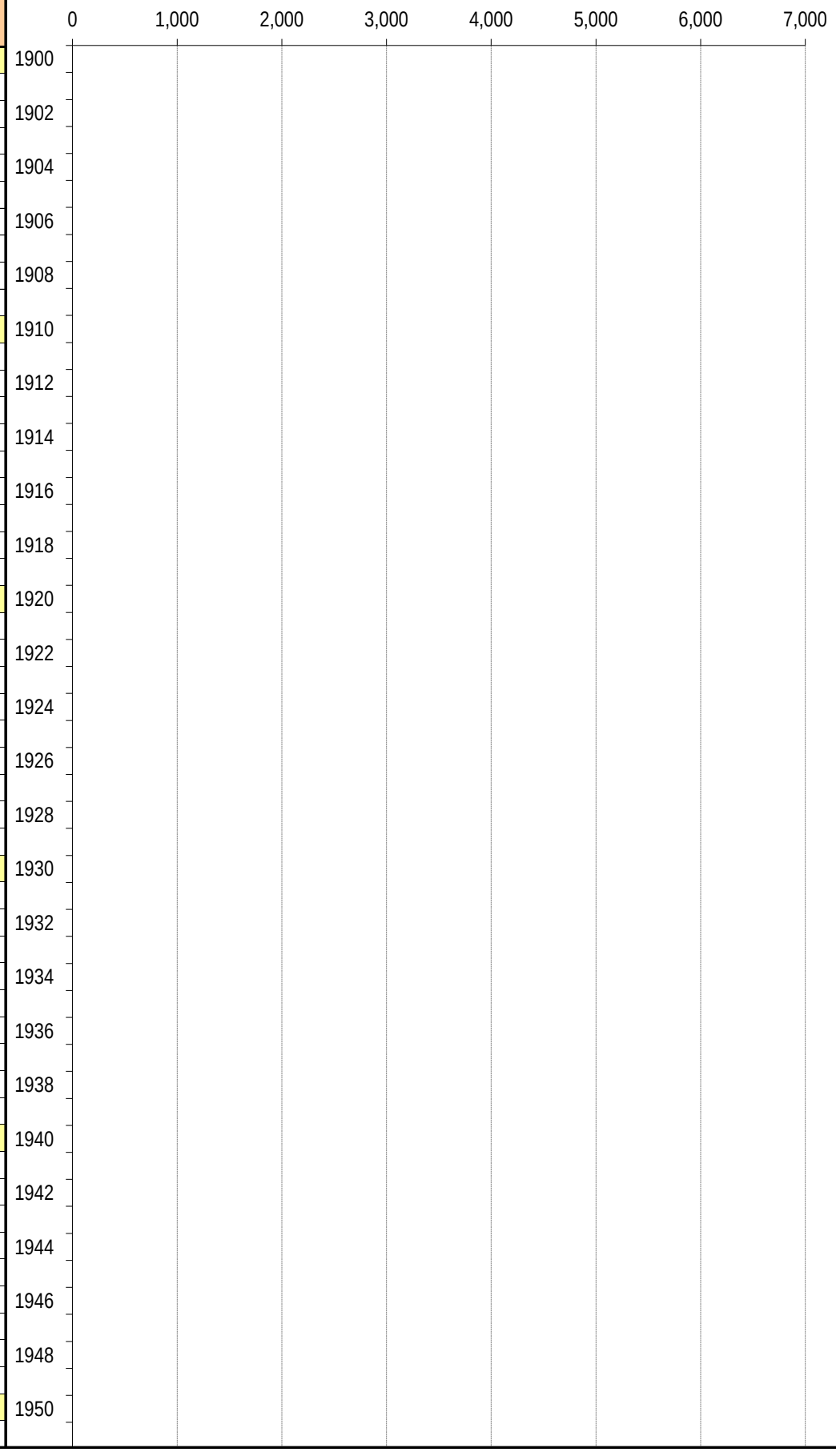

Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Methane and Carbon Dioxide Emissions (metric tonnes of CO_2 equivalent)

Year	CH_4	CO_2
1952		
1953		
1954		
1955		
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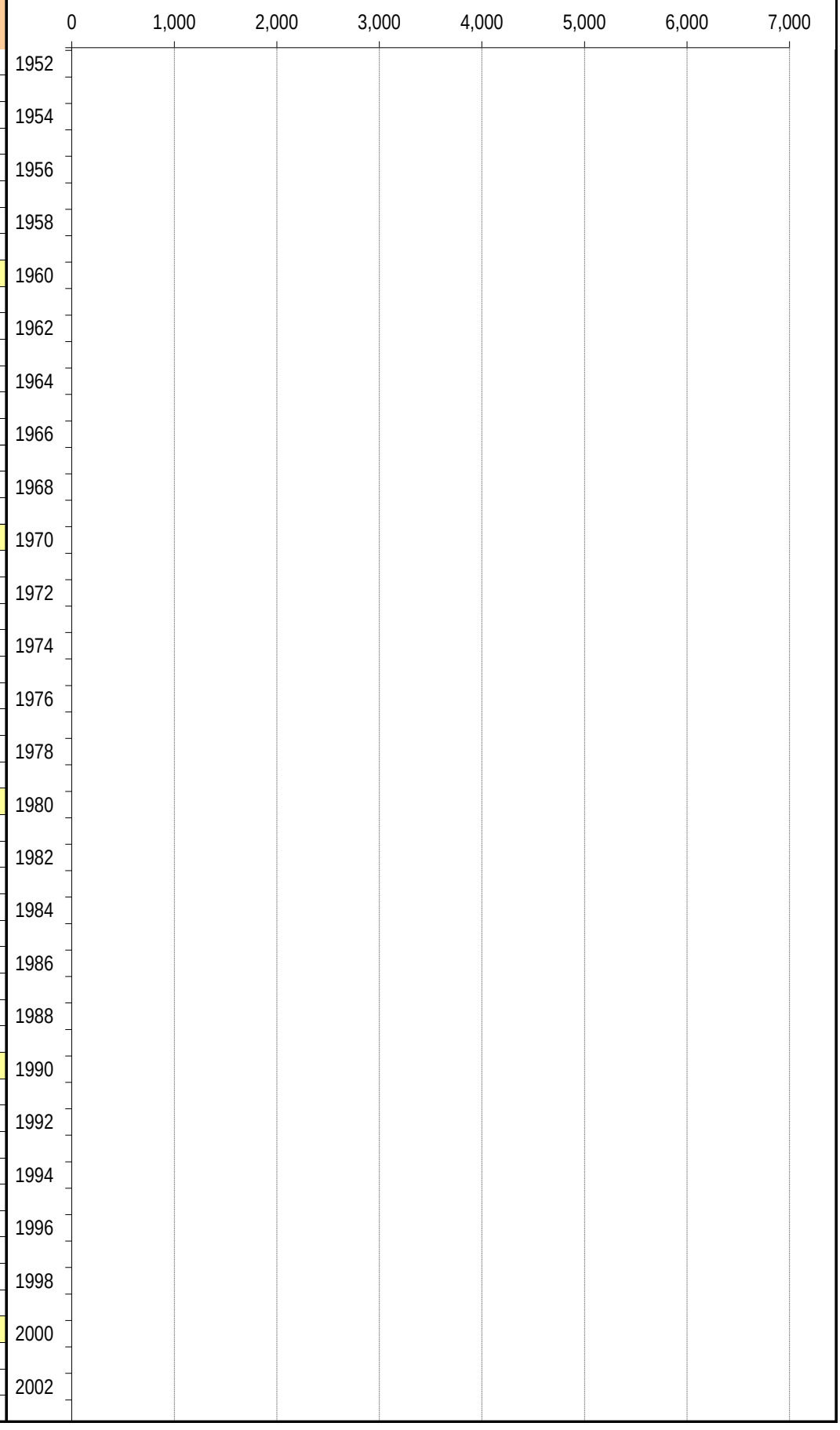
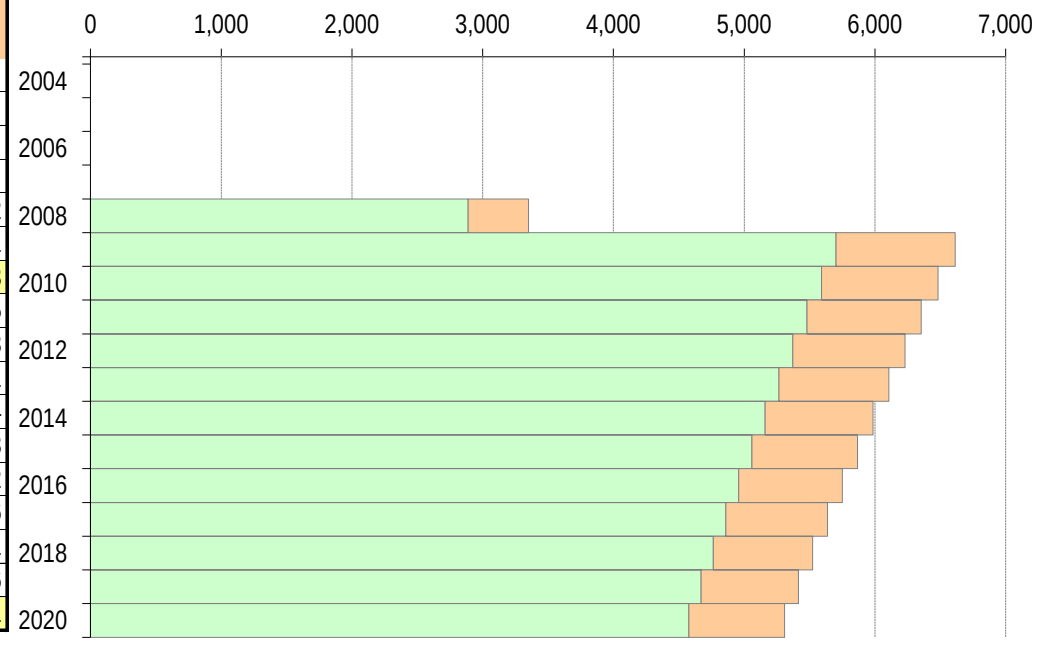


Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Methane and Carbon Dioxide Emissions (metric tonnes of CO_2 equivalent)

Year	CH_4	CO_2
2004		
2005		
2006		
2007		
2008	2,890	462
2009	5,704	911
2010	5,591	893
2011	5,480	875
2012	5,371	858
2013	5,265	841
2014	5,161	824
2015	5,059	808
2016	4,958	792
2017	4,860	776
2018	4,764	761
2019	4,670	746
2020	4,577	731



Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Landfill Gas Captured and Captured Gas Heat (graph values in MMbtu/hr)

Year	Landfill Gas Captured (scf/min)	Captured Gas Heat (MMbtu/hr)
1900		
1901		
1902		
1903		
1904		
1905		
1906		
1907		
1908		
1909		
1910		
1911		
1912		
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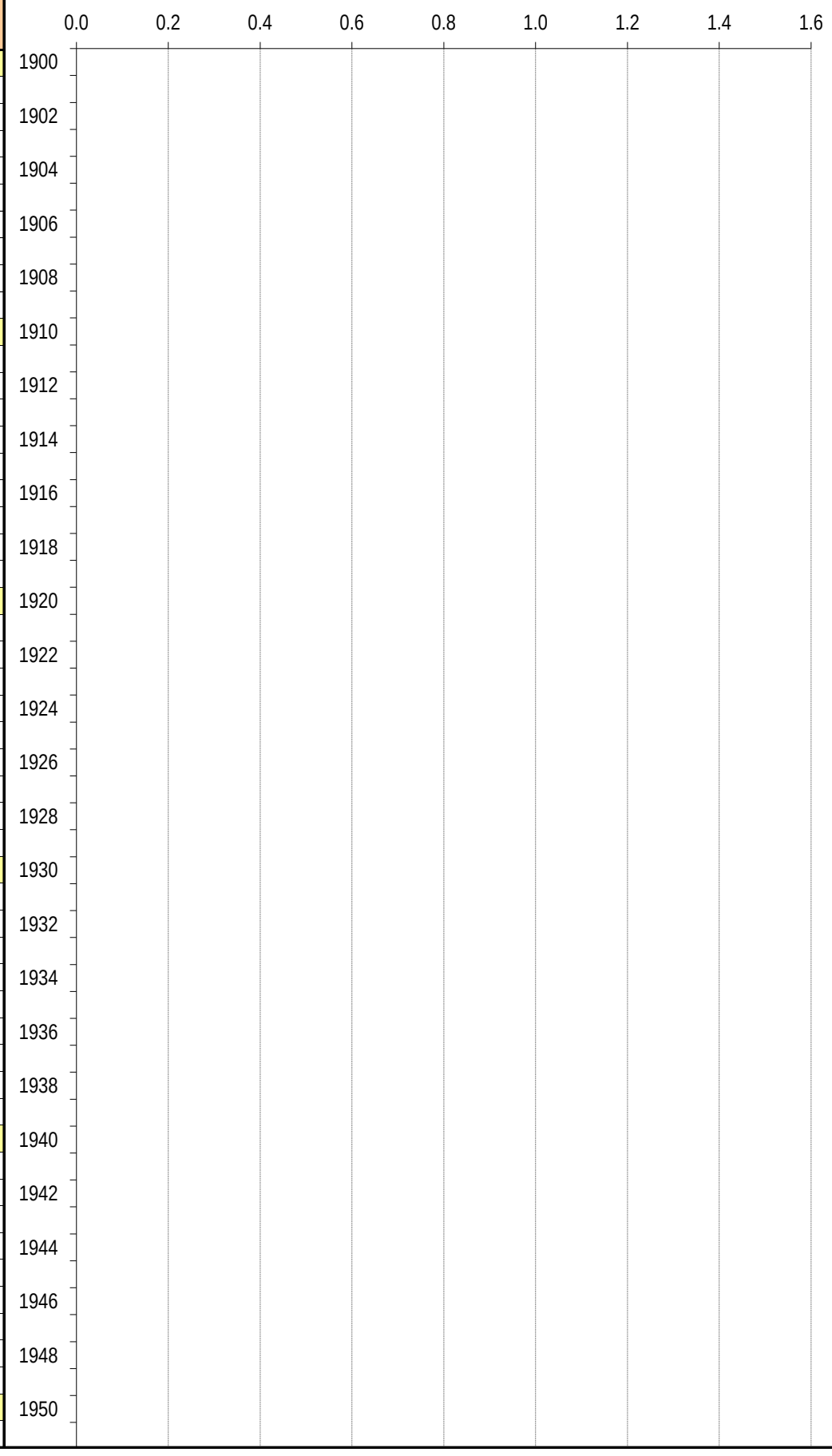

Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Landfill Gas Captured and Captured Gas Heat (graph values in MMbtu/hr)

Year	Landfill Gas Captured (scf/min)	Captured Gas Heat (MMbtu/hr)
1952		
1953		
1954		
1955		
1956		
1957		
1958		
1959		
1960		
1961		
1962		
1963		
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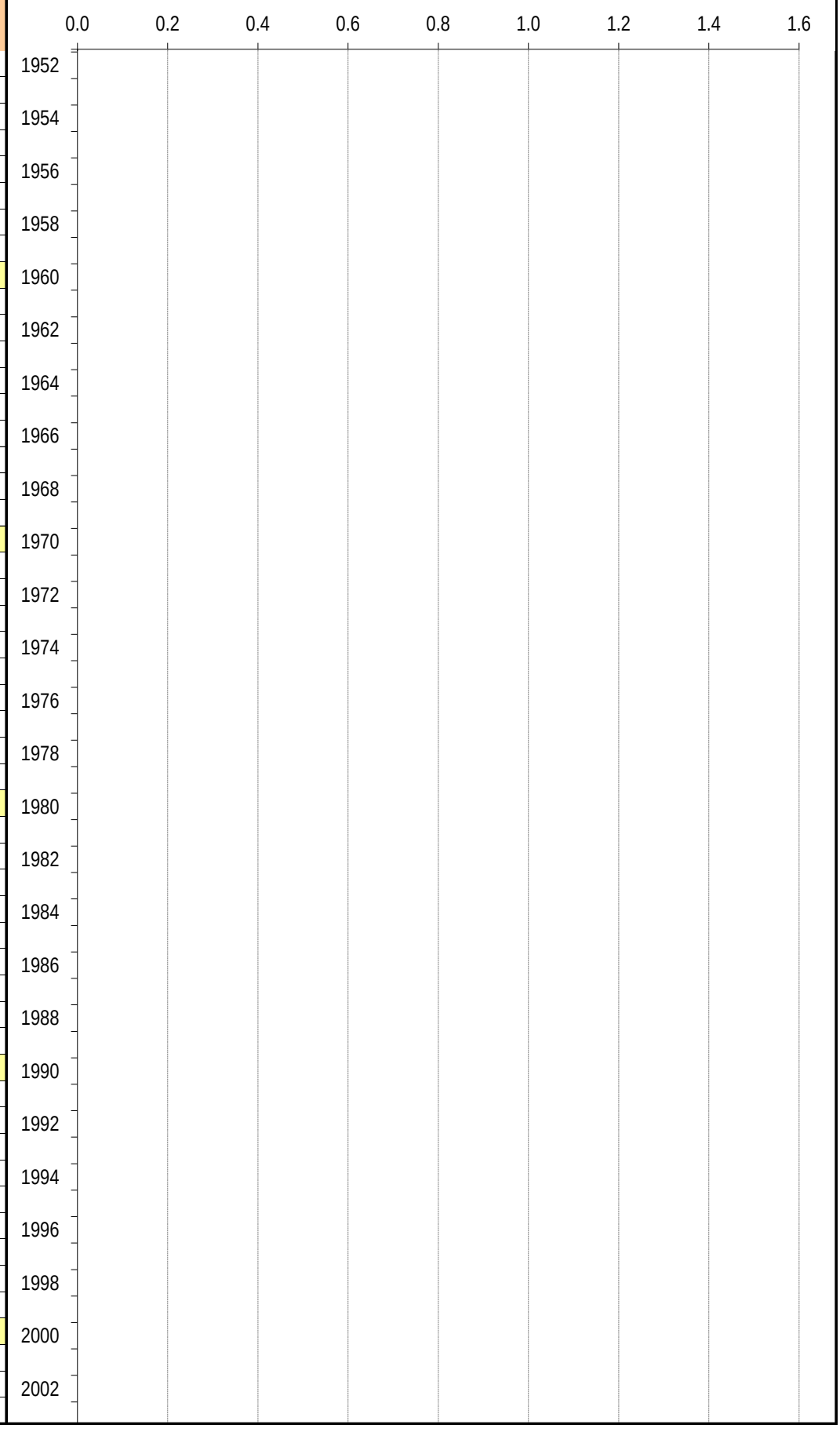
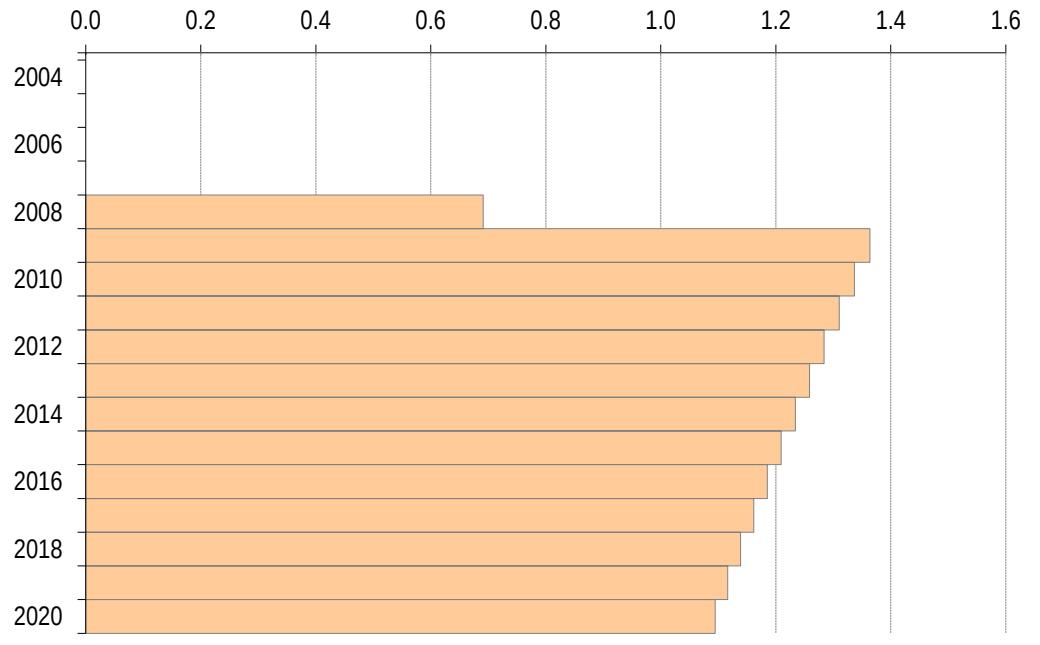


Model Output: Lanfill Characteristics

Landfill Name: Temple City La
State: CA
City/County: San Joaquin County
Year Opened:
If Closed, Year:
k Value: 0.020
M Value: 6

Model Output: Landfill Gas Captured and Captured Gas Heat (graph values in MMbtu/hr)

Year	Landfill Gas Captured (scf/min)	Captured Gas Heat (MMbtu/hr)
2004		
2005		
2006		
2007		
2008	23	0.7
2009	45	1.4
2010	44	1.3
2011	43	1.3
2012	42	1.3
2013	41	1.3
2014	41	1.2
2015	40	1.2
2016	39	1.2
2017	38	1.2
2018	38	1.1
2019	37	1.1
2020	36	1.1



Landfill Methane Emissions Estimation Methodology

The calculations made by this tool are based on:

1) The following equations from IPCC's Mathematically Exact First-Order Decay Model, see section 3A1.6.3 of the 2006 IPCC Guidelines available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/5_Volume5/V5_3_Ch3_SWDS.pdf

ANDOC% = Σ $WIPFRAC_i$ x $TDOC_i$ x $DANF_i$	
ANDOC%	Percent of the waste that is degradable
$WIPFRAC_i$	Fraction of the ith component in the Waste-in-Place (WIP)
$TDOC_i$	Total Degradable Organic Carbon fraction of the ith waste component (Mg of that component/Mg of Total WIP)
$DANF_i$	Decomposable Anaerobic Fraction of the ith waste component. That is, the fraction capable of decomposition in anaerobic conditions (Mg of decomposable carbon for that component/Mg TDOCi for that component)

ANDOC = WIP (Tons) x 0.9072 (Mg/Ton) x **ANDOC%**	
ANDOC	Anaerobically Degradable Organic Carbon, carbon that is capable of decomposition in an anaerobic environment (Mg of carbon)
WIP	Waste-in-Place estimate of all the landfilled waste (wet weight) as reported to the CIWMB (Tons)

$$\mathbf{ANDOC_{year\text{-}end}} = \mathbf{ANDOC_{year\text{-}start}} \times e^{-[k]} + \mathbf{ANDOC_{deposited\text{-}last\ year}} \times [1/k \times (e^{-[k \times (1-M/12)]} - e^{-[k]}) - (M/12) \times e^{-[k]}] + \mathbf{ANDOC_{deposited\text{-}same\ year}} \times [(1/k) \times (1-e^{-[k \times (1-M/12)]}) + (M/12)]$$

$ANDOC_{year\text{-}end}$	ANDOC remaining undecomposed at the end of the inventory year in question
$ANDOC_{year\text{-}start}$	ANDOC in place at the beginning of the inventory year in question
$ANDOC_{deposited\text{-}last\ year}$	ANDOC deposited during the previous inventory year
$ANDOC_{deposited\text{-}same\ year}$	ANDOC deposited during the inventory year in question
M	Assumed delay before newly deposited waste begins to undergo anaerobic decomposition (Months, Default=6)
k	Assumed rate constant for anaerobic decomposition; k = ln2/half-life (years); half-life is the number of years required for half of the original mass of carbon to degrade

$$\mathbf{CH_4\ Generation} = \{\mathbf{ANDOC_{year\text{-}start}} \times [1-e^{-[k]}] - \mathbf{ANDOC_{deposited\text{-}last\ year}} \times [1/k \times (e^{-[k \times (1-M/12)]} - e^{-[k]}) - (M/12) \times e^{-[k]}] + \mathbf{ANDOC_{deposited\text{-}same\ year}} \times [1-((1/k) \times (1-e^{-[k \times (1-M/12)]}) + (M/12))]\} \times \mathbf{FCH_4} \times 16/12$$

CH_4 *Generation*	CH_4 generated in the inventory year in question (Mg of CH_4)
FCH_4	Fraction of decomposing carbon converted into CH_4 (Default = 0.5)

CH_4 Emitted = CH_4 Generation x (1-**OX**)	
CH_4 *Emitted*	CH_4 emitted to the atmosphere in the inventory year in question (Mg of CH_4)
OX	Fraction of escaping CH_4 that is oxidized to CO_2 in the cover soil (Default = 0.1)

2) Using an iterative approach (where the $ANDOC_{year\text{-}start}$ for the next inventory year equals the the $ANDOC_{year\text{-}end}$ of the previous inventory year), starting with the landfill's opening year and working through each subsequent years to arrive at the year for which an estimate is desired.

3) Choosing the rate of anaerobic decomposition (k). For the US and Mexico, select one of the following k values from EPA depending on the local average rainfall:

Average Rainfall (Inches/Year)		
<20	**20-40**	**>40**
k = 0.02	k = 0.038	k = 0.057

Where to input k values

For Canada, select the k value that corresponds to the province/territory :

Province/Territories	k
Alberta	0.012
British Columbia	0.082
Manitoba	0.019
New Brunswick	0.062
Newfoundland & Labrador	0.078
Nova Scotia	0.077
Northwest Territories	0.005
Nunavut	0.005
Ontario	0.045
Prince Edward Island	0.060
Quebec	0.056
Sakatchewan	0.010
Yukon	0.001

4) Using IPCC default value for the percent of methane oxidized while passing through the landfill to atmosphere:

Percent oxidation: 10%

Note: *Items 5 & 6 below only pertain when using this tool to assist in compliance with the Early Action Landfill Rule, and only affect the results shown in the Landfill Gas Heat Output page.*

5) Using EPA default value for the percent of methane captured by a landfill gas collection system:

Percent collection: 75%

6) Using EPA value for heat content of methane:

Methane heat content: 1,012 btu/scf

Percent of Anaerobically Degradable Carbon (ANDOC%): Default Values Used for California

For documentation on these values, see the ARB's Local Government Operations Protocol, available online at:
http://www.arb.ca.gov/cc/protocols/localgov/pubs/pubs.htm

Table 1: EPA 1960 Waste Characterization Study (Applies for waste deposited up to 1964)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	6.40%	47.09%	15.05%	0.45%
Office Paper	10.70%	38.54%	87.03%	3.59%
Corrugated Boxes	10.80%	44.84%	44.25%	2.14%
Coated Paper	2.20%	33.03%	24.31%	0.18%
Food	14.80%	14.83%	86.52%	1.90%
Grass	12.10%	13.30%	47.36%	0.76%
Leaves	6.05%	29.13%	7.30%	0.13%
Branches	6.05%	44.24%	23.14%	0.62%
Lumber	3.70%	43.00%	23.26%	0.37%
Textiles	2.10%	24.00%	50.00%	0.25%
Diapers	0.05%	24.00%	50.00%	0.01%
Construction/Demolition	2.60%	4.00%	50.00%	0.05%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.45%**

Table 2: EPA 1970 Waste Characterization Study (Applies for waste deposited from 1965 to 1974)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	6.40%	47.09%	15.05%	0.45%
Office Paper	11.30%	38.54%	87.03%	3.79%
Corrugated Boxes	13.50%	44.84%	44.25%	2.68%
Coated Paper	2.00%	33.03%	24.31%	0.16%
Food	11.30%	14.83%	86.52%	1.45%
Grass	10.25%	13.30%	47.36%	0.65%
Leaves	5.13%	29.13%	7.30%	0.11%
Branches	5.13%	44.24%	23.14%	0.52%
Lumber	3.30%	43.00%	23.26%	0.33%
Textiles	1.80%	24.00%	50.00%	0.22%
Diapers	0.30%	24.00%	50.00%	0.04%
Construction/Demolition	2.50%	4.00%	50.00%	0.05%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.44%**

Table 3: EPA 1980 Waste Characterization Study (Applies for waste deposited from 1975 to 1984)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	5.90%	47.09%	15.05%	0.42%
Office Paper	12.00%	38.54%	87.03%	4.02%
Corrugated Boxes	11.50%	44.84%	44.25%	2.28%
Coated Paper	2.40%	33.03%	24.31%	0.19%
Food	9.50%	14.83%	86.52%	1.22%
Grass	10.05%	13.30%	47.36%	0.63%
Leaves	5.03%	29.13%	7.30%	0.11%
Branches	5.03%	44.24%	23.14%	0.51%
Lumber	5.10%	43.00%	23.26%	0.51%
Textiles	1.70%	24.00%	50.00%	0.20%
Diapers	1.40%	24.00%	50.00%	0.17%
Construction/Demolition	3.50%	4.00%	50.00%	0.07%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.34%**

Table 4: EPA 1990 Waste Characterization Study (Applies for waste deposited from 1985 to 1992)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	4.80%	47.09%	15.05%	0.34%
Office Paper	13.10%	38.54%	87.03%	4.39%
Corrugated Boxes	10.50%	44.84%	44.25%	2.08%
Coated Paper	2.10%	33.03%	24.31%	0.17%
Food	12.10%	14.83%	86.52%	1.55%
Grass	8.95%	13.30%	47.36%	0.56%
Leaves	4.48%	29.13%	7.30%	0.10%
Branches	4.48%	44.24%	23.14%	0.46%
Lumber	7.00%	43.00%	23.26%	0.70%
Textiles	3.30%	24.00%	50.00%	0.40%
Diapers	1.60%	24.00%	50.00%	0.19%
Construction/Demolition	3.90%	4.00%	50.00%	0.08%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.02%**

Table 5: EPA 1995 Waste Characterization Study (Applies for waste deposited from 1993 to 1995)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	3.90%	47.09%	15.05%	0.28%
Office Paper	15.00%	38.54%	87.03%	5.03%
Corrugated Boxes	10.30%	44.84%	44.25%	2.04%
Coated Paper	1.80%	33.03%	24.31%	0.14%
Food	13.40%	14.83%	86.52%	1.72%
Grass	6.55%	13.30%	47.36%	0.41%
Leaves	3.28%	29.13%	7.30%	0.07%
Branches	3.28%	44.24%	23.14%	0.34%
Lumber	7.30%	43.00%	23.26%	0.73%
Textiles	4.50%	24.00%	50.00%	0.54%
Diapers	1.90%	24.00%	50.00%	0.23%
Construction/Demolition	4.50%	4.00%	50.00%	0.09%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.62%**

Table 6: CIWMB 1999 Waste Characterization Study (Applies for waste deposited from 1996 to 2002)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	4.28%	47.09%	15.05%	0.30%
Office Paper	4.44%	38.54%	87.03%	1.49%
Corrugated Boxes	4.59%	44.84%	44.25%	0.91%
Coated Paper	16.92%	33.03%	24.31%	1.36%
Food	15.72%	14.83%	86.52%	2.02%
Grass	5.27%	13.30%	47.36%	0.33%
Leaves	2.63%	29.13%	7.30%	0.06%
Branches	2.37%	44.24%	23.14%	0.24%
Lumber	4.91%	43.00%	23.26%	0.49%
Textiles	2.11%	24.00%	50.00%	0.25%
Diapers	6.91%	24.00%	50.00%	0.83%
Construction/Demolition	6.65%	4.00%	50.00%	0.13%
Medical Waste	0.02%	15.00%	50.00%	0.00%
Sludge/Manure	0.14%	5.00%	50.00%	0.00%
MSW Total				**8.42%**

Table 7: CIWMB 2004 Waste Characterization Study (Applies for waste deposited from 2003 to 2006)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	2.20%	47.09%	15.05%	0.16%
Office Paper	1.95%	38.54%	87.03%	0.65%
Corrugated Boxes	5.75%	44.84%	44.25%	1.14%
Coated Paper	11.09%	33.03%	24.31%	0.89%
Food	14.55%	14.83%	86.52%	1.87%
Grass	2.81%	13.30%	47.36%	0.18%
Leaves	1.41%	29.13%	7.30%	0.03%
Branches	2.59%	44.24%	23.14%	0.26%
Lumber	9.65%	43.00%	23.26%	0.96%
Textiles	4.44%	24.00%	50.00%	0.53%

Diapers	4.36%	24.00%	50.00%	0.52%
Construction/Demolition	12.06%	4.00%	50.00%	0.24%
Medical Waste	0.04%	15.00%	50.00%	0.00%
Sludge/Manure	0.09%	5.00%	50.00%	0.00%
MSW Total				**7.45%**

Table 8: CIWMB 2008 Waste Characterization Study (Applies for waste deposited from 2007 to the present)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.65%	47.09%	15.05%	0.12%
Office Paper	1.84%	38.54%	87.03%	0.62%
Corrugated Boxes	4.80%	44.84%	44.25%	0.95%
Coated Paper	8.98%	33.03%	24.31%	0.72%
Food	15.50%	14.83%	86.52%	1.99%
Grass	1.90%	13.30%	47.36%	0.12%
Leaves	3.24%	29.13%	7.30%	0.07%
Branches	1.95%	44.24%	23.14%	0.20%
Lumber	14.51%	43.00%	23.26%	1.45%
Textiles	5.47%	24.00%	50.00%	0.66%
Diapers	4.33%	24.00%	50.00%	0.52%
Construction/Demolition	5.48%	4.00%	50.00%	0.11%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.05%	5.00%	50.00%	0.00%
MSW Total				**7.52%**

Percent of Anaerobically Degradable Carbon (ANDOC%): Default Values Used for Canada and Mexico

For documentation on these values, see the ARB's Local Government Operations Protocol, available online at:
http://www.arb.ca.gov/cc/protocols/localgov/pubs/pubs.htm

Table 18: IPCC 2006 Waste Characterization Defaults - Central America (Applies for all years of waste deposited)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.64%	47.09%	15.05%	0.12%
Office Paper	6.30%	38.54%	87.03%	2.11%
Corrugated Boxes	4.93%	44.84%	44.25%	0.98%
Coated Paper	0.82%	33.03%	24.31%	0.07%
Food	43.80%	14.83%	86.52%	5.62%
Grass	0.00%	13.30%	47.36%	0.00%
Leaves	0.00%	29.13%	7.30%	0.00%
Branches	0.00%	44.24%	23.14%	0.00%
Lumber	13.50%	43.00%	23.26%	1.35%
Textiles	4.40%	24.00%	50.00%	0.53%
Diapers	0.00%	24.00%	50.00%	0.00%
Construction/Demolition	0.00%	4.00%	50.00%	0.00%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.77%**

Table 19: IPCC 2006 Waste Characterization Defaults - North America (Applies for all years of waste deposited)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	2.78%	47.09%	15.05%	0.20%
Office Paper	10.67%	38.54%	87.03%	3.58%
Corrugated Boxes	8.35%	44.84%	44.25%	1.66%
Coated Paper	1.39%	33.03%	24.31%	0.11%
Food	33.90%	14.83%	86.52%	4.35%
Grass	0.00%	13.30%	47.36%	0.00%
Leaves	0.00%	29.13%	7.30%	0.00%
Branches	0.00%	44.24%	23.14%	0.00%
Lumber	6.20%	43.00%	23.26%	0.62%
Textiles	5.30%	24.00%	50.00%	0.64%
Diapers	0.00%	24.00%	50.00%	0.00%
Construction/Demolition	0.00%	4.00%	50.00%	0.00%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.15%**

Percent of Anaerobically Degradable Carbon (ANDOC%): Default Values Used for United States (other than California)

For documentation on these values, see the ARB's Local Government Operations Protocol, available online at:
http://www.arb.ca.gov/cc/protocols/localgov/pubs/pubs.htm

Table 1: EPA 1960 Waste Characterization Study (Applies for waste deposited up to 1964)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	6.40%	47.09%	15.05%	0.45%
Office Paper	10.70%	38.54%	87.03%	3.59%
Corrugated Boxes	10.80%	44.84%	44.25%	2.14%
Coated Paper	2.20%	33.03%	24.31%	0.18%
Food	14.80%	14.83%	86.52%	1.90%
Grass	12.10%	13.30%	47.36%	0.76%
Leaves	6.05%	29.13%	7.30%	0.13%
Branches	6.05%	44.24%	23.14%	0.62%
Lumber	3.70%	43.00%	23.26%	0.37%
Textiles	2.10%	24.00%	50.00%	0.25%
Diapers	0.05%	24.00%	50.00%	0.01%
Construction/Demolition	2.60%	4.00%	50.00%	0.05%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.45%**

Table 2: EPA 1970 Waste Characterization Study (Applies for waste deposited from 1965 to 1974)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	6.40%	47.09%	15.05%	0.45%
Office Paper	11.30%	38.54%	87.03%	3.79%
Corrugated Boxes	13.50%	44.84%	44.25%	2.68%
Coated Paper	2.00%	33.03%	24.31%	0.16%
Food	11.30%	14.83%	86.52%	1.45%
Grass	10.25%	13.30%	47.36%	0.65%
Leaves	5.13%	29.13%	7.30%	0.11%
Branches	5.13%	44.24%	23.14%	0.52%
Lumber	3.30%	43.00%	23.26%	0.33%
Textiles	1.80%	24.00%	50.00%	0.22%
Diapers	0.30%	24.00%	50.00%	0.04%
Construction/Demolition	2.50%	4.00%	50.00%	0.05%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.44%**

Table 3: EPA 1980 Waste Characterization Study (Applies for waste deposited from 1975 to 1984)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	5.90%	47.09%	15.05%	0.42%
Office Paper	12.00%	38.54%	87.03%	4.02%
Corrugated Boxes	11.50%	44.84%	44.25%	2.28%
Coated Paper	2.40%	33.03%	24.31%	0.19%
Food	9.50%	14.83%	86.52%	1.22%
Grass	10.05%	13.30%	47.36%	0.63%
Leaves	5.03%	29.13%	7.30%	0.11%
Branches	5.03%	44.24%	23.14%	0.51%
Lumber	5.10%	43.00%	23.26%	0.51%
Textiles	1.70%	24.00%	50.00%	0.20%
Diapers	1.40%	24.00%	50.00%	0.17%
Construction/Demolition	3.50%	4.00%	50.00%	0.07%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.34%**

Table 4: EPA 1990 Waste Characterization Study (Applies for waste deposited from 1985 to 1992)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	4.80%	47.09%	15.05%	0.34%

Office Paper	13.10%	38.54%	87.03%	4.39%
Corrugated Boxes	10.50%	44.84%	44.25%	2.08%
Coated Paper	2.10%	33.03%	24.31%	0.17%
Food	12.10%	14.83%	86.52%	1.55%
Grass	8.95%	13.30%	47.36%	0.56%
Leaves	4.48%	29.13%	7.30%	0.10%
Branches	4.48%	44.24%	23.14%	0.46%
Lumber	7.00%	43.00%	23.26%	0.70%
Textiles	3.30%	24.00%	50.00%	0.40%
Diapers	1.60%	24.00%	50.00%	0.19%
Construction/Demolition	3.90%	4.00%	50.00%	0.08%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.02%**

Table 5: EPA 1995 Waste Characterization Study (Applies for waste deposited from 1993 to 1997)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	3.90%	47.09%	15.05%	0.28%
Office Paper	15.00%	38.54%	87.03%	5.03%
Corrugated Boxes	10.30%	44.84%	44.25%	2.04%
Coated Paper	1.80%	33.03%	24.31%	0.14%
Food	13.40%	14.83%	86.52%	1.72%
Grass	6.55%	13.30%	47.36%	0.41%
Leaves	3.28%	29.13%	7.30%	0.07%
Branches	3.28%	44.24%	23.14%	0.34%
Lumber	7.30%	43.00%	23.26%	0.73%
Textiles	4.50%	24.00%	50.00%	0.54%
Diapers	1.90%	24.00%	50.00%	0.23%
Construction/Demolition	4.50%	4.00%	50.00%	0.09%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.62%**

Table 9: EPA 2000 Waste Characterization Study (Applies for waste deposited from 1998 to 2000)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	3.60%	47.09%	15.05%	0.26%
Office Paper	14.50%	38.54%	87.03%	4.86%
Corrugated Boxes	10.00%	44.84%	44.25%	1.98%
Coated Paper	1.50%	33.03%	24.31%	0.12%
Food	15.40%	14.83%	86.52%	1.98%
Grass	4.35%	13.30%	47.36%	0.27%
Leaves	2.18%	29.13%	7.30%	0.05%
Branches	2.18%	44.24%	23.14%	0.22%
Lumber	7.00%	43.00%	23.26%	0.70%
Textiles	5.20%	24.00%	50.00%	0.62%
Diapers	1.90%	24.00%	50.00%	0.23%
Construction/Demolition	4.70%	4.00%	50.00%	0.09%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.39%**

Table 10: EPA 2001 Waste Characterization Study (Applies for waste deposited in 2001)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	2.10%	47.09%	15.05%	0.15%
Office Paper	14.50%	38.54%	87.03%	4.86%
Corrugated Boxes	9.80%	44.84%	44.25%	1.94%
Coated Paper	1.30%	33.03%	24.31%	0.10%
Food	16.20%	14.83%	86.52%	2.08%
Grass	3.75%	13.30%	47.36%	0.24%
Leaves	1.88%	29.13%	7.30%	0.04%
Branches	1.88%	44.24%	23.14%	0.19%
Lumber	7.40%	43.00%	23.26%	0.74%
Textiles	5.60%	24.00%	50.00%	0.67%
Diapers	2.10%	24.00%	50.00%	0.25%
Construction/Demolition	5.00%	4.00%	50.00%	0.10%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%

MSW Total				**11.37%**

Table 11: EPA 2002 Waste Characterization Study (Applies for waste deposited in 2002)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.90%	47.09%	15.05%	0.13%
Office Paper	14.70%	38.54%	87.03%	4.93%
Corrugated Boxes	9.80%	44.84%	44.25%	1.94%
Coated Paper	1.20%	33.03%	24.31%	0.10%
Food	16.10%	14.83%	86.52%	2.07%
Grass	3.75%	13.30%	47.36%	0.24%
Leaves	1.88%	29.13%	7.30%	0.04%
Branches	1.88%	44.24%	23.14%	0.19%
Lumber	7.40%	43.00%	23.26%	0.74%
Textiles	5.70%	24.00%	50.00%	0.68%
Diapers	2.10%	24.00%	50.00%	0.25%
Construction/Demolition	5.10%	4.00%	50.00%	0.10%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.42%**

Table 12: EPA 2003 Waste Characterization Study (Applies for waste deposited in 2003)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.90%	47.09%	15.05%	0.13%
Office Paper	13.60%	38.54%	87.03%	4.56%
Corrugated Boxes	9.20%	44.84%	44.25%	1.83%
Coated Paper	1.40%	33.03%	24.31%	0.11%
Food	16.60%	14.83%	86.52%	2.13%
Grass	3.90%	13.30%	47.36%	0.25%
Leaves	1.95%	29.13%	7.30%	0.04%
Branches	1.95%	44.24%	23.14%	0.20%
Lumber	7.40%	43.00%	23.26%	0.74%
Textiles	5.90%	24.00%	50.00%	0.71%
Diapers	2.00%	24.00%	50.00%	0.24%
Construction/Demolition	5.00%	4.00%	50.00%	0.10%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**11.04%**

Table 13: EPA 2004 Waste Characterization Study (Applies for waste deposited in 2004)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	2.50%	47.09%	15.05%	0.18%
Office Paper	13.00%	38.54%	87.03%	4.36%
Corrugated Boxes	9.60%	44.84%	44.25%	1.90%
Coated Paper	1.50%	33.03%	24.31%	0.12%
Food	16.70%	14.83%	86.52%	2.14%
Grass	3.50%	13.30%	47.36%	0.22%
Leaves	1.75%	29.13%	7.30%	0.04%
Branches	1.75%	44.24%	23.14%	0.18%
Lumber	7.30%	43.00%	23.26%	0.73%
Textiles	5.90%	24.00%	50.00%	0.71%
Diapers	2.00%	24.00%	50.00%	0.24%
Construction/Demolition	5.00%	4.00%	50.00%	0.10%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.92%**

Table 14: EPA 2005 Waste Characterization Study (Applies for waste deposited in 2005)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	2.00%	47.09%	15.05%	0.14%
Office Paper	12.80%	38.54%	87.03%	4.29%
Corrugated Boxes	8.80%	44.84%	44.25%	1.75%
Coated Paper	1.50%	33.03%	24.31%	0.12%
Food	17.30%	14.83%	86.52%	2.22%
Grass	3.60%	13.30%	47.36%	0.23%
Leaves	1.80%	29.13%	7.30%	0.04%
Branches	1.80%	44.24%	23.14%	0.18%
Lumber	7.50%	43.00%	23.26%	0.75%

Textiles	6.10%	24.00%	50.00%	0.73%
Diapers	2.00%	24.00%	50.00%	0.24%
Construction/Demolition	5.20%	4.00%	50.00%	0.10%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.80%**

Table 15: EPA 2006 Waste Characterization Study (Applies for waste deposited in 2006)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.80%	47.09%	15.05%	0.13%
Office Paper	12.10%	38.54%	87.03%	4.06%
Corrugated Boxes	8.70%	44.84%	44.25%	1.73%
Coated Paper	1.50%	33.03%	24.31%	0.12%
Food	17.60%	14.83%	86.52%	2.26%
Grass	3.60%	13.30%	47.36%	0.23%
Leaves	1.80%	29.13%	7.30%	0.04%
Branches	1.80%	44.24%	23.14%	0.18%
Lumber	7.40%	43.00%	23.26%	0.74%
Textiles	6.30%	24.00%	50.00%	0.76%
Diapers	2.10%	24.00%	50.00%	0.25%
Construction/Demolition	5.30%	4.00%	50.00%	0.11%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.59%**

Table 16: EPA 2007 Waste Characterization Study (Applies for waste deposited in 2007)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	1.30%	47.09%	15.05%	0.09%
Office Paper	11.20%	38.54%	87.03%	3.76%
Corrugated Boxes	8.20%	44.84%	44.25%	1.63%
Coated Paper	1.40%	33.03%	24.31%	0.11%
Food	18.10%	14.83%	86.52%	2.32%
Grass	3.45%	13.30%	47.36%	0.22%
Leaves	1.73%	29.13%	7.30%	0.04%
Branches	1.73%	44.24%	23.14%	0.18%
Lumber	8.50%	43.00%	23.26%	0.85%
Textiles	6.40%	24.00%	50.00%	0.77%
Diapers	2.20%	24.00%	50.00%	0.26%
Construction/Demolition	5.50%	4.00%	50.00%	0.11%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.33%**

Table 17: EPA 2008 Waste Characterization Study (Applies for waste deposited from 2008 to the present)

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	0.60%	47.09%	15.05%	0.04%
Office Paper	11.50%	38.54%	87.03%	3.86%
Corrugated Boxes	7.40%	44.84%	44.25%	1.47%
Coated Paper	1.30%	33.03%	24.31%	0.10%
Food	18.60%	14.83%	86.52%	2.39%
Grass	3.50%	13.30%	47.36%	0.22%
Leaves	1.75%	29.13%	7.30%	0.04%
Branches	1.75%	44.24%	23.14%	0.18%
Lumber	8.90%	43.00%	23.26%	0.89%
Textiles	6.90%	24.00%	50.00%	0.83%
Diapers	2.30%	24.00%	50.00%	0.28%
Construction/Demolition	5.80%	4.00%	50.00%	0.12%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.41%**

Landfill Specific Value Calculator for the Percent of Anaerobically Degradable Carbon (ANDOC%)

Landfill specific Waste Characterization Data

Waste Type	WIPFRAC	TDOC	DANF	%ANDOC
Newspaper	6.40%	47.09%	15.05%	0.45%
Office Paper	10.70%	38.54%	87.03%	3.59%
Corrugated Boxes	10.80%	44.84%	44.25%	2.14%
Coated Paper	2.20%	33.03%	24.31%	0.18%
Food	14.80%	14.83%	86.52%	1.90%
Grass	12.10%	13.30%	47.36%	0.76%
Leaves	6.05%	29.13%	7.30%	0.13%
Branches	6.05%	44.24%	23.14%	0.62%
Lumber	3.70%	43.00%	23.26%	0.37%
Textiles	2.10%	24.00%	50.00%	0.25%
Diapers	0.05%	24.00%	50.00%	0.01%
Construction/Demolition	2.60%	4.00%	50.00%	0.05%
Medical Waste	0.00%	15.00%	50.00%	0.00%
Sludge/Manure	0.00%	5.00%	50.00%	0.00%
MSW Total				**10.45%**

1) Enter your landfill specific waste characterization data (WIPFRAC).
2) Copy the result of the calculation (MSW total) and overwrite the default %ANDOC value for the particular year on the ***Landfill Model Inputs*** page.
Note: Only the data for the Fraction of the Waste in Place (WIPFRAC) should be altered. If you wish to modify the TDOC or DANF values, please contact ARB staff.

California Department of Resources Recycling and Recovery (CalRecycle)
Disposal Reporting System (DRS)

Jurisdiction Disposal By Facility

With Reported Alternative Daily Cover (ADC) and Alternative Intermediate Cover (AIC)

Disposal during 2014 for Stockton

Destination Facility	SWISNo	Qtr	Instate Ton	Transform Ton	Export Ton	Total ADC	Total AIC
Altamont Landfill & Resource Recv`ry	01-AA-0009		437			286	
American Avenue Disposal Site	10-AA-0009		4				
Avenal Regional Landfill	16-AA-0004					9	
Azusa Land Reclamation Co. Landfill	19-AA-0013		52				
Covanta Stanislaus, Inc.	50-AA-0009			2,392			
Fink Road Landfill	50-AA-0001		332			7	
Foothill Sanitary Landfill	39-AA-0004		24,328				
Forward Landfill, Inc.	39-AA-0015		175,998				
Highway 59 Disposal Site	24-AA-0001		116				
John Smith Road Landfill	35-AA-0001		56				
Keller Canyon Landfill	07-AA-0032		61			3	
L and D Landfill	34-AA-0020		663			17	6
McKittrick Waste Treatment Site	15-AA-0105		6				
Monterey Peninsula Landfill	27-AA-0010		5				
North County Landfill & Recycling Center	39-AA-0022		48,336				
Potrero Hills Landfill	48-AA-0075		2,809			809	
Recology Hay Road	48-AA-0002		9,874			2	
Sacramento County Landfill (Kiefer)	34-AA-0001		285				
Vasco Road Sanitary Landfill	01-AA-0010		98				
Yolo County Central Landfill	57-AA-0001						
Yearly Totals:			263,460.7.	2,391.66.	..	1,133.62.	5.71.

Notes:
1. Disposal tonnage is subject to change due to revisions. Report is based upon information provided by County disposal reports.
2. AIC information was not collected prior to 2006.
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California Department of Resources Recycling and Recovery (CalRecycle)
Disposal Reporting System (DRS)

Jurisdiction Disposal By Facility

With Reported Alternative Daily Cover (ADC) and Alternative Intermediate Cover (AIC)

Disposal during 2015 for Stockton

Destination Facility	SWISNo	Qtr	Instate Ton	Transform Ton	Export Ton	Total ADC	Total AIC
Unknown Destination					16		
Altamont Landfill & Resource Recv`ry	01-AA-0009		416			347	
American Avenue Disposal Site	10-AA-0009						
Azusa Land Reclamation Co. Landfill	19-AA-0013		129				
Covanta Stanislaus, Inc.	50-AA-0009			205			
Fink Road Landfill	50-AA-0001		69			8	
Foothill Sanitary Landfill	39-AA-0004		19,661				
Forward Landfill, Inc.	39-AA-0015		196,073				
Highway 59 Disposal Site	24-AA-0001						
Keller Canyon Landfill	07-AA-0032		37			41	
L and D Landfill	34-AA-0020		146			28	9
McKittrick Waste Treatment Site	15-AA-0105		10				
Monterey Peninsula Landfill	27-AA-0010		21				
North County Landfill & Recycling Center	39-AA-0022		51,656				
Potrero Hills Landfill	48-AA-0075		10,136			1,227	
Recology Hay Road	48-AA-0002		4,320				
Sacramento County Landfill (Kiefer)	34-AA-0001		123				
Vasco Road Sanitary Landfill	01-AA-0010		47				
Yolo County Central Landfill	57-AA-0001		15			112	
Yearly Totals:			282,859.17.	204.63.	16.03.	1,761.93.	9.34.

Notes:
1. Disposal tonnage is subject to change due to revisions. Report is based upon information provided by County disposal reports.
2. AIC information was not collected prior to 2006.

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California Department of Resources Recycling and Recovery (CalRecycle)
Disposal Reporting System (DRS)

Jurisdiction Disposal By Facility

With Reported Alternative Daily Cover (ADC) and Alternative Intermediate Cover (AIC)

Disposal during 2016 for Stockton

Destination Facility	SWISNo	Qtr	Instate Ton	Transform Ton	Export Ton	Total ADC	Total AIC
Unknown Destination					2		
Altamont Landfill & Resource Recv`ry	01-AA-0009		1,099			465	
American Avenue Disposal Site	10-AA-0009		11				
Avenal Regional Landfill	16-AA-0004		45				
Azusa Land Reclamation Co. Landfill	19-AA-0013		147				
Chemical Waste Management, Inc.Unit B-17	16-AA-0027		2				
Covanta Stanislaus, Inc.	50-AA-0009			2,487			
Fink Road Landfill	50-AA-0001		3,294			706	
Foothill Sanitary Landfill	39-AA-0004		45,335				
Forward Landfill, Inc.	39-AA-0015		203,194				
Keller Canyon Landfill	07-AA-0032		46			18	
L and D Landfill	34-AA-0020		227			29	12
McKittrick Waste Treatment Site	15-AA-0105		31				
Monterey Peninsula Landfill	27-AA-0010		88				
North County Landfill & Recycling Center	39-AA-0022		48,593				
Potrero Hills Landfill	48-AA-0075		2,506			818	
Recology Hay Road	48-AA-0002		4,657			6,160	
Sacramento County Landfill (Kiefer)	34-AA-0001		671				
Vasco Road Sanitary Landfill	01-AA-0010		58			1	
Yolo County Central Landfill	57-AA-0001		2				
Yearly Totals:			310,003.84.	2,487.09.	1.67.	8,197.22.	11.88.

Notes:
1. Disposal tonnage is subject to change due to revisions. Report is based upon information provided by County disposal reports.
2. AIC information was not collected prior to 2006.
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General Plan: Criteria Air Pollutant and GHG Emissions On-Road Transportation

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CITY OF STOCKTON — TRANSPORTATION SECTOR

VMT	City of Stockton						
	Population	Employment	Service Population (SP)	Daily VMT*	Rate (VMT/ SP)	Adjusted Daily VMT	Annual VMT
Year 2017	320,600	81,200	401,800	6,582,189	16.38	6,582,189	2,284,019,583
Baseline in 2040	320,600	81,200	401,800	6,582,189	16.38	6,582,189	2,284,019,583
Year 2040	452,800	144,400	597,200	9,699,344	16.24	9,699,344	3,365,672,368
F&P Baseline	363,300	123,400	486,700	7,973,000	16.38		
F&P 2040 WP	484,100	187,700	671,800	10,910,950	16.24		

Source: 2017 and 2040 VMT is based on data provided by Fehr & Peers.

For GHG emissions, the transportation sector methodology is based on the Regional Targets Advisory Committee (RTAC) recommendations. Under Senate Bill 375 (SB 375), 50 percent of the trip length for intrajurisdictional trips are the responsibility of the adjacent/corresponding jurisdiction while the other 50 percent are the responsibility of Stockton. External-Internal (X-I) and Internal-External (I-X) trips include 50 percent of the trip length to account for the RTAC recommendations.

Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

CRITERIA AIR POLLUTANTS

	lbs/day					
	ROG	NOx	CO	SOx	PM10	PM2.5
Year 2017	793	6,420	18,523	62	799	358
Year 2040	386	2,136	7,804	57	1,081	438
Baseline in 2040	249	1,186	5,195	38	725	294
	Tons/year					
	ROG	NOx	CO	SOx	PM10	PM2.5
Year 2017	138	1,114	3,214	11	139	62
Year 2040	67	371	1,354	10	188	76
Baseline in 2040	43	206	901	7	126	51

Daily emissions multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Source: EMFAC2014, Version 1.0.7.

GHG EMISSIONS

	MTons/year			
	CO_2	CH_4	N_2O	CO_2e
Year 2017	987,059	32	42	1,000,387
Year 2040	914,708	15	14	919,262

Source: EMFAC2014, Version 1.0.7.

Note: MTons = metric tons; CO_2e = carbon dioxide-equivalent.

Source: EMFAC2014. Based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) Global Warming Potentials (GWPs)

Note: MTons = metric tons; CO_2e = carbon dioxide-equivalent. Includes Pavley + California Advanced Clean Car Standards, the Low Carbon Fuel Standard (LCFS), on-road diesel fleet rules, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation.

Year 2017 Criteria Air Pollutants

Based on EMFAC2014, Version 1.0.7.

EMFAC2014 Speed Bins

	VMT Speed Bins (MPH)	Daily VMT	% of Total	Adjusted Daily VMT[1]
5	0.00-7.50	3,000	0.04%	2,477
10	7.51-12.50	6,300	0.08%	5,201
15	12.51-17.50	16,650	0.21%	13,746
20	17.51-22.50	58,850	0.74%	48,584
25	22.51-27.50	344,100	4.32%	284,075
30	27.51-32.50	820,450	10.29%	677,331
35	32.51-37.50	650,700	8.16%	537,192
40	37.51-42.50	974,450	12.22%	804,467
45	42.51-47.60	732,700	9.19%	604,888
50	47.61-52.50	269,700	3.38%	222,654
55	52.51-57.50	109,750	1.38%	90,605
60	57.51-62.50	198,700	2.49%	164,039
65	62.51-67.50	3,787,650	47.51%	3,126,932
70	67.51-72.50	0	0.00%	0
	Total VMT	**7,973,000**		6,582,189
	SP	486,700		401,800
	VMT/SP	16.38		

[1.] VMT is adjusted based on VMT per service population provided by Fehr and Peers (i.e., VMT/population and employment (service population)).

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Emission year

Year 2017			lbs/day					
Vehicle Type	**Speed**	**Percent of VMT of SpeedBin**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	05 MPH	0.18%	0.01	0.12	0.02	0.00	0.00	0.00
LDA	05 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	05 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT2	05 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD1	05 MPH	53.82%	1.79	6.57	11.67	0.04	0.47	0.31
LHD2	05 MPH	10.87%	0.36	1.22	1.85	0.01	0.10	0.06
MCY	05 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MDV	05 MPH	0.58%	0.01	0.02	0.13	0.00	0.00	0.00
MH	05 MPH	0.90%	0.06	0.23	0.83	0.00	0.01	0.01
Motor Coach	05 MPH	0.09%	0.01	0.09	0.02	0.00	0.00	0.00
OBUS	05 MPH	0.63%	0.02	0.04	0.17	0.00	0.01	0.00
SBUS	05 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	05 MPH	0.45%	0.19	0.58	0.21	0.00	0.05	0.04
T6 CAIRP Heavy	05 MPH	0.08%	0.00	0.04	0.01	0.00	0.00	0.00
T6 CAIRP Small	05 MPH	0.24%	0.02	0.14	0.03	0.00	0.00	0.00
T6 Instate Construction Heavy	05 MPH	0.39%	0.03	0.29	0.05	0.00	0.01	0.01
T6 Instate Construction Small	05 MPH	1.60%	0.19	1.08	0.30	0.00	0.04	0.03
T6 Instate Heavy	05 MPH	2.08%	0.08	1.10	0.20	0.00	0.02	0.01
T6 Instate Small	05 MPH	4.97%	0.73	3.69	1.06	0.01	0.15	0.13
T6 OOS Heavy	05 MPH	0.04%	0.00	0.02	0.00	0.00	0.00	0.00
T6 OOS Small	05 MPH	0.14%	0.01	0.08	0.02	0.00	0.00	0.00
T6 Public	05 MPH	0.23%	0.01	0.16	0.01	0.00	0.00	0.00
T6 Utility	05 MPH	0.04%	0.00	0.01	0.00	0.00	0.00	0.00
T6TS	05 MPH	1.21%	0.08	0.12	0.87	0.00	0.01	0.00
T7 Ag	05 MPH	0.10%	0.07	0.22	0.11	0.00	0.02	0.02
T7 CAIRP	05 MPH	3.51%	0.26	3.86	0.93	0.01	0.03	0.02
T7 CAIRP Construction	05 MPH	0.13%	0.01	0.15	0.03	0.00	0.00	0.00
T7 NNOOS	05 MPH	4.35%	0.18	4.00	0.83	0.01	0.03	0.01
T7 NOOS	05 MPH	1.39%	0.09	1.52	0.35	0.00	0.01	0.01
T7 Other Port	05 MPH	0.07%	0.00	0.07	0.02	0.00	0.00	0.00
T7 POAK	05 MPH	0.17%	0.01	0.18	0.05	0.00	0.00	0.00
T7 POLA	05 MPH	0.31%	0.03	0.33	0.08	0.00	0.00	0.00
T7 Public	05 MPH	0.14%	0.01	0.20	0.01	0.00	0.00	0.00
T7 Single	05 MPH	0.93%	0.11	1.05	0.22	0.00	0.02	0.02
T7 Single Construction	05 MPH	0.32%	0.03	0.36	0.07	0.00	0.01	0.01
T7 SWCV	05 MPH	2.30%	0.09	3.16	0.41	0.01	0.02	0.01
T7 Tractor	05 MPH	5.02%	0.45	5.55	1.34	0.01	0.06	0.04
T7 Tractor Construction	05 MPH	0.24%	0.03	0.32	0.07	0.00	0.00	0.00
T7 Utility	05 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	05 MPH	0.07%	0.02	0.02	0.25	0.00	0.00	0.00
UBUS	05 MPH	2.41%	0.58	3.59	4.07	0.00	0.17	0.12

All Other Buses	10 MPH	0.25%	0.02	0.30	0.05	0.00	0.01	0.00
LDA	10 MPH	3.32%	0.03	0.05	0.60	0.00	0.02	0.01
LDT1	10 MPH	0.26%	0.01	0.01	0.14	0.00	0.00	0.00
LDT2	10 MPH	1.12%	0.02	0.03	0.29	0.00	0.01	0.00
LHD1	10 MPH	43.98%	2.14	11.47	15.10	0.06	0.70	0.43
LHD2	10 MPH	9.28%	0.46	2.22	2.47	0.01	0.16	0.10
MCY	10 MPH	0.03%	0.03	0.01	0.18	0.00	0.00	0.00
MDV	10 MPH	0.92%	0.02	0.04	0.38	0.00	0.01	0.00
MH	10 MPH	1.27%	0.12	0.59	1.83	0.00	0.03	0.02
Motor Coach	10 MPH	0.12%	0.02	0.23	0.05	0.00	0.00	0.00
OBUS	10 MPH	0.90%	0.04	0.10	0.45	0.00	0.02	0.01
SBUS	10 MPH	0.57%	0.05	0.85	0.18	0.00	0.06	0.03
T6 Ag	10 MPH	0.63%	0.43	1.41	0.53	0.00	0.12	0.11
T6 CAIRP heavy	10 MPH	0.11%	0.01	0.09	0.02	0.00	0.00	0.00
T6 CAIRP small	10 MPH	0.33%	0.04	0.33	0.08	0.00	0.01	0.01
T6 instate construction heavy	10 MPH	0.55%	0.07	0.71	0.12	0.00	0.02	0.02
T6 instate construction small	10 MPH	2.25%	0.42	2.63	0.71	0.01	0.11	0.08
T6 instate heavy	10 MPH	2.92%	0.18	2.68	0.49	0.01	0.07	0.04
T6 instate small	10 MPH	6.98%	1.63	8.96	2.57	0.02	0.40	0.32
T6 OOS heavy	10 MPH	0.06%	0.00	0.05	0.01	0.00	0.00	0.00
T6 OOS small	10 MPH	0.19%	0.02	0.19	0.05	0.00	0.01	0.00
T6 Public	10 MPH	0.32%	0.01	0.40	0.03	0.00	0.01	0.00
T6 utility	10 MPH	0.06%	0.00	0.03	0.00	0.00	0.00	0.00
T6TS	10 MPH	1.71%	0.16	0.33	2.11	0.01	0.03	0.01
T7 Ag	10 MPH	0.11%	0.13	0.40	0.22	0.00	0.03	0.03
T7 CAIRP	10 MPH	3.78%	0.47	7.14	1.70	0.01	0.07	0.04
T7 CAIRP construction	10 MPH	0.13%	0.02	0.28	0.06	0.00	0.00	0.00
T7 NNOOS	10 MPH	4.69%	0.32	7.17	1.52	0.01	0.06	0.03
T7 NOOS	10 MPH	1.49%	0.16	2.81	0.64	0.00	0.02	0.01
T7 other port	10 MPH	0.07%	0.01	0.12	0.03	0.00	0.00	0.00
T7 POAK	10 MPH	0.18%	0.03	0.33	0.08	0.00	0.00	0.00
T7 POLA	10 MPH	0.34%	0.05	0.61	0.15	0.00	0.01	0.00
T7 Public	10 MPH	0.15%	0.01	0.36	0.03	0.00	0.00	0.00
T7 Single	10 MPH	1.00%	0.19	1.94	0.42	0.00	0.04	0.03
T7 single construction	10 MPH	0.35%	0.06	0.67	0.13	0.00	0.01	0.01
T7 SWCV	10 MPH	1.56%	0.10	3.74	0.47	0.01	0.02	0.01
T7 tractor	10 MPH	5.40%	0.81	10.35	2.47	0.02	0.12	0.08
T7 tractor construction	10 MPH	0.26%	0.06	0.59	0.14	0.00	0.01	0.01
T7 utility	10 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	10 MPH	0.10%	0.03	0.06	0.65	0.00	0.00	0.00
UBUS	10 MPH	2.25%	0.83	5.84	6.46	0.01	0.31	0.20
All Other Buses	15 MPH	0.18%	0.03	0.41	0.06	0.00	0.01	0.01
LDA	15 MPH	5.35%	0.09	0.18	2.29	0.01	0.08	0.04
LDT1	15 MPH	0.42%	0.02	0.04	0.51	0.00	0.01	0.00
LDT2	15 MPH	1.81%	0.04	0.11	1.09	0.00	0.03	0.01
LHD1	15 MPH	52.04%	4.47	36.47	35.76	0.13	1.97	1.14
LHD2	15 MPH	10.88%	0.89	6.91	5.32	0.03	0.46	0.26
MCY	15 MPH	0.06%	0.10	0.02	0.59	0.00	0.00	0.00
MDV	15 MPH	1.49%	0.07	0.16	1.41	0.00	0.02	0.01
MH	15 MPH	0.86%	0.15	0.79	2.55	0.01	0.06	0.03
Motor Coach	15 MPH	0.08%	0.02	0.28	0.06	0.00	0.01	0.00
OBUS	15 MPH	0.60%	0.05	0.16	0.71	0.00	0.03	0.01
SBUS	15 MPH	0.61%	0.09	1.66	0.42	0.00	0.16	0.08
T6 Ag	15 MPH	0.45%	0.44	1.90	0.78	0.00	0.17	0.15
T6 CAIRP heavy	15 MPH	0.08%	0.01	0.12	0.02	0.00	0.00	0.00
T6 CAIRP small	15 MPH	0.24%	0.04	0.43	0.10	0.00	0.02	0.01
T6 instate construction heavy	15 MPH	0.39%	0.07	0.95	0.16	0.00	0.03	0.02
T6 instate construction small	15 MPH	1.61%	0.43	3.51	0.89	0.01	0.17	0.12
T6 instate heavy	15 MPH	2.10%	0.22	3.71	0.65	0.01	0.12	0.06
T6 instate small	15 MPH	5.01%	1.62	11.94	3.24	0.02	0.61	0.46
T6 OOS heavy	15 MPH	0.04%	0.00	0.07	0.01	0.00	0.00	0.00
T6 OOS small	15 MPH	0.14%	0.02	0.24	0.06	0.00	0.01	0.01
T6 Public	15 MPH	0.23%	0.01	0.53	0.04	0.00	0.01	0.01
T6 utility	15 MPH	0.04%	0.00	0.03	0.01	0.00	0.00	0.00
T6TS	15 MPH	1.15%	0.19	0.52	3.17	0.01	0.05	0.02
T7 Ag	15 MPH	0.07%	0.12	0.48	0.30	0.00	0.04	0.04
T7 CAIRP	15 MPH	2.46%	0.54	8.80	2.04	0.02	0.11	0.06
T7 CAIRP construction	15 MPH	0.09%	0.02	0.34	0.07	0.00	0.00	0.00
T7 NNOOS	15 MPH	3.05%	0.38	8.23	1.83	0.02	0.11	0.05

T7 NOOS	15 MPH	0.97%	0.19	3.46	0.77	0.01	0.04	0.02
T7 other port	15 MPH	0.05%	0.01	0.15	0.04	0.00	0.00	0.00
T7 POAK	15 MPH	0.12%	0.03	0.43	0.10	0.00	0.01	0.00
T7 POLA	15 MPH	0.22%	0.06	0.79	0.19	0.00	0.01	0.01
T7 Public	15 MPH	0.10%	0.01	0.44	0.04	0.00	0.01	0.00
T7 Single	15 MPH	0.65%	0.19	2.34	0.52	0.00	0.06	0.04
T7 single construction	15 MPH	0.23%	0.06	0.80	0.16	0.00	0.02	0.01
T7 SWCV	15 MPH	0.38%	0.04	1.73	0.21	0.01	0.01	0.01
T7 tractor	15 MPH	3.52%	0.90	12.94	2.97	0.03	0.18	0.11
T7 tractor construction	15 MPH	0.17%	0.06	0.73	0.16	0.00	0.01	0.01
T7 utility	15 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	15 MPH	0.06%	0.03	0.08	0.89	0.00	0.00	0.00
UBUS	15 MPH	2.03%	1.11	9.92	10.80	0.01	0.62	0.38
All Other Buses	20 MPH	0.10%	0.03	0.63	0.09	0.00	0.02	0.01
LDA	20 MPH	18.29%	0.81	2.01	24.81	0.09	0.95	0.41
LDT1	20 MPH	1.42%	0.20	0.45	5.39	0.01	0.08	0.04
LDT2	20 MPH	6.17%	0.39	1.24	11.84	0.04	0.32	0.14
LHD1	20 MPH	31.22%	6.60	79.19	60.27	0.23	3.88	2.12
LHD2	20 MPH	6.47%	1.19	14.77	8.14	0.05	0.90	0.48
MCY	20 MPH	0.19%	0.89	0.23	5.83	0.00	0.00	0.00
MDV	20 MPH	5.08%	0.58	1.75	15.23	0.04	0.26	0.12
MH	20 MPH	0.48%	0.20	1.25	4.05	0.01	0.10	0.05
Motor Coach	20 MPH	0.04%	0.03	0.43	0.08	0.00	0.01	0.01
OBUS	20 MPH	0.33%	0.06	0.29	1.26	0.01	0.05	0.02
SBUS	20 MPH	0.44%	0.12	3.26	0.93	0.01	0.39	0.18
T6 Ag	20 MPH	0.25%	0.43	2.96	1.19	0.00	0.24	0.21
T6 CAIRP heavy	20 MPH	0.04%	0.01	0.18	0.03	0.00	0.01	0.00
T6 CAIRP small	20 MPH	0.14%	0.05	0.61	0.13	0.00	0.03	0.02
T6 instate construction heavy	20 MPH	0.22%	0.08	1.43	0.22	0.00	0.05	0.03
T6 instate construction small	20 MPH	0.91%	0.43	5.20	1.20	0.01	0.28	0.19
T6 instate heavy	20 MPH	1.18%	0.28	5.63	0.93	0.02	0.22	0.12
T6 instate small	20 MPH	2.82%	1.59	17.76	4.38	0.04	0.99	0.71
T6 OOS heavy	20 MPH	0.03%	0.00	0.10	0.02	0.00	0.00	0.00
T6 OOS small	20 MPH	0.08%	0.03	0.35	0.08	0.00	0.02	0.01
T6 Public	20 MPH	0.13%	0.02	0.80	0.05	0.00	0.02	0.01
T6 utility	20 MPH	0.02%	0.00	0.04	0.01	0.00	0.00	0.00
T6TS	20 MPH	0.63%	0.27	0.92	5.36	0.01	0.10	0.04
T7 Ag	20 MPH	0.08%	0.24	1.55	0.96	0.00	0.12	0.11
T7 CAIRP	20 MPH	2.86%	1.50	26.89	6.00	0.06	0.43	0.23
T7 CAIRP construction	20 MPH	0.10%	0.06	1.06	0.21	0.00	0.02	0.01
T7 NNOOS	20 MPH	3.55%	1.10	22.76	5.41	0.07	0.43	0.19
T7 NOOS	20 MPH	1.13%	0.54	10.54	2.27	0.02	0.16	0.08
T7 other port	20 MPH	0.05%	0.03	0.49	0.11	0.00	0.01	0.00
T7 POAK	20 MPH	0.14%	0.09	1.37	0.30	0.00	0.02	0.01
T7 POLA	20 MPH	0.26%	0.17	2.52	0.55	0.01	0.04	0.02
T7 Public	20 MPH	0.11%	0.03	1.40	0.11	0.00	0.02	0.01
T7 Single	20 MPH	0.76%	0.43	7.28	1.56	0.02	0.18	0.13
T7 single construction	20 MPH	0.26%	0.14	2.45	0.48	0.01	0.06	0.04
T7 SWCV	20 MPH	0.19%	0.04	2.33	0.26	0.01	0.02	0.01
T7 tractor	20 MPH	4.09%	2.44	40.54	8.78	0.09	0.68	0.40
T7 tractor construction	20 MPH	0.20%	0.14	2.26	0.47	0.00	0.05	0.03
T7 utility	20 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	20 MPH	0.05%	0.06	0.24	2.59	0.00	0.00	0.00
UBUS	20 MPH	9.47%	9.59	128.83	127.86	0.14	8.94	5.02
All Other Buses	25 MPH	0.02%	0.03	0.62	0.08	0.00	0.02	0.01
LDA	25 MPH	52.45%	10.24	30.80	377.80	1.20	15.61	6.67
LDT1	25 MPH	4.07%	2.61	6.88	80.51	0.11	1.29	0.59
LDT2	25 MPH	17.71%	4.93	18.88	179.96	0.55	5.26	2.24
LHD1	25 MPH	5.24%	5.00	80.14	50.30	0.21	3.61	1.90
LHD2	25 MPH	1.15%	0.93	15.81	6.98	0.05	0.89	0.46
MCY	25 MPH	0.54%	11.54	3.77	83.43	0.01	0.06	0.03
MDV	25 MPH	14.58%	7.38	26.68	230.69	0.61	4.35	1.86
MH	25 MPH	0.10%	0.18	1.37	4.10	0.01	0.11	0.06
Motor Coach	25 MPH	0.01%	0.02	0.40	0.07	0.00	0.01	0.01
OBUS	25 MPH	0.07%	0.06	0.32	1.39	0.01	0.06	0.03
SBUS	25 MPH	0.13%	0.15	5.13	1.41	0.01	0.66	0.31
T6 Ag	25 MPH	0.05%	0.34	3.07	1.11	0.00	0.23	0.20
T6 CAIRP heavy	25 MPH	0.01%	0.01	0.16	0.02	0.00	0.01	0.00

T6 CAIRP small	25 MPH	0.03%	0.04	0.55	0.12	0.00	0.04	0.02
T6 instate construction heavy	25 MPH	0.04%	0.06	1.41	0.20	0.00	0.06	0.03
T6 instate construction small	25 MPH	0.18%	0.36	4.93	1.08	0.01	0.29	0.20
T6 instate heavy	25 MPH	0.23%	0.23	5.25	0.78	0.02	0.25	0.12
T6 instate small	25 MPH	0.55%	1.32	17.11	3.96	0.04	1.01	0.71
T6 OOS heavy	25 MPH	0.00%	0.00	0.09	0.01	0.00	0.00	0.00
T6 OOS small	25 MPH	0.02%	0.02	0.31	0.07	0.00	0.02	0.01
T6 Public	25 MPH	0.03%	0.01	0.79	0.05	0.00	0.03	0.01
T6 utility	25 MPH	0.00%	0.00	0.03	0.01	0.00	0.00	0.00
T6TS	25 MPH	0.13%	0.25	1.02	5.77	0.01	0.12	0.05
T7 Ag	25 MPH	0.02%	0.19	1.58	0.90	0.00	0.11	0.10
T7 CAIRP	25 MPH	0.55%	1.23	23.83	4.99	0.06	0.46	0.24
T7 CAIRP construction	25 MPH	0.02%	0.05	0.98	0.18	0.00	0.02	0.01
T7 NNOOS	25 MPH	0.68%	0.91	18.00	4.47	0.07	0.48	0.21
T7 NOOS	25 MPH	0.22%	0.45	9.30	1.87	0.03	0.17	0.09
T7 other port	25 MPH	0.01%	0.03	0.45	0.09	0.00	0.01	0.00
T7 POAK	25 MPH	0.03%	0.08	1.29	0.25	0.00	0.02	0.01
T7 POLA	25 MPH	0.05%	0.14	2.37	0.45	0.01	0.04	0.02
T7 Public	25 MPH	0.02%	0.02	1.40	0.10	0.00	0.02	0.01
T7 Single	25 MPH	0.15%	0.35	7.04	1.36	0.02	0.19	0.12
T7 single construction	25 MPH	0.05%	0.11	2.35	0.42	0.01	0.06	0.04
T7 SWCV	25 MPH	0.05%	0.04	3.32	0.31	0.01	0.03	0.02
T7 tractor	25 MPH	0.78%	2.01	37.69	7.33	0.09	0.73	0.41
T7 tractor construction	25 MPH	0.04%	0.12	2.16	0.40	0.00	0.05	0.03
T7 utility	25 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	25 MPH	0.01%	0.07	0.32	3.36	0.00	0.01	0.00
UBUS	25 MPH	0.02%	0.09	1.59	1.40	0.00	0.11	0.06
All Other Buses	30 MPH	0.02%	0.05	1.42	0.15	0.00	0.06	0.03
LDA	30 MPH	52.58%	19.43	68.66	826.69	2.48	36.85	15.52
LDT1	30 MPH	4.08%	5.04	15.34	174.17	0.23	3.00	1.34
LDT2	30 MPH	17.75%	9.37	41.87	393.20	1.14	12.42	5.22
LHD1	30 MPH	3.97%	7.41	149.69	80.59	0.34	6.30	3.21
LHD2	30 MPH	0.86%	1.36	29.32	10.95	0.08	1.55	0.78
MCY	30 MPH	0.54%	22.35	8.85	177.02	0.02	0.14	0.06
MDV	30 MPH	14.61%	14.02	59.21	503.44	1.25	10.26	4.33
MH	30 MPH	0.10%	0.36	3.11	8.70	0.02	0.26	0.14
Motor Coach	30 MPH	0.01%	0.04	0.98	0.14	0.00	0.03	0.01
OBUS	30 MPH	0.07%	0.11	0.70	3.01	0.01	0.15	0.06
SBUS	30 MPH	0.14%	0.30	12.27	3.17	0.02	1.63	0.75
T6 Ag	30 MPH	0.05%	0.71	7.31	2.37	0.01	0.52	0.43
T6 CAIRP heavy	30 MPH	0.01%	0.01	0.33	0.05	0.00	0.02	0.01
T6 CAIRP small	30 MPH	0.03%	0.08	1.19	0.25	0.00	0.09	0.06
T6 instate construction heavy	30 MPH	0.05%	0.12	3.25	0.40	0.01	0.14	0.08
T6 instate construction small	30 MPH	0.19%	0.74	11.06	2.29	0.03	0.71	0.47
T6 instate heavy	30 MPH	0.24%	0.44	11.57	1.50	0.04	0.61	0.30
T6 instate small	30 MPH	0.58%	2.69	38.80	8.45	0.10	2.42	1.65
T6 OOS heavy	30 MPH	0.01%	0.01	0.19	0.02	0.00	0.01	0.01
T6 OOS small	30 MPH	0.02%	0.05	0.68	0.14	0.00	0.05	0.03
T6 Public	30 MPH	0.03%	0.03	1.82	0.09	0.00	0.07	0.03
T6 utility	30 MPH	0.00%	0.00	0.05	0.01	0.00	0.01	0.00
T6TS	30 MPH	0.13%	0.47	2.27	12.36	0.03	0.28	0.12
T7 Ag	30 MPH	0.02%	0.56	5.28	2.68	0.01	0.35	0.31
T7 CAIRP	30 MPH	0.81%	3.26	71.26	13.24	0.21	1.60	0.82
T7 CAIRP construction	30 MPH	0.03%	0.14	3.02	0.48	0.01	0.06	0.04
T7 NNOOS	30 MPH	1.01%	2.38	49.70	11.70	0.25	1.67	0.73
T7 NOOS	30 MPH	0.32%	1.18	27.70	4.93	0.08	0.60	0.29
T7 other port	30 MPH	0.02%	0.07	1.40	0.23	0.00	0.03	0.01
T7 POAK	30 MPH	0.04%	0.20	4.08	0.65	0.01	0.08	0.04
T7 POLA	30 MPH	0.07%	0.36	7.48	1.18	0.02	0.14	0.07
T7 Public	30 MPH	0.03%	0.06	4.58	0.28	0.01	0.07	0.04
T7 Single	30 MPH	0.22%	0.95	22.72	3.84	0.06	0.61	0.40
T7 single construction	30 MPH	0.07%	0.30	7.57	1.16	0.02	0.19	0.11
T7 SWCV	30 MPH	0.05%	0.08	7.32	0.54	0.03	0.08	0.03
T7 tractor	30 MPH	1.16%	5.31	117.48	19.60	0.30	2.47	1.36
T7 tractor construction	30 MPH	0.06%	0.32	6.88	1.14	0.01	0.16	0.10
T7 utility	30 MPH	0.00%	0.00	0.03	0.01	0.00	0.00	0.00
T7IS	30 MPH	0.02%	0.20	1.12	11.77	0.01	0.02	0.01
UBUS	30 MPH	0.02%	0.16	3.34	2.67	0.00	0.23	0.12

All Other Buses	35 MPH	0.03%	0.04	1.30	0.12	0.00	0.05	0.03
LDA	35 MPH	51.80%	12.67	50.88	595.33	1.73	28.56	11.91
LDT1	35 MPH	4.02%	3.34	11.41	124.92	0.16	2.31	1.01
LDT2	35 MPH	17.49%	6.12	30.92	282.97	0.79	9.63	4.01
LHD1	35 MPH	1.87%	2.39	58.00	27.68	0.13	2.30	1.15
LHD2	35 MPH	0.43%	0.46	12.03	3.95	0.03	0.60	0.29
MCY	35 MPH	0.53%	14.88	6.85	127.38	0.01	0.11	0.05
MDV	35 MPH	14.40%	9.16	43.78	362.37	0.87	7.95	3.32
MH	35 MPH	0.13%	0.31	3.03	8.13	0.02	0.26	0.13
Motor Coach	35 MPH	0.01%	0.03	0.94	0.11	0.00	0.03	0.01
OBUS	35 MPH	0.09%	0.09	0.68	2.85	0.01	0.15	0.06
SBUS	35 MPH	0.14%	0.21	10.05	2.42	0.02	1.37	0.62
T6 Ag	35 MPH	0.06%	0.58	6.84	1.95	0.01	0.46	0.38
T6 CAIRP heavy	35 MPH	0.01%	0.01	0.29	0.04	0.00	0.02	0.01
T6 CAIRP small	35 MPH	0.03%	0.06	1.04	0.21	0.00	0.09	0.05
T6 instate construction heavy	35 MPH	0.06%	0.09	2.97	0.31	0.01	0.13	0.07
T6 instate construction small	35 MPH	0.23%	0.59	9.88	1.92	0.03	0.68	0.44
T6 instate heavy	35 MPH	0.30%	0.32	10.19	1.12	0.04	0.58	0.29
T6 instate small	35 MPH	0.71%	2.14	34.95	7.10	0.10	2.29	1.54
T6 OOS heavy	35 MPH	0.01%	0.00	0.16	0.02	0.00	0.01	0.01
T6 OOS small	35 MPH	0.02%	0.04	0.59	0.12	0.00	0.05	0.03
T6 Public	35 MPH	0.03%	0.02	1.67	0.07	0.00	0.06	0.03
T6 utility	35 MPH	0.01%	0.00	0.04	0.01	0.00	0.01	0.00
T6TS	35 MPH	0.17%	0.41	2.23	11.71	0.02	0.29	0.12
T7 Ag	35 MPH	0.04%	0.69	7.51	3.38	0.01	0.46	0.41
T7 CAIRP	35 MPH	1.52%	3.65	93.24	14.89	0.30	2.34	1.19
T7 CAIRP construction	35 MPH	0.05%	0.15	4.06	0.56	0.01	0.10	0.05
T7 NNOOS	35 MPH	1.89%	2.63	61.31	12.95	0.35	2.47	1.06
T7 NOOS	35 MPH	0.60%	1.31	36.13	5.48	0.12	0.87	0.42
T7 other port	35 MPH	0.03%	0.07	1.90	0.26	0.01	0.04	0.02
T7 POAK	35 MPH	0.07%	0.22	5.58	0.71	0.01	0.11	0.06
T7 POLA	35 MPH	0.14%	0.40	10.23	1.30	0.03	0.21	0.11
T7 Public	35 MPH	0.06%	0.07	6.46	0.34	0.01	0.11	0.06
T7 Single	35 MPH	0.40%	1.10	31.59	4.61	0.08	0.86	0.55
T7 single construction	35 MPH	0.14%	0.35	10.50	1.39	0.03	0.27	0.16
T7 SWCV	35 MPH	0.13%	0.13	14.19	0.82	0.05	0.16	0.07
T7 tractor	35 MPH	2.18%	5.94	158.96	22.19	0.43	3.59	1.93
T7 tractor construction	35 MPH	0.10%	0.38	9.45	1.38	0.02	0.23	0.15
T7 utility	35 MPH	0.00%	0.00	0.03	0.01	0.00	0.00	0.00
T7IS	35 MPH	0.04%	0.25	1.56	15.96	0.01	0.04	0.01
UBUS	35 MPH	0.03%	0.14	3.48	2.54	0.00	0.24	0.12
All Other Buses	40 MPH	0.03%	0.04	1.92	0.14	0.01	0.08	0.04
LDA	40 MPH	53.56%	17.22	75.95	855.26	2.48	44.01	18.25
LDT1	40 MPH	4.16%	4.58	17.16	180.08	0.23	3.54	1.53
LDT2	40 MPH	18.08%	8.32	46.07	406.60	1.14	14.83	6.14
LHD1	40 MPH	0.70%	1.21	33.65	14.71	0.07	1.27	0.62
LHD2	40 MPH	0.18%	0.25	7.60	2.28	0.02	0.36	0.18
MCY	40 MPH	0.55%	20.62	10.62	188.44	0.02	0.17	0.07
MDV	40 MPH	14.88%	12.45	65.35	521.52	1.25	12.25	5.09
MH	40 MPH	0.13%	0.43	4.59	12.11	0.03	0.41	0.21
Motor Coach	40 MPH	0.02%	0.05	1.66	0.17	0.00	0.05	0.03
OBUS	40 MPH	0.09%	0.12	1.01	4.13	0.02	0.23	0.10
SBUS	40 MPH	0.08%	0.15	8.31	1.86	0.01	1.15	0.52
T6 Ag	40 MPH	0.07%	0.78	10.34	2.58	0.01	0.66	0.54
T6 CAIRP heavy	40 MPH	0.01%	0.01	0.40	0.04	0.00	0.03	0.02
T6 CAIRP small	40 MPH	0.04%	0.08	1.48	0.28	0.01	0.14	0.08
T6 instate construction heavy	40 MPH	0.06%	0.12	4.40	0.40	0.01	0.20	0.11
T6 instate construction small	40 MPH	0.24%	0.76	14.36	2.63	0.05	1.06	0.69
T6 instate heavy	40 MPH	0.31%	0.39	14.64	1.35	0.06	0.90	0.44
T6 instate small	40 MPH	0.74%	2.78	51.18	9.74	0.14	3.56	2.39
T6 OOS heavy	40 MPH	0.01%	0.01	0.23	0.02	0.00	0.02	0.01
T6 OOS small	40 MPH	0.02%	0.05	0.85	0.16	0.00	0.08	0.05
T6 Public	40 MPH	0.03%	0.02	2.48	0.09	0.01	0.10	0.05
T6 utility	40 MPH	0.01%	0.00	0.05	0.01	0.00	0.02	0.01
T6TS	40 MPH	0.18%	0.56	3.36	17.15	0.03	0.45	0.19
T7 Ag	40 MPH	0.03%	0.69	8.61	3.41	0.01	0.50	0.45
T7 CAIRP	40 MPH	1.20%	3.26	99.60	13.44	0.33	2.75	1.39
T7 CAIRP construction	40 MPH	0.04%	0.14	4.44	0.52	0.01	0.11	0.06
T7 NNOOS	40 MPH	1.49%	2.32	62.59	11.44	0.39	2.91	1.25

T7 NOOS	40 MPH	0.48%	1.16	38.48	4.88	0.13	1.02	0.49
T7 other port	40 MPH	0.02%	0.07	2.09	0.22	0.01	0.05	0.02
T7 POAK	40 MPH	0.06%	0.19	6.17	0.62	0.02	0.13	0.07
T7 POLA	40 MPH	0.11%	0.35	11.32	1.14	0.03	0.24	0.12
T7 Public	40 MPH	0.05%	0.07	7.34	0.33	0.01	0.12	0.07
T7 Single	40 MPH	0.32%	1.04	35.55	4.45	0.09	0.99	0.61
T7 single construction	40 MPH	0.11%	0.32	11.80	1.33	0.03	0.31	0.18
T7 SWCV	40 MPH	0.08%	0.10	12.31	0.56	0.04	0.15	0.06
T7 tractor	40 MPH	1.72%	5.32	174.57	20.17	0.48	4.17	2.22
T7 tractor construction	40 MPH	0.08%	0.35	10.50	1.35	0.02	0.27	0.17
T7 utility	40 MPH	0.00%	0.00	0.03	0.01	0.00	0.00	0.00
T7IS	40 MPH	0.03%	0.24	1.63	16.19	0.01	0.04	0.02
UBUS	40 MPH	0.03%	0.21	5.70	3.84	0.01	0.40	0.20
All Other Buses	45 MPH	0.03%	0.03	1.60	0.10	0.00	0.07	0.04
LDA	45 MPH	49.77%	11.11	52.01	558.48	1.67	30.67	12.67
LDT1	45 MPH	3.86%	2.97	11.88	118.94	0.15	2.46	1.06
LDT2	45 MPH	16.80%	5.36	31.54	265.80	0.77	10.34	4.26
LHD1	45 MPH	1.11%	1.36	41.51	17.21	0.08	1.50	0.73
LHD2	45 MPH	0.27%	0.28	9.24	2.63	0.02	0.42	0.20
MCY	45 MPH	0.51%	13.54	7.49	130.71	0.01	0.12	0.05
MDV	45 MPH	13.83%	8.03	44.84	341.99	0.84	8.53	3.53
MH	45 MPH	0.16%	0.39	4.28	11.41	0.02	0.39	0.20
Motor Coach	45 MPH	0.01%	0.02	1.08	0.09	0.00	0.03	0.02
OBUS	45 MPH	0.12%	0.11	0.95	3.74	0.02	0.23	0.09
SBUS	45 MPH	0.06%	0.07	4.17	0.86	0.01	0.59	0.26
T6 Ag	45 MPH	0.08%	0.61	8.83	1.94	0.01	0.56	0.45
T6 CAIRP heavy	45 MPH	0.01%	0.01	0.32	0.03	0.00	0.03	0.01
T6 CAIRP small	45 MPH	0.04%	0.06	1.20	0.22	0.01	0.12	0.08
T6 instate construction heavy	45 MPH	0.07%	0.08	3.69	0.29	0.01	0.17	0.10
T6 instate construction small	45 MPH	0.27%	0.57	11.87	2.08	0.04	0.94	0.62
T6 instate heavy	45 MPH	0.36%	0.26	11.93	0.92	0.05	0.78	0.38
T6 instate small	45 MPH	0.85%	2.09	42.56	7.69	0.12	3.16	2.15
T6 OOS heavy	45 MPH	0.01%	0.00	0.18	0.01	0.00	0.02	0.01
T6 OOS small	45 MPH	0.02%	0.03	0.69	0.13	0.00	0.07	0.04
T6 Public	45 MPH	0.04%	0.02	2.09	0.06	0.01	0.09	0.04
T6 utility	45 MPH	0.01%	0.00	0.04	0.01	0.00	0.01	0.01
T6TS	45 MPH	0.23%	0.51	3.19	15.89	0.03	0.43	0.18
T7 Ag	45 MPH	0.07%	0.92	12.57	4.38	0.01	0.71	0.63
T7 CAIRP	45 MPH	2.38%	3.69	136.28	15.45	0.47	4.08	2.06
T7 CAIRP construction	45 MPH	0.08%	0.16	6.19	0.63	0.02	0.17	0.10
T7 NNOOS	45 MPH	2.95%	2.58	82.64	12.77	0.56	4.32	1.85
T7 NOOS	45 MPH	0.94%	1.29	52.52	5.50	0.19	1.51	0.72
T7 other port	45 MPH	0.04%	0.07	2.93	0.25	0.01	0.07	0.03
T7 POAK	45 MPH	0.12%	0.21	8.68	0.69	0.02	0.19	0.10
T7 POLA	45 MPH	0.21%	0.38	15.93	1.26	0.04	0.36	0.18
T7 Public	45 MPH	0.09%	0.09	10.64	0.40	0.02	0.18	0.10
T7 Single	45 MPH	0.63%	1.28	50.98	5.50	0.13	1.45	0.90
T7 single construction	45 MPH	0.22%	0.39	16.92	1.65	0.04	0.46	0.27
T7 SWCV	45 MPH	0.09%	0.07	10.38	0.37	0.04	0.13	0.05
T7 tractor	45 MPH	3.40%	6.07	244.57	23.37	0.68	6.15	3.25
T7 tractor construction	45 MPH	0.16%	0.43	14.90	1.71	0.03	0.40	0.26
T7 utility	45 MPH	0.00%	0.00	0.04	0.01	0.00	0.01	0.00
T7IS	45 MPH	0.04%	0.24	1.79	16.98	0.01	0.04	0.02
UBUS	45 MPH	0.03%	0.17	5.03	3.17	0.00	0.35	0.17
All Other Buses	50 MPH	0.04%	0.01	0.75	0.04	0.00	0.03	0.02
LDA	50 MPH	44.30%	3.53	16.97	172.36	0.55	10.04	4.14
LDT1	50 MPH	3.44%	0.94	3.93	37.46	0.05	0.80	0.35
LDT2	50 MPH	14.96%	1.70	10.31	82.20	0.25	3.38	1.39
LHD1	50 MPH	6.31%	2.82	90.47	36.98	0.18	3.14	1.53
LHD2	50 MPH	1.42%	0.52	18.32	5.16	0.04	0.80	0.39
MCY	50 MPH	0.46%	4.38	2.50	44.29	0.00	0.04	0.02
MDV	50 MPH	12.31%	2.55	14.69	106.30	0.28	2.79	1.15
MH	50 MPH	0.19%	0.16	1.83	5.09	0.01	0.17	0.09
Motor Coach	50 MPH	0.03%	0.01	0.72	0.05	0.00	0.02	0.01
OBUS	50 MPH	0.14%	0.04	0.39	1.47	0.01	0.09	0.04
SBUS	50 MPH	0.03%	0.01	0.89	0.17	0.00	0.13	0.06
T6 Ag	50 MPH	0.10%	0.28	4.22	0.83	0.01	0.27	0.22
T6 CAIRP heavy	50 MPH	0.02%	0.00	0.15	0.01	0.00	0.01	0.01

T6 CAIRP small	50 MPH	0.05%	0.03	0.55	0.10	0.00	0.06	0.04
T6 instate construction heavy	50 MPH	0.09%	0.04	1.73	0.12	0.00	0.08	0.05
T6 instate construction small	50 MPH	0.36%	0.25	5.51	0.94	0.02	0.47	0.32
T6 instate heavy	50 MPH	0.47%	0.10	5.44	0.36	0.02	0.38	0.18
T6 instate small	50 MPH	1.11%	0.92	19.86	3.48	0.06	1.59	1.10
T6 OOS heavy	50 MPH	0.01%	0.00	0.08	0.01	0.00	0.01	0.00
T6 OOS small	50 MPH	0.03%	0.01	0.32	0.06	0.00	0.04	0.02
T6 Public	50 MPH	0.05%	0.01	0.99	0.03	0.00	0.04	0.02
T6 utility	50 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	50 MPH	0.26%	0.21	1.33	6.49	0.01	0.18	0.08
T7 Ag	50 MPH	0.08%	0.39	5.59	1.73	0.01	0.31	0.28
T7 CAIRP	50 MPH	2.89%	1.28	56.86	5.43	0.20	1.83	0.93
T7 CAIRP construction	50 MPH	0.10%	0.06	2.63	0.24	0.01	0.08	0.04
T7 NNOOS	50 MPH	3.58%	0.87	33.51	4.32	0.24	1.93	0.82
T7 NOOS	50 MPH	1.14%	0.44	21.87	1.88	0.08	0.68	0.32
T7 other port	50 MPH	0.05%	0.02	1.24	0.08	0.00	0.03	0.02
T7 POAK	50 MPH	0.14%	0.07	3.70	0.23	0.01	0.09	0.04
T7 POLA	50 MPH	0.26%	0.13	6.79	0.42	0.02	0.16	0.08
T7 Public	50 MPH	0.11%	0.03	4.70	0.15	0.01	0.08	0.04
T7 Single	50 MPH	0.76%	0.50	22.24	2.11	0.06	0.65	0.41
T7 single construction	50 MPH	0.27%	0.15	7.38	0.63	0.02	0.21	0.12
T7 SWCV	50 MPH	0.04%	0.01	1.53	0.04	0.01	0.02	0.01
T7 tractor	50 MPH	4.13%	2.13	104.14	8.30	0.29	2.75	1.46
T7 tractor construction	50 MPH	0.20%	0.16	6.43	0.67	0.01	0.18	0.12
T7 utility	50 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	50 MPH	0.05%	0.11	0.80	7.17	0.00	0.02	0.01
UBUS	50 MPH	0.04%	0.07	2.04	1.23	0.00	0.14	0.07
All Other Buses	55 MPH	0.07%	0.01	0.50	0.02	0.00	0.02	0.01
LDA	55 MPH	42.12%	1.39	6.64	63.44	0.22	3.89	1.61
LDT1	55 MPH	3.27%	0.37	1.57	14.22	0.02	0.31	0.13
LDT2	55 MPH	14.22%	0.67	4.05	30.35	0.10	1.31	0.54
LHD1	55 MPH	3.29%	0.62	19.92	8.38	0.04	0.67	0.33
LHD2	55 MPH	0.83%	0.13	4.51	1.32	0.01	0.19	0.09
MCY	55 MPH	0.43%	1.76	0.99	18.53	0.00	0.01	0.01
MDV	55 MPH	11.71%	1.00	5.79	39.56	0.11	1.08	0.45
MH	55 MPH	0.29%	0.11	1.15	3.45	0.01	0.11	0.06
Motor Coach	55 MPH	0.05%	0.01	0.60	0.04	0.00	0.02	0.01
OBUS	55 MPH	0.20%	0.03	0.24	0.85	0.00	0.06	0.02
SBUS	55 MPH	0.05%	0.01	0.62	0.11	0.00	0.09	0.04
T6 Ag	55 MPH	0.17%	0.19	2.89	0.52	0.00	0.19	0.15
T6 CAIRP heavy	55 MPH	0.03%	0.00	0.09	0.01	0.00	0.01	0.00
T6 CAIRP small	55 MPH	0.09%	0.02	0.36	0.07	0.00	0.04	0.03
T6 instate construction heavy	55 MPH	0.15%	0.02	1.16	0.08	0.00	0.06	0.03
T6 instate construction small	55 MPH	0.60%	0.16	3.68	0.63	0.01	0.34	0.24
T6 instate heavy	55 MPH	0.78%	0.06	3.55	0.20	0.02	0.26	0.13
T6 instate small	55 MPH	1.86%	0.62	13.32	2.33	0.04	1.16	0.82
T6 OOS heavy	55 MPH	0.02%	0.00	0.05	0.00	0.00	0.01	0.00
T6 OOS small	55 MPH	0.05%	0.01	0.21	0.04	0.00	0.03	0.02
T6 Public	55 MPH	0.09%	0.00	0.67	0.02	0.00	0.03	0.01
T6 utility	55 MPH	0.02%	0.00	0.01	0.00	0.00	0.00	0.00
T6TS	55 MPH	0.38%	0.13	0.81	3.96	0.01	0.11	0.05
T7 Ag	55 MPH	0.11%	0.22	3.20	0.91	0.00	0.18	0.16
T7 CAIRP	55 MPH	4.02%	0.57	30.47	2.49	0.11	1.04	0.53
T7 CAIRP construction	55 MPH	0.14%	0.03	1.43	0.12	0.00	0.04	0.03
T7 NNOOS	55 MPH	4.98%	0.37	17.56	1.87	0.13	1.09	0.47
T7 NOOS	55 MPH	1.59%	0.19	11.70	0.83	0.04	0.38	0.18
T7 other port	55 MPH	0.07%	0.01	0.67	0.03	0.00	0.02	0.01
T7 POAK	55 MPH	0.20%	0.03	2.01	0.10	0.01	0.05	0.02
T7 POLA	55 MPH	0.36%	0.05	3.69	0.18	0.01	0.09	0.04
T7 Public	55 MPH	0.16%	0.02	2.67	0.08	0.00	0.05	0.03
T7 Single	55 MPH	1.06%	0.27	12.45	1.07	0.03	0.38	0.24
T7 single construction	55 MPH	0.37%	0.08	4.13	0.32	0.01	0.12	0.07
T7 SWCV	55 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	55 MPH	5.74%	0.99	56.81	3.86	0.16	1.57	0.84
T7 tractor construction	55 MPH	0.28%	0.08	3.57	0.35	0.01	0.11	0.07
T7 utility	55 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	55 MPH	0.08%	0.07	0.55	4.64	0.00	0.01	0.01
UBUS	55 MPH	0.07%	0.05	1.61	0.95	0.00	0.11	0.06

All Other Buses	60 MPH	0.03%	0.01	0.38	0.02	0.00	0.02	0.01
LDA	60 MPH	56.28%	3.62	16.52	147.81	0.57	9.42	3.90
LDT1	60 MPH	4.37%	0.96	3.98	34.58	0.05	0.76	0.33
LDT2	60 MPH	19.00%	1.73	10.15	71.03	0.26	3.17	1.31
LHD1	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	60 MPH	0.58%	4.62	2.46	50.92	0.00	0.04	0.02
MDV	60 MPH	15.64%	2.60	14.55	93.66	0.29	2.62	1.09
MH	60 MPH	0.12%	0.09	0.87	2.92	0.00	0.08	0.04
Motor Coach	60 MPH	0.02%	0.01	0.40	0.02	0.00	0.01	0.01
OBUS	60 MPH	0.08%	0.02	0.18	0.60	0.00	0.04	0.02
SBUS	60 MPH	0.01%	0.00	0.22	0.04	0.00	0.03	0.01
T6 Ag	60 MPH	0.07%	0.15	2.23	0.39	0.00	0.15	0.12
T6 CAIRP heavy	60 MPH	0.01%	0.00	0.07	0.00	0.00	0.01	0.00
T6 CAIRP small	60 MPH	0.04%	0.01	0.28	0.05	0.00	0.03	0.02
T6 instate construction heavy	60 MPH	0.06%	0.02	0.89	0.06	0.00	0.05	0.03
T6 instate construction small	60 MPH	0.25%	0.12	2.80	0.49	0.01	0.27	0.19
T6 instate heavy	60 MPH	0.33%	0.04	2.68	0.14	0.01	0.20	0.10
T6 instate small	60 MPH	0.79%	0.48	10.19	1.79	0.03	0.93	0.67
T6 OOS heavy	60 MPH	0.01%	0.00	0.04	0.00	0.00	0.00	0.00
T6 OOS small	60 MPH	0.02%	0.01	0.16	0.03	0.00	0.02	0.01
T6 Public	60 MPH	0.04%	0.00	0.52	0.01	0.00	0.02	0.01
T6 utility	60 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T6TS	60 MPH	0.16%	0.10	0.61	3.03	0.01	0.08	0.03
T7 Ag	60 MPH	0.01%	0.05	0.63	0.17	0.00	0.04	0.03
T7 CAIRP	60 MPH	0.43%	0.10	5.78	0.44	0.02	0.20	0.10
T7 CAIRP construction	60 MPH	0.02%	0.00	0.27	0.02	0.00	0.01	0.01
T7 NNOOS	60 MPH	0.53%	0.06	3.30	0.32	0.03	0.21	0.09
T7 NOOS	60 MPH	0.17%	0.03	2.22	0.14	0.01	0.07	0.04
T7 other port	60 MPH	0.01%	0.00	0.13	0.01	0.00	0.00	0.00
T7 POAK	60 MPH	0.02%	0.00	0.38	0.02	0.00	0.01	0.00
T7 POLA	60 MPH	0.04%	0.01	0.70	0.03	0.00	0.02	0.01
T7 Public	60 MPH	0.02%	0.00	0.52	0.01	0.00	0.01	0.01
T7 Single	60 MPH	0.11%	0.05	2.41	0.20	0.01	0.08	0.05
T7 single construction	60 MPH	0.04%	0.02	0.80	0.06	0.00	0.02	0.02
T7 SWCV	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	60 MPH	0.62%	0.18	10.86	0.69	0.03	0.31	0.17
T7 tractor construction	60 MPH	0.03%	0.02	0.69	0.07	0.00	0.02	0.01
T7 utility	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	60 MPH	0.01%	0.01	0.09	0.70	0.00	0.00	0.00
UBUS	60 MPH	0.04%	0.06	1.59	0.95	0.00	0.11	0.06
All Other Buses	65 MPH	0.00%	0.01	0.74	0.03	0.00	0.04	0.02
LDA	65 MPH	58.16%	80.46	340.05	2,852.82	12.52	186.37	77.60
LDT1	65 MPH	4.51%	21.13	84.26	707.00	1.16	15.02	6.54
LDT2	65 MPH	19.63%	38.38	210.92	1,378.94	5.75	62.77	26.06
LHD1	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	65 MPH	0.60%	104.03	50.30	1,201.92	0.09	0.72	0.32
MDV	65 MPH	16.16%	57.65	303.37	1,849.08	6.31	51.86	21.63
MH	65 MPH	0.01%	0.19	1.72	6.79	0.01	0.17	0.09
Motor Coach	65 MPH	0.00%	0.01	0.53	0.03	0.00	0.02	0.01
OBUS	65 MPH	0.01%	0.05	0.36	1.13	0.01	0.08	0.03
SBUS	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	65 MPH	0.01%	0.30	4.32	0.76	0.01	0.29	0.24
T6 CAIRP heavy	65 MPH	0.00%	0.00	0.14	0.01	0.00	0.01	0.01
T6 CAIRP small	65 MPH	0.00%	0.02	0.53	0.10	0.00	0.07	0.04
T6 instate construction heavy	65 MPH	0.01%	0.04	1.72	0.11	0.00	0.09	0.05
T6 instate construction small	65 MPH	0.03%	0.24	5.43	0.94	0.02	0.53	0.37
T6 instate heavy	65 MPH	0.03%	0.08	5.19	0.28	0.02	0.38	0.19
T6 instate small	65 MPH	0.08%	0.93	19.74	3.48	0.05	1.80	1.29
T6 OOS heavy	65 MPH	0.00%	0.00	0.08	0.00	0.00	0.01	0.00
T6 OOS small	65 MPH	0.00%	0.01	0.31	0.06	0.00	0.04	0.03
T6 Public	65 MPH	0.00%	0.01	1.00	0.02	0.00	0.04	0.02
T6 utility	65 MPH	0.00%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	65 MPH	0.02%	0.23	1.22	6.33	0.01	0.16	0.07
T7 Ag	65 MPH	0.00%	0.30	4.22	1.16	0.00	0.25	0.22
T7 CAIRP	65 MPH	0.15%	0.68	38.97	2.96	0.14	1.38	0.71
T7 CAIRP construction	65 MPH	0.01%	0.03	1.85	0.14	0.01	0.06	0.03
T7 NNOOS	65 MPH	0.19%	0.43	22.26	2.16	0.17	1.43	0.61

T7 NOOS	65 MPH	0.06%	0.22	14.95	0.97	0.06	0.50	0.24
T7 other port	65 MPH	0.00%	0.01	0.87	0.04	0.00	0.02	0.01
T7 POAK	65 MPH	0.01%	0.03	2.59	0.11	0.01	0.06	0.03
T7 POLA	65 MPH	0.01%	0.06	4.74	0.20	0.01	0.11	0.06
T7 Public	65 MPH	0.01%	0.02	3.52	0.10	0.01	0.06	0.03
T7 Single	65 MPH	0.04%	0.35	16.27	1.35	0.04	0.51	0.33
T7 single construction	65 MPH	0.01%	0.11	5.39	0.41	0.01	0.17	0.10
T7 SWCV	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	65 MPH	0.22%	1.20	73.24	4.64	0.21	2.08	1.12
T7 tractor construction	65 MPH	0.01%	0.11	4.64	0.45	0.01	0.15	0.10
T7 utility	65 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	65 MPH	0.00%	0.09	0.60	4.50	0.00	0.01	0.01
UBUS	65 MPH	0.00%	0.13	3.03	1.90	0.00	0.21	0.11
All Other Buses	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDA	70 MPH	58.70%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	70 MPH	4.56%	0.00	0.00	0.00	0.00	0.00	0.00
LDT2	70 MPH	19.82%	0.00	0.00	0.00	0.00	0.00	0.00
LHD1	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	70 MPH	0.61%	0.00	0.00	0.00	0.00	0.00	0.00
MDV	70 MPH	16.31%	0.00	0.00	0.00	0.00	0.00	0.00
MH	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
Motor Coach	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
OBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NNOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 other port	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POAK	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POLA	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 single construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 SWCV	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			**792.64**	**6,419.58**	**18,522.88**	**62.21**	**799.29**	**357.99**

Based on EMFAC2014, Version 1.0.7, emission factors for San Joaquin County - San Joaquin Valley Air Basin

Baseline in 2040 Criteria Air Pollutants

Based on EMFAC2014, Version 1.0.7.

EMFAC2014 Speed Bins

	VMT Speed Bins (MPH)	Daily VMT	% of Total	Adjusted Daily VMT[1]
5	0.00-7.50	3,000	0.04%	2,477
10	7.51-12.50	6,300	0.08%	5,201
15	12.51-17.50	16,650	0.21%	13,746
20	17.51-22.50	58,850	0.74%	48,584
25	22.51-27.50	344,100	4.32%	284,075
30	27.51-32.50	820,450	10.29%	677,331
35	32.51-37.50	650,700	8.16%	537,192
40	37.51-42.50	974,450	12.22%	804,467
45	42.51-47.60	732,700	9.19%	604,888
50	47.61-52.50	269,700	3.38%	222,654
55	52.51-57.50	109,750	1.38%	90,605
60	57.51-62.50	198,700	2.49%	164,039
65	62.51-67.50	3,787,650	47.51%	3,126,932
70	67.51-72.50	0	0.00%	0
	Total VMT	**7,973,000**		6,582,189
	SP	486,700		401,800
	VMT/SP	16.38		

[1.] VMT is adjusted based on VMT per service population provided by Fehr and Peers (i.e., VMT/population and employment (service population)).

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Emission year

Baseline in 2040					lbs/day			
Vehicle Type	**Speed**	**Percent of VMT of SpeedBin**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	05 MPH	0.29%	0.00	0.17	0.02	0.00	0.00	0.00
LDA	05 MPH	5.53%	0.01	0.01	0.14	0.00	0.01	0.01
LDT1	05 MPH	0.30%	0.00	0.00	0.01	0.00	0.00	0.00
LDT2	05 MPH	1.82%	0.00	0.00	0.07	0.00	0.00	0.00
LHD1	05 MPH	27.08%	0.72	0.60	3.40	0.02	0.16	0.08
LHD2	05 MPH	11.00%	0.32	0.12	1.45	0.01	0.07	0.03
MCY	05 MPH	0.04%	0.03	0.00	0.10	0.00	0.00	0.00
MDV	05 MPH	0.91%	0.00	0.00	0.05	0.00	0.00	0.00
MH	05 MPH	0.58%	0.01	0.08	0.02	0.00	0.01	0.00
Motor Coach	05 MPH	0.14%	0.00	0.14	0.02	0.00	0.00	0.00
OBUS	05 MPH	0.95%	0.00	0.01	0.02	0.00	0.01	0.00
SBUS	05 MPH	0.77%	0.01	0.23	0.04	0.00	0.03	0.01
T6 Ag	05 MPH	0.48%	0.01	0.31	0.04	0.00	0.00	0.00
T6 CAIRP Heavy	05 MPH	0.13%	0.00	0.06	0.01	0.00	0.00	0.00
T6 CAIRP Small	05 MPH	0.38%	0.00	0.18	0.02	0.00	0.00	0.00
T6 Instate Construction Heavy	05 MPH	0.82%	0.01	0.48	0.06	0.00	0.01	0.00
T6 Instate Construction Small	05 MPH	3.36%	0.04	1.78	0.23	0.00	0.03	0.01
T6 Instate Heavy	05 MPH	2.76%	0.04	1.55	0.20	0.00	0.02	0.01
T6 Instate Small	05 MPH	6.96%	0.09	3.70	0.47	0.01	0.06	0.02
T6 OOS Heavy	05 MPH	0.07%	0.00	0.04	0.00	0.00	0.00	0.00
T6 OOS Small	05 MPH	0.22%	0.00	0.10	0.01	0.00	0.00	0.00
T6 Public	05 MPH	0.40%	0.00	0.15	0.02	0.00	0.00	0.00
T6 Utility	05 MPH	0.05%	0.00	0.02	0.00	0.00	0.00	0.00
T6TS	05 MPH	1.78%	0.01	0.02	0.04	0.00	0.01	0.01
T7 Ag	05 MPH	0.11%	0.00	0.12	0.02	0.00	0.00	0.00
T7 CAIRP	05 MPH	5.68%	0.18	6.19	1.04	0.01	0.03	0.01
T7 CAIRP Construction	05 MPH	0.26%	0.01	0.30	0.05	0.00	0.00	0.00
T7 NNOOS	05 MPH	7.04%	0.19	6.44	1.13	0.01	0.04	0.02
T7 NOOS	05 MPH	2.24%	0.07	2.45	0.41	0.00	0.01	0.01
T7 Other Port	05 MPH	0.12%	0.00	0.14	0.02	0.00	0.00	0.00
T7 POAK	05 MPH	0.50%	0.02	0.62	0.10	0.00	0.00	0.00
T7 POLA	05 MPH	0.90%	0.03	1.10	0.18	0.00	0.01	0.00
T7 Public	05 MPH	0.25%	0.01	0.17	0.03	0.00	0.00	0.00
T7 Single	05 MPH	1.44%	0.04	1.21	0.22	0.00	0.01	0.00
T7 Single Construction	05 MPH	0.68%	0.02	0.57	0.10	0.00	0.00	0.00
T7 SWCV	05 MPH	2.73%	0.02	0.53	0.98	0.01	0.02	0.01
T7 Tractor	05 MPH	8.29%	0.26	9.22	1.54	0.01	0.05	0.02
T7 Tractor Construction	05 MPH	0.51%	0.02	0.59	0.10	0.00	0.00	0.00
T7 Utility	05 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	05 MPH	0.10%	0.01	0.03	0.30	0.00	0.00	0.00
UBUS	05 MPH	2.34%	0.06	0.41	2.34	0.00	0.07	0.03

All Other Buses	10 MPH	0.37%	0.01	0.33	0.04	0.00	0.01	0.00
LDA	10 MPH	10.37%	0.02	0.03	0.50	0.00	0.06	0.02
LDT1	10 MPH	0.56%	0.00	0.00	0.03	0.00	0.00	0.00
LDT2	10 MPH	3.41%	0.01	0.02	0.25	0.00	0.02	0.01
LHD1	10 MPH	20.16%	0.84	0.89	4.00	0.02	0.23	0.11
LHD2	10 MPH	8.38%	0.38	0.17	1.74	0.01	0.11	0.05
MCY	10 MPH	0.08%	0.07	0.01	0.30	0.00	0.00	0.00
MDV	10 MPH	1.70%	0.01	0.01	0.16	0.00	0.01	0.00
MH	10 MPH	0.72%	0.01	0.18	0.05	0.00	0.01	0.01
Motor Coach	10 MPH	0.17%	0.01	0.27	0.05	0.00	0.00	0.00
OBUS	10 MPH	1.19%	0.01	0.02	0.05	0.00	0.02	0.01
SBUS	10 MPH	0.67%	0.01	0.32	0.05	0.00	0.06	0.03
T6 Ag	10 MPH	0.60%	0.02	0.62	0.08	0.00	0.01	0.00
T6 CAIRP heavy	10 MPH	0.16%	0.00	0.13	0.02	0.00	0.00	0.00
T6 CAIRP small	10 MPH	0.48%	0.01	0.36	0.05	0.00	0.01	0.00
T6 instate construction heavy	10 MPH	1.02%	0.02	0.96	0.13	0.00	0.02	0.01
T6 instate construction small	10 MPH	4.18%	0.09	3.53	0.48	0.01	0.07	0.03
T6 instate heavy	10 MPH	3.44%	0.08	3.07	0.42	0.01	0.06	0.03
T6 instate small	10 MPH	8.67%	0.19	7.33	1.00	0.02	0.15	0.06
T6 OOS heavy	10 MPH	0.09%	0.00	0.07	0.01	0.00	0.00	0.00
T6 OOS small	10 MPH	0.27%	0.01	0.20	0.03	0.00	0.00	0.00
T6 Public	10 MPH	0.50%	0.01	0.31	0.05	0.00	0.01	0.00
T6 utility	10 MPH	0.07%	0.00	0.04	0.01	0.00	0.00	0.00
T6TS	10 MPH	2.24%	0.01	0.04	0.08	0.01	0.04	0.02
T7 Ag	10 MPH	0.10%	0.01	0.19	0.04	0.00	0.00	0.00
T7 CAIRP	10 MPH	5.43%	0.29	9.42	1.69	0.01	0.07	0.03
T7 CAIRP construction	10 MPH	0.25%	0.01	0.45	0.08	0.00	0.00	0.00
T7 NNOOS	10 MPH	6.73%	0.31	9.79	1.84	0.02	0.08	0.03
T7 NOOS	10 MPH	2.14%	0.11	3.72	0.67	0.01	0.03	0.01
T7 other port	10 MPH	0.11%	0.01	0.22	0.04	0.00	0.00	0.00
T7 POAK	10 MPH	0.48%	0.03	0.95	0.16	0.00	0.01	0.00
T7 POLA	10 MPH	0.86%	0.05	1.67	0.29	0.00	0.01	0.00
T7 Public	10 MPH	0.24%	0.01	0.26	0.05	0.00	0.00	0.00
T7 Single	10 MPH	1.38%	0.06	1.85	0.36	0.00	0.02	0.01
T7 single construction	10 MPH	0.65%	0.03	0.87	0.17	0.00	0.01	0.00
T7 SWCV	10 MPH	1.64%	0.02	0.56	1.01	0.01	0.02	0.01
T7 tractor	10 MPH	7.93%	0.43	14.04	2.51	0.02	0.10	0.04
T7 tractor construction	10 MPH	0.48%	0.03	0.90	0.16	0.00	0.01	0.00
T7 utility	10 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	10 MPH	0.12%	0.02	0.07	0.69	0.00	0.00	0.00
UBUS	10 MPH	1.94%	0.07	0.58	3.10	0.00	0.12	0.06
All Other Buses	15 MPH	0.22%	0.01	0.31	0.05	0.00	0.01	0.00
LDA	15 MPH	26.81%	0.07	0.20	3.07	0.02	0.38	0.16
LDT1	15 MPH	1.44%	0.01	0.01	0.22	0.00	0.02	0.01
LDT2	15 MPH	8.81%	0.04	0.09	1.56	0.01	0.13	0.05
LHD1	15 MPH	19.47%	1.09	2.04	5.37	0.04	0.58	0.27
LHD2	15 MPH	8.05%	0.48	0.31	2.22	0.02	0.27	0.12
MCY	15 MPH	0.21%	0.34	0.08	1.65	0.00	0.00	0.00
MDV	15 MPH	4.41%	0.03	0.07	0.97	0.01	0.06	0.03
MH	15 MPH	0.40%	0.01	0.18	0.05	0.00	0.02	0.01
Motor Coach	15 MPH	0.09%	0.01	0.22	0.05	0.00	0.00	0.00
OBUS	15 MPH	0.66%	0.01	0.03	0.07	0.00	0.03	0.01
SBUS	15 MPH	0.59%	0.02	0.45	0.09	0.00	0.13	0.06
T6 Ag	15 MPH	0.35%	0.02	0.59	0.09	0.00	0.02	0.01
T6 CAIRP heavy	15 MPH	0.09%	0.00	0.12	0.02	0.00	0.00	0.00
T6 CAIRP small	15 MPH	0.28%	0.01	0.33	0.06	0.00	0.01	0.01
T6 instate construction heavy	15 MPH	0.60%	0.03	0.89	0.14	0.00	0.03	0.01
T6 instate construction small	15 MPH	2.46%	0.10	3.28	0.53	0.01	0.11	0.05
T6 instate heavy	15 MPH	2.02%	0.09	2.87	0.46	0.01	0.09	0.04
T6 instate small	15 MPH	5.11%	0.21	6.83	1.10	0.02	0.23	0.10
T6 OOS heavy	15 MPH	0.05%	0.00	0.07	0.01	0.00	0.00	0.00
T6 OOS small	15 MPH	0.16%	0.01	0.19	0.03	0.00	0.01	0.00
T6 Public	15 MPH	0.30%	0.01	0.29	0.05	0.00	0.01	0.01
T6 utility	15 MPH	0.04%	0.00	0.03	0.01	0.00	0.00	0.00
T6TS	15 MPH	1.24%	0.01	0.05	0.11	0.01	0.05	0.02
T7 Ag	15 MPH	0.05%	0.01	0.17	0.04	0.00	0.00	0.00
T7 CAIRP	15 MPH	2.90%	0.28	7.94	1.68	0.02	0.09	0.04
T7 CAIRP construction	15 MPH	0.13%	0.01	0.38	0.08	0.00	0.00	0.00
T7 NNOOS	15 MPH	3.59%	0.31	8.24	1.83	0.02	0.11	0.05

T7 NOOS	15 MPH	1.14%	0.11	3.14	0.66	0.01	0.04	0.02
T7 other port	15 MPH	0.06%	0.01	0.19	0.04	0.00	0.00	0.00
T7 POAK	15 MPH	0.26%	0.03	0.80	0.16	0.00	0.01	0.00
T7 POLA	15 MPH	0.46%	0.05	1.41	0.29	0.00	0.01	0.01
T7 Public	15 MPH	0.13%	0.01	0.22	0.05	0.00	0.00	0.00
T7 Single	15 MPH	0.73%	0.06	1.57	0.36	0.00	0.02	0.01
T7 single construction	15 MPH	0.35%	0.03	0.74	0.17	0.00	0.01	0.00
T7 SWCV	15 MPH	0.33%	0.01	0.21	0.37	0.00	0.01	0.00
T7 tractor	15 MPH	4.23%	0.42	11.85	2.49	0.03	0.14	0.06
T7 tractor construction	15 MPH	0.26%	0.03	0.76	0.16	0.00	0.01	0.00
T7 utility	15 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	15 MPH	0.06%	0.02	0.07	0.80	0.00	0.00	0.00
UBUS	15 MPH	1.44%	0.08	0.80	3.18	0.01	0.23	0.11
All Other Buses	20 MPH	0.13%	0.01	0.37	0.08	0.00	0.02	0.01
LDA	20 MPH	30.37%	0.20	0.70	11.07	0.08	1.50	0.62
LDT1	20 MPH	1.63%	0.02	0.05	0.80	0.01	0.08	0.03
LDT2	20 MPH	9.98%	0.11	0.34	5.70	0.04	0.50	0.21
LHD1	20 MPH	12.70%	1.09	4.41	5.84	0.08	1.31	0.60
LHD2	20 MPH	5.23%	0.44	0.53	2.15	0.04	0.61	0.27
MCY	20 MPH	0.23%	0.99	0.30	5.55	0.00	0.01	0.00
MDV	20 MPH	4.99%	0.07	0.23	3.46	0.02	0.25	0.10
MH	20 MPH	0.25%	0.01	0.26	0.08	0.00	0.04	0.02
Motor Coach	20 MPH	0.06%	0.01	0.27	0.08	0.00	0.01	0.00
OBUS	20 MPH	0.40%	0.01	0.05	0.13	0.01	0.06	0.03
SBUS	20 MPH	0.46%	0.03	0.71	0.19	0.01	0.38	0.16
T6 Ag	20 MPH	0.22%	0.03	0.75	0.14	0.00	0.03	0.01
T6 CAIRP heavy	20 MPH	0.06%	0.01	0.14	0.03	0.00	0.01	0.00
T6 CAIRP small	20 MPH	0.17%	0.02	0.40	0.09	0.00	0.03	0.01
T6 instate construction heavy	20 MPH	0.37%	0.04	1.09	0.22	0.01	0.06	0.03
T6 instate construction small	20 MPH	1.52%	0.16	3.98	0.83	0.02	0.24	0.10
T6 instate heavy	20 MPH	1.25%	0.14	3.51	0.72	0.02	0.20	0.08
T6 instate small	20 MPH	3.15%	0.33	8.30	1.73	0.04	0.49	0.21
T6 OOS heavy	20 MPH	0.03%	0.00	0.08	0.02	0.00	0.01	0.00
T6 OOS small	20 MPH	0.10%	0.01	0.23	0.05	0.00	0.02	0.01
T6 Public	20 MPH	0.18%	0.02	0.36	0.08	0.00	0.03	0.01
T6 utility	20 MPH	0.02%	0.00	0.04	0.01	0.00	0.00	0.00
T6TS	20 MPH	0.75%	0.01	0.09	0.22	0.01	0.12	0.05
T7 Ag	20 MPH	0.07%	0.02	0.45	0.12	0.00	0.01	0.00
T7 CAIRP	20 MPH	3.69%	0.92	19.86	5.46	0.07	0.42	0.17
T7 CAIRP construction	20 MPH	0.17%	0.04	0.95	0.26	0.00	0.02	0.01
T7 NNOOS	20 MPH	4.57%	1.01	20.55	5.96	0.08	0.51	0.20
T7 NOOS	20 MPH	1.46%	0.37	7.85	2.16	0.03	0.16	0.07
T7 other port	20 MPH	0.08%	0.02	0.46	0.12	0.00	0.01	0.00
T7 POAK	20 MPH	0.32%	0.09	1.99	0.53	0.01	0.04	0.02
T7 POLA	20 MPH	0.59%	0.16	3.53	0.94	0.01	0.07	0.03
T7 Public	20 MPH	0.16%	0.03	0.60	0.17	0.00	0.02	0.01
T7 Single	20 MPH	0.93%	0.20	3.99	1.17	0.02	0.10	0.04
T7 single construction	20 MPH	0.44%	0.09	1.87	0.55	0.01	0.05	0.02
T7 SWCV	20 MPH	0.17%	0.01	0.30	0.51	0.01	0.02	0.01
T7 tractor	20 MPH	5.39%	1.37	29.72	8.11	0.10	0.61	0.25
T7 tractor construction	20 MPH	0.33%	0.09	1.91	0.51	0.01	0.04	0.02
T7 utility	20 MPH	0.01%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	20 MPH	0.06%	0.04	0.23	2.56	0.00	0.01	0.00
UBUS	20 MPH	7.34%	0.68	10.82	26.46	0.08	4.13	1.82
All Other Buses	25 MPH	0.02%	0.01	0.18	0.05	0.00	0.02	0.01
LDA	25 MPH	59.91%	1.73	7.35	116.73	0.74	17.16	7.00
LDT1	25 MPH	3.22%	0.14	0.55	8.44	0.05	0.93	0.38
LDT2	25 MPH	19.68%	0.90	3.56	60.36	0.36	5.66	2.32
LHD1	25 MPH	1.78%	0.57	3.55	3.30	0.06	1.05	0.48
LHD2	25 MPH	0.75%	0.22	0.37	1.16	0.03	0.51	0.23
MCY	25 MPH	0.46%	8.68	3.26	55.71	0.01	0.05	0.03
MDV	25 MPH	9.84%	0.63	2.46	36.38	0.24	2.84	1.17
MH	25 MPH	0.04%	0.01	0.20	0.06	0.00	0.04	0.02
Motor Coach	25 MPH	0.01%	0.01	0.13	0.05	0.00	0.01	0.00
OBUS	25 MPH	0.07%	0.01	0.04	0.11	0.01	0.06	0.03
SBUS	25 MPH	0.11%	0.03	0.54	0.21	0.01	0.52	0.22
T6 Ag	25 MPH	0.03%	0.02	0.39	0.10	0.00	0.03	0.01
T6 CAIRP heavy	25 MPH	0.01%	0.00	0.07	0.02	0.00	0.01	0.00

T6 CAIRP small	25 MPH	0.03%	0.01	0.19	0.06	0.00	0.02	0.01
T6 instate construction heavy	25 MPH	0.06%	0.03	0.54	0.15	0.00	0.05	0.02
T6 instate construction small	25 MPH	0.24%	0.11	1.95	0.56	0.02	0.22	0.09
T6 instate heavy	25 MPH	0.19%	0.09	1.74	0.48	0.01	0.18	0.08
T6 instate small	25 MPH	0.49%	0.22	4.07	1.16	0.04	0.45	0.19
T6 OOS heavy	25 MPH	0.01%	0.00	0.04	0.01	0.00	0.00	0.00
T6 OOS small	25 MPH	0.02%	0.01	0.11	0.03	0.00	0.01	0.01
T6 Public	25 MPH	0.03%	0.01	0.18	0.05	0.00	0.03	0.01
T6 utility	25 MPH	0.00%	0.00	0.02	0.01	0.00	0.00	0.00
T6TS	25 MPH	0.12%	0.01	0.08	0.20	0.01	0.11	0.05
T7 Ag	25 MPH	0.01%	0.01	0.24	0.08	0.00	0.01	0.00
T7 CAIRP	25 MPH	0.57%	0.61	9.61	3.62	0.06	0.37	0.15
T7 CAIRP construction	25 MPH	0.03%	0.03	0.46	0.17	0.00	0.02	0.01
T7 NNOOS	25 MPH	0.71%	0.67	9.89	3.95	0.07	0.46	0.18
T7 NOOS	25 MPH	0.23%	0.24	3.80	1.43	0.02	0.15	0.06
T7 other port	25 MPH	0.01%	0.01	0.22	0.08	0.00	0.01	0.00
T7 POAK	25 MPH	0.05%	0.06	0.96	0.35	0.01	0.03	0.01
T7 POLA	25 MPH	0.09%	0.11	1.71	0.62	0.01	0.06	0.02
T7 Public	25 MPH	0.03%	0.02	0.34	0.11	0.00	0.02	0.01
T7 Single	25 MPH	0.14%	0.13	1.98	0.78	0.01	0.09	0.04
T7 single construction	25 MPH	0.07%	0.06	0.93	0.37	0.01	0.04	0.02
T7 SWCV	25 MPH	0.04%	0.01	0.31	0.47	0.01	0.02	0.01
T7 tractor	25 MPH	0.83%	0.91	14.43	5.37	0.08	0.55	0.22
T7 tractor construction	25 MPH	0.05%	0.06	0.93	0.34	0.01	0.03	0.01
T7 utility	25 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	25 MPH	0.01%	0.03	0.24	2.69	0.00	0.01	0.00
UBUS	25 MPH	0.01%	0.01	0.10	0.19	0.00	0.04	0.02
All Other Buses	30 MPH	0.02%	0.02	0.25	0.08	0.00	0.04	0.02
LDA	30 MPH	60.04%	3.23	16.26	256.37	1.51	40.80	16.54
LDT1	30 MPH	3.23%	0.25	1.23	18.56	0.10	2.20	0.90
LDT2	30 MPH	19.72%	1.67	7.88	132.73	0.73	13.45	5.48
LHD1	30 MPH	1.17%	0.70	5.60	4.20	0.09	1.63	0.73
LHD2	30 MPH	0.49%	0.26	0.52	1.43	0.04	0.78	0.35
MCY	30 MPH	0.46%	16.57	7.45	119.29	0.02	0.13	0.06
MDV	30 MPH	9.86%	1.18	5.42	79.83	0.48	6.74	2.75
MH	30 MPH	0.04%	0.01	0.36	0.12	0.01	0.08	0.03
Motor Coach	30 MPH	0.01%	0.01	0.18	0.09	0.00	0.02	0.01
OBUS	30 MPH	0.06%	0.01	0.08	0.22	0.01	0.12	0.05
SBUS	30 MPH	0.10%	0.05	0.75	0.36	0.01	1.13	0.48
T6 Ag	30 MPH	0.03%	0.03	0.56	0.16	0.01	0.07	0.03
T6 CAIRP heavy	30 MPH	0.01%	0.01	0.09	0.03	0.00	0.02	0.01
T6 CAIRP small	30 MPH	0.02%	0.02	0.26	0.09	0.00	0.05	0.02
T6 instate construction heavy	30 MPH	0.05%	0.05	0.72	0.24	0.01	0.12	0.05
T6 instate construction small	30 MPH	0.22%	0.17	2.62	0.90	0.04	0.47	0.20
T6 instate heavy	30 MPH	0.18%	0.15	2.36	0.78	0.03	0.39	0.17
T6 instate small	30 MPH	0.45%	0.36	5.49	1.87	0.08	0.98	0.42
T6 OOS heavy	30 MPH	0.00%	0.00	0.05	0.02	0.00	0.01	0.00
T6 OOS small	30 MPH	0.01%	0.01	0.15	0.05	0.00	0.03	0.01
T6 Public	30 MPH	0.03%	0.02	0.26	0.09	0.00	0.06	0.02
T6 utility	30 MPH	0.00%	0.00	0.03	0.01	0.00	0.01	0.00
T6TS	30 MPH	0.11%	0.02	0.15	0.37	0.02	0.23	0.10
T7 Ag	30 MPH	0.01%	0.03	0.51	0.18	0.00	0.02	0.01
T7 CAIRP	30 MPH	0.73%	1.39	18.10	8.19	0.16	1.14	0.46
T7 CAIRP construction	30 MPH	0.03%	0.07	0.86	0.39	0.01	0.05	0.02
T7 NNOOS	30 MPH	0.91%	1.51	18.56	8.94	0.20	1.40	0.55
T7 NOOS	30 MPH	0.29%	0.55	7.16	3.24	0.06	0.45	0.18
T7 other port	30 MPH	0.02%	0.03	0.42	0.19	0.00	0.02	0.01
T7 POAK	30 MPH	0.06%	0.13	1.79	0.79	0.01	0.10	0.04
T7 POLA	30 MPH	0.12%	0.24	3.23	1.41	0.03	0.18	0.07
T7 Public	30 MPH	0.03%	0.04	0.75	0.25	0.01	0.05	0.02
T7 Single	30 MPH	0.19%	0.30	3.82	1.76	0.04	0.29	0.11
T7 single construction	30 MPH	0.09%	0.14	1.78	0.83	0.02	0.13	0.05
T7 SWCV	30 MPH	0.03%	0.01	0.57	0.71	0.01	0.05	0.02
T7 tractor	30 MPH	1.07%	2.06	27.30	12.18	0.24	1.67	0.67
T7 tractor construction	30 MPH	0.07%	0.13	1.75	0.77	0.01	0.10	0.04
T7 utility	30 MPH	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	30 MPH	0.02%	0.08	0.74	8.23	0.00	0.02	0.01
UBUS	30 MPH	0.01%	0.01	0.18	0.30	0.00	0.08	0.04

All Other Buses	35 MPH	0.02%	0.01	0.16	0.06	0.00	0.04	0.02
LDA	35 MPH	58.39%	2.05	11.80	182.36	1.04	31.38	12.67
LDT1	35 MPH	3.14%	0.16	0.89	13.21	0.07	1.69	0.69
LDT2	35 MPH	19.18%	1.06	5.72	94.49	0.50	10.34	4.19
LHD1	35 MPH	0.56%	0.22	2.17	1.37	0.03	0.62	0.27
LHD2	35 MPH	0.24%	0.08	0.19	0.46	0.02	0.30	0.13
MCY	35 MPH	0.45%	10.74	5.58	84.79	0.01	0.10	0.04
MDV	35 MPH	9.59%	0.75	3.93	56.75	0.33	5.18	2.10
MH	35 MPH	0.04%	0.01	0.32	0.11	0.01	0.08	0.03
Motor Coach	35 MPH	0.01%	0.01	0.12	0.06	0.00	0.02	0.01
OBUS	35 MPH	0.07%	0.01	0.08	0.20	0.01	0.12	0.05
SBUS	35 MPH	0.11%	0.03	0.44	0.24	0.01	0.95	0.40
T6 Ag	35 MPH	0.04%	0.02	0.38	0.11	0.00	0.07	0.03
T6 CAIRP heavy	35 MPH	0.01%	0.00	0.06	0.02	0.00	0.02	0.01
T6 CAIRP small	35 MPH	0.03%	0.01	0.17	0.07	0.00	0.05	0.02
T6 instate construction heavy	35 MPH	0.06%	0.03	0.47	0.17	0.01	0.11	0.05
T6 instate construction small	35 MPH	0.26%	0.12	1.68	0.64	0.03	0.45	0.19
T6 instate heavy	35 MPH	0.22%	0.10	1.53	0.55	0.03	0.37	0.16
T6 instate small	35 MPH	0.55%	0.25	3.53	1.32	0.07	0.94	0.40
T6 OOS heavy	35 MPH	0.01%	0.00	0.03	0.01	0.00	0.01	0.00
T6 OOS small	35 MPH	0.02%	0.01	0.09	0.04	0.00	0.03	0.01
T6 Public	35 MPH	0.03%	0.01	0.17	0.06	0.00	0.05	0.02
T6 utility	35 MPH	0.00%	0.00	0.02	0.01	0.00	0.01	0.00
T6TS	35 MPH	0.14%	0.01	0.14	0.35	0.02	0.23	0.10
T7 Ag	35 MPH	0.03%	0.03	0.54	0.19	0.00	0.03	0.01
T7 CAIRP	35 MPH	1.36%	1.50	17.65	8.84	0.23	1.67	0.66
T7 CAIRP construction	35 MPH	0.06%	0.07	0.84	0.42	0.01	0.08	0.03
T7 NNOOS	35 MPH	1.68%	1.63	18.02	9.65	0.28	2.05	0.80
T7 NOOS	35 MPH	0.54%	0.59	6.98	3.49	0.09	0.66	0.26
T7 other port	35 MPH	0.03%	0.03	0.41	0.20	0.00	0.03	0.01
T7 POAK	35 MPH	0.12%	0.14	1.74	0.86	0.02	0.15	0.06
T7 POLA	35 MPH	0.22%	0.26	3.15	1.53	0.04	0.27	0.11
T7 Public	35 MPH	0.06%	0.05	0.87	0.27	0.01	0.07	0.03
T7 Single	35 MPH	0.34%	0.32	3.81	1.90	0.06	0.42	0.16
T7 single construction	35 MPH	0.16%	0.15	1.77	0.89	0.03	0.20	0.08
T7 SWCV	35 MPH	0.08%	0.02	1.04	1.06	0.03	0.10	0.04
T7 tractor	35 MPH	1.98%	2.23	26.72	13.14	0.33	2.44	0.97
T7 tractor construction	35 MPH	0.12%	0.14	1.72	0.83	0.02	0.15	0.06
T7 utility	35 MPH	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	35 MPH	0.03%	0.10	1.00	11.00	0.01	0.03	0.01
UBUS	35 MPH	0.01%	0.01	0.19	0.26	0.00	0.09	0.04
All Other Buses	40 MPH	0.03%	0.01	0.20	0.08	0.01	0.07	0.03
LDA	40 MPH	58.95%	2.68	17.05	255.04	1.46	47.36	19.08
LDT1	40 MPH	3.17%	0.21	1.29	18.48	0.10	2.56	1.03
LDT2	40 MPH	19.37%	1.39	8.27	132.22	0.71	15.60	6.31
LHD1	40 MPH	0.25%	0.12	1.50	0.81	0.02	0.41	0.18
LHD2	40 MPH	0.11%	0.05	0.13	0.28	0.01	0.21	0.09
MCY	40 MPH	0.45%	14.37	8.30	121.47	0.01	0.14	0.06
MDV	40 MPH	9.69%	0.98	5.69	79.34	0.47	7.81	3.16
MH	40 MPH	0.05%	0.01	0.51	0.18	0.01	0.14	0.06
Motor Coach	40 MPH	0.02%	0.02	0.19	0.10	0.00	0.04	0.02
OBUS	40 MPH	0.09%	0.01	0.14	0.33	0.02	0.22	0.09
SBUS	40 MPH	0.07%	0.02	0.32	0.19	0.01	0.91	0.39
T6 Ag	40 MPH	0.04%	0.03	0.51	0.14	0.01	0.12	0.05
T6 CAIRP heavy	40 MPH	0.01%	0.01	0.07	0.03	0.00	0.03	0.01
T6 CAIRP small	40 MPH	0.04%	0.02	0.21	0.09	0.01	0.09	0.04
T6 instate construction heavy	40 MPH	0.08%	0.04	0.59	0.22	0.01	0.20	0.08
T6 instate construction small	40 MPH	0.31%	0.16	2.11	0.83	0.06	0.80	0.34
T6 instate heavy	40 MPH	0.26%	0.14	1.95	0.72	0.05	0.66	0.28
T6 instate small	40 MPH	0.65%	0.33	4.44	1.73	0.12	1.67	0.71
T6 OOS heavy	40 MPH	0.01%	0.00	0.04	0.02	0.00	0.02	0.01
T6 OOS small	40 MPH	0.02%	0.01	0.12	0.05	0.00	0.05	0.02
T6 Public	40 MPH	0.04%	0.02	0.23	0.08	0.01	0.10	0.04
T6 utility	40 MPH	0.01%	0.00	0.02	0.01	0.00	0.01	0.01
T6TS	40 MPH	0.16%	0.02	0.24	0.57	0.03	0.41	0.17
T7 Ag	40 MPH	0.02%	0.03	0.56	0.19	0.01	0.04	0.02
T7 CAIRP	40 MPH	1.22%	1.49	16.84	8.80	0.30	2.24	0.88
T7 CAIRP construction	40 MPH	0.06%	0.07	0.80	0.42	0.01	0.10	0.04
T7 NNOOS	40 MPH	1.52%	1.63	17.11	9.60	0.37	2.76	1.07

T7 NOOS	40 MPH	0.48%	0.59	6.66	3.48	0.12	0.89	0.35
T7 other port	40 MPH	0.03%	0.03	0.39	0.20	0.01	0.05	0.02
T7 POAK	40 MPH	0.11%	0.14	1.65	0.85	0.03	0.20	0.08
T7 POLA	40 MPH	0.19%	0.26	3.01	1.52	0.05	0.36	0.14
T7 Public	40 MPH	0.05%	0.05	0.99	0.27	0.01	0.10	0.04
T7 Single	40 MPH	0.31%	0.32	3.72	1.89	0.08	0.56	0.22
T7 single construction	40 MPH	0.15%	0.15	1.72	0.89	0.04	0.26	0.10
T7 SWCV	40 MPH	0.06%	0.02	0.99	0.80	0.03	0.10	0.04
T7 tractor	40 MPH	1.79%	2.22	25.58	13.08	0.43	3.28	1.30
T7 tractor construction	40 MPH	0.11%	0.14	1.64	0.83	0.03	0.20	0.08
T7 utility	40 MPH	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	40 MPH	0.02%	0.11	1.20	12.70	0.01	0.04	0.01
UBUS	40 MPH	0.02%	0.01	0.34	0.43	0.00	0.16	0.07
All Other Buses	45 MPH	0.03%	0.01	0.13	0.05	0.00	0.06	0.03
LDA	45 MPH	54.72%	1.71	11.57	165.13	0.98	33.02	13.29
LDT1	45 MPH	2.94%	0.13	0.87	11.97	0.07	1.78	0.72
LDT2	45 MPH	17.98%	0.88	5.61	85.65	0.47	10.87	4.39
LHD1	45 MPH	0.40%	0.13	1.83	0.88	0.03	0.49	0.21
LHD2	45 MPH	0.18%	0.05	0.15	0.28	0.01	0.25	0.11
MCY	45 MPH	0.42%	9.34	5.76	82.73	0.01	0.10	0.04
MDV	45 MPH	8.99%	0.62	3.86	51.37	0.31	5.44	2.20
MH	45 MPH	0.07%	0.01	0.46	0.16	0.01	0.13	0.06
Motor Coach	45 MPH	0.01%	0.01	0.09	0.05	0.00	0.03	0.01
OBUS	45 MPH	0.11%	0.01	0.13	0.30	0.01	0.22	0.09
SBUS	45 MPH	0.05%	0.01	0.13	0.08	0.00	0.47	0.20
T6 Ag	45 MPH	0.05%	0.02	0.35	0.09	0.01	0.10	0.04
T6 CAIRP heavy	45 MPH	0.01%	0.00	0.05	0.02	0.00	0.03	0.01
T6 CAIRP small	45 MPH	0.04%	0.01	0.13	0.06	0.01	0.08	0.03
T6 instate construction heavy	45 MPH	0.09%	0.03	0.38	0.14	0.01	0.17	0.07
T6 instate construction small	45 MPH	0.36%	0.10	1.37	0.54	0.05	0.71	0.30
T6 instate heavy	45 MPH	0.30%	0.09	1.28	0.46	0.04	0.58	0.25
T6 instate small	45 MPH	0.76%	0.21	2.89	1.12	0.10	1.46	0.62
T6 OOS heavy	45 MPH	0.01%	0.00	0.03	0.01	0.00	0.02	0.01
T6 OOS small	45 MPH	0.02%	0.01	0.08	0.03	0.00	0.05	0.02
T6 Public	45 MPH	0.04%	0.01	0.16	0.05	0.01	0.08	0.04
T6 utility	45 MPH	0.01%	0.00	0.01	0.01	0.00	0.01	0.00
T6TS	45 MPH	0.21%	0.02	0.23	0.52	0.03	0.41	0.17
T7 Ag	45 MPH	0.05%	0.04	0.67	0.21	0.01	0.06	0.03
T7 CAIRP	45 MPH	2.44%	1.65	18.66	9.74	0.43	3.35	1.32
T7 CAIRP construction	45 MPH	0.11%	0.08	0.88	0.46	0.02	0.16	0.06
T7 NNOOS	45 MPH	3.03%	1.80	18.88	10.62	0.53	4.12	1.60
T7 NOOS	45 MPH	0.96%	0.65	7.38	3.85	0.17	1.32	0.52
T7 other port	45 MPH	0.05%	0.04	0.43	0.22	0.01	0.07	0.03
T7 POAK	45 MPH	0.22%	0.16	1.82	0.94	0.04	0.30	0.12
T7 POLA	45 MPH	0.39%	0.28	3.34	1.68	0.07	0.54	0.21
T7 Public	45 MPH	0.11%	0.05	1.31	0.30	0.02	0.15	0.06
T7 Single	45 MPH	0.62%	0.35	4.22	2.09	0.11	0.84	0.33
T7 single construction	45 MPH	0.29%	0.17	1.94	0.98	0.05	0.40	0.15
T7 SWCV	45 MPH	0.07%	0.01	0.82	0.52	0.02	0.09	0.04
T7 tractor	45 MPH	3.57%	2.45	28.46	14.47	0.63	4.90	1.93
T7 tractor construction	45 MPH	0.22%	0.16	1.83	0.92	0.04	0.30	0.12
T7 utility	45 MPH	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	45 MPH	0.04%	0.11	1.32	13.38	0.01	0.04	0.02
UBUS	45 MPH	0.02%	0.01	0.30	0.34	0.00	0.15	0.06
All Other Buses	50 MPH	0.03%	0.00	0.04	0.01	0.00	0.02	0.01
LDA	50 MPH	53.64%	0.59	4.12	55.42	0.35	11.91	4.79
LDT1	50 MPH	2.88%	0.05	0.31	4.02	0.02	0.64	0.26
LDT2	50 MPH	17.62%	0.31	2.00	28.76	0.17	3.92	1.58
LHD1	50 MPH	1.74%	0.19	3.02	1.33	0.04	0.78	0.34
LHD2	50 MPH	0.75%	0.06	0.22	0.39	0.02	0.38	0.17
MCY	50 MPH	0.41%	3.30	2.09	30.10	0.00	0.04	0.02
MDV	50 MPH	8.81%	0.22	1.38	17.24	0.11	1.96	0.79
MH	50 MPH	0.06%	0.00	0.15	0.05	0.00	0.05	0.02
Motor Coach	50 MPH	0.02%	0.00	0.04	0.02	0.00	0.02	0.01
OBUS	50 MPH	0.10%	0.00	0.04	0.10	0.00	0.07	0.03
SBUS	50 MPH	0.02%	0.00	0.02	0.01	0.00	0.08	0.03
T6 Ag	50 MPH	0.06%	0.01	0.11	0.03	0.00	0.04	0.02
T6 CAIRP heavy	50 MPH	0.01%	0.00	0.01	0.01	0.00	0.01	0.00

T6 CAIRP small	50 MPH	0.04%	0.00	0.04	0.02	0.00	0.03	0.01
T6 instate construction heavy	50 MPH	0.09%	0.01	0.12	0.04	0.00	0.07	0.03
T6 instate construction small	50 MPH	0.39%	0.03	0.41	0.15	0.02	0.27	0.12
T6 instate heavy	50 MPH	0.32%	0.03	0.38	0.13	0.01	0.23	0.10
T6 instate small	50 MPH	0.80%	0.06	0.86	0.32	0.04	0.57	0.24
T6 OOS heavy	50 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6 OOS small	50 MPH	0.03%	0.00	0.02	0.01	0.00	0.02	0.01
T6 Public	50 MPH	0.05%	0.00	0.05	0.02	0.00	0.03	0.01
T6 utility	50 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	50 MPH	0.19%	0.01	0.08	0.16	0.01	0.14	0.06
T7 Ag	50 MPH	0.04%	0.01	0.20	0.06	0.00	0.02	0.01
T7 CAIRP	50 MPH	2.40%	0.44	5.15	2.59	0.15	1.21	0.47
T7 CAIRP construction	50 MPH	0.11%	0.02	0.24	0.12	0.01	0.06	0.02
T7 NNOOS	50 MPH	2.97%	0.48	5.19	2.83	0.19	1.49	0.58
T7 NOOS	50 MPH	0.95%	0.17	2.04	1.02	0.06	0.48	0.19
T7 other port	50 MPH	0.05%	0.01	0.12	0.06	0.00	0.03	0.01
T7 POAK	50 MPH	0.21%	0.04	0.50	0.25	0.01	0.11	0.04
T7 POLA	50 MPH	0.38%	0.08	0.92	0.45	0.02	0.19	0.08
T7 Public	50 MPH	0.11%	0.01	0.43	0.08	0.01	0.05	0.02
T7 Single	50 MPH	0.61%	0.09	1.19	0.56	0.04	0.30	0.12
T7 single construction	50 MPH	0.29%	0.04	0.55	0.26	0.02	0.14	0.06
T7 SWCV	50 MPH	0.02%	0.00	0.10	0.05	0.00	0.01	0.00
T7 tractor	50 MPH	3.50%	0.65	7.89	3.85	0.22	1.77	0.69
T7 tractor construction	50 MPH	0.21%	0.04	0.51	0.24	0.01	0.11	0.04
T7 utility	50 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	50 MPH	0.04%	0.04	0.47	4.53	0.00	0.01	0.01
UBUS	50 MPH	0.02%	0.00	0.10	0.10	0.00	0.05	0.02
All Other Buses	55 MPH	0.05%	0.00	0.02	0.01	0.00	0.01	0.01
LDA	55 MPH	52.65%	0.24	1.65	20.65	0.15	4.76	1.91
LDT1	55 MPH	2.83%	0.02	0.13	1.50	0.01	0.26	0.10
LDT2	55 MPH	17.30%	0.13	0.80	10.72	0.07	1.57	0.63
LHD1	55 MPH	0.82%	0.03	0.59	0.25	0.01	0.15	0.06
LHD2	55 MPH	0.37%	0.01	0.04	0.07	0.00	0.08	0.03
MCY	55 MPH	0.40%	1.36	0.85	12.60	0.00	0.01	0.01
MDV	55 MPH	8.65%	0.09	0.56	6.43	0.05	0.78	0.32
MH	55 MPH	0.08%	0.00	0.07	0.02	0.00	0.02	0.01
Motor Coach	55 MPH	0.04%	0.00	0.02	0.01	0.00	0.01	0.00
OBUS	55 MPH	0.13%	0.00	0.02	0.05	0.00	0.04	0.02
SBUS	55 MPH	0.03%	0.00	0.01	0.01	0.00	0.05	0.02
T6 Ag	55 MPH	0.08%	0.00	0.05	0.01	0.00	0.02	0.01
T6 CAIRP heavy	55 MPH	0.02%	0.00	0.01	0.00	0.00	0.01	0.00
T6 CAIRP small	55 MPH	0.06%	0.00	0.02	0.01	0.00	0.02	0.01
T6 instate construction heavy	55 MPH	0.13%	0.00	0.05	0.02	0.00	0.04	0.02
T6 instate construction small	55 MPH	0.54%	0.01	0.18	0.06	0.01	0.16	0.07
T6 instate heavy	55 MPH	0.44%	0.01	0.17	0.06	0.01	0.13	0.05
T6 instate small	55 MPH	1.12%	0.03	0.39	0.14	0.02	0.32	0.14
T6 OOS heavy	55 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS small	55 MPH	0.04%	0.00	0.01	0.00	0.00	0.01	0.00
T6 Public	55 MPH	0.07%	0.00	0.03	0.01	0.00	0.02	0.01
T6 utility	55 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	55 MPH	0.24%	0.00	0.04	0.08	0.00	0.07	0.03
T7 Ag	55 MPH	0.05%	0.00	0.08	0.02	0.00	0.01	0.00
T7 CAIRP	55 MPH	2.80%	0.15	1.92	0.91	0.07	0.57	0.22
T7 CAIRP construction	55 MPH	0.13%	0.01	0.09	0.04	0.00	0.03	0.01
T7 NNOOS	55 MPH	3.47%	0.17	1.92	0.99	0.09	0.70	0.27
T7 NOOS	55 MPH	1.10%	0.06	0.76	0.36	0.03	0.23	0.09
T7 other port	55 MPH	0.06%	0.00	0.04	0.02	0.00	0.01	0.00
T7 POAK	55 MPH	0.25%	0.01	0.19	0.09	0.01	0.05	0.02
T7 POLA	55 MPH	0.45%	0.03	0.34	0.16	0.01	0.09	0.04
T7 Public	55 MPH	0.12%	0.01	0.19	0.03	0.00	0.03	0.01
T7 Single	55 MPH	0.71%	0.03	0.45	0.20	0.02	0.14	0.06
T7 single construction	55 MPH	0.33%	0.02	0.21	0.09	0.01	0.07	0.03
T7 SWCV	55 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	55 MPH	4.09%	0.23	2.95	1.35	0.10	0.84	0.33
T7 tractor construction	55 MPH	0.25%	0.01	0.19	0.09	0.01	0.05	0.02
T7 utility	55 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	55 MPH	0.05%	0.02	0.27	2.41	0.00	0.01	0.00
UBUS	55 MPH	0.03%	0.00	0.06	0.06	0.00	0.03	0.01

All Other Buses	60 MPH	0.02%	0.00	0.01	0.00	0.00	0.01	0.01
LDA	60 MPH	62.25%	0.55	3.60	41.37	0.34	10.19	4.10
LDT1	60 MPH	3.35%	0.04	0.27	3.00	0.02	0.55	0.22
LDT2	60 MPH	20.45%	0.29	1.75	21.47	0.16	3.36	1.36
LHD1	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	60 MPH	0.48%	3.15	1.87	29.53	0.00	0.03	0.01
MDV	60 MPH	10.23%	0.20	1.22	12.88	0.11	1.68	0.68
MH	60 MPH	0.04%	0.00	0.06	0.02	0.00	0.02	0.01
Motor Coach	60 MPH	0.02%	0.00	0.02	0.01	0.00	0.01	0.00
OBUS	60 MPH	0.06%	0.00	0.02	0.04	0.00	0.03	0.01
SBUS	60 MPH	0.01%	0.00	0.00	0.00	0.00	0.02	0.01
T6 Ag	60 MPH	0.04%	0.00	0.04	0.01	0.00	0.02	0.01
T6 CAIRP heavy	60 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6 CAIRP small	60 MPH	0.03%	0.00	0.01	0.01	0.00	0.02	0.01
T6 instate construction heavy	60 MPH	0.06%	0.00	0.04	0.01	0.00	0.03	0.01
T6 instate construction small	60 MPH	0.27%	0.01	0.15	0.05	0.01	0.14	0.06
T6 instate heavy	60 MPH	0.22%	0.01	0.14	0.04	0.01	0.11	0.05
T6 instate small	60 MPH	0.55%	0.02	0.31	0.10	0.02	0.29	0.12
T6 OOS heavy	60 MPH	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS small	60 MPH	0.02%	0.00	0.01	0.00	0.00	0.01	0.00
T6 Public	60 MPH	0.03%	0.00	0.02	0.00	0.00	0.02	0.01
T6 utility	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	60 MPH	0.12%	0.00	0.03	0.06	0.00	0.06	0.02
T7 Ag	60 MPH	0.01%	0.00	0.02	0.00	0.00	0.00	0.00
T7 CAIRP	60 MPH	0.35%	0.03	0.39	0.18	0.02	0.13	0.05
T7 CAIRP construction	60 MPH	0.02%	0.00	0.02	0.01	0.00	0.01	0.00
T7 NNOOS	60 MPH	0.43%	0.03	0.39	0.19	0.02	0.16	0.06
T7 NOOS	60 MPH	0.14%	0.01	0.15	0.07	0.01	0.05	0.02
T7 other port	60 MPH	0.01%	0.00	0.01	0.00	0.00	0.00	0.00
T7 POAK	60 MPH	0.03%	0.00	0.04	0.02	0.00	0.01	0.00
T7 POLA	60 MPH	0.06%	0.01	0.07	0.03	0.00	0.02	0.01
T7 Public	60 MPH	0.02%	0.00	0.04	0.01	0.00	0.01	0.00
T7 Single	60 MPH	0.09%	0.01	0.09	0.04	0.00	0.03	0.01
T7 single construction	60 MPH	0.04%	0.00	0.04	0.02	0.00	0.02	0.01
T7 SWCV	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	60 MPH	0.51%	0.04	0.60	0.26	0.02	0.19	0.07
T7 tractor construction	60 MPH	0.03%	0.00	0.04	0.02	0.00	0.01	0.00
T7 utility	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	60 MPH	0.01%	0.00	0.05	0.41	0.00	0.00	0.00
UBUS	60 MPH	0.02%	0.00	0.07	0.07	0.00	0.04	0.02
All Other Buses	65 MPH	0.00%	0.00	0.06	0.02	0.00	0.05	0.02
LDA	65 MPH	63.34%	12.18	72.41	752.91	7.30	197.98	79.88
LDT1	65 MPH	3.41%	0.95	5.51	54.69	0.50	10.69	4.33
LDT2	65 MPH	20.81%	6.31	35.21	390.73	3.53	65.23	26.41
LHD1	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	65 MPH	0.49%	69.60	37.49	660.35	0.07	0.60	0.27
MDV	65 MPH	10.41%	4.40	24.69	234.73	2.34	32.65	13.24
MH	65 MPH	0.01%	0.01	0.25	0.07	0.00	0.08	0.04
Motor Coach	65 MPH	0.00%	0.00	0.04	0.02	0.00	0.02	0.01
OBUS	65 MPH	0.01%	0.01	0.08	0.13	0.01	0.12	0.05
SBUS	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	65 MPH	0.01%	0.01	0.16	0.03	0.01	0.08	0.03
T6 CAIRP heavy	65 MPH	0.00%	0.00	0.02	0.01	0.00	0.02	0.01
T6 CAIRP small	65 MPH	0.01%	0.00	0.06	0.02	0.00	0.06	0.03
T6 instate construction heavy	65 MPH	0.01%	0.01	0.16	0.05	0.01	0.13	0.06
T6 instate construction small	65 MPH	0.06%	0.04	0.58	0.20	0.04	0.55	0.23
T6 instate heavy	65 MPH	0.05%	0.03	0.55	0.17	0.03	0.45	0.19
T6 instate small	65 MPH	0.11%	0.08	1.22	0.41	0.07	1.14	0.48
T6 OOS heavy	65 MPH	0.00%	0.00	0.01	0.00	0.00	0.01	0.00
T6 OOS small	65 MPH	0.00%	0.00	0.03	0.01	0.00	0.04	0.02
T6 Public	65 MPH	0.01%	0.00	0.08	0.02	0.00	0.07	0.03
T6 utility	65 MPH	0.00%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	65 MPH	0.02%	0.01	0.14	0.23	0.01	0.23	0.10
T7 Ag	65 MPH	0.00%	0.01	0.23	0.05	0.00	0.03	0.01
T7 CAIRP	65 MPH	0.25%	0.41	5.32	2.42	0.21	1.77	0.69
T7 CAIRP construction	65 MPH	0.01%	0.02	0.25	0.11	0.01	0.08	0.03
T7 NNOOS	65 MPH	0.31%	0.45	5.33	2.64	0.26	2.18	0.84

T7 NOOS	65 MPH	0.10%	0.16	2.11	0.95	0.08	0.70	0.27
T7 other port	65 MPH	0.01%	0.01	0.12	0.05	0.00	0.04	0.01
T7 POAK	65 MPH	0.02%	0.04	0.51	0.23	0.02	0.16	0.06
T7 POLA	65 MPH	0.04%	0.07	0.96	0.42	0.03	0.28	0.11
T7 Public	65 MPH	0.01%	0.01	0.58	0.08	0.01	0.08	0.03
T7 Single	65 MPH	0.06%	0.09	1.27	0.52	0.06	0.45	0.17
T7 single construction	65 MPH	0.03%	0.04	0.58	0.24	0.03	0.21	0.08
T7 SWCV	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	65 MPH	0.37%	0.61	8.20	3.59	0.31	2.59	1.01
T7 tractor construction	65 MPH	0.02%	0.04	0.53	0.23	0.02	0.16	0.06
T7 utility	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	65 MPH	0.00%	0.07	0.71	5.21	0.00	0.02	0.01
UBUS	65 MPH	0.00%	0.01	0.29	0.25	0.00	0.13	0.06
All Other Buses	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDA	70 MPH	64.34%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	70 MPH	3.46%	0.00	0.00	0.00	0.00	0.00	0.00
LDT2	70 MPH	21.14%	0.00	0.00	0.00	0.00	0.00	0.00
LHD1	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	70 MPH	0.49%	0.00	0.00	0.00	0.00	0.00	0.00
MDV	70 MPH	10.57%	0.00	0.00	0.00	0.00	0.00	0.00
MH	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
Motor Coach	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
OBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NNOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 other port	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POAK	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POLA	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 single construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 SWCV	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			**248.64**	**1,185.75**	**5,195.02**	**37.66**	**725.38**	**293.91**

Based on EMFAC2014, Version 1.0.7, emission factors for San Joaquin County - San Joaquin Valley Air Basin

Year 2040 Criteria Air Pollutants

Based on EMFAC2014, Version 1.0.7.

EMFAC2014 Speed Bins

	VMT Speed Bins (MPH)	Daily VMT	% of Total	Adjusted Daily VMT[1]
5	0.00-7.50	14,450	0.13%	12,845
10	7.51-12.50	24,400	0.22%	21,691
15	12.51-17.50	22,000	0.20%	19,557
20	17.51-22.50	91,350	0.84%	81,206
25	22.51-27.50	518,150	4.75%	460,612
30	27.51-32.50	1,221,250	11.19%	1,085,636
35	32.51-37.50	865,150	7.93%	769,079
40	37.51-42.50	1,280,950	11.74%	1,138,707
45	42.51-47.60	1,095,050	10.04%	973,450
50	47.61-52.50	439,600	4.03%	390,785
55	52.51-57.50	284,750	2.61%	253,130
60	57.51-62.50	448,300	4.11%	398,519
65	62.51-67.50	4,605,550	42.21%	4,094,127
70	67.51-72.50	0	0.00%	0
	Total VMT	**10,910,950**		9,699,344
	SP	671,800		597,200
	VMT/SP	16.24		

[1.] VMT is adjusted based on VMT per service population provided by Fehr and Peers (i.e., VMT/population and employment (service population)).

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Emission year

Year 2040			lbs/day					
Vehicle Type	**Speed**	**Percent of VMT of SpeedBin**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	05 MPH	0.29%	0.02	0.86	0.11	0.00	0.01	0.01
LDA	05 MPH	5.53%	0.03	0.05	0.74	0.01	0.08	0.03
LDT1	05 MPH	0.30%	0.00	0.00	0.05	0.00	0.00	0.00
LDT2	05 MPH	1.82%	0.02	0.02	0.36	0.00	0.03	0.01
LHD1	05 MPH	27.08%	3.76	3.10	17.63	0.09	0.81	0.41
LHD2	05 MPH	11.00%	1.67	0.63	7.50	0.04	0.35	0.17
MCY	05 MPH	0.04%	0.15	0.02	0.51	0.00	0.00	0.00
MDV	05 MPH	0.91%	0.01	0.02	0.24	0.00	0.01	0.01
MH	05 MPH	0.58%	0.04	0.41	0.12	0.01	0.03	0.01
Motor Coach	05 MPH	0.14%	0.02	0.70	0.12	0.00	0.01	0.00
OBUS	05 MPH	0.95%	0.02	0.05	0.11	0.01	0.04	0.02
SBUS	05 MPH	0.77%	0.03	1.19	0.18	0.00	0.17	0.07
T6 Ag	05 MPH	0.48%	0.04	1.60	0.20	0.00	0.02	0.01
T6 CAIRP Heavy	05 MPH	0.13%	0.01	0.33	0.04	0.00	0.01	0.00
T6 CAIRP Small	05 MPH	0.38%	0.02	0.93	0.12	0.00	0.02	0.01
T6 Instate Construction Heavy	05 MPH	0.82%	0.06	2.50	0.31	0.00	0.03	0.02
T6 Instate Construction Small	05 MPH	3.36%	0.22	9.23	1.18	0.02	0.14	0.06
T6 Instate Heavy	05 MPH	2.76%	0.19	8.02	1.02	0.02	0.12	0.05
T6 Instate Small	05 MPH	6.96%	0.47	19.17	2.46	0.04	0.29	0.13
T6 OOS Heavy	05 MPH	0.07%	0.00	0.19	0.02	0.00	0.00	0.00
T6 OOS Small	05 MPH	0.22%	0.01	0.53	0.07	0.00	0.01	0.00
T6 Public	05 MPH	0.40%	0.02	0.80	0.11	0.00	0.02	0.01
T6 Utility	05 MPH	0.05%	0.00	0.10	0.01	0.00	0.00	0.00
T6TS	05 MPH	1.78%	0.03	0.08	0.18	0.02	0.08	0.03
T7 Ag	05 MPH	0.11%	0.02	0.63	0.12	0.00	0.00	0.00
T7 CAIRP	05 MPH	5.68%	0.91	32.10	5.39	0.04	0.17	0.07
T7 CAIRP Construction	05 MPH	0.26%	0.04	1.54	0.26	0.00	0.01	0.00
T7 NNOOS	05 MPH	7.04%	1.00	33.38	5.88	0.05	0.21	0.09
T7 NOOS	05 MPH	2.24%	0.36	12.68	2.13	0.02	0.07	0.03
T7 Other Port	05 MPH	0.12%	0.02	0.75	0.12	0.00	0.00	0.00
T7 POAK	05 MPH	0.50%	0.09	3.23	0.52	0.00	0.02	0.01
T7 POLA	05 MPH	0.90%	0.16	5.70	0.93	0.01	0.03	0.01
T7 Public	05 MPH	0.25%	0.03	0.87	0.16	0.00	0.01	0.00
T7 Single	05 MPH	1.44%	0.20	6.27	1.16	0.01	0.04	0.02
T7 Single Construction	05 MPH	0.68%	0.09	2.96	0.54	0.01	0.02	0.01
T7 SWCV	05 MPH	2.73%	0.13	2.76	5.10	0.04	0.08	0.04
T7 Tractor	05 MPH	8.29%	1.36	47.82	8.01	0.06	0.26	0.11
T7 Tractor Construction	05 MPH	0.51%	0.09	3.08	0.51	0.00	0.02	0.01
T7 Utility	05 MPH	0.01%	0.00	0.02	0.01	0.00	0.00	0.00
T7IS	05 MPH	0.10%	0.06	0.15	1.54	0.00	0.00	0.00
UBUS	05 MPH	2.34%	0.29	2.11	12.13	0.01	0.37	0.18

All Other Buses	10 MPH	0.37%	0.04	1.37	0.18	0.00	0.03	0.01
LDA	10 MPH	10.37%	0.07	0.14	2.11	0.02	0.24	0.10
LDT1	10 MPH	0.56%	0.01	0.01	0.15	0.00	0.01	0.01
LDT2	10 MPH	3.41%	0.03	0.07	1.05	0.01	0.08	0.03
LHD1	10 MPH	20.16%	3.50	3.69	16.67	0.10	0.98	0.47
LHD2	10 MPH	8.38%	1.60	0.70	7.26	0.05	0.45	0.21
MCY	10 MPH	0.08%	0.31	0.05	1.24	0.00	0.00	0.00
MDV	10 MPH	1.70%	0.03	0.05	0.67	0.01	0.04	0.02
MH	10 MPH	0.72%	0.06	0.73	0.22	0.01	0.06	0.03
Motor Coach	10 MPH	0.17%	0.03	1.11	0.21	0.00	0.01	0.01
OBUS	10 MPH	1.19%	0.02	0.08	0.20	0.02	0.08	0.04
SBUS	10 MPH	0.67%	0.04	1.34	0.22	0.01	0.24	0.10
T6 Ag	10 MPH	0.60%	0.07	2.57	0.35	0.01	0.04	0.02
T6 CAIRP heavy	10 MPH	0.16%	0.01	0.52	0.07	0.00	0.01	0.00
T6 CAIRP small	10 MPH	0.48%	0.04	1.48	0.21	0.00	0.03	0.01
T6 instate construction heavy	10 MPH	1.02%	0.10	4.00	0.53	0.01	0.07	0.03
T6 instate construction small	10 MPH	4.18%	0.38	14.71	2.01	0.04	0.29	0.13
T6 instate heavy	10 MPH	3.44%	0.33	12.81	1.73	0.03	0.24	0.11
T6 instate small	10 MPH	8.67%	0.80	30.58	4.19	0.07	0.61	0.26
T6 OOS heavy	10 MPH	0.09%	0.01	0.30	0.04	0.00	0.01	0.00
T6 OOS small	10 MPH	0.27%	0.02	0.85	0.12	0.00	0.02	0.01
T6 Public	10 MPH	0.50%	0.04	1.28	0.19	0.00	0.04	0.02
T6 utility	10 MPH	0.07%	0.00	0.15	0.02	0.00	0.00	0.00
T6TS	10 MPH	2.24%	0.04	0.15	0.35	0.03	0.16	0.07
T7 Ag	10 MPH	0.10%	0.03	0.79	0.15	0.00	0.01	0.00
T7 CAIRP	10 MPH	5.43%	1.19	39.29	7.04	0.06	0.28	0.12
T7 CAIRP construction	10 MPH	0.25%	0.06	1.89	0.33	0.00	0.01	0.01
T7 NNOOS	10 MPH	6.73%	1.30	40.82	7.69	0.08	0.34	0.14
T7 NOOS	10 MPH	2.14%	0.47	15.52	2.78	0.02	0.11	0.05
T7 other port	10 MPH	0.11%	0.03	0.92	0.16	0.00	0.01	0.00
T7 POAK	10 MPH	0.48%	0.12	3.95	0.68	0.01	0.02	0.01
T7 POLA	10 MPH	0.86%	0.21	6.97	1.22	0.01	0.04	0.02
T7 Public	10 MPH	0.24%	0.04	1.07	0.21	0.00	0.01	0.01
T7 Single	10 MPH	1.38%	0.26	7.70	1.52	0.02	0.07	0.03
T7 single construction	10 MPH	0.65%	0.12	3.63	0.71	0.01	0.03	0.01
T7 SWCV	10 MPH	1.64%	0.10	2.31	4.19	0.04	0.09	0.04
T7 tractor	10 MPH	7.93%	1.77	58.55	10.47	0.09	0.41	0.17
T7 tractor construction	10 MPH	0.48%	0.11	3.77	0.66	0.01	0.03	0.01
T7 utility	10 MPH	0.01%	0.00	0.03	0.01	0.00	0.00	0.00
T7IS	10 MPH	0.12%	0.08	0.27	2.89	0.00	0.01	0.00
UBUS	10 MPH	1.94%	0.30	2.44	12.92	0.02	0.51	0.24
All Other Buses	15 MPH	0.22%	0.01	0.44	0.07	0.00	0.01	0.01
LDA	15 MPH	26.81%	0.11	0.28	4.37	0.03	0.54	0.23
LDT1	15 MPH	1.44%	0.01	0.02	0.31	0.00	0.03	0.01
LDT2	15 MPH	8.81%	0.05	0.13	2.22	0.02	0.18	0.08
LHD1	15 MPH	19.47%	1.55	2.91	7.65	0.06	0.83	0.39
LHD2	15 MPH	8.05%	0.68	0.44	3.16	0.03	0.38	0.18
MCY	15 MPH	0.21%	0.49	0.11	2.35	0.00	0.00	0.00
MDV	15 MPH	4.41%	0.04	0.09	1.38	0.01	0.09	0.04
MH	15 MPH	0.40%	0.02	0.25	0.07	0.00	0.03	0.01
Motor Coach	15 MPH	0.09%	0.01	0.31	0.07	0.00	0.01	0.00
OBUS	15 MPH	0.66%	0.01	0.04	0.09	0.01	0.04	0.02
SBUS	15 MPH	0.59%	0.02	0.64	0.13	0.00	0.19	0.08
T6 Ag	15 MPH	0.35%	0.02	0.84	0.13	0.00	0.02	0.01
T6 CAIRP heavy	15 MPH	0.09%	0.01	0.17	0.03	0.00	0.01	0.00
T6 CAIRP small	15 MPH	0.28%	0.01	0.47	0.08	0.00	0.02	0.01
T6 instate construction heavy	15 MPH	0.60%	0.04	1.27	0.20	0.00	0.04	0.02
T6 instate construction small	15 MPH	2.46%	0.14	4.67	0.75	0.02	0.16	0.07
T6 instate heavy	15 MPH	2.02%	0.12	4.08	0.65	0.01	0.13	0.06
T6 instate small	15 MPH	5.11%	0.30	9.72	1.57	0.03	0.32	0.14
T6 OOS heavy	15 MPH	0.05%	0.00	0.09	0.02	0.00	0.00	0.00
T6 OOS small	15 MPH	0.16%	0.01	0.27	0.05	0.00	0.01	0.00
T6 Public	15 MPH	0.30%	0.01	0.41	0.07	0.00	0.02	0.01
T6 utility	15 MPH	0.04%	0.00	0.05	0.01	0.00	0.00	0.00
T6TS	15 MPH	1.24%	0.01	0.07	0.16	0.01	0.08	0.03
T7 Ag	15 MPH	0.05%	0.01	0.24	0.05	0.00	0.00	0.00
T7 CAIRP	15 MPH	2.90%	0.40	11.30	2.39	0.02	0.13	0.05
T7 CAIRP construction	15 MPH	0.13%	0.02	0.54	0.11	0.00	0.01	0.00
T7 NNOOS	15 MPH	3.59%	0.44	11.72	2.61	0.03	0.16	0.07

T7 NOOS	15 MPH	1.14%	0.16	4.46	0.94	0.01	0.05	0.02
T7 other port	15 MPH	0.06%	0.01	0.26	0.05	0.00	0.00	0.00
T7 POAK	15 MPH	0.26%	0.04	1.13	0.23	0.00	0.01	0.00
T7 POLA	15 MPH	0.46%	0.07	2.01	0.41	0.00	0.02	0.01
T7 Public	15 MPH	0.13%	0.01	0.32	0.07	0.00	0.01	0.00
T7 Single	15 MPH	0.73%	0.09	2.23	0.51	0.01	0.03	0.01
T7 single construction	15 MPH	0.35%	0.04	1.05	0.24	0.00	0.02	0.01
T7 SWCV	15 MPH	0.33%	0.01	0.30	0.53	0.01	0.02	0.01
T7 tractor	15 MPH	4.23%	0.60	16.86	3.55	0.04	0.19	0.08
T7 tractor construction	15 MPH	0.26%	0.04	1.08	0.22	0.00	0.01	0.00
T7 utility	15 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	15 MPH	0.06%	0.02	0.10	1.13	0.00	0.00	0.00
UBUS	15 MPH	1.44%	0.11	1.14	4.53	0.01	0.33	0.15
All Other Buses	20 MPH	0.13%	0.02	0.62	0.13	0.00	0.03	0.01
LDA	20 MPH	30.37%	0.34	1.17	18.50	0.13	2.50	1.03
LDT1	20 MPH	1.63%	0.03	0.09	1.33	0.01	0.14	0.06
LDT2	20 MPH	9.98%	0.18	0.57	9.53	0.06	0.83	0.34
LHD1	20 MPH	12.70%	1.83	7.37	9.77	0.14	2.19	1.01
LHD2	20 MPH	5.23%	0.73	0.88	3.60	0.06	1.02	0.46
MCY	20 MPH	0.23%	1.66	0.50	9.28	0.00	0.01	0.00
MDV	20 MPH	4.99%	0.12	0.39	5.78	0.04	0.41	0.17
MH	20 MPH	0.25%	0.02	0.44	0.13	0.01	0.07	0.03
Motor Coach	20 MPH	0.06%	0.02	0.45	0.13	0.00	0.02	0.01
OBUS	20 MPH	0.40%	0.01	0.08	0.21	0.01	0.10	0.04
SBUS	20 MPH	0.46%	0.05	1.18	0.32	0.01	0.63	0.27
T6 Ag	20 MPH	0.22%	0.05	1.25	0.24	0.01	0.06	0.02
T6 CAIRP heavy	20 MPH	0.06%	0.01	0.24	0.05	0.00	0.01	0.01
T6 CAIRP small	20 MPH	0.17%	0.03	0.67	0.15	0.00	0.05	0.02
T6 instate construction heavy	20 MPH	0.37%	0.07	1.82	0.37	0.01	0.10	0.04
T6 instate construction small	20 MPH	1.52%	0.26	6.66	1.39	0.04	0.40	0.17
T6 instate heavy	20 MPH	1.25%	0.23	5.87	1.20	0.03	0.33	0.14
T6 instate small	20 MPH	3.15%	0.55	13.88	2.90	0.07	0.82	0.35
T6 OOS heavy	20 MPH	0.03%	0.01	0.14	0.03	0.00	0.01	0.00
T6 OOS small	20 MPH	0.10%	0.02	0.38	0.08	0.00	0.03	0.01
T6 Public	20 MPH	0.18%	0.03	0.60	0.13	0.00	0.05	0.02
T6 utility	20 MPH	0.02%	0.00	0.07	0.02	0.00	0.01	0.00
T6TS	20 MPH	0.75%	0.02	0.15	0.37	0.02	0.19	0.08
T7 Ag	20 MPH	0.07%	0.03	0.75	0.20	0.00	0.01	0.01
T7 CAIRP	20 MPH	3.69%	1.55	33.20	9.12	0.11	0.70	0.28
T7 CAIRP construction	20 MPH	0.17%	0.07	1.59	0.43	0.01	0.03	0.01
T7 NNOOS	20 MPH	4.57%	1.69	34.35	9.96	0.14	0.85	0.34
T7 NOOS	20 MPH	1.46%	0.61	13.12	3.61	0.04	0.27	0.11
T7 other port	20 MPH	0.08%	0.03	0.77	0.21	0.00	0.01	0.01
T7 POAK	20 MPH	0.32%	0.15	3.32	0.88	0.01	0.06	0.03
T7 POLA	20 MPH	0.59%	0.27	5.90	1.58	0.02	0.11	0.05
T7 Public	20 MPH	0.16%	0.05	1.00	0.28	0.01	0.03	0.01
T7 Single	20 MPH	0.93%	0.33	6.67	1.96	0.03	0.17	0.07
T7 single construction	20 MPH	0.44%	0.16	3.13	0.92	0.01	0.08	0.03
T7 SWCV	20 MPH	0.17%	0.02	0.49	0.85	0.01	0.03	0.01
T7 tractor	20 MPH	5.39%	2.30	49.68	13.56	0.17	1.02	0.41
T7 tractor construction	20 MPH	0.33%	0.15	3.19	0.86	0.01	0.06	0.03
T7 utility	20 MPH	0.01%	0.00	0.02	0.01	0.00	0.00	0.00
T7IS	20 MPH	0.06%	0.06	0.38	4.28	0.00	0.01	0.00
UBUS	20 MPH	7.34%	1.14	18.09	44.23	0.13	6.90	3.04
All Other Buses	25 MPH	0.02%	0.02	0.30	0.08	0.00	0.03	0.01
LDA	25 MPH	59.91%	2.81	11.92	189.27	1.19	27.82	11.34
LDT1	25 MPH	3.22%	0.22	0.90	13.68	0.08	1.50	0.62
LDT2	25 MPH	19.68%	1.45	5.77	97.87	0.58	9.18	3.77
LHD1	25 MPH	1.78%	0.93	5.76	5.34	0.10	1.71	0.77
LHD2	25 MPH	0.75%	0.36	0.60	1.89	0.05	0.82	0.37
MCY	25 MPH	0.46%	14.08	5.28	90.34	0.01	0.09	0.04
MDV	25 MPH	9.84%	1.02	3.98	58.99	0.38	4.60	1.89
MH	25 MPH	0.04%	0.01	0.32	0.10	0.01	0.06	0.03
Motor Coach	25 MPH	0.01%	0.01	0.20	0.08	0.00	0.01	0.01
OBUS	25 MPH	0.07%	0.01	0.07	0.19	0.01	0.10	0.04
SBUS	25 MPH	0.11%	0.05	0.88	0.34	0.01	0.84	0.36
T6 Ag	25 MPH	0.03%	0.03	0.64	0.16	0.00	0.05	0.02
T6 CAIRP heavy	25 MPH	0.01%	0.01	0.11	0.03	0.00	0.01	0.01

T6 CAIRP small	25 MPH	0.03%	0.02	0.32	0.09	0.00	0.04	0.02
T6 instate construction heavy	25 MPH	0.06%	0.05	0.87	0.24	0.01	0.09	0.04
T6 instate construction small	25 MPH	0.24%	0.17	3.16	0.90	0.03	0.35	0.15
T6 instate heavy	25 MPH	0.19%	0.15	2.82	0.78	0.02	0.29	0.12
T6 instate small	25 MPH	0.49%	0.36	6.61	1.88	0.06	0.73	0.31
T6 OOS heavy	25 MPH	0.01%	0.00	0.06	0.02	0.00	0.01	0.00
T6 OOS small	25 MPH	0.02%	0.01	0.18	0.05	0.00	0.02	0.01
T6 Public	25 MPH	0.03%	0.02	0.30	0.09	0.00	0.04	0.02
T6 utility	25 MPH	0.00%	0.00	0.03	0.01	0.00	0.01	0.00
T6TS	25 MPH	0.12%	0.02	0.13	0.32	0.02	0.18	0.08
T7 Ag	25 MPH	0.01%	0.02	0.40	0.13	0.00	0.01	0.00
T7 CAIRP	25 MPH	0.57%	0.99	15.58	5.86	0.09	0.61	0.24
T7 CAIRP construction	25 MPH	0.03%	0.05	0.74	0.28	0.00	0.03	0.01
T7 NNOOS	25 MPH	0.71%	1.08	16.04	6.40	0.11	0.74	0.29
T7 NOOS	25 MPH	0.23%	0.39	6.16	2.32	0.04	0.24	0.10
T7 other port	25 MPH	0.01%	0.02	0.36	0.13	0.00	0.01	0.01
T7 POAK	25 MPH	0.05%	0.10	1.55	0.57	0.01	0.05	0.02
T7 POLA	25 MPH	0.09%	0.17	2.77	1.01	0.01	0.10	0.04
T7 Public	25 MPH	0.03%	0.03	0.55	0.18	0.00	0.03	0.01
T7 Single	25 MPH	0.14%	0.21	3.21	1.26	0.02	0.15	0.06
T7 single construction	25 MPH	0.07%	0.10	1.50	0.59	0.01	0.07	0.03
T7 SWCV	25 MPH	0.04%	0.02	0.51	0.77	0.01	0.04	0.02
T7 tractor	25 MPH	0.83%	1.48	23.40	8.71	0.13	0.89	0.36
T7 tractor construction	25 MPH	0.05%	0.09	1.50	0.55	0.01	0.05	0.02
T7 utility	25 MPH	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
T7IS	25 MPH	0.01%	0.05	0.39	4.36	0.00	0.01	0.00
UBUS	25 MPH	0.01%	0.01	0.17	0.31	0.00	0.07	0.03
All Other Buses	30 MPH	0.02%	0.03	0.40	0.13	0.01	0.07	0.03
LDA	30 MPH	60.04%	5.17	26.06	410.91	2.42	65.40	26.51
LDT1	30 MPH	3.23%	0.40	1.96	29.74	0.17	3.53	1.44
LDT2	30 MPH	19.72%	2.67	12.63	212.74	1.17	21.56	8.78
LHD1	30 MPH	1.17%	1.11	8.98	6.73	0.14	2.61	1.17
LHD2	30 MPH	0.49%	0.42	0.84	2.29	0.06	1.25	0.55
MCY	30 MPH	0.46%	26.56	11.95	191.20	0.02	0.20	0.09
MDV	30 MPH	9.86%	1.89	8.69	127.95	0.78	10.80	4.41
MH	30 MPH	0.04%	0.02	0.57	0.19	0.01	0.13	0.06
Motor Coach	30 MPH	0.01%	0.02	0.29	0.14	0.00	0.03	0.01
OBUS	30 MPH	0.06%	0.02	0.14	0.35	0.02	0.20	0.08
SBUS	30 MPH	0.10%	0.08	1.21	0.58	0.02	1.82	0.78
T6 Ag	30 MPH	0.03%	0.05	0.90	0.25	0.01	0.11	0.05
T6 CAIRP heavy	30 MPH	0.01%	0.01	0.15	0.05	0.00	0.03	0.01
T6 CAIRP small	30 MPH	0.02%	0.03	0.42	0.15	0.01	0.09	0.04
T6 instate construction heavy	30 MPH	0.05%	0.07	1.16	0.38	0.01	0.19	0.08
T6 instate construction small	30 MPH	0.22%	0.27	4.20	1.44	0.06	0.76	0.32
T6 instate heavy	30 MPH	0.18%	0.24	3.79	1.24	0.05	0.62	0.27
T6 instate small	30 MPH	0.45%	0.57	8.80	3.00	0.12	1.57	0.67
T6 OOS heavy	30 MPH	0.00%	0.01	0.08	0.03	0.00	0.02	0.01
T6 OOS small	30 MPH	0.01%	0.02	0.24	0.09	0.00	0.05	0.02
T6 Public	30 MPH	0.03%	0.03	0.41	0.14	0.01	0.09	0.04
T6 utility	30 MPH	0.00%	0.00	0.04	0.02	0.00	0.01	0.01
T6TS	30 MPH	0.11%	0.03	0.24	0.60	0.03	0.37	0.15
T7 Ag	30 MPH	0.01%	0.05	0.82	0.28	0.01	0.03	0.01
T7 CAIRP	30 MPH	0.73%	2.22	29.02	13.13	0.26	1.83	0.73
T7 CAIRP construction	30 MPH	0.03%	0.11	1.38	0.62	0.01	0.08	0.03
T7 NNOOS	30 MPH	0.91%	2.43	29.75	14.33	0.32	2.25	0.89
T7 NOOS	30 MPH	0.29%	0.88	11.47	5.19	0.10	0.72	0.29
T7 other port	30 MPH	0.02%	0.05	0.67	0.30	0.01	0.04	0.02
T7 POAK	30 MPH	0.06%	0.22	2.88	1.27	0.02	0.16	0.07
T7 POLA	30 MPH	0.12%	0.38	5.17	2.27	0.04	0.29	0.12
T7 Public	30 MPH	0.03%	0.07	1.20	0.40	0.01	0.08	0.03
T7 Single	30 MPH	0.19%	0.48	6.12	2.82	0.07	0.46	0.18
T7 single construction	30 MPH	0.09%	0.22	2.85	1.33	0.03	0.22	0.08
T7 SWCV	30 MPH	0.03%	0.02	0.91	1.14	0.02	0.08	0.03
T7 tractor	30 MPH	1.07%	3.31	43.76	19.52	0.38	2.68	1.07
T7 tractor construction	30 MPH	0.07%	0.21	2.81	1.24	0.02	0.16	0.07
T7 utility	30 MPH	0.00%	0.00	0.02	0.01	0.00	0.00	0.00
T7IS	30 MPH	0.02%	0.13	1.18	13.19	0.01	0.03	0.01
UBUS	30 MPH	0.01%	0.01	0.30	0.47	0.00	0.13	0.06

All Other Buses	35 MPH	0.02%	0.02	0.23	0.08	0.00	0.06	0.02
LDA	35 MPH	58.39%	2.93	16.89	261.07	1.49	44.92	18.14
LDT1	35 MPH	3.14%	0.23	1.27	18.91	0.10	2.43	0.98
LDT2	35 MPH	19.18%	1.51	8.19	135.28	0.72	14.80	6.00
LHD1	35 MPH	0.56%	0.31	3.11	1.95	0.05	0.88	0.39
LHD2	35 MPH	0.24%	0.12	0.27	0.66	0.02	0.44	0.19
MCY	35 MPH	0.45%	15.38	7.99	121.39	0.01	0.14	0.06
MDV	35 MPH	9.59%	1.07	5.63	81.24	0.48	7.41	3.01
MH	35 MPH	0.04%	0.01	0.46	0.16	0.01	0.11	0.05
Motor Coach	35 MPH	0.01%	0.02	0.18	0.09	0.00	0.03	0.01
OBUS	35 MPH	0.07%	0.01	0.12	0.29	0.01	0.18	0.07
SBUS	35 MPH	0.11%	0.05	0.63	0.35	0.02	1.36	0.58
T6 Ag	35 MPH	0.04%	0.03	0.54	0.16	0.01	0.09	0.04
T6 CAIRP heavy	35 MPH	0.01%	0.01	0.08	0.03	0.00	0.02	0.01
T6 CAIRP small	35 MPH	0.03%	0.02	0.24	0.10	0.01	0.07	0.03
T6 instate construction heavy	35 MPH	0.06%	0.05	0.67	0.24	0.01	0.16	0.07
T6 instate construction small	35 MPH	0.26%	0.17	2.40	0.91	0.05	0.65	0.28
T6 instate heavy	35 MPH	0.22%	0.15	2.19	0.79	0.04	0.53	0.23
T6 instate small	35 MPH	0.55%	0.36	5.05	1.90	0.10	1.35	0.57
T6 OOS heavy	35 MPH	0.01%	0.00	0.05	0.02	0.00	0.01	0.01
T6 OOS small	35 MPH	0.02%	0.01	0.14	0.05	0.00	0.04	0.02
T6 Public	35 MPH	0.03%	0.02	0.25	0.09	0.01	0.08	0.03
T6 utility	35 MPH	0.00%	0.00	0.02	0.01	0.00	0.01	0.00
T6TS	35 MPH	0.14%	0.02	0.21	0.50	0.03	0.33	0.14
T7 Ag	35 MPH	0.03%	0.05	0.78	0.27	0.01	0.04	0.02
T7 CAIRP	35 MPH	1.36%	2.14	25.28	12.66	0.33	2.38	0.95
T7 CAIRP construction	35 MPH	0.06%	0.10	1.20	0.60	0.02	0.11	0.04
T7 NNOOS	35 MPH	1.68%	2.34	25.80	13.81	0.41	2.93	1.15
T7 NOOS	35 MPH	0.54%	0.85	10.00	5.00	0.13	0.94	0.37
T7 other port	35 MPH	0.03%	0.05	0.58	0.29	0.01	0.05	0.02
T7 POAK	35 MPH	0.12%	0.21	2.49	1.22	0.03	0.21	0.08
T7 POLA	35 MPH	0.22%	0.37	4.51	2.19	0.05	0.38	0.15
T7 Public	35 MPH	0.06%	0.07	1.25	0.39	0.02	0.11	0.04
T7 Single	35 MPH	0.34%	0.46	5.46	2.72	0.08	0.60	0.23
T7 single construction	35 MPH	0.16%	0.22	2.53	1.28	0.04	0.28	0.11
T7 SWCV	35 MPH	0.08%	0.03	1.49	1.52	0.04	0.15	0.06
T7 tractor	35 MPH	1.98%	3.19	38.26	18.82	0.48	3.49	1.39
T7 tractor construction	35 MPH	0.12%	0.20	2.46	1.19	0.03	0.21	0.09
T7 utility	35 MPH	0.00%	0.00	0.02	0.01	0.00	0.00	0.00
T7IS	35 MPH	0.03%	0.14	1.43	15.75	0.01	0.04	0.02
UBUS	35 MPH	0.01%	0.01	0.27	0.38	0.00	0.12	0.05
All Other Buses	40 MPH	0.03%	0.02	0.29	0.11	0.01	0.10	0.04
LDA	40 MPH	58.95%	3.80	24.14	361.00	2.07	67.03	27.01
LDT1	40 MPH	3.17%	0.30	1.82	26.16	0.14	3.62	1.46
LDT2	40 MPH	19.37%	1.96	11.70	187.16	1.00	22.08	8.93
LHD1	40 MPH	0.25%	0.18	2.12	1.15	0.03	0.59	0.26
LHD2	40 MPH	0.11%	0.07	0.18	0.39	0.01	0.30	0.13
MCY	40 MPH	0.45%	20.35	11.75	171.93	0.02	0.20	0.09
MDV	40 MPH	9.69%	1.39	8.05	112.30	0.66	11.05	4.47
MH	40 MPH	0.05%	0.02	0.73	0.25	0.01	0.20	0.09
Motor Coach	40 MPH	0.02%	0.02	0.26	0.14	0.01	0.06	0.02
OBUS	40 MPH	0.09%	0.02	0.19	0.47	0.02	0.31	0.13
SBUS	40 MPH	0.07%	0.03	0.45	0.27	0.01	1.29	0.55
T6 Ag	40 MPH	0.04%	0.04	0.71	0.20	0.01	0.16	0.07
T6 CAIRP heavy	40 MPH	0.01%	0.01	0.10	0.04	0.00	0.04	0.02
T6 CAIRP small	40 MPH	0.04%	0.02	0.29	0.12	0.01	0.13	0.06
T6 instate construction heavy	40 MPH	0.08%	0.06	0.83	0.31	0.02	0.28	0.12
T6 instate construction small	40 MPH	0.31%	0.22	2.98	1.18	0.08	1.14	0.48
T6 instate heavy	40 MPH	0.26%	0.19	2.76	1.02	0.07	0.94	0.40
T6 instate small	40 MPH	0.65%	0.47	6.29	2.45	0.17	2.36	1.00
T6 OOS heavy	40 MPH	0.01%	0.00	0.06	0.02	0.00	0.02	0.01
T6 OOS small	40 MPH	0.02%	0.01	0.17	0.07	0.01	0.07	0.03
T6 Public	40 MPH	0.04%	0.02	0.33	0.11	0.01	0.14	0.06
T6 utility	40 MPH	0.01%	0.00	0.03	0.01	0.00	0.02	0.01
T6TS	40 MPH	0.16%	0.03	0.35	0.81	0.04	0.59	0.24
T7 Ag	40 MPH	0.02%	0.05	0.80	0.27	0.01	0.06	0.02
T7 CAIRP	40 MPH	1.22%	2.11	23.83	12.46	0.42	3.17	1.25
T7 CAIRP construction	40 MPH	0.06%	0.10	1.13	0.59	0.02	0.15	0.06
T7 NNOOS	40 MPH	1.52%	2.30	24.22	13.59	0.52	3.90	1.52

T7 NOOS	40 MPH	0.48%	0.83	9.43	4.92	0.17	1.25	0.49
T7 other port	40 MPH	0.03%	0.05	0.55	0.28	0.01	0.07	0.03
T7 POAK	40 MPH	0.11%	0.20	2.34	1.21	0.04	0.28	0.11
T7 POLA	40 MPH	0.19%	0.36	4.26	2.15	0.07	0.51	0.20
T7 Public	40 MPH	0.05%	0.07	1.40	0.39	0.02	0.14	0.06
T7 Single	40 MPH	0.31%	0.45	5.27	2.68	0.11	0.80	0.31
T7 single construction	40 MPH	0.15%	0.21	2.43	1.26	0.05	0.37	0.15
T7 SWCV	40 MPH	0.06%	0.03	1.41	1.14	0.04	0.15	0.06
T7 tractor	40 MPH	1.79%	3.14	36.21	18.51	0.61	4.64	1.83
T7 tractor construction	40 MPH	0.11%	0.20	2.32	1.17	0.04	0.28	0.11
T7 utility	40 MPH	0.00%	0.00	0.02	0.01	0.00	0.00	0.00
T7IS	40 MPH	0.02%	0.15	1.69	17.98	0.01	0.05	0.02
UBUS	40 MPH	0.02%	0.01	0.49	0.61	0.00	0.23	0.10
All Other Buses	45 MPH	0.03%	0.02	0.21	0.08	0.01	0.10	0.04
LDA	45 MPH	54.72%	2.75	18.61	265.75	1.58	53.14	21.38
LDT1	45 MPH	2.94%	0.22	1.41	19.27	0.11	2.87	1.16
LDT2	45 MPH	17.98%	1.42	9.03	137.83	0.76	17.50	7.06
LHD1	45 MPH	0.40%	0.21	2.94	1.42	0.04	0.79	0.34
LHD2	45 MPH	0.18%	0.08	0.23	0.46	0.02	0.40	0.17
MCY	45 MPH	0.42%	15.03	9.28	133.14	0.02	0.16	0.07
MDV	45 MPH	8.99%	1.00	6.22	82.66	0.51	8.76	3.54
MH	45 MPH	0.07%	0.02	0.73	0.25	0.01	0.22	0.09
Motor Coach	45 MPH	0.01%	0.01	0.15	0.08	0.00	0.04	0.02
OBUS	45 MPH	0.11%	0.02	0.21	0.49	0.02	0.35	0.14
SBUS	45 MPH	0.05%	0.01	0.20	0.13	0.01	0.76	0.32
T6 Ag	45 MPH	0.05%	0.03	0.56	0.15	0.01	0.16	0.07
T6 CAIRP heavy	45 MPH	0.01%	0.01	0.08	0.03	0.00	0.04	0.02
T6 CAIRP small	45 MPH	0.04%	0.02	0.21	0.09	0.01	0.13	0.05
T6 instate construction heavy	45 MPH	0.09%	0.04	0.62	0.23	0.02	0.28	0.12
T6 instate construction small	45 MPH	0.36%	0.16	2.20	0.87	0.08	1.14	0.48
T6 instate heavy	45 MPH	0.30%	0.14	2.06	0.75	0.06	0.93	0.40
T6 instate small	45 MPH	0.76%	0.34	4.66	1.80	0.17	2.35	1.00
T6 OOS heavy	45 MPH	0.01%	0.00	0.04	0.02	0.00	0.02	0.01
T6 OOS small	45 MPH	0.02%	0.01	0.12	0.05	0.01	0.07	0.03
T6 Public	45 MPH	0.04%	0.02	0.26	0.08	0.01	0.14	0.06
T6 utility	45 MPH	0.01%	0.00	0.02	0.01	0.00	0.02	0.01
T6TS	45 MPH	0.21%	0.03	0.37	0.84	0.04	0.65	0.27
T7 Ag	45 MPH	0.05%	0.06	1.08	0.34	0.01	0.10	0.04
T7 CAIRP	45 MPH	2.44%	2.65	30.03	15.67	0.69	5.40	2.12
T7 CAIRP construction	45 MPH	0.11%	0.13	1.42	0.74	0.03	0.25	0.10
T7 NNOOS	45 MPH	3.03%	2.90	30.38	17.10	0.85	6.64	2.58
T7 NOOS	45 MPH	0.96%	1.05	11.88	6.19	0.27	2.13	0.84
T7 other port	45 MPH	0.05%	0.06	0.68	0.35	0.01	0.11	0.04
T7 POAK	45 MPH	0.22%	0.26	2.94	1.52	0.06	0.48	0.19
T7 POLA	45 MPH	0.39%	0.46	5.38	2.70	0.11	0.86	0.34
T7 Public	45 MPH	0.11%	0.09	2.11	0.49	0.03	0.24	0.09
T7 Single	45 MPH	0.62%	0.57	6.78	3.37	0.18	1.35	0.52
T7 single construction	45 MPH	0.29%	0.27	3.13	1.58	0.08	0.64	0.25
T7 SWCV	45 MPH	0.07%	0.02	1.32	0.84	0.04	0.15	0.06
T7 tractor	45 MPH	3.57%	3.94	45.80	23.29	1.01	7.89	3.10
T7 tractor construction	45 MPH	0.22%	0.25	2.94	1.48	0.06	0.48	0.19
T7 utility	45 MPH	0.00%	0.00	0.02	0.01	0.00	0.01	0.00
T7IS	45 MPH	0.04%	0.18	2.12	21.53	0.01	0.06	0.03
UBUS	45 MPH	0.02%	0.01	0.49	0.55	0.00	0.24	0.10
All Other Buses	50 MPH	0.03%	0.00	0.07	0.02	0.00	0.04	0.02
LDA	50 MPH	53.64%	1.04	7.23	97.28	0.62	20.90	8.41
LDT1	50 MPH	2.88%	0.08	0.55	7.06	0.04	1.13	0.46
LDT2	50 MPH	17.62%	0.54	3.51	50.47	0.30	6.88	2.78
LHD1	50 MPH	1.74%	0.33	5.29	2.34	0.08	1.37	0.60
LHD2	50 MPH	0.75%	0.11	0.38	0.68	0.03	0.67	0.29
MCY	50 MPH	0.41%	5.79	3.67	52.83	0.01	0.06	0.03
MDV	50 MPH	8.81%	0.38	2.42	30.26	0.20	3.44	1.39
MH	50 MPH	0.06%	0.01	0.26	0.09	0.00	0.08	0.04
Motor Coach	50 MPH	0.02%	0.01	0.07	0.04	0.00	0.03	0.01
OBUS	50 MPH	0.10%	0.01	0.08	0.17	0.01	0.13	0.05
SBUS	50 MPH	0.02%	0.00	0.03	0.02	0.00	0.14	0.06
T6 Ag	50 MPH	0.06%	0.01	0.19	0.05	0.00	0.07	0.03
T6 CAIRP heavy	50 MPH	0.01%	0.00	0.02	0.01	0.00	0.02	0.01

T6 CAIRP small	50 MPH	0.04%	0.01	0.07	0.03	0.00	0.06	0.02
T6 instate construction heavy	50 MPH	0.09%	0.01	0.20	0.07	0.01	0.12	0.05
T6 instate construction small	50 MPH	0.39%	0.05	0.72	0.27	0.03	0.48	0.20
T6 instate heavy	50 MPH	0.32%	0.04	0.68	0.23	0.03	0.40	0.17
T6 instate small	50 MPH	0.80%	0.11	1.52	0.56	0.07	1.00	0.42
T6 OOS heavy	50 MPH	0.01%	0.00	0.01	0.01	0.00	0.01	0.00
T6 OOS small	50 MPH	0.03%	0.00	0.04	0.02	0.00	0.03	0.01
T6 Public	50 MPH	0.05%	0.01	0.09	0.03	0.00	0.06	0.02
T6 utility	50 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	50 MPH	0.19%	0.01	0.14	0.29	0.02	0.24	0.10
T7 Ag	50 MPH	0.04%	0.02	0.35	0.10	0.01	0.04	0.02
T7 CAIRP	50 MPH	2.40%	0.77	9.04	4.55	0.26	2.12	0.83
T7 CAIRP construction	50 MPH	0.11%	0.04	0.43	0.22	0.01	0.10	0.04
T7 NNOOS	50 MPH	2.97%	0.84	9.10	4.97	0.32	2.61	1.01
T7 NOOS	50 MPH	0.95%	0.30	3.58	1.80	0.10	0.84	0.33
T7 other port	50 MPH	0.05%	0.02	0.21	0.10	0.01	0.04	0.02
T7 POAK	50 MPH	0.21%	0.07	0.88	0.44	0.02	0.19	0.07
T7 POLA	50 MPH	0.38%	0.13	1.62	0.79	0.04	0.34	0.13
T7 Public	50 MPH	0.11%	0.03	0.76	0.14	0.01	0.09	0.04
T7 Single	50 MPH	0.61%	0.17	2.09	0.98	0.07	0.53	0.21
T7 single construction	50 MPH	0.29%	0.08	0.96	0.46	0.03	0.25	0.10
T7 SWCV	50 MPH	0.02%	0.00	0.17	0.08	0.00	0.02	0.01
T7 tractor	50 MPH	3.50%	1.15	13.84	6.76	0.38	3.10	1.21
T7 tractor construction	50 MPH	0.21%	0.07	0.89	0.43	0.02	0.19	0.07
T7 utility	50 MPH	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T7IS	50 MPH	0.04%	0.07	0.83	7.94	0.00	0.03	0.01
UBUS	50 MPH	0.02%	0.00	0.17	0.18	0.00	0.08	0.04
All Other Buses	55 MPH	0.05%	0.00	0.05	0.02	0.00	0.04	0.02
LDA	55 MPH	52.65%	0.67	4.61	57.70	0.41	13.29	5.35
LDT1	55 MPH	2.83%	0.05	0.35	4.19	0.03	0.72	0.29
LDT2	55 MPH	17.30%	0.35	2.24	29.95	0.20	4.38	1.77
LHD1	55 MPH	0.82%	0.09	1.66	0.69	0.02	0.42	0.18
LHD2	55 MPH	0.37%	0.03	0.12	0.20	0.01	0.21	0.09
MCY	55 MPH	0.40%	3.80	2.37	35.19	0.00	0.04	0.02
MDV	55 MPH	8.65%	0.25	1.55	17.96	0.13	2.19	0.89
MH	55 MPH	0.08%	0.01	0.21	0.07	0.00	0.07	0.03
Motor Coach	55 MPH	0.04%	0.01	0.06	0.03	0.00	0.03	0.01
OBUS	55 MPH	0.13%	0.01	0.06	0.13	0.01	0.10	0.04
SBUS	55 MPH	0.03%	0.00	0.02	0.02	0.00	0.13	0.06
T6 Ag	55 MPH	0.08%	0.01	0.14	0.03	0.00	0.06	0.03
T6 CAIRP heavy	55 MPH	0.02%	0.00	0.02	0.01	0.00	0.02	0.01
T6 CAIRP small	55 MPH	0.06%	0.00	0.05	0.02	0.00	0.05	0.02
T6 instate construction heavy	55 MPH	0.13%	0.01	0.15	0.05	0.01	0.11	0.05
T6 instate construction small	55 MPH	0.54%	0.03	0.51	0.18	0.03	0.44	0.18
T6 instate heavy	55 MPH	0.44%	0.03	0.49	0.16	0.02	0.36	0.15
T6 instate small	55 MPH	1.12%	0.07	1.09	0.38	0.06	0.90	0.38
T6 OOS heavy	55 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6 OOS small	55 MPH	0.04%	0.00	0.03	0.01	0.00	0.03	0.01
T6 Public	55 MPH	0.07%	0.00	0.07	0.02	0.00	0.05	0.02
T6 utility	55 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	55 MPH	0.24%	0.01	0.11	0.22	0.01	0.19	0.08
T7 Ag	55 MPH	0.05%	0.01	0.22	0.05	0.00	0.03	0.01
T7 CAIRP	55 MPH	2.80%	0.43	5.36	2.53	0.19	1.60	0.62
T7 CAIRP construction	55 MPH	0.13%	0.02	0.25	0.12	0.01	0.07	0.03
T7 NNOOS	55 MPH	3.47%	0.47	5.38	2.76	0.24	1.97	0.76
T7 NOOS	55 MPH	1.10%	0.17	2.12	1.00	0.08	0.63	0.25
T7 other port	55 MPH	0.06%	0.01	0.12	0.06	0.00	0.03	0.01
T7 POAK	55 MPH	0.25%	0.04	0.52	0.25	0.02	0.14	0.06
T7 POLA	55 MPH	0.45%	0.07	0.96	0.44	0.03	0.26	0.10
T7 Public	55 MPH	0.12%	0.01	0.54	0.08	0.01	0.07	0.03
T7 Single	55 MPH	0.71%	0.09	1.27	0.55	0.05	0.40	0.15
T7 single construction	55 MPH	0.33%	0.04	0.58	0.26	0.02	0.19	0.07
T7 SWCV	55 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	55 MPH	4.09%	0.64	8.24	3.77	0.28	2.34	0.91
T7 tractor construction	55 MPH	0.25%	0.04	0.53	0.24	0.02	0.14	0.06
T7 utility	55 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	55 MPH	0.05%	0.06	0.76	6.74	0.00	0.02	0.01
UBUS	55 MPH	0.03%	0.01	0.18	0.17	0.00	0.09	0.04

All Other Buses	60 MPH	0.02%	0.00	0.03	0.01	0.00	0.03	0.01
LDA	60 MPH	62.25%	1.35	8.75	100.50	0.82	24.76	9.97
LDT1	60 MPH	3.35%	0.11	0.66	7.30	0.06	1.34	0.54
LDT2	60 MPH	20.45%	0.70	4.25	52.16	0.40	8.16	3.29
LHD1	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	60 MPH	0.48%	7.65	4.53	71.74	0.01	0.07	0.03
MDV	60 MPH	10.23%	0.49	2.96	31.30	0.26	4.08	1.65
MH	60 MPH	0.04%	0.00	0.15	0.05	0.00	0.05	0.02
Motor Coach	60 MPH	0.02%	0.00	0.04	0.02	0.00	0.02	0.01
OBUS	60 MPH	0.06%	0.00	0.05	0.09	0.00	0.08	0.03
SBUS	60 MPH	0.01%	0.00	0.01	0.01	0.00	0.05	0.02
T6 Ag	60 MPH	0.04%	0.00	0.10	0.02	0.00	0.05	0.02
T6 CAIRP heavy	60 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.01
T6 CAIRP small	60 MPH	0.03%	0.00	0.03	0.01	0.00	0.04	0.02
T6 instate construction heavy	60 MPH	0.06%	0.01	0.10	0.03	0.01	0.08	0.03
T6 instate construction small	60 MPH	0.27%	0.02	0.35	0.12	0.02	0.34	0.14
T6 instate heavy	60 MPH	0.22%	0.02	0.34	0.10	0.02	0.28	0.12
T6 instate small	60 MPH	0.55%	0.05	0.75	0.25	0.05	0.70	0.30
T6 OOS heavy	60 MPH	0.01%	0.00	0.01	0.00	0.00	0.01	0.00
T6 OOS small	60 MPH	0.02%	0.00	0.02	0.01	0.00	0.02	0.01
T6 Public	60 MPH	0.03%	0.00	0.05	0.01	0.00	0.04	0.02
T6 utility	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6TS	60 MPH	0.12%	0.01	0.08	0.15	0.01	0.14	0.06
T7 Ag	60 MPH	0.01%	0.00	0.04	0.01	0.00	0.01	0.00
T7 CAIRP	60 MPH	0.35%	0.07	0.94	0.43	0.04	0.31	0.12
T7 CAIRP construction	60 MPH	0.02%	0.00	0.04	0.02	0.00	0.01	0.01
T7 NNOOS	60 MPH	0.43%	0.08	0.94	0.47	0.05	0.39	0.15
T7 NOOS	60 MPH	0.14%	0.03	0.37	0.17	0.01	0.12	0.05
T7 other port	60 MPH	0.01%	0.00	0.02	0.01	0.00	0.01	0.00
T7 POAK	60 MPH	0.03%	0.01	0.09	0.04	0.00	0.03	0.01
T7 POLA	60 MPH	0.06%	0.01	0.17	0.07	0.01	0.05	0.02
T7 Public	60 MPH	0.02%	0.00	0.10	0.01	0.00	0.01	0.01
T7 Single	60 MPH	0.09%	0.02	0.22	0.09	0.01	0.08	0.03
T7 single construction	60 MPH	0.04%	0.01	0.10	0.04	0.00	0.04	0.01
T7 SWCV	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	60 MPH	0.51%	0.11	1.45	0.63	0.05	0.46	0.18
T7 tractor construction	60 MPH	0.03%	0.01	0.09	0.04	0.00	0.03	0.01
T7 utility	60 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	60 MPH	0.01%	0.01	0.12	1.00	0.00	0.00	0.00
UBUS	60 MPH	0.02%	0.01	0.18	0.16	0.00	0.09	0.04
All Other Buses	65 MPH	0.00%	0.00	0.07	0.02	0.00	0.06	0.03
LDA	65 MPH	63.34%	15.94	94.80	985.79	9.56	259.21	104.59
LDT1	65 MPH	3.41%	1.25	7.21	71.61	0.66	13.99	5.67
LDT2	65 MPH	20.81%	8.26	46.10	511.59	4.62	85.40	34.59
LHD1	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	65 MPH	0.49%	91.13	49.09	864.61	0.10	0.79	0.35
MDV	65 MPH	10.41%	5.76	32.33	307.34	3.06	42.75	17.33
MH	65 MPH	0.01%	0.01	0.33	0.10	0.01	0.11	0.05
Motor Coach	65 MPH	0.00%	0.00	0.06	0.03	0.00	0.03	0.01
OBUS	65 MPH	0.01%	0.01	0.10	0.17	0.01	0.16	0.07
SBUS	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	65 MPH	0.01%	0.01	0.21	0.04	0.01	0.10	0.04
T6 CAIRP heavy	65 MPH	0.00%	0.00	0.03	0.01	0.00	0.03	0.01
T6 CAIRP small	65 MPH	0.01%	0.01	0.07	0.03	0.01	0.08	0.03
T6 instate construction heavy	65 MPH	0.01%	0.01	0.21	0.07	0.01	0.18	0.07
T6 instate construction small	65 MPH	0.06%	0.05	0.75	0.26	0.05	0.72	0.30
T6 instate heavy	65 MPH	0.05%	0.04	0.72	0.22	0.04	0.59	0.25
T6 instate small	65 MPH	0.11%	0.10	1.60	0.53	0.10	1.49	0.63
T6 OOS heavy	65 MPH	0.00%	0.00	0.01	0.01	0.00	0.02	0.01
T6 OOS small	65 MPH	0.00%	0.00	0.04	0.02	0.00	0.05	0.02
T6 Public	65 MPH	0.01%	0.00	0.11	0.03	0.01	0.09	0.04
T6 utility	65 MPH	0.00%	0.00	0.01	0.00	0.00	0.01	0.00
T6TS	65 MPH	0.02%	0.02	0.18	0.30	0.02	0.31	0.13
T7 Ag	65 MPH	0.00%	0.01	0.30	0.07	0.01	0.04	0.02
T7 CAIRP	65 MPH	0.25%	0.54	6.97	3.16	0.27	2.32	0.90
T7 CAIRP construction	65 MPH	0.01%	0.03	0.33	0.15	0.01	0.11	0.04
T7 NNOOS	65 MPH	0.31%	0.58	6.97	3.45	0.34	2.86	1.10

T7 NOOS	65 MPH	0.10%	0.21	2.76	1.25	0.11	0.92	0.36
T7 other port	65 MPH	0.01%	0.01	0.16	0.07	0.01	0.05	0.02
T7 POAK	65 MPH	0.02%	0.05	0.67	0.31	0.02	0.21	0.08
T7 POLA	65 MPH	0.04%	0.09	1.25	0.55	0.05	0.37	0.15
T7 Public	65 MPH	0.01%	0.02	0.77	0.10	0.01	0.10	0.04
T7 Single	65 MPH	0.06%	0.12	1.66	0.68	0.07	0.58	0.22
T7 single construction	65 MPH	0.03%	0.05	0.76	0.32	0.03	0.27	0.11
T7 SWCV	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	65 MPH	0.37%	0.80	10.73	4.70	0.40	3.39	1.32
T7 tractor construction	65 MPH	0.02%	0.05	0.69	0.30	0.03	0.21	0.08
T7 utility	65 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	65 MPH	0.00%	0.09	0.92	6.82	0.00	0.03	0.01
UBUS	65 MPH	0.00%	0.01	0.37	0.32	0.00	0.18	0.08
All Other Buses	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDA	70 MPH	64.34%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	70 MPH	3.46%	0.00	0.00	0.00	0.00	0.00	0.00
LDT2	70 MPH	21.14%	0.00	0.00	0.00	0.00	0.00	0.00
LHD1	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	70 MPH	0.49%	0.00	0.00	0.00	0.00	0.00	0.00
MDV	70 MPH	10.57%	0.00	0.00	0.00	0.00	0.00	0.00
MH	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
Motor Coach	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
OBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate construction small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 instate small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NNOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 NOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 other port	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POAK	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POLA	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 single construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 SWCV	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 tractor construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			**386.12**	**2,136.10**	**7,803.94**	**57.13**	**1,080.81**	**438.25**

Based on EMFAC2014, Version 1.0.7, emission factors for San Joaquin County - San Joaquin Valley Air Basin

Year 2017 GHG Emissions

Based on EMFAC2014, Version 1.0.7.

EMFAC2014 Speed Bins

	VMT Speed Bins (MPH)	Daily VMT	% of Total	Adjusted Daily VMT[1]	Adjusted Annual VMT[2]
5	0.00-7.50	3,000	0.04%	2,477	859,408
10	7.51-12.50	6,300	0.08%	5,201	1,804,756
15	12.51-17.50	16,650	0.21%	13,746	4,769,714
20	17.51-22.50	58,850	0.74%	48,584	16,858,717
25	22.51-27.50	344,100	4.32%	284,075	98,574,080
30	27.51-32.50	820,450	10.29%	677,331	235,033,723
35	32.51-37.50	650,700	8.16%	537,192	186,405,562
40	37.51-42.50	974,450	12.22%	804,467	279,149,993
45	42.51-47.60	732,700	9.19%	604,888	209,896,044
50	47.61-52.50	269,700	3.38%	222,654	77,260,766
55	52.51-57.50	109,750	1.38%	90,605	31,440,004
60	57.51-62.50	198,700	2.49%	164,039	56,921,447
65	62.51-67.50	3,787,650	47.51%	3,126,932	1,085,045,379
70	67.51-72.50	0	0.00%	0	0
	Total VMT	**7,973,000**		6,582,189	2,284,019,593
	SP	486,700		401,800	
	VMT/SP	16.38			

[1.] VMT is adjusted based on VMT per service population provided by Fehr and Peers (i.e., VMT/population and employment (service population)).

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Emission year			AR4 GWP	AR4 GWP	AR4 GWP		
Year 2017			298	1	25		
Vehicle Type	**Speed**	**Percent of VMT of SpeedBin**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
All Other Buses	05 MPH	0.18%	0.02	0.00	3.54	0.00	4
LDA	05 MPH	0.00%	0.00	0.00	0.00	0.00	0
LDT1	05 MPH	0.00%	0.00	0.00	0.00	0.00	0
LDT2	05 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD1	05 MPH	53.82%	1.03	0.04	623.72	0.04	638
LHD2	05 MPH	10.87%	0.19	0.01	130.99	0.01	133
MCY	05 MPH	0.00%	0.00	0.00	0.00	0.00	0
MDV	05 MPH	0.58%	0.00	0.00	8.66	0.00	9
MH	05 MPH	0.90%	0.04	0.00	27.21	0.00	28
Motor Coach	05 MPH	0.09%	0.01	0.00	2.56	0.00	3
OBUS	05 MPH	0.63%	0.01	0.00	21.23	0.00	21
SBUS	05 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Ag	05 MPH	0.45%	0.09	0.00	9.24	0.00	10
T6 CAIRP Heavy	05 MPH	0.08%	0.01	0.00	1.51	0.00	2
T6 CAIRP Small	05 MPH	0.24%	0.02	0.00	4.64	0.00	5
T6 Instate Construction Heavy	05 MPH	0.39%	0.05	0.00	7.78	0.00	8
T6 Instate Construction Small	05 MPH	1.60%	0.17	0.01	31.59	0.00	34
T6 Instate Heavy	05 MPH	2.08%	0.17	0.01	41.08	0.00	43
T6 Instate Small	05 MPH	4.97%	0.58	0.02	98.72	0.01	106
T6 OOS Heavy	05 MPH	0.04%	0.00	0.00	0.87	0.00	1
T6 OOS Small	05 MPH	0.14%	0.01	0.00	2.66	0.00	3
T6 Public	05 MPH	0.23%	0.03	0.00	4.58	0.00	5
T6 Utility	05 MPH	0.04%	0.00	0.00	0.80	0.00	1
T6TS	05 MPH	1.21%	0.02	0.00	40.48	0.00	41
T7 Ag	05 MPH	0.10%	0.03	0.00	3.10	0.00	4
T7 CAIRP	05 MPH	3.51%	0.61	0.03	98.11	0.00	106
T7 CAIRP Construction	05 MPH	0.13%	0.02	0.00	3.56	0.00	4
T7 NNOOS	05 MPH	4.35%	0.63	0.03	113.67	0.00	121
T7 NOOS	05 MPH	1.39%	0.24	0.01	38.74	0.00	42
T7 Other Port	05 MPH	0.07%	0.01	0.00	1.85	0.00	2
T7 POAK	05 MPH	0.17%	0.03	0.00	4.92	0.00	5
T7 POLA	05 MPH	0.31%	0.05	0.00	9.03	0.00	10

T7 Public	05 MPH	0.14%	0.03	0.00	4.11	0.00	4
T7 Single	05 MPH	0.93%	0.16	0.01	26.93	0.00	29
T7 Single Construction	05 MPH	0.32%	0.06	0.00	9.29	0.00	10
T7 SWCV	05 MPH	2.30%	0.50	0.02	148.52	0.08	157
T7 Tractor	05 MPH	5.02%	0.87	0.04	142.26	0.00	153
T7 Tractor Construction	05 MPH	0.24%	0.05	0.00	6.98	0.00	8
T7 Utility	05 MPH	0.01%	0.00	0.00	0.17	0.00	0
T7IS	05 MPH	0.07%	0.00	0.00	2.65	0.00	3
UBUS	05 MPH	2.41%	0.56	0.02	76.03	0.17	87
			0.00		0.00	0.00	
All Other Buses	10 MPH	0.25%	0.05	0.00	9.32	0.00	10
LDA	10 MPH	3.32%	0.01	0.00	42.92	0.00	43
LDT1	10 MPH	0.26%	0.00	0.00	3.95	0.00	4
LDT2	10 MPH	1.12%	0.00	0.00	19.72	0.00	20
LHD1	10 MPH	43.98%	1.81	0.08	975.49	0.05	999
LHD2	10 MPH	9.28%	0.35	0.01	219.98	0.01	224
MCY	10 MPH	0.03%	0.00	0.00	0.25	0.00	0
MDV	10 MPH	0.92%	0.01	0.00	21.58	0.00	22
MH	10 MPH	1.27%	0.09	0.00	69.55	0.00	71
Motor Coach	10 MPH	0.12%	0.04	0.00	6.67	0.00	7
OBUS	10 MPH	0.90%	0.02	0.00	53.93	0.00	54
SBUS	10 MPH	0.57%	0.13	0.01	20.50	0.00	22
T6 Ag	10 MPH	0.63%	0.22	0.01	24.55	0.00	27
T6 CAIRP heavy	10 MPH	0.11%	0.01	0.00	3.96	0.00	4
T6 CAIRP small	10 MPH	0.33%	0.05	0.00	12.19	0.00	13
T6 instate construction heavy	10 MPH	0.55%	0.11	0.00	20.49	0.00	22
T6 instate construction small	10 MPH	2.25%	0.41	0.02	83.16	0.00	88
T6 instate heavy	10 MPH	2.92%	0.42	0.02	107.69	0.00	113
T6 instate small	10 MPH	6.98%	1.41	0.06	260.23	0.01	278
T6 OOS heavy	10 MPH	0.06%	0.01	0.00	2.27	0.00	2
T6 OOS small	10 MPH	0.19%	0.03	0.00	6.98	0.00	7
T6 Public	10 MPH	0.32%	0.06	0.00	12.08	0.00	13
T6 utility	10 MPH	0.06%	0.00	0.00	2.08	0.00	2
T6TS	10 MPH	1.71%	0.05	0.00	102.82	0.01	104
T7 Ag	10 MPH	0.11%	0.06	0.00	6.31	0.00	7
T7 CAIRP	10 MPH	3.78%	1.12	0.05	197.27	0.00	211
T7 CAIRP construction	10 MPH	0.13%	0.04	0.00	7.18	0.00	8
T7 NNOOS	10 MPH	4.69%	1.13	0.05	228.22	0.00	242
T7 NOOS	10 MPH	1.49%	0.44	0.02	77.89	0.00	83
T7 other port	10 MPH	0.07%	0.02	0.00	3.72	0.00	4
T7 POAK	10 MPH	0.18%	0.05	0.00	9.90	0.00	11
T7 POLA	10 MPH	0.34%	0.10	0.00	18.16	0.00	19
T7 Public	10 MPH	0.15%	0.06	0.00	8.34	0.00	9
T7 Single	10 MPH	1.00%	0.30	0.01	54.41	0.00	58
T7 single construction	10 MPH	0.35%	0.10	0.00	18.76	0.00	20
T7 SWCV	10 MPH	1.56%	0.59	0.02	189.91	0.09	199
T7 tractor	10 MPH	5.40%	1.63	0.07	286.40	0.01	307
T7 tractor construction	10 MPH	0.26%	0.09	0.00	14.11	0.00	15
T7 utility	10 MPH	0.01%	0.00	0.00	0.34	0.00	0
T7IS	10 MPH	0.10%	0.01	0.00	6.51	0.00	7
UBUS	10 MPH	2.25%	0.92	0.04	132.94	0.25	151
			0.00				
All Other Buses	15 MPH	0.18%	0.06	0.00	14.82	0.00	16
LDA	15 MPH	5.35%	0.03	0.00	140.64	0.01	141
LDT1	15 MPH	0.42%	0.01	0.00	12.92	0.00	13
LDT2	15 MPH	1.81%	0.02	0.00	64.60	0.00	65
LHD1	15 MPH	52.04%	5.74	0.24	2,060.17	0.10	2,134
LHD2	15 MPH	10.88%	1.09	0.05	463.20	0.01	477
MCY	15 MPH	0.06%	0.00	0.00	0.81	0.00	1
MDV	15 MPH	1.49%	0.03	0.00	70.75	0.00	71
MH	15 MPH	0.86%	0.12	0.01	88.61	0.01	90
Motor Coach	15 MPH	0.08%	0.04	0.00	9.34	0.00	10
OBUS	15 MPH	0.60%	0.03	0.00	65.99	0.00	66
SBUS	15 MPH	0.61%	0.26	0.01	46.18	0.00	49
T6 Ag	15 MPH	0.45%	0.30	0.01	38.47	0.00	42

T6 CAIRP heavy	15 MPH	0.08%	0.02	0.00	6.31	0.00	7
T6 CAIRP small	15 MPH	0.24%	0.07	0.00	19.33	0.00	20
T6 instate construction heavy	15 MPH	0.39%	0.15	0.01	32.49	0.00	34
T6 instate construction small	15 MPH	1.61%	0.55	0.02	131.68	0.00	139
T6 instate heavy	15 MPH	2.10%	0.58	0.02	171.58	0.00	179
T6 instate small	15 MPH	5.01%	1.88	0.08	411.29	0.01	435
T6 OOS heavy	15 MPH	0.04%	0.01	0.00	3.62	0.00	4
T6 OOS small	15 MPH	0.14%	0.04	0.00	11.07	0.00	12
T6 Public	15 MPH	0.23%	0.08	0.00	19.06	0.00	20
T6 utility	15 MPH	0.04%	0.00	0.00	3.31	0.00	3
T6TS	15 MPH	1.15%	0.08	0.00	125.82	0.01	127
T7 Ag	15 MPH	0.07%	0.08	0.00	8.94	0.00	10
T7 CAIRP	15 MPH	2.46%	1.39	0.06	284.75	0.00	302
T7 CAIRP construction	15 MPH	0.09%	0.05	0.00	10.35	0.00	11
T7 NNOOS	15 MPH	3.05%	1.29	0.05	329.09	0.00	345
T7 NOOS	15 MPH	0.97%	0.54	0.02	112.42	0.00	119
T7 other port	15 MPH	0.05%	0.02	0.00	5.39	0.00	6
T7 POAK	15 MPH	0.12%	0.07	0.00	14.36	0.00	15
T7 POLA	15 MPH	0.22%	0.12	0.01	26.34	0.00	28
T7 Public	15 MPH	0.10%	0.07	0.00	11.88	0.00	13
T7 Single	15 MPH	0.65%	0.37	0.02	78.13	0.00	83
T7 single construction	15 MPH	0.23%	0.13	0.01	26.94	0.00	29
T7 SWCV	15 MPH	0.38%	0.27	0.01	101.07	0.03	105
T7 tractor	15 MPH	3.52%	2.04	0.08	413.58	0.01	439
T7 tractor construction	15 MPH	0.17%	0.11	0.00	20.28	0.00	22
T7 utility	15 MPH	0.00%	0.00	0.00	0.48	0.00	0
T7IS	15 MPH	0.06%	0.01	0.00	7.19	0.00	7
UBUS	15 MPH	2.03%	1.56	0.06	249.47	0.31	277
			0.00	0.00	0.00	0.00	0
All Other Buses	20 MPH	0.10%	0.10	0.00	25.61	0.00	27
LDA	20 MPH	18.29%	0.32	0.01	1,358.12	0.04	1,363
LDT1	20 MPH	1.42%	0.07	0.00	124.78	0.01	126
LDT2	20 MPH	6.17%	0.19	0.01	623.77	0.02	627
LHD1	20 MPH	31.22%	12.47	0.52	3,761.31	0.16	3,920
LHD2	20 MPH	6.47%	2.33	0.10	838.00	0.02	867
MCY	20 MPH	0.19%	0.04	0.00	7.85	0.02	9
MDV	20 MPH	5.08%	0.28	0.01	683.32	0.03	688
MH	20 MPH	0.48%	0.20	0.01	125.27	0.01	128
Motor Coach	20 MPH	0.04%	0.07	0.00	16.39	0.00	17
OBUS	20 MPH	0.33%	0.05	0.00	90.41	0.00	91
SBUS	20 MPH	0.44%	0.51	0.02	96.33	0.00	103
T6 Ag	20 MPH	0.25%	0.47	0.02	64.05	0.00	70
T6 CAIRP heavy	20 MPH	0.04%	0.03	0.00	10.95	0.00	11
T6 CAIRP small	20 MPH	0.14%	0.10	0.00	33.24	0.00	34
T6 instate construction heavy	20 MPH	0.22%	0.23	0.01	55.72	0.00	59
T6 instate construction small	20 MPH	0.91%	0.82	0.03	225.37	0.00	236
T6 instate heavy	20 MPH	1.18%	0.89	0.04	298.05	0.00	309
T6 instate small	20 MPH	2.82%	2.80	0.12	700.91	0.01	736
T6 OOS heavy	20 MPH	0.03%	0.02	0.00	6.28	0.00	6
T6 OOS small	20 MPH	0.08%	0.06	0.00	19.05	0.00	20
T6 Public	20 MPH	0.13%	0.13	0.01	32.36	0.00	34
T6 utility	20 MPH	0.02%	0.01	0.00	5.77	0.00	6
T6TS	20 MPH	0.63%	0.14	0.01	172.37	0.02	175
T7 Ag	20 MPH	0.08%	0.24	0.01	30.55	0.00	34
T7 CAIRP	20 MPH	2.86%	4.23	0.18	1,021.39	0.01	1,074
T7 CAIRP construction	20 MPH	0.10%	0.17	0.01	36.94	0.00	39
T7 NNOOS	20 MPH	3.55%	3.58	0.15	1,180.46	0.01	1,225
T7 NOOS	20 MPH	1.13%	1.66	0.07	403.18	0.00	424
T7 other port	20 MPH	0.05%	0.08	0.00	19.45	0.00	20
T7 POAK	20 MPH	0.14%	0.22	0.01	51.82	0.00	55
T7 POLA	20 MPH	0.26%	0.40	0.02	95.07	0.00	100
T7 Public	20 MPH	0.11%	0.22	0.01	41.23	0.00	44
T7 Single	20 MPH	0.76%	1.15	0.05	276.46	0.00	291
T7 single construction	20 MPH	0.26%	0.39	0.02	95.33	0.00	100
T7 SWCV	20 MPH	0.19%	0.37	0.02	147.00	0.03	152

T7 tractor	20 MPH	4.09%	6.38	0.27	1,482.25	0.02	1,562
T7 tractor construction	20 MPH	0.20%	0.36	0.01	71.81	0.00	76
T7 utility	20 MPH	0.01%	0.00	0.00	1.74	0.00	2
T7IS	20 MPH	0.05%	0.04	0.00	18.66	0.00	19
UBUS	20 MPH	9.47%	20.28	0.84	3,248.69	2.31	3,558
			0.00				
All Other Buses	25 MPH	0.02%	0.10	0.00	26.48	0.00	28
LDA	25 MPH	52.45%	4.85	0.20	18,884.54	0.56	18,959
LDT1	25 MPH	4.07%	1.08	0.05	1,734.93	0.13	1,752
LDT2	25 MPH	17.71%	2.97	0.12	8,672.82	0.27	8,716
LHD1	25 MPH	5.24%	12.61	0.52	3,334.31	0.12	3,494
LHD2	25 MPH	1.15%	2.49	0.10	780.35	0.02	812
MCY	25 MPH	0.54%	0.59	0.02	109.13	0.30	124
MDV	25 MPH	14.58%	4.20	0.17	9,502.49	0.40	9,565
MH	25 MPH	0.10%	0.22	0.01	131.25	0.01	134
Motor Coach	25 MPH	0.01%	0.06	0.00	16.38	0.00	17
OBUS	25 MPH	0.07%	0.05	0.00	95.65	0.00	96
SBUS	25 MPH	0.13%	0.81	0.03	148.83	0.00	159
T6 Ag	25 MPH	0.05%	0.48	0.02	65.56	0.00	72
T6 CAIRP heavy	25 MPH	0.01%	0.02	0.00	11.39	0.00	12
T6 CAIRP small	25 MPH	0.03%	0.09	0.00	34.49	0.00	36
T6 instate construction heavy	25 MPH	0.04%	0.22	0.01	57.54	0.00	60
T6 instate construction small	25 MPH	0.18%	0.78	0.03	233.13	0.00	243
T6 instate heavy	25 MPH	0.23%	0.83	0.03	309.48	0.00	320
T6 instate small	25 MPH	0.55%	2.69	0.11	724.28	0.01	758
T6 OOS heavy	25 MPH	0.00%	0.01	0.00	6.54	0.00	7
T6 OOS small	25 MPH	0.02%	0.05	0.00	19.76	0.00	20
T6 Public	25 MPH	0.03%	0.12	0.01	33.37	0.00	35
T6 utility	25 MPH	0.00%	0.00	0.00	6.03	0.00	6
T6TS	25 MPH	0.13%	0.16	0.01	182.35	0.01	185
T7 Ag	25 MPH	0.02%	0.25	0.01	30.89	0.00	34
T7 CAIRP	25 MPH	0.55%	3.75	0.16	1,051.50	0.01	1,098
T7 CAIRP construction	25 MPH	0.02%	0.15	0.01	37.88	0.00	40
T7 NNOOS	25 MPH	0.68%	2.83	0.12	1,218.97	0.01	1,254
T7 NOOS	25 MPH	0.22%	1.46	0.06	415.17	0.00	433
T7 other port	25 MPH	0.01%	0.07	0.00	19.97	0.00	21
T7 POAK	25 MPH	0.03%	0.20	0.01	53.17	0.00	56
T7 POLA	25 MPH	0.05%	0.37	0.02	97.54	0.00	102
T7 Public	25 MPH	0.02%	0.22	0.01	41.93	0.00	45
T7 Single	25 MPH	0.15%	1.11	0.05	282.79	0.00	297
T7 single construction	25 MPH	0.05%	0.37	0.02	97.52	0.00	102
T7 SWCV	25 MPH	0.05%	0.52	0.02	209.05	0.04	217
T7 tractor	25 MPH	0.78%	5.93	0.25	1,521.99	0.01	1,596
T7 tractor construction	25 MPH	0.04%	0.34	0.01	73.41	0.00	78
T7 utility	25 MPH	0.00%	0.00	0.00	1.80	0.00	2
T7IS	25 MPH	0.01%	0.05	0.00	24.91	0.00	26
UBUS	25 MPH	0.02%	0.25	0.01	38.04	0.02	42
			0.00	0.00	0.00	0.00	0
All Other Buses	30 MPH	0.02%	0.22	0.01	62.51	0.00	65
LDA	30 MPH	52.58%	10.81	0.45	38,857.98	1.06	39,018
LDT1	30 MPH	4.08%	2.41	0.10	3,569.75	0.25	3,606
LDT2	30 MPH	17.75%	6.59	0.27	17,844.94	0.52	17,940
LHD1	30 MPH	3.97%	23.56	0.98	5,464.67	0.18	5,761
LHD2	30 MPH	0.86%	4.61	0.19	1,261.57	0.02	1,319
MCY	30 MPH	0.54%	1.39	0.06	224.53	0.57	256
MDV	30 MPH	14.61%	9.32	0.39	19,552.59	0.76	19,687
MH	30 MPH	0.10%	0.49	0.02	290.15	0.01	297
Motor Coach	30 MPH	0.01%	0.15	0.01	41.93	0.00	44
OBUS	30 MPH	0.07%	0.11	0.00	207.82	0.01	209
SBUS	30 MPH	0.14%	1.93	0.08	349.58	0.01	374
T6 Ag	30 MPH	0.05%	1.15	0.05	155.00	0.01	169
T6 CAIRP heavy	30 MPH	0.01%	0.05	0.00	26.85	0.00	28
T6 CAIRP small	30 MPH	0.03%	0.19	0.01	81.82	0.00	84
T6 instate construction heavy	30 MPH	0.05%	0.51	0.02	135.90	0.00	142
T6 instate construction small	30 MPH	0.19%	1.74	0.07	552.14	0.01	574

T6 instate heavy	30 MPH	0.24%	1.82	0.08	727.77	0.00	750
T6 instate small	30 MPH	0.58%	6.11	0.25	1,715.93	0.02	1,792
T6 OOS heavy	30 MPH	0.01%	0.03	0.00	15.41	0.00	16
T6 OOS small	30 MPH	0.02%	0.11	0.00	46.88	0.00	48
T6 Public	30 MPH	0.03%	0.29	0.01	79.02	0.00	83
T6 utility	30 MPH	0.00%	0.01	0.00	14.35	0.00	14
T6TS	30 MPH	0.13%	0.36	0.01	396.21	0.03	401
T7 Ag	30 MPH	0.02%	0.83	0.03	102.45	0.00	113
T7 CAIRP	30 MPH	0.81%	11.22	0.47	3,474.91	0.02	3,615
T7 CAIRP construction	30 MPH	0.03%	0.48	0.02	125.67	0.00	132
T7 NNOOS	30 MPH	1.01%	7.82	0.33	4,042.11	0.02	4,140
T7 NOOS	30 MPH	0.32%	4.36	0.18	1,372.34	0.01	1,427
T7 other port	30 MPH	0.02%	0.22	0.01	66.11	0.00	69
T7 POAK	30 MPH	0.04%	0.64	0.03	175.76	0.00	184
T7 POLA	30 MPH	0.07%	1.18	0.05	322.44	0.00	337
T7 Public	30 MPH	0.03%	0.72	0.03	139.16	0.00	148
T7 Single	30 MPH	0.22%	3.58	0.15	938.24	0.01	983
T7 single construction	30 MPH	0.07%	1.19	0.05	323.55	0.00	338
T7 SWCV	30 MPH	0.05%	1.15	0.05	461.07	0.07	477
T7 tractor	30 MPH	1.16%	18.49	0.77	5,018.77	0.04	5,249
T7 tractor construction	30 MPH	0.06%	1.08	0.05	243.39	0.00	257
T7 utility	30 MPH	0.00%	0.00	0.00	6.02	0.00	6
T7IS	30 MPH	0.02%	0.18	0.01	90.58	0.01	93
UBUS	30 MPH	0.02%	0.53	0.02	77.70	0.04	85
			0.00				
All Other Buses	35 MPH	0.03%	0.20	0.01	57.77	0.00	60
LDA	35 MPH	51.80%	8.01	0.33	27,126.38	0.69	27,243
LDT1	35 MPH	4.02%	1.80	0.07	2,491.81	0.16	2,518
LDT2	35 MPH	17.49%	4.87	0.20	12,456.39	0.34	12,525
LHD1	35 MPH	1.87%	9.13	0.38	2,043.42	0.06	2,158
LHD2	35 MPH	0.43%	1.89	0.08	499.25	0.01	523
MCY	35 MPH	0.53%	1.08	0.04	156.73	0.38	180
MDV	35 MPH	14.40%	6.89	0.29	13,650.28	0.49	13,748
MH	35 MPH	0.13%	0.48	0.02	273.34	0.01	280
Motor Coach	35 MPH	0.01%	0.15	0.01	40.98	0.00	43
OBUS	35 MPH	0.09%	0.11	0.00	197.10	0.01	199
SBUS	35 MPH	0.14%	1.58	0.07	279.98	0.00	300
T6 Ag	35 MPH	0.06%	1.08	0.04	143.22	0.00	157
T6 CAIRP heavy	35 MPH	0.01%	0.05	0.00	24.76	0.00	25
T6 CAIRP small	35 MPH	0.03%	0.16	0.01	75.92	0.00	78
T6 instate construction heavy	35 MPH	0.06%	0.47	0.02	125.64	0.00	131
T6 instate construction small	35 MPH	0.23%	1.55	0.06	511.57	0.00	531
T6 instate heavy	35 MPH	0.30%	1.60	0.07	670.02	0.00	690
T6 instate small	35 MPH	0.71%	5.50	0.23	1,589.96	0.02	1,659
T6 OOS heavy	35 MPH	0.01%	0.03	0.00	14.21	0.00	15
T6 OOS small	35 MPH	0.02%	0.09	0.00	43.50	0.00	45
T6 Public	35 MPH	0.03%	0.26	0.01	73.17	0.00	76
T6 utility	35 MPH	0.01%	0.01	0.00	13.36	0.00	13
T6TS	35 MPH	0.17%	0.35	0.01	375.78	0.02	381
T7 Ag	35 MPH	0.04%	1.18	0.05	144.37	0.01	159
T7 CAIRP	35 MPH	1.52%	14.68	0.61	4,884.61	0.03	5,067
T7 CAIRP construction	35 MPH	0.05%	0.64	0.03	177.36	0.00	185
T7 NNOOS	35 MPH	1.89%	9.65	0.40	5,698.47	0.02	5,819
T7 NOOS	35 MPH	0.60%	5.69	0.24	1,929.45	0.01	2,000
T7 other port	35 MPH	0.03%	0.30	0.01	93.18	0.00	97
T7 POAK	35 MPH	0.07%	0.88	0.04	247.43	0.00	258
T7 POLA	35 MPH	0.14%	1.61	0.07	453.94	0.00	474
T7 Public	35 MPH	0.06%	1.02	0.04	196.29	0.00	209
T7 Single	35 MPH	0.40%	4.97	0.21	1,323.96	0.01	1,386
T7 single construction	35 MPH	0.14%	1.65	0.07	456.58	0.00	477
T7 SWCV	35 MPH	0.13%	2.23	0.09	892.33	0.12	923
T7 tractor	35 MPH	2.18%	25.02	1.04	7,042.03	0.04	7,353
T7 tractor construction	35 MPH	0.10%	1.49	0.06	343.22	0.00	362
T7 utility	35 MPH	0.00%	0.01	0.00	8.56	0.00	9
T7IS	35 MPH	0.04%	0.25	0.01	127.72	0.01	131

UBUS	35 MPH	0.03%	0.55	0.02	78.10	0.03	86
			0.00				
All Other Buses	40 MPH	0.03%	0.30	0.01	85.90	0.00	90
LDA	40 MPH	53.56%	11.95	0.50	38,945.94	0.93	39,117
LDT1	40 MPH	4.16%	2.70	0.11	3,577.33	0.22	3,616
LDT2	40 MPH	18.08%	7.25	0.30	17,882.76	0.45	17,984
LHD1	40 MPH	0.70%	5.30	0.22	1,127.36	0.03	1,194
LHD2	40 MPH	0.18%	1.20	0.05	294.62	0.00	310
MCY	40 MPH	0.55%	1.67	0.07	225.01	0.52	259
MDV	40 MPH	14.88%	10.29	0.43	19,598.27	0.66	19,742
MH	40 MPH	0.13%	0.72	0.03	398.54	0.02	408
Motor Coach	40 MPH	0.02%	0.26	0.01	73.84	0.00	77
OBUS	40 MPH	0.09%	0.16	0.01	286.13	0.01	288
SBUS	40 MPH	0.08%	1.31	0.05	225.55	0.00	242
T6 Ag	40 MPH	0.07%	1.63	0.07	213.07	0.01	233
T6 CAIRP heavy	40 MPH	0.01%	0.06	0.00	36.72	0.00	38
T6 CAIRP small	40 MPH	0.04%	0.23	0.01	113.29	0.00	116
T6 instate construction heavy	40 MPH	0.06%	0.69	0.03	186.92	0.00	196
T6 instate construction small	40 MPH	0.24%	2.26	0.09	762.43	0.01	791
T6 instate heavy	40 MPH	0.31%	2.30	0.10	992.01	0.00	1,021
T6 instate small	40 MPH	0.74%	8.05	0.34	2,369.97	0.02	2,470
T6 OOS heavy	40 MPH	0.01%	0.04	0.00	21.07	0.00	22
T6 OOS small	40 MPH	0.02%	0.13	0.01	64.91	0.00	67
T6 Public	40 MPH	0.03%	0.39	0.02	109.01	0.00	114
T6 utility	40 MPH	0.01%	0.01	0.00	19.99	0.00	20
T6TS	40 MPH	0.18%	0.53	0.02	545.51	0.03	553
T7 Ag	40 MPH	0.03%	1.35	0.06	163.32	0.01	180
T7 CAIRP	40 MPH	1.20%	15.68	0.65	5,501.34	0.02	5,696
T7 CAIRP construction	40 MPH	0.04%	0.70	0.03	200.66	0.00	209
T7 NNOOS	40 MPH	1.49%	9.85	0.41	6,433.91	0.02	6,556
T7 NOOS	40 MPH	0.48%	6.06	0.25	2,173.41	0.01	2,249
T7 other port	40 MPH	0.02%	0.33	0.01	105.28	0.00	109
T7 POAK	40 MPH	0.06%	0.97	0.04	279.29	0.00	291
T7 POLA	40 MPH	0.11%	1.78	0.07	512.39	0.00	535
T7 Public	40 MPH	0.05%	1.16	0.05	222.10	0.00	236
T7 Single	40 MPH	0.32%	5.59	0.23	1,498.00	0.01	1,568
T7 single construction	40 MPH	0.11%	1.86	0.08	516.63	0.00	540
T7 SWCV	40 MPH	0.08%	1.94	0.08	769.43	0.09	796
T7 tractor	40 MPH	1.72%	27.48	1.14	7,919.76	0.04	8,261
T7 tractor construction	40 MPH	0.08%	1.65	0.07	388.10	0.00	409
T7 utility	40 MPH	0.00%	0.00	0.00	9.74	0.00	10
T7IS	40 MPH	0.03%	0.26	0.01	134.50	0.01	138
UBUS	40 MPH	0.03%	0.90	0.04	123.81	0.05	136
			0.00				
All Other Buses	45 MPH	0.03%	0.25	0.01	71.85	0.00	75
LDA	45 MPH	49.77%	8.19	0.34	26,190.89	0.59	26,307
LDT1	45 MPH	3.86%	1.87	0.08	2,405.66	0.14	2,432
LDT2	45 MPH	16.80%	4.96	0.21	12,025.71	0.29	12,095
LHD1	45 MPH	1.11%	6.53	0.27	1,322.71	0.03	1,404
LHD2	45 MPH	0.27%	1.45	0.06	333.44	0.00	352
MCY	45 MPH	0.51%	1.18	0.05	151.31	0.34	175
MDV	45 MPH	13.83%	7.06	0.29	13,179.33	0.42	13,277
MH	45 MPH	0.16%	0.67	0.03	353.47	0.01	362
Motor Coach	45 MPH	0.01%	0.17	0.01	48.27	0.00	50
OBUS	45 MPH	0.12%	0.15	0.01	257.42	0.01	259
SBUS	45 MPH	0.06%	0.66	0.03	110.23	0.00	118
T6 Ag	45 MPH	0.08%	1.39	0.06	178.74	0.00	196
T6 CAIRP heavy	45 MPH	0.01%	0.05	0.00	30.59	0.00	31
T6 CAIRP small	45 MPH	0.04%	0.19	0.01	95.05	0.00	97
T6 instate construction heavy	45 MPH	0.07%	0.58	0.02	156.47	0.00	164
T6 instate construction small	45 MPH	0.27%	1.87	0.08	639.26	0.00	663
T6 instate heavy	45 MPH	0.36%	1.88	0.08	825.48	0.00	849
T6 instate small	45 MPH	0.85%	6.70	0.28	1,987.89	0.02	2,071
T6 OOS heavy	45 MPH	0.01%	0.03	0.00	17.56	0.00	18
T6 OOS small	45 MPH	0.02%	0.11	0.00	54.46	0.00	56

T6 Public	45 MPH	0.04%	0.33	0.01	91.43	0.00	96
T6 utility	45 MPH	0.01%	0.01	0.00	16.80	0.00	17
T6TS	45 MPH	0.23%	0.50	0.02	490.77	0.03	498
T7 Ag	45 MPH	0.07%	1.98	0.08	234.48	0.01	259
T7 CAIRP	45 MPH	2.38%	21.45	0.89	7,830.63	0.03	8,097
T7 CAIRP construction	45 MPH	0.08%	0.97	0.04	287.12	0.00	299
T7 NNOOS	45 MPH	2.95%	13.01	0.54	9,177.12	0.02	9,339
T7 NOOS	45 MPH	0.94%	8.27	0.34	3,094.04	0.01	3,197
T7 other port	45 MPH	0.04%	0.46	0.02	150.36	0.00	156
T7 POAK	45 MPH	0.12%	1.37	0.06	398.55	0.00	416
T7 POLA	45 MPH	0.21%	2.51	0.10	731.18	0.00	762
T7 Public	45 MPH	0.09%	1.67	0.07	318.51	0.00	339
T7 Single	45 MPH	0.63%	8.02	0.33	2,145.03	0.01	2,245
T7 single construction	45 MPH	0.22%	2.66	0.11	739.81	0.00	773
T7 SWCV	45 MPH	0.09%	1.63	0.07	642.39	0.06	664
T7 tractor	45 MPH	3.40%	38.49	1.60	11,261.15	0.04	11,739
T7 tractor construction	45 MPH	0.16%	2.34	0.10	555.40	0.00	585
T7 utility	45 MPH	0.00%	0.01	0.00	13.99	0.00	14
T7IS	45 MPH	0.04%	0.28	0.01	147.78	0.01	152
UBUS	45 MPH	0.03%	0.79	0.03	105.38	0.04	116
			0.00	0.00	0.00	0.00	0
All Other Buses	50 MPH	0.04%	0.12	0.00	33.39	0.00	35
LDA	50 MPH	44.30%	2.67	0.11	8,570.62	0.19	8,608
LDT1	50 MPH	3.44%	0.62	0.03	787.20	0.04	796
LDT2	50 MPH	14.96%	1.62	0.07	3,935.15	0.09	3,958
LHD1	50 MPH	6.31%	14.24	0.59	2,924.04	0.07	3,102
LHD2	50 MPH	1.42%	2.88	0.12	662.46	0.01	698
MCY	50 MPH	0.46%	0.39	0.02	49.51	0.11	57
MDV	50 MPH	12.31%	2.31	0.10	4,312.89	0.13	4,345
MH	50 MPH	0.19%	0.29	0.01	143.41	0.01	147
Motor Coach	50 MPH	0.03%	0.11	0.00	32.14	0.00	34
OBUS	50 MPH	0.14%	0.06	0.00	100.60	0.00	101
SBUS	50 MPH	0.03%	0.14	0.01	22.94	0.00	25
T6 Ag	50 MPH	0.10%	0.66	0.03	83.65	0.00	92
T6 CAIRP heavy	50 MPH	0.02%	0.02	0.00	14.15	0.00	14
T6 CAIRP small	50 MPH	0.05%	0.09	0.00	44.31	0.00	45
T6 instate construction heavy	50 MPH	0.09%	0.27	0.01	72.84	0.00	76
T6 instate construction small	50 MPH	0.36%	0.87	0.04	298.02	0.00	309
T6 instate heavy	50 MPH	0.47%	0.86	0.04	381.37	0.00	392
T6 instate small	50 MPH	1.11%	3.13	0.13	927.52	0.01	966
T6 OOS heavy	50 MPH	0.01%	0.01	0.00	8.12	0.00	8
T6 OOS small	50 MPH	0.03%	0.05	0.00	25.39	0.00	26
T6 Public	50 MPH	0.05%	0.16	0.01	42.68	0.00	45
T6 utility	50 MPH	0.01%	0.00	0.00	7.83	0.00	8
T6TS	50 MPH	0.26%	0.21	0.01	191.80	0.01	195
T7 Ag	50 MPH	0.08%	0.88	0.04	102.17	0.00	113
T7 CAIRP	50 MPH	2.89%	8.95	0.37	3,362.82	0.01	3,474
T7 CAIRP construction	50 MPH	0.10%	0.41	0.02	124.06	0.00	129
T7 NNOOS	50 MPH	3.58%	5.28	0.22	3,947.73	0.01	4,013
T7 NOOS	50 MPH	1.14%	3.44	0.14	1,328.86	0.00	1,372
T7 other port	50 MPH	0.05%	0.20	0.01	64.79	0.00	67
T7 POAK	50 MPH	0.14%	0.58	0.02	171.60	0.00	179
T7 POLA	50 MPH	0.26%	1.07	0.04	314.81	0.00	328
T7 Public	50 MPH	0.11%	0.74	0.03	138.36	0.00	148
T7 Single	50 MPH	0.76%	3.50	0.15	928.39	0.00	972
T7 single construction	50 MPH	0.27%	1.16	0.05	320.22	0.00	335
T7 SWCV	50 MPH	0.04%	0.24	0.01	93.36	0.01	97
T7 tractor	50 MPH	4.13%	16.39	0.68	4,832.90	0.02	5,036
T7 tractor construction	50 MPH	0.20%	1.01	0.04	240.25	0.00	253
T7 utility	50 MPH	0.01%	0.00	0.00	6.06	0.00	6
T7IS	50 MPH	0.05%	0.13	0.01	65.55	0.01	67
UBUS	50 MPH	0.04%	0.32	0.01	41.21	0.01	46
			0.00	0.00	0.00	0.00	0
All Other Buses	55 MPH	0.07%	0.08	0.00	22.09	0.00	23
LDA	55 MPH	42.12%	1.05	0.04	3,438.23	0.07	3,453

LDT1	55 MPH	3.27%	0.25	0.01	315.78	0.02	319
LDT2	55 MPH	14.22%	0.64	0.03	1,578.54	0.04	1,587
LHD1	55 MPH	3.29%	3.14	0.13	651.95	0.01	691
LHD2	55 MPH	0.83%	0.71	0.03	163.32	0.00	172
MCY	55 MPH	0.43%	0.16	0.01	19.86	0.04	23
MDV	55 MPH	11.71%	0.91	0.04	1,730.36	0.05	1,743
MH	55 MPH	0.29%	0.18	0.01	87.21	0.00	90
Motor Coach	55 MPH	0.05%	0.09	0.00	26.81	0.00	28
OBUS	55 MPH	0.20%	0.04	0.00	59.41	0.00	60
SBUS	55 MPH	0.05%	0.10	0.00	15.54	0.00	17
T6 Ag	55 MPH	0.17%	0.45	0.02	55.99	0.00	62
T6 CAIRP heavy	55 MPH	0.03%	0.01	0.00	9.36	0.00	10
T6 CAIRP small	55 MPH	0.09%	0.06	0.00	29.41	0.00	30
T6 instate construction heavy	55 MPH	0.15%	0.18	0.01	48.31	0.00	51
T6 instate construction small	55 MPH	0.60%	0.58	0.02	197.94	0.00	205
T6 instate heavy	55 MPH	0.78%	0.56	0.02	252.11	0.00	259
T6 instate small	55 MPH	1.86%	2.10	0.09	616.88	0.00	643
T6 OOS heavy	55 MPH	0.02%	0.01	0.00	5.37	0.00	5
T6 OOS small	55 MPH	0.05%	0.03	0.00	16.85	0.00	17
T6 Public	55 MPH	0.09%	0.11	0.00	28.41	0.00	30
T6 utility	55 MPH	0.02%	0.00	0.00	5.19	0.00	5
T6TS	55 MPH	0.38%	0.13	0.01	113.27	0.01	115
T7 Ag	55 MPH	0.11%	0.50	0.02	57.09	0.00	63
T7 CAIRP	55 MPH	4.02%	4.80	0.20	1,850.50	0.00	1,910
T7 CAIRP construction	55 MPH	0.14%	0.23	0.01	68.32	0.00	71
T7 NNOOS	55 MPH	4.98%	2.76	0.11	2,174.79	0.00	2,209
T7 NOOS	55 MPH	1.59%	1.84	0.08	731.34	0.00	754
T7 other port	55 MPH	0.07%	0.11	0.00	35.53	0.00	37
T7 POAK	55 MPH	0.20%	0.32	0.01	94.05	0.00	98
T7 POLA	55 MPH	0.36%	0.58	0.02	172.55	0.00	180
T7 Public	55 MPH	0.16%	0.42	0.02	76.90	0.00	82
T7 Single	55 MPH	1.06%	1.96	0.08	512.73	0.00	537
T7 single construction	55 MPH	0.37%	0.65	0.03	176.86	0.00	185
T7 SWCV	55 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	55 MPH	5.74%	8.94	0.37	2,657.94	0.01	2,769
T7 tractor construction	55 MPH	0.28%	0.56	0.02	132.61	0.00	140
T7 utility	55 MPH	0.01%	0.00	0.00	3.34	0.00	3
T7IS	55 MPH	0.08%	0.09	0.00	43.84	0.00	45
UBUS	55 MPH	0.07%	0.25	0.01	31.83	0.01	35
			0.00				
All Other Buses	60 MPH	0.03%	0.06	0.00	16.72	0.00	17
LDA	60 MPH	56.28%	2.60	0.11	8,949.12	0.19	8,986
LDT1	60 MPH	4.37%	0.63	0.03	821.87	0.04	831
LDT2	60 MPH	19.00%	1.60	0.07	4,108.45	0.09	4,131
LHD1	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
MCY	60 MPH	0.58%	0.39	0.02	51.69	0.12	59
MDV	60 MPH	15.64%	2.29	0.10	4,503.84	0.13	4,536
MH	60 MPH	0.12%	0.14	0.01	65.12	0.00	67
Motor Coach	60 MPH	0.02%	0.06	0.00	17.76	0.00	19
OBUS	60 MPH	0.08%	0.03	0.00	43.98	0.00	44
SBUS	60 MPH	0.01%	0.03	0.00	5.49	0.00	6
T6 Ag	60 MPH	0.07%	0.35	0.01	42.70	0.00	47
T6 CAIRP heavy	60 MPH	0.01%	0.01	0.00	7.08	0.00	7
T6 CAIRP small	60 MPH	0.04%	0.04	0.00	22.29	0.00	23
T6 instate construction heavy	60 MPH	0.06%	0.14	0.01	36.62	0.00	38
T6 instate construction small	60 MPH	0.25%	0.44	0.02	150.13	0.00	156
T6 instate heavy	60 MPH	0.33%	0.42	0.02	190.63	0.00	196
T6 instate small	60 MPH	0.79%	1.60	0.07	468.31	0.00	488
T6 OOS heavy	60 MPH	0.01%	0.01	0.00	4.07	0.00	4
T6 OOS small	60 MPH	0.02%	0.02	0.00	12.77	0.00	13
T6 Public	60 MPH	0.04%	0.08	0.00	21.58	0.00	23
T6 utility	60 MPH	0.01%	0.00	0.00	3.92	0.00	4
T6TS	60 MPH	0.16%	0.10	0.00	83.85	0.01	85
T7 Ag	60 MPH	0.01%	0.10	0.00	11.05	0.00	12

T7 CAIRP	60 MPH	0.43%	0.91	0.04	354.75	0.00	366
T7 CAIRP construction	60 MPH	0.02%	0.04	0.00	13.11	0.00	14
T7 NNOOS	60 MPH	0.53%	0.52	0.02	417.09	0.00	424
T7 NOOS	60 MPH	0.17%	0.35	0.01	140.21	0.00	145
T7 other port	60 MPH	0.01%	0.02	0.00	6.80	0.00	7
T7 POAK	60 MPH	0.02%	0.06	0.00	17.99	0.00	19
T7 POLA	60 MPH	0.04%	0.11	0.00	33.01	0.00	34
T7 Public	60 MPH	0.02%	0.08	0.00	14.84	0.00	16
T7 Single	60 MPH	0.11%	0.38	0.02	98.53	0.00	103
T7 single construction	60 MPH	0.04%	0.13	0.01	33.98	0.00	36
T7 SWCV	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	60 MPH	0.62%	1.71	0.07	509.45	0.00	531
T7 tractor construction	60 MPH	0.03%	0.11	0.00	25.48	0.00	27
T7 utility	60 MPH	0.00%	0.00	0.00	0.64	0.00	1
T7IS	60 MPH	0.01%	0.01	0.00	6.80	0.00	7
UBUS	60 MPH	0.04%	0.25	0.01	30.79	0.01	34
			0.00				
All Other Buses	65 MPH	0.00%	0.12	0.00	32.39	0.00	34
LDA	65 MPH	58.16%	53.52	2.23	196,871.02	4.23	197,640
LDT1	65 MPH	4.51%	13.26	0.55	18,079.46	0.97	18,268
LDT2	65 MPH	19.63%	33.20	1.38	90,377.38	2.03	90,840
LHD1	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
MCY	65 MPH	0.60%	7.92	0.33	1,137.12	2.61	1,301
MDV	65 MPH	16.16%	47.75	1.99	99,079.85	2.97	99,746
MH	65 MPH	0.01%	0.27	0.01	127.70	0.01	131
Motor Coach	65 MPH	0.00%	0.08	0.00	23.55	0.00	25
OBUS	65 MPH	0.01%	0.06	0.00	86.16	0.00	87
SBUS	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Ag	65 MPH	0.01%	0.68	0.03	82.72	0.00	91
T6 CAIRP heavy	65 MPH	0.00%	0.02	0.00	13.72	0.00	14
T6 CAIRP small	65 MPH	0.00%	0.08	0.00	43.17	0.00	44
T6 instate construction heavy	65 MPH	0.01%	0.27	0.01	70.93	0.00	74
T6 instate construction small	65 MPH	0.03%	0.86	0.04	290.83	0.00	301
T6 instate heavy	65 MPH	0.03%	0.82	0.03	369.28	0.00	379
T6 instate small	65 MPH	0.08%	3.11	0.13	907.20	0.01	946
T6 OOS heavy	65 MPH	0.00%	0.01	0.00	7.88	0.00	8
T6 OOS small	65 MPH	0.00%	0.05	0.00	24.74	0.00	25
T6 Public	65 MPH	0.00%	0.16	0.01	41.81	0.00	44
T6 utility	65 MPH	0.00%	0.00	0.00	7.60	0.00	8
T6TS	65 MPH	0.02%	0.19	0.01	164.27	0.01	167
T7 Ag	65 MPH	0.00%	0.66	0.03	74.48	0.00	83
T7 CAIRP	65 MPH	0.15%	6.13	0.26	2,391.77	0.00	2,468
T7 CAIRP construction	65 MPH	0.01%	0.29	0.01	88.38	0.00	92
T7 NNOOS	65 MPH	0.19%	3.50	0.15	2,812.08	0.00	2,856
T7 NOOS	65 MPH	0.06%	2.35	0.10	945.31	0.00	975
T7 other port	65 MPH	0.00%	0.14	0.01	45.84	0.00	48
T7 POAK	65 MPH	0.01%	0.41	0.02	121.31	0.00	126
T7 POLA	65 MPH	0.01%	0.75	0.03	222.55	0.00	232
T7 Public	65 MPH	0.01%	0.55	0.02	100.02	0.00	107
T7 Single	65 MPH	0.04%	2.56	0.11	664.31	0.00	696
T7 single construction	65 MPH	0.01%	0.85	0.04	229.12	0.00	240
T7 SWCV	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	65 MPH	0.22%	11.53	0.48	3,434.78	0.01	3,578
T7 tractor construction	65 MPH	0.01%	0.73	0.03	171.78	0.00	181
T7 utility	65 MPH	0.00%	0.00	0.00	4.32	0.00	4
T7IS	65 MPH	0.00%	0.09	0.00	44.75	0.01	46
UBUS	65 MPH	0.00%	0.48	0.02	57.93	0.03	64
			0.00				
All Other Buses	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
LDA	70 MPH	58.70%	0.00	0.00	0.00	0.00	0
LDT1	70 MPH	4.56%	0.00	0.00	0.00	0.00	0
LDT2	70 MPH	19.82%	0.00	0.00	0.00	0.00	0
LHD1	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	70 MPH	0.00%	0.00	0.00	0.00	0.00	0

MCY	70 MPH	0.61%	0.00	0.00	0.00	0.00	0
MDV	70 MPH	16.31%	0.00	0.00	0.00	0.00	0
MH	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
Motor Coach	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
OBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
SBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 CAIRP heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 CAIRP small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate construction heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate construction small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 OOS heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 OOS small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6TS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 CAIRP	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 CAIRP construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 NNOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 NOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 other port	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 POAK	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 POLA	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Single	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 single construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 SWCV	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7IS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
UBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
TOTAL			**1,010.43**	**42.03**	**987,059.04**	**32.09**	**1,000,387.41**

Based on EMFAC2017, Version 1.0.7, emission factors for San Joaquin County - San Joaquin Valley Air Basin

Year 2040 GHG Emissions

Based on EMFAC2014, Version 1.0.7.

EMFAC2014 Speed Bins

	VMT Speed Bins (MPH)	Daily VMT	% of Total	Adjusted Daily VMT[1]	Adjusted Annual VMT[2]
5	0.00-7.50	14,450	0.13%	12,845	4,457,354
10	7.51-12.50	24,400	0.22%	21,691	7,526,605
15	12.51-17.50	22,000	0.20%	19,557	6,786,283
20	17.51-22.50	91,350	0.84%	81,206	28,178,497
25	22.51-27.50	518,150	4.75%	460,612	159,832,384
30	27.51-32.50	1,221,250	11.19%	1,085,636	376,715,813
35	32.51-37.50	865,150	7.93%	769,079	266,870,572
40	37.51-42.50	1,280,950	11.74%	1,138,707	395,131,317
45	42.51-47.60	1,095,050	10.04%	973,450	337,787,227
50	47.61-52.50	439,600	4.03%	390,785	135,602,269
55	52.51-57.50	284,750	2.61%	253,130	87,836,092
60	57.51-62.50	448,300	4.11%	398,519	138,285,936
65	62.51-67.50	4,605,550	42.21%	4,094,127	1,420,662,039
70	67.51-72.50	0	0.00%	0	0
	Total VMT	**10,910,950**		9,699,344	3,365,672,389
	SP	671,800		597,200	
	VMT/SP	16.24			

[1.] VMT is adjusted based on VMT per service population provided by Fehr and Peers (i.e., VMT/population and employment (service population)).

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Emission year			AR4 GWP	AR4 GWP	AR4 GWP		
Year 2040			298	1	25		
Vehicle Type	**Speed**	**Percent of VMT of SpeedBin**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
All Other Buses	05 MPH	0.29%	0.14	0.01	27.68	0.00	29
LDA	05 MPH	5.53%	0.01	0.00	127.31	0.00	127
LDT1	05 MPH	0.30%	0.00	0.00	8.79	0.00	9
LDT2	05 MPH	1.82%	0.00	0.00	61.67	0.00	62
LHD1	05 MPH	27.08%	0.49	0.02	1,448.77	0.03	1,456
LHD2	05 MPH	11.00%	0.10	0.00	607.94	0.01	610
MCY	05 MPH	0.04%	0.00	0.00	1.07	0.01	1
MDV	05 MPH	0.91%	0.00	0.00	40.59	0.00	41
MH	05 MPH	0.58%	0.07	0.00	84.89	0.00	86
Motor Coach	05 MPH	0.14%	0.11	0.00	18.87	0.00	20
OBUS	05 MPH	0.95%	0.01	0.00	154.73	0.00	155
SBUS	05 MPH	0.77%	0.19	0.01	67.03	0.00	69
T6 Ag	05 MPH	0.48%	0.25	0.01	46.10	0.00	49
T6 CAIRP Heavy	05 MPH	0.13%	0.05	0.00	11.69	0.00	12
T6 CAIRP Small	05 MPH	0.38%	0.15	0.01	36.18	0.00	38
T6 Instate Construction Heavy	05 MPH	0.82%	0.39	0.02	77.30	0.00	82
T6 Instate Construction Small	05 MPH	3.36%	1.45	0.06	316.12	0.00	334
T6 Instate Heavy	05 MPH	2.76%	1.26	0.05	257.86	0.00	274
T6 Instate Small	05 MPH	6.96%	3.02	0.13	656.26	0.00	694
T6 OOS Heavy	05 MPH	0.07%	0.03	0.00	6.70	0.00	7
T6 OOS Small	05 MPH	0.22%	0.08	0.00	20.73	0.00	22
T6 Public	05 MPH	0.40%	0.13	0.01	38.22	0.00	40
T6 Utility	05 MPH	0.05%	0.02	0.00	5.06	0.00	5
T6TS	05 MPH	1.78%	0.01	0.00	290.51	0.00	291
T7 Ag	05 MPH	0.11%	0.10	0.00	13.78	0.00	15
T7 CAIRP	05 MPH	5.68%	5.05	0.21	699.30	0.01	762
T7 CAIRP Construction	05 MPH	0.26%	0.24	0.01	32.58	0.00	36
T7 NNOOS	05 MPH	7.04%	5.25	0.22	865.94	0.01	931
T7 NOOS	05 MPH	2.24%	2.00	0.08	276.24	0.00	301
T7 Other Port	05 MPH	0.12%	0.12	0.00	14.64	0.00	16
T7 POAK	05 MPH	0.50%	0.51	0.02	62.06	0.00	68
T7 POLA	05 MPH	0.90%	0.90	0.04	112.52	0.00	124

T7 Public	05 MPH	0.25%	0.14	0.01	32.19	0.00	34
T7 Single	05 MPH	1.44%	0.99	0.04	180.36	0.00	193
T7 Single Construction	05 MPH	0.68%	0.47	0.02	84.92	0.00	91
T7 SWCV	05 MPH	2.73%	0.43	0.02	760.84	0.26	773
T7 Tractor	05 MPH	8.29%	7.53	0.31	1,023.46	0.01	1,117
T7 Tractor Construction	05 MPH	0.51%	0.48	0.02	62.99	0.00	69
T7 Utility	05 MPH	0.01%	0.00	0.00	1.02	0.00	1
T7IS	05 MPH	0.10%	0.02	0.00	16.97	0.00	17
UBUS	05 MPH	2.34%	0.33	0.01	348.55	0.41	363
All Other Buses	10 MPH	0.37%	0.22	0.01	51.64	0.00	54
LDA	10 MPH	10.37%	0.02	0.00	299.48	0.00	300
LDT1	10 MPH	0.56%	0.00	0.00	20.65	0.00	21
LDT2	10 MPH	3.41%	0.01	0.00	144.91	0.00	145
LHD1	10 MPH	20.16%	0.58	0.02	1,635.89	0.03	1,644
LHD2	10 MPH	8.38%	0.11	0.00	731.78	0.01	733
MCY	10 MPH	0.08%	0.01	0.00	2.52	0.01	3
MDV	10 MPH	1.70%	0.01	0.00	95.63	0.00	96
MH	10 MPH	0.72%	0.11	0.00	154.98	0.00	156
Motor Coach	10 MPH	0.17%	0.18	0.01	34.94	0.00	37
OBUS	10 MPH	1.19%	0.01	0.00	280.66	0.00	281
SBUS	10 MPH	0.67%	0.21	0.01	86.89	0.00	90
T6 Ag	10 MPH	0.60%	0.40	0.02	85.99	0.00	91
T6 CAIRP heavy	10 MPH	0.16%	0.08	0.00	21.80	0.00	23
T6 CAIRP small	10 MPH	0.48%	0.23	0.01	67.49	0.00	70
T6 instate construction heavy	10 MPH	1.02%	0.63	0.03	144.21	0.00	152
T6 instate construction small	10 MPH	4.18%	2.32	0.10	589.71	0.00	618
T6 instate heavy	10 MPH	3.44%	2.02	0.08	481.02	0.00	506
T6 instate small	10 MPH	8.67%	4.81	0.20	1,224.23	0.01	1,284
T6 OOS heavy	10 MPH	0.09%	0.05	0.00	12.49	0.00	13
T6 OOS small	10 MPH	0.27%	0.13	0.01	38.67	0.00	40
T6 Public	10 MPH	0.50%	0.20	0.01	71.32	0.00	74
T6 utility	10 MPH	0.07%	0.02	0.00	9.43	0.00	10
T6TS	10 MPH	2.24%	0.02	0.00	526.94	0.00	527
T7 Ag	10 MPH	0.10%	0.12	0.01	19.73	0.00	21
T7 CAIRP	10 MPH	5.43%	6.18	0.26	1,001.15	0.01	1,078
T7 CAIRP construction	10 MPH	0.25%	0.30	0.01	46.64	0.00	50
T7 NNOOS	10 MPH	6.73%	6.43	0.27	1,239.73	0.01	1,320
T7 NOOS	10 MPH	2.14%	2.44	0.10	395.48	0.00	426
T7 other port	10 MPH	0.11%	0.14	0.01	20.97	0.00	23
T7 POAK	10 MPH	0.48%	0.62	0.03	88.85	0.00	97
T7 POLA	10 MPH	0.86%	1.10	0.05	161.09	0.00	175
T7 Public	10 MPH	0.24%	0.17	0.01	46.13	0.00	48
T7 Single	10 MPH	1.38%	1.21	0.05	258.21	0.00	273
T7 single construction	10 MPH	0.65%	0.57	0.02	121.57	0.00	129
T7 SWCV	10 MPH	1.64%	0.36	0.02	686.33	0.21	696
T7 tractor	10 MPH	7.93%	9.21	0.38	1,465.23	0.01	1,580
T7 tractor construction	10 MPH	0.48%	0.59	0.02	90.18	0.00	98
T7 utility	10 MPH	0.01%	0.00	0.00	1.45	0.00	2
T7IS	10 MPH	0.12%	0.04	0.00	29.75	0.00	30
UBUS	10 MPH	1.94%	0.38	0.02	428.98	0.43	445
All Other Buses	15 MPH	0.22%	0.07	0.00	23.01	0.00	24
LDA	15 MPH	26.81%	0.04	0.00	537.95	0.01	539
LDT1	15 MPH	1.44%	0.00	0.00	37.07	0.00	37
LDT2	15 MPH	8.81%	0.02	0.00	260.12	0.00	260
LHD1	15 MPH	19.47%	0.46	0.02	956.74	0.01	963
LHD2	15 MPH	8.05%	0.07	0.00	430.83	0.01	432
MCY	15 MPH	0.21%	0.02	0.00	4.53	0.02	5
MDV	15 MPH	4.41%	0.01	0.00	172.02	0.00	172
MH	15 MPH	0.40%	0.04	0.00	55.32	0.00	56
Motor Coach	15 MPH	0.09%	0.05	0.00	13.69	0.00	14
OBUS	15 MPH	0.66%	0.01	0.00	96.16	0.00	96
SBUS	15 MPH	0.59%	0.10	0.00	53.85	0.00	55
T6 Ag	15 MPH	0.35%	0.13	0.01	38.32	0.00	40

T6 CAIRP heavy	15 MPH	0.09%	0.03	0.00	9.71	0.00	10
T6 CAIRP small	15 MPH	0.28%	0.07	0.00	30.07	0.00	31
T6 instate construction heavy	15 MPH	0.60%	0.20	0.01	64.26	0.00	67
T6 instate construction small	15 MPH	2.46%	0.74	0.03	262.77	0.00	272
T6 instate heavy	15 MPH	2.02%	0.64	0.03	214.34	0.00	222
T6 instate small	15 MPH	5.11%	1.53	0.06	545.51	0.00	565
T6 OOS heavy	15 MPH	0.05%	0.01	0.00	5.57	0.00	6
T6 OOS small	15 MPH	0.16%	0.04	0.00	17.23	0.00	18
T6 Public	15 MPH	0.30%	0.06	0.00	31.78	0.00	33
T6 utility	15 MPH	0.04%	0.01	0.00	4.20	0.00	4
T6TS	15 MPH	1.24%	0.01	0.00	180.55	0.00	181
T7 Ag	15 MPH	0.05%	0.04	0.00	7.97	0.00	8
T7 CAIRP	15 MPH	2.90%	1.78	0.07	404.25	0.00	426
T7 CAIRP construction	15 MPH	0.13%	0.09	0.00	18.83	0.00	20
T7 NNOOS	15 MPH	3.59%	1.84	0.08	500.58	0.00	524
T7 NOOS	15 MPH	1.14%	0.70	0.03	159.69	0.00	168
T7 other port	15 MPH	0.06%	0.04	0.00	8.47	0.00	9
T7 POAK	15 MPH	0.26%	0.18	0.01	35.88	0.00	38
T7 POLA	15 MPH	0.46%	0.32	0.01	65.05	0.00	69
T7 Public	15 MPH	0.13%	0.05	0.00	18.61	0.00	19
T7 Single	15 MPH	0.73%	0.35	0.01	104.26	0.00	109
T7 single construction	15 MPH	0.35%	0.17	0.01	49.09	0.00	51
T7 SWCV	15 MPH	0.33%	0.05	0.00	103.44	0.03	105
T7 tractor	15 MPH	4.23%	2.65	0.11	591.63	0.00	625
T7 tractor construction	15 MPH	0.26%	0.17	0.01	36.41	0.00	39
T7 utility	15 MPH	0.00%	0.00	0.00	0.59	0.00	1
T7IS	15 MPH	0.06%	0.02	0.00	9.21	0.00	9
UBUS	15 MPH	1.44%	0.18	0.01	216.58	0.14	222
All Other Buses	20 MPH	0.13%	0.10	0.00	51.43	0.00	53
LDA	20 MPH	30.37%	0.18	0.01	2,021.96	0.02	2,025
LDT1	20 MPH	1.63%	0.01	0.00	139.27	0.00	139
LDT2	20 MPH	9.98%	0.09	0.00	977.43	0.01	979
LHD1	20 MPH	12.70%	1.16	0.05	2,227.09	0.02	2,242
LHD2	20 MPH	5.23%	0.14	0.01	999.75	0.01	1,002
MCY	20 MPH	0.23%	0.08	0.00	17.02	0.06	19
MDV	20 MPH	4.99%	0.06	0.00	646.97	0.01	648
MH	20 MPH	0.25%	0.07	0.00	100.49	0.00	101
Motor Coach	20 MPH	0.06%	0.07	0.00	31.02	0.00	32
OBUS	20 MPH	0.40%	0.01	0.00	169.20	0.00	169
SBUS	20 MPH	0.46%	0.19	0.01	144.98	0.00	147
T6 Ag	20 MPH	0.22%	0.20	0.01	85.65	0.00	88
T6 CAIRP heavy	20 MPH	0.06%	0.04	0.00	21.69	0.00	22
T6 CAIRP small	20 MPH	0.17%	0.11	0.00	67.22	0.00	69
T6 instate construction heavy	20 MPH	0.37%	0.29	0.01	143.63	0.00	147
T6 instate construction small	20 MPH	1.52%	1.05	0.04	587.37	0.00	600
T6 instate heavy	20 MPH	1.25%	0.92	0.04	478.61	0.00	490
T6 instate small	20 MPH	3.15%	2.18	0.09	1,219.36	0.00	1,247
T6 OOS heavy	20 MPH	0.03%	0.02	0.00	12.43	0.00	13
T6 OOS small	20 MPH	0.10%	0.06	0.00	38.52	0.00	39
T6 Public	20 MPH	0.18%	0.09	0.00	70.99	0.00	72
T6 utility	20 MPH	0.02%	0.01	0.00	9.40	0.00	10
T6TS	20 MPH	0.75%	0.02	0.00	317.67	0.00	318
T7 Ag	20 MPH	0.07%	0.12	0.00	36.76	0.00	38
T7 CAIRP	20 MPH	3.69%	5.23	0.22	1,863.61	0.01	1,929
T7 CAIRP construction	20 MPH	0.17%	0.25	0.01	86.91	0.00	90
T7 NNOOS	20 MPH	4.57%	5.41	0.22	2,307.71	0.01	2,375
T7 NOOS	20 MPH	1.46%	2.07	0.09	736.17	0.00	762
T7 other port	20 MPH	0.08%	0.12	0.01	39.07	0.00	41
T7 POAK	20 MPH	0.32%	0.52	0.02	165.57	0.00	172
T7 POLA	20 MPH	0.59%	0.93	0.04	300.18	0.00	312
T7 Public	20 MPH	0.16%	0.16	0.01	85.66	0.00	88
T7 Single	20 MPH	0.93%	1.05	0.04	481.14	0.00	494
T7 single construction	20 MPH	0.44%	0.49	0.02	226.53	0.00	233
T7 SWCV	20 MPH	0.17%	0.08	0.00	199.57	0.04	202

T7 tractor	20 MPH	5.39%	7.82	0.33	2,727.47	0.02	2,825
T7 tractor construction	20 MPH	0.33%	0.50	0.02	168.04	0.00	174
T7 utility	20 MPH	0.01%	0.00	0.00	2.71	0.00	3
T7IS	20 MPH	0.06%	0.06	0.00	30.67	0.00	32
UBUS	20 MPH	7.34%	2.85	0.12	3,502.10	1.22	3,568
All Other Buses	25 MPH	0.02%	0.05	0.00	42.02	0.00	43
LDA	25 MPH	59.91%	1.88	0.08	18,767.83	0.18	18,795
LDT1	25 MPH	3.22%	0.14	0.01	1,292.56	0.01	1,295
LDT2	25 MPH	19.68%	0.91	0.04	9,071.45	0.09	9,085
LHD1	25 MPH	1.78%	0.91	0.04	1,592.24	0.01	1,604
LHD2	25 MPH	0.75%	0.10	0.00	732.20	0.00	733
MCY	25 MPH	0.46%	0.83	0.03	157.91	0.48	180
MDV	25 MPH	9.84%	0.63	0.03	6,007.36	0.06	6,017
MH	25 MPH	0.04%	0.05	0.00	82.31	0.00	83
Motor Coach	25 MPH	0.01%	0.03	0.00	24.48	0.00	25
OBUS	25 MPH	0.07%	0.01	0.00	139.91	0.00	140
SBUS	25 MPH	0.11%	0.14	0.01	177.01	0.00	179
T6 Ag	25 MPH	0.03%	0.10	0.00	69.97	0.00	71
T6 CAIRP heavy	25 MPH	0.01%	0.02	0.00	17.70	0.00	18
T6 CAIRP small	25 MPH	0.03%	0.05	0.00	54.92	0.00	56
T6 instate construction heavy	25 MPH	0.06%	0.14	0.01	117.34	0.00	119
T6 instate construction small	25 MPH	0.24%	0.50	0.02	479.84	0.00	486
T6 instate heavy	25 MPH	0.19%	0.44	0.02	390.61	0.00	396
T6 instate small	25 MPH	0.49%	1.04	0.04	996.14	0.00	1,009
T6 OOS heavy	25 MPH	0.01%	0.01	0.00	10.14	0.00	10
T6 OOS small	25 MPH	0.02%	0.03	0.00	31.47	0.00	32
T6 Public	25 MPH	0.03%	0.05	0.00	57.98	0.00	59
T6 utility	25 MPH	0.00%	0.01	0.00	7.68	0.00	8
T6TS	25 MPH	0.12%	0.02	0.00	262.69	0.00	263
T7 Ag	25 MPH	0.01%	0.06	0.00	29.75	0.00	31
T7 CAIRP	25 MPH	0.57%	2.45	0.10	1,506.53	0.01	1,537
T7 CAIRP construction	25 MPH	0.03%	0.12	0.00	70.32	0.00	72
T7 NNOOS	25 MPH	0.71%	2.52	0.11	1,865.54	0.01	1,897
T7 NOOS	25 MPH	0.23%	0.97	0.04	595.11	0.00	607
T7 other port	25 MPH	0.01%	0.06	0.00	31.61	0.00	32
T7 POAK	25 MPH	0.05%	0.24	0.01	133.98	0.00	137
T7 POLA	25 MPH	0.09%	0.44	0.02	242.90	0.00	248
T7 Public	25 MPH	0.03%	0.09	0.00	69.21	0.00	70
T7 Single	25 MPH	0.14%	0.51	0.02	389.33	0.00	396
T7 single construction	25 MPH	0.07%	0.24	0.01	183.30	0.00	186
T7 SWCV	25 MPH	0.04%	0.08	0.00	225.74	0.04	228
T7 tractor	25 MPH	0.83%	3.68	0.15	2,204.86	0.01	2,251
T7 tractor construction	25 MPH	0.05%	0.24	0.01	135.97	0.00	139
T7 utility	25 MPH	0.00%	0.00	0.00	2.19	0.00	2
T7IS	25 MPH	0.01%	0.06	0.00	32.01	0.00	33
UBUS	25 MPH	0.01%	0.03	0.00	31.88	0.01	32
All Other Buses	30 MPH	0.02%	0.06	0.00	86.12	0.00	87
LDA	30 MPH	60.04%	4.10	0.17	38,156.60	0.32	38,216
LDT1	30 MPH	3.23%	0.31	0.01	2,627.67	0.03	2,632
LDT2	30 MPH	19.72%	1.99	0.08	18,441.67	0.17	18,471
LHD1	30 MPH	1.17%	1.41	0.06	2,235.82	0.01	2,254
LHD2	30 MPH	0.49%	0.13	0.01	1,018.15	0.00	1,020
MCY	30 MPH	0.46%	1.88	0.08	321.02	0.90	367
MDV	30 MPH	9.86%	1.37	0.06	12,213.53	0.12	12,233
MH	30 MPH	0.04%	0.09	0.00	156.66	0.00	158
Motor Coach	30 MPH	0.01%	0.05	0.00	54.45	0.00	55
OBUS	30 MPH	0.06%	0.02	0.00	261.71	0.00	262
SBUS	30 MPH	0.10%	0.19	0.01	359.33	0.00	362
T6 Ag	30 MPH	0.03%	0.14	0.01	143.41	0.00	145
T6 CAIRP heavy	30 MPH	0.01%	0.02	0.00	36.23	0.00	37
T6 CAIRP small	30 MPH	0.02%	0.07	0.00	112.56	0.00	113
T6 instate construction heavy	30 MPH	0.05%	0.18	0.01	240.50	0.00	243
T6 instate construction small	30 MPH	0.22%	0.66	0.03	983.46	0.00	992

T6 instate heavy	30 MPH	0.18%	0.60	0.02	799.41	0.00	807
T6 instate small	30 MPH	0.45%	1.39	0.06	2,041.66	0.00	2,059
T6 OOS heavy	30 MPH	0.00%	0.01	0.00	20.76	0.00	21
T6 OOS small	30 MPH	0.01%	0.04	0.00	64.49	0.00	65
T6 Public	30 MPH	0.03%	0.06	0.00	118.80	0.00	120
T6 utility	30 MPH	0.00%	0.01	0.00	15.73	0.00	16
T6TS	30 MPH	0.11%	0.04	0.00	491.36	0.00	492
T7 Ag	30 MPH	0.01%	0.13	0.01	85.60	0.00	87
T7 CAIRP	30 MPH	0.73%	4.57	0.19	4,329.00	0.02	4,386
T7 CAIRP construction	30 MPH	0.03%	0.22	0.01	202.37	0.00	205
T7 NNOOS	30 MPH	0.91%	4.68	0.19	5,360.64	0.02	5,419
T7 NOOS	30 MPH	0.29%	1.81	0.08	1,710.06	0.01	1,733
T7 other port	30 MPH	0.02%	0.11	0.00	90.97	0.00	92
T7 POAK	30 MPH	0.06%	0.45	0.02	385.55	0.00	391
T7 POLA	30 MPH	0.12%	0.81	0.03	699.00	0.00	709
T7 Public	30 MPH	0.03%	0.19	0.01	199.01	0.00	201
T7 Single	30 MPH	0.19%	0.96	0.04	1,120.38	0.00	1,132
T7 single construction	30 MPH	0.09%	0.45	0.02	527.50	0.00	533
T7 SWCV	30 MPH	0.03%	0.14	0.01	431.78	0.05	435
T7 tractor	30 MPH	1.07%	6.89	0.29	6,335.64	0.02	6,422
T7 tractor construction	30 MPH	0.07%	0.44	0.02	391.29	0.00	397
T7 utility	30 MPH	0.00%	0.00	0.00	6.31	0.00	6
T7IS	30 MPH	0.02%	0.19	0.01	100.19	0.01	103
UBUS	30 MPH	0.01%	0.05	0.00	55.80	0.01	57
All Other Buses	35 MPH	0.02%	0.04	0.00	70.57	0.00	71
LDA	35 MPH	58.39%	2.66	0.11	23,488.50	0.18	23,526
LDT1	35 MPH	3.14%	0.20	0.01	1,617.30	0.01	1,620
LDT2	35 MPH	19.18%	1.29	0.05	11,350.80	0.10	11,369
LHD1	35 MPH	0.56%	0.49	0.02	761.50	0.00	768
LHD2	35 MPH	0.24%	0.04	0.00	356.59	0.00	357
MCY	35 MPH	0.45%	1.26	0.05	197.59	0.52	226
MDV	35 MPH	9.59%	0.89	0.04	7,520.30	0.07	7,533
MH	35 MPH	0.04%	0.07	0.00	129.85	0.00	131
Motor Coach	35 MPH	0.01%	0.03	0.00	47.21	0.00	48
OBUS	35 MPH	0.07%	0.02	0.00	218.39	0.00	219
SBUS	35 MPH	0.11%	0.10	0.00	254.18	0.00	255
T6 Ag	35 MPH	0.04%	0.09	0.00	117.51	0.00	119
T6 CAIRP heavy	35 MPH	0.01%	0.01	0.00	29.63	0.00	30
T6 CAIRP small	35 MPH	0.03%	0.04	0.00	92.23	0.00	93
T6 instate construction heavy	35 MPH	0.06%	0.11	0.00	197.06	0.00	198
T6 instate construction small	35 MPH	0.26%	0.38	0.02	805.84	0.00	811
T6 instate heavy	35 MPH	0.22%	0.35	0.01	653.69	0.00	658
T6 instate small	35 MPH	0.55%	0.79	0.03	1,672.93	0.00	1,683
T6 OOS heavy	35 MPH	0.01%	0.01	0.00	16.98	0.00	17
T6 OOS small	35 MPH	0.02%	0.02	0.00	52.84	0.00	53
T6 Public	35 MPH	0.03%	0.04	0.00	97.33	0.00	98
T6 utility	35 MPH	0.00%	0.00	0.00	12.89	0.00	13
T6TS	35 MPH	0.14%	0.03	0.00	410.02	0.00	410
T7 Ag	35 MPH	0.03%	0.12	0.01	107.02	0.00	109
T7 CAIRP	35 MPH	1.36%	3.98	0.17	5,400.97	0.02	5,451
T7 CAIRP construction	35 MPH	0.06%	0.19	0.01	253.00	0.00	255
T7 NNOOS	35 MPH	1.68%	4.06	0.17	6,688.10	0.02	6,739
T7 NOOS	35 MPH	0.54%	1.57	0.07	2,133.51	0.01	2,153
T7 other port	35 MPH	0.03%	0.09	0.00	113.73	0.00	115
T7 POAK	35 MPH	0.12%	0.39	0.02	482.00	0.00	487
T7 POLA	35 MPH	0.22%	0.71	0.03	873.87	0.00	883
T7 Public	35 MPH	0.06%	0.20	0.01	248.61	0.00	251
T7 Single	35 MPH	0.34%	0.86	0.04	1,400.67	0.00	1,411
T7 single construction	35 MPH	0.16%	0.40	0.02	659.45	0.00	664
T7 SWCV	35 MPH	0.08%	0.23	0.01	740.78	0.07	746
T7 tractor	35 MPH	1.98%	6.02	0.25	7,904.46	0.02	7,980
T7 tractor construction	35 MPH	0.12%	0.39	0.02	489.18	0.00	494
T7 utility	35 MPH	0.00%	0.00	0.00	7.89	0.00	8
T7IS	35 MPH	0.03%	0.23	0.01	124.29	0.01	127

UBUS	35 MPH	0.01%	0.04	0.00	49.09	0.01	50
All Other Buses	40 MPH	0.03%	0.04	0.00	119.19	0.00	120
LDA	40 MPH	58.95%	3.80	0.16	32,560.91	0.24	32,614
LDT1	40 MPH	3.17%	0.29	0.01	2,241.71	0.02	2,246
LDT2	40 MPH	19.37%	1.84	0.08	15,733.29	0.12	15,759
LHD1	40 MPH	0.25%	0.33	0.01	499.03	0.00	503
LHD2	40 MPH	0.11%	0.03	0.00	239.43	0.00	240
MCY	40 MPH	0.45%	1.85	0.08	273.87	0.69	314
MDV	40 MPH	9.69%	1.27	0.05	10,426.12	0.09	10,444
MH	40 MPH	0.05%	0.11	0.00	213.73	0.00	215
Motor Coach	40 MPH	0.02%	0.04	0.00	96.66	0.00	97
OBUS	40 MPH	0.09%	0.03	0.00	357.84	0.00	358
SBUS	40 MPH	0.07%	0.07	0.00	231.66	0.00	233
T6 Ag	40 MPH	0.04%	0.11	0.00	198.49	0.00	200
T6 CAIRP heavy	40 MPH	0.01%	0.02	0.00	49.77	0.00	50
T6 CAIRP small	40 MPH	0.04%	0.05	0.00	155.79	0.00	156
T6 instate construction heavy	40 MPH	0.08%	0.13	0.01	332.86	0.00	334
T6 instate construction small	40 MPH	0.31%	0.47	0.02	1,361.16	0.00	1,367
T6 instate heavy	40 MPH	0.26%	0.43	0.02	1,098.01	0.00	1,103
T6 instate small	40 MPH	0.65%	0.99	0.04	2,825.76	0.00	2,838
T6 OOS heavy	40 MPH	0.01%	0.01	0.00	28.52	0.00	29
T6 OOS small	40 MPH	0.02%	0.03	0.00	89.26	0.00	90
T6 Public	40 MPH	0.04%	0.05	0.00	164.38	0.00	165
T6 utility	40 MPH	0.01%	0.00	0.00	21.78	0.00	22
T6TS	40 MPH	0.16%	0.05	0.00	671.84	0.00	673
T7 Ag	40 MPH	0.02%	0.13	0.01	137.43	0.00	139
T7 CAIRP	40 MPH	1.22%	3.75	0.16	6,897.12	0.02	6,944
T7 CAIRP construction	40 MPH	0.06%	0.18	0.01	324.88	0.00	327
T7 NNOOS	40 MPH	1.52%	3.81	0.16	8,540.92	0.02	8,589
T7 NOOS	40 MPH	0.48%	1.48	0.06	2,724.53	0.01	2,743
T7 other port	40 MPH	0.03%	0.09	0.00	146.04	0.00	147
T7 POAK	40 MPH	0.11%	0.37	0.02	618.94	0.00	624
T7 POLA	40 MPH	0.19%	0.67	0.03	1,122.15	0.00	1,131
T7 Public	40 MPH	0.05%	0.22	0.01	319.07	0.00	322
T7 Single	40 MPH	0.31%	0.83	0.03	1,798.62	0.00	1,809
T7 single construction	40 MPH	0.15%	0.38	0.02	846.81	0.00	852
T7 SWCV	40 MPH	0.06%	0.22	0.01	725.03	0.06	729
T7 tractor	40 MPH	1.79%	5.70	0.24	10,093.99	0.02	10,165
T7 tractor construction	40 MPH	0.11%	0.37	0.02	628.16	0.00	633
T7 utility	40 MPH	0.00%	0.00	0.00	10.13	0.00	10
T7IS	40 MPH	0.02%	0.27	0.01	147.74	0.01	151
UBUS	40 MPH	0.02%	0.08	0.00	87.39	0.01	89
All Other Buses	45 MPH	0.03%	0.03	0.00	115.02	0.00	115
LDA	45 MPH	54.72%	2.93	0.12	24,867.37	0.17	24,908
LDT1	45 MPH	2.94%	0.22	0.01	1,711.95	0.01	1,715
LDT2	45 MPH	17.98%	1.42	0.06	12,015.25	0.09	12,035
LHD1	45 MPH	0.40%	0.46	0.02	664.33	0.00	670
LHD2	45 MPH	0.18%	0.04	0.00	310.67	0.00	311
MCY	45 MPH	0.42%	1.46	0.06	209.15	0.51	240
MDV	45 MPH	8.99%	0.98	0.04	7,962.23	0.06	7,976
MH	45 MPH	0.07%	0.12	0.00	217.67	0.00	219
Motor Coach	45 MPH	0.01%	0.02	0.00	72.93	0.00	73
OBUS	45 MPH	0.11%	0.03	0.00	369.67	0.00	370
SBUS	45 MPH	0.05%	0.03	0.00	129.81	0.00	130
T6 Ag	45 MPH	0.05%	0.09	0.00	191.53	0.00	193
T6 CAIRP heavy	45 MPH	0.01%	0.01	0.00	47.99	0.00	48
T6 CAIRP small	45 MPH	0.04%	0.03	0.00	150.33	0.00	151
T6 instate construction heavy	45 MPH	0.09%	0.10	0.00	321.19	0.00	322
T6 instate construction small	45 MPH	0.36%	0.35	0.01	1,313.45	0.00	1,318
T6 instate heavy	45 MPH	0.30%	0.32	0.01	1,058.75	0.00	1,063
T6 instate small	45 MPH	0.76%	0.73	0.03	2,726.72	0.00	2,736
T6 OOS heavy	45 MPH	0.01%	0.01	0.00	27.50	0.00	28
T6 OOS small	45 MPH	0.02%	0.02	0.00	86.13	0.00	86

T6 Public	45 MPH	0.04%	0.04	0.00	158.61	0.00	159
T6 utility	45 MPH	0.01%	0.00	0.00	21.01	0.00	21
T6TS	45 MPH	0.21%	0.06	0.00	694.07	0.00	695
T7 Ag	45 MPH	0.05%	0.17	0.01	226.73	0.00	229
T7 CAIRP	45 MPH	2.44%	4.73	0.20	11,370.75	0.02	11,430
T7 CAIRP construction	45 MPH	0.11%	0.22	0.01	536.00	0.00	539
T7 NNOOS	45 MPH	3.03%	4.78	0.20	14,080.78	0.02	14,141
T7 NOOS	45 MPH	0.96%	1.87	0.08	4,491.71	0.01	4,515
T7 other port	45 MPH	0.05%	0.11	0.00	240.94	0.00	242
T7 POAK	45 MPH	0.22%	0.46	0.02	1,021.15	0.00	1,027
T7 POLA	45 MPH	0.39%	0.85	0.04	1,851.36	0.00	1,862
T7 Public	45 MPH	0.11%	0.33	0.01	526.27	0.00	530
T7 Single	45 MPH	0.62%	1.07	0.04	2,967.42	0.00	2,981
T7 single construction	45 MPH	0.29%	0.49	0.02	1,397.09	0.00	1,403
T7 SWCV	45 MPH	0.07%	0.21	0.01	696.62	0.04	700
T7 tractor	45 MPH	3.57%	7.21	0.30	16,641.16	0.03	16,731
T7 tractor construction	45 MPH	0.22%	0.46	0.02	1,036.36	0.00	1,042
T7 utility	45 MPH	0.00%	0.00	0.00	16.71	0.00	17
T7IS	45 MPH	0.04%	0.33	0.01	186.41	0.01	191
UBUS	45 MPH	0.02%	0.08	0.00	84.76	0.01	86
All Other Buses	50 MPH	0.03%	0.01	0.00	47.32	0.00	47
LDA	50 MPH	53.64%	1.14	0.05	9,773.75	0.07	9,790
LDT1	50 MPH	2.88%	0.09	0.00	672.82	0.01	674
LDT2	50 MPH	17.62%	0.55	0.02	4,722.21	0.03	4,730
LHD1	50 MPH	1.74%	0.83	0.03	1,221.62	0.00	1,232
LHD2	50 MPH	0.75%	0.06	0.00	539.79	0.00	541
MCY	50 MPH	0.41%	0.58	0.02	82.20	0.20	94
MDV	50 MPH	8.81%	0.38	0.02	3,129.79	0.02	3,135
MH	50 MPH	0.06%	0.04	0.00	77.99	0.00	79
Motor Coach	50 MPH	0.02%	0.01	0.00	43.01	0.00	43
OBUS	50 MPH	0.10%	0.01	0.00	127.53	0.00	128
SBUS	50 MPH	0.02%	0.00	0.00	23.71	0.00	24
T6 Ag	50 MPH	0.06%	0.03	0.00	78.81	0.00	79
T6 CAIRP heavy	50 MPH	0.01%	0.00	0.00	19.66	0.00	20
T6 CAIRP small	50 MPH	0.04%	0.01	0.00	61.85	0.00	62
T6 instate construction heavy	50 MPH	0.09%	0.03	0.00	132.15	0.00	133
T6 instate construction small	50 MPH	0.39%	0.11	0.00	540.42	0.00	542
T6 instate heavy	50 MPH	0.32%	0.11	0.00	433.69	0.00	435
T6 instate small	50 MPH	0.80%	0.24	0.01	1,121.91	0.00	1,125
T6 OOS heavy	50 MPH	0.01%	0.00	0.00	11.26	0.00	11
T6 OOS small	50 MPH	0.03%	0.01	0.00	35.44	0.00	36
T6 Public	50 MPH	0.05%	0.01	0.00	65.26	0.00	65
T6 utility	50 MPH	0.01%	0.00	0.00	8.65	0.00	9
T6TS	50 MPH	0.19%	0.02	0.00	239.44	0.00	240
T7 Ag	50 MPH	0.04%	0.06	0.00	86.69	0.00	87
T7 CAIRP	50 MPH	2.40%	1.42	0.06	4,328.28	0.01	4,346
T7 CAIRP construction	50 MPH	0.11%	0.07	0.00	204.93	0.00	206
T7 NNOOS	50 MPH	2.97%	1.43	0.06	5,359.91	0.01	5,378
T7 NOOS	50 MPH	0.95%	0.56	0.02	1,709.77	0.00	1,717
T7 other port	50 MPH	0.05%	0.03	0.00	92.12	0.00	93
T7 POAK	50 MPH	0.21%	0.14	0.01	390.42	0.00	392
T7 POLA	50 MPH	0.38%	0.26	0.01	707.84	0.00	711
T7 Public	50 MPH	0.11%	0.12	0.00	201.23	0.00	203
T7 Single	50 MPH	0.61%	0.33	0.01	1,134.56	0.00	1,139
T7 single construction	50 MPH	0.29%	0.15	0.01	534.16	0.00	536
T7 SWCV	50 MPH	0.02%	0.03	0.00	89.15	0.00	90
T7 tractor	50 MPH	3.50%	2.18	0.09	6,334.41	0.01	6,362
T7 tractor construction	50 MPH	0.21%	0.14	0.01	396.24	0.00	398
T7 utility	50 MPH	0.00%	0.00	0.00	6.39	0.00	6
T7IS	50 MPH	0.04%	0.13	0.01	72.99	0.00	75
UBUS	50 MPH	0.02%	0.03	0.00	29.01	0.00	29
All Other Buses	55 MPH	0.05%	0.01	0.00	41.82	0.00	42
LDA	55 MPH	52.65%	0.73	0.03	6,443.59	0.04	6,454

LDT1	55 MPH	2.83%	0.05	0.00	443.52	0.00	444
LDT2	55 MPH	17.30%	0.35	0.01	3,112.89	0.02	3,118
LHD1	55 MPH	0.82%	0.26	0.01	389.24	0.00	392
LHD2	55 MPH	0.37%	0.02	0.00	179.50	0.00	180
MCY	55 MPH	0.40%	0.37	0.02	54.18	0.13	62
MDV	55 MPH	8.65%	0.24	0.01	2,064.12	0.02	2,068
MH	55 MPH	0.08%	0.03	0.00	63.30	0.00	64
Motor Coach	55 MPH	0.04%	0.01	0.00	47.97	0.00	48
OBUS	55 MPH	0.13%	0.01	0.00	100.51	0.00	101
SBUS	55 MPH	0.03%	0.00	0.00	21.28	0.00	21
T6 Ag	55 MPH	0.08%	0.02	0.00	69.63	0.00	70
T6 CAIRP heavy	55 MPH	0.02%	0.00	0.00	17.28	0.00	17
T6 CAIRP small	55 MPH	0.06%	0.01	0.00	54.65	0.00	55
T6 instate construction heavy	55 MPH	0.13%	0.02	0.00	116.78	0.00	117
T6 instate construction small	55 MPH	0.54%	0.08	0.00	477.53	0.00	479
T6 instate heavy	55 MPH	0.44%	0.08	0.00	381.14	0.00	382
T6 instate small	55 MPH	1.12%	0.17	0.01	991.36	0.00	993
T6 OOS heavy	55 MPH	0.01%	0.00	0.00	9.90	0.00	10
T6 OOS small	55 MPH	0.04%	0.00	0.00	31.32	0.00	31
T6 Public	55 MPH	0.07%	0.01	0.00	57.67	0.00	58
T6 utility	55 MPH	0.01%	0.00	0.00	7.64	0.00	8
T6TS	55 MPH	0.24%	0.02	0.00	188.70	0.00	189
T7 Ag	55 MPH	0.05%	0.03	0.00	63.74	0.00	64
T7 CAIRP	55 MPH	2.80%	0.84	0.04	3,165.49	0.00	3,176
T7 CAIRP construction	55 MPH	0.13%	0.04	0.00	150.69	0.00	151
T7 NNOOS	55 MPH	3.47%	0.85	0.04	3,920.02	0.00	3,931
T7 NOOS	55 MPH	1.10%	0.33	0.01	1,250.44	0.00	1,255
T7 other port	55 MPH	0.06%	0.02	0.00	67.74	0.00	68
T7 POAK	55 MPH	0.25%	0.08	0.00	287.08	0.00	288
T7 POLA	55 MPH	0.45%	0.15	0.01	520.49	0.00	522
T7 Public	55 MPH	0.12%	0.08	0.00	148.05	0.00	149
T7 Single	55 MPH	0.71%	0.20	0.01	834.26	0.00	837
T7 single construction	55 MPH	0.33%	0.09	0.00	392.78	0.00	394
T7 SWCV	55 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	55 MPH	4.09%	1.30	0.05	4,632.61	0.00	4,649
T7 tractor construction	55 MPH	0.25%	0.08	0.00	291.36	0.00	292
T7 utility	55 MPH	0.00%	0.00	0.00	4.70	0.00	5
T7IS	55 MPH	0.05%	0.12	0.00	65.14	0.00	67
UBUS	55 MPH	0.03%	0.03	0.00	29.81	0.00	30
All Other Buses	60 MPH	0.02%	0.01	0.00	31.97	0.00	32
LDA	60 MPH	62.25%	1.38	0.06	12,906.38	0.08	12,926
LDT1	60 MPH	3.35%	0.10	0.00	888.27	0.01	890
LDT2	60 MPH	20.45%	0.67	0.03	6,234.49	0.04	6,244
LHD1	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
MCY	60 MPH	0.48%	0.71	0.03	108.52	0.26	124
MDV	60 MPH	10.23%	0.47	0.02	4,134.67	0.03	4,141
MH	60 MPH	0.04%	0.02	0.00	47.78	0.00	48
Motor Coach	60 MPH	0.02%	0.01	0.00	32.12	0.00	32
OBUS	60 MPH	0.06%	0.01	0.00	75.19	0.00	75
SBUS	60 MPH	0.01%	0.00	0.00	7.56	0.00	8
T6 Ag	60 MPH	0.04%	0.02	0.00	53.24	0.00	53
T6 CAIRP heavy	60 MPH	0.01%	0.00	0.00	13.12	0.00	13
T6 CAIRP small	60 MPH	0.03%	0.01	0.00	41.79	0.00	42
T6 instate construction heavy	60 MPH	0.06%	0.02	0.00	89.28	0.00	89
T6 instate construction small	60 MPH	0.27%	0.06	0.00	365.09	0.00	366
T6 instate heavy	60 MPH	0.22%	0.05	0.00	289.48	0.00	290
T6 instate small	60 MPH	0.55%	0.12	0.00	757.92	0.00	759
T6 OOS heavy	60 MPH	0.01%	0.00	0.00	7.52	0.00	8
T6 OOS small	60 MPH	0.02%	0.00	0.00	23.94	0.00	24
T6 Public	60 MPH	0.03%	0.01	0.00	44.09	0.00	44
T6 utility	60 MPH	0.00%	0.00	0.00	5.84	0.00	6
T6TS	60 MPH	0.12%	0.01	0.00	141.18	0.00	141
T7 Ag	60 MPH	0.01%	0.01	0.00	12.35	0.00	12

T7 CAIRP	60 MPH	0.35%	0.15	0.01	609.52	0.00	611
T7 CAIRP construction	60 MPH	0.02%	0.01	0.00	29.21	0.00	29
T7 NNOOS	60 MPH	0.43%	0.15	0.01	754.81	0.00	757
T7 NOOS	60 MPH	0.14%	0.06	0.00	240.77	0.00	242
T7 other port	60 MPH	0.01%	0.00	0.00	13.13	0.00	13
T7 POAK	60 MPH	0.03%	0.01	0.00	55.64	0.00	56
T7 POLA	60 MPH	0.06%	0.03	0.00	100.88	0.00	101
T7 Public	60 MPH	0.02%	0.02	0.00	28.71	0.00	29
T7 Single	60 MPH	0.09%	0.04	0.00	161.69	0.00	162
T7 single construction	60 MPH	0.04%	0.02	0.00	76.13	0.00	76
T7 SWCV	60 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	60 MPH	0.51%	0.23	0.01	892.00	0.00	895
T7 tractor construction	60 MPH	0.03%	0.01	0.00	56.47	0.00	57
T7 utility	60 MPH	0.00%	0.00	0.00	0.91	0.00	1
T7IS	60 MPH	0.01%	0.02	0.00	10.21	0.00	10
UBUS	60 MPH	0.02%	0.03	0.00	29.17	0.00	30
All Other Buses	65 MPH	0.00%	0.01	0.00	68.05	0.00	68
LDA	65 MPH	63.34%	14.92	0.62	150,671.44	1.01	150,882
LDT1	65 MPH	3.41%	1.13	0.05	10,368.93	0.08	10,385
LDT2	65 MPH	20.81%	7.26	0.30	72,776.78	0.52	72,880
LHD1	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
MCY	65 MPH	0.49%	7.73	0.32	1,266.75	3.09	1,440
MDV	65 MPH	10.41%	5.09	0.21	48,271.70	0.36	48,344
MH	65 MPH	0.01%	0.05	0.00	102.95	0.00	104
Motor Coach	65 MPH	0.00%	0.01	0.00	46.80	0.00	47
OBUS	65 MPH	0.01%	0.02	0.00	161.88	0.00	162
SBUS	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Ag	65 MPH	0.01%	0.03	0.00	113.33	0.00	114
T6 CAIRP heavy	65 MPH	0.00%	0.00	0.00	27.93	0.00	28
T6 CAIRP small	65 MPH	0.01%	0.01	0.00	88.95	0.00	89
T6 instate construction heavy	65 MPH	0.01%	0.03	0.00	190.05	0.00	190
T6 instate construction small	65 MPH	0.06%	0.12	0.00	777.15	0.00	779
T6 instate heavy	65 MPH	0.05%	0.11	0.00	616.21	0.00	618
T6 instate small	65 MPH	0.11%	0.25	0.01	1,613.37	0.00	1,617
T6 OOS heavy	65 MPH	0.00%	0.00	0.00	16.01	0.00	16
T6 OOS small	65 MPH	0.00%	0.01	0.00	50.96	0.00	51
T6 Public	65 MPH	0.01%	0.02	0.00	93.86	0.00	94
T6 utility	65 MPH	0.00%	0.00	0.00	12.43	0.00	12
T6TS	65 MPH	0.02%	0.03	0.00	303.94	0.00	304
T7 Ag	65 MPH	0.00%	0.05	0.00	91.53	0.00	92
T7 CAIRP	65 MPH	0.25%	1.10	0.05	4,515.73	0.00	4,529
T7 CAIRP construction	65 MPH	0.01%	0.05	0.00	216.38	0.00	217
T7 NNOOS	65 MPH	0.31%	1.10	0.05	5,592.20	0.00	5,606
T7 NOOS	65 MPH	0.10%	0.43	0.02	1,783.82	0.00	1,789
T7 other port	65 MPH	0.01%	0.02	0.00	97.27	0.00	98
T7 POAK	65 MPH	0.02%	0.11	0.00	412.23	0.00	414
T7 POLA	65 MPH	0.04%	0.20	0.01	747.38	0.00	750
T7 Public	65 MPH	0.01%	0.12	0.01	212.67	0.00	214
T7 Single	65 MPH	0.06%	0.26	0.01	1,197.93	0.00	1,201
T7 single construction	65 MPH	0.03%	0.12	0.00	564.00	0.00	565
T7 SWCV	65 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	65 MPH	0.37%	1.69	0.07	6,608.57	0.01	6,630
T7 tractor construction	65 MPH	0.02%	0.11	0.00	418.37	0.00	420
T7 utility	65 MPH	0.00%	0.00	0.00	6.74	0.00	7
T7IS	65 MPH	0.00%	0.15	0.01	73.85	0.01	76
UBUS	65 MPH	0.00%	0.06	0.00	60.35	0.01	61
All Other Buses	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
LDA	70 MPH	64.34%	0.00	0.00	0.00	0.00	0
LDT1	70 MPH	3.46%	0.00	0.00	0.00	0.00	0
LDT2	70 MPH	21.14%	0.00	0.00	0.00	0.00	0
LHD1	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
LHD2	70 MPH	0.00%	0.00	0.00	0.00	0.00	0

MCY	70 MPH	0.49%	0.00	0.00	0.00	0.00	0
MDV	70 MPH	10.57%	0.00	0.00	0.00	0.00	0
MH	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
Motor Coach	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
OBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
SBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 CAIRP heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 CAIRP small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate construction heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate construction small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 instate small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 OOS heavy	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 OOS small	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T6TS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Ag	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 CAIRP	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 CAIRP construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 NNOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 NOOS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 other port	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 POAK	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 POLA	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Public	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 Single	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 single construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 SWCV	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 tractor construction	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7 utility	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
T7IS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
UBUS	70 MPH	0.00%	0.00	0.00	0.00	0.00	0
TOTAL			**336.22**	**13.99**	**914,708.39**	**15.44**	**919,262.37**

Based on EMFAC2017, Version 1.0.7, emission factors for San Joaquin County - San Joaquin Valley Air Basin

Stockton 2017 - all Model Years

g/mile

calendar_year	season_month	sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	VMT	%VMT Total	%VMT SpdBin
2017	Annual	San Joaquin (SJV)	All Other Buses	05 MPH	1.00913065	12.7954148	2.07269441	0.02228209	0.012	0.13034	0.13621669	2.79E-01	0.003	0.05586	0.13032402	1.89E-01	2335.5	0.046871505	42	0.0002%	0.1766%
2017	Annual	San Joaquin (SJV)	LDA	05 MPH	0.1325687	0.14849011	1.8056988	0.00965035	0.008	0.03675	0.01205448	5.68E-02	0.002	0.01575	0.0111145	2.89E-02	963.989416	0.04773299		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LDT1	05 MPH	0.38646831	0.45092975	5.62738869	0.01150358	0.008	0.03675	0.02311475	6.79E-02	0.002	0.01575	0.02131466	3.91E-02	1142.4383	0.126401996		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LDT2	05 MPH	0.18429525	0.27902976	2.56714341	0.01315028	0.008	0.03675	0.01175082	5.65E-02	0.002	0.01575	0.01081482	2.86E-02	1313.05597	0.067007737		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LHD1	05 MPH	0.61031292	2.23723086	3.96980187	0.01320416	0.01009977	0.07644	0.07444474	1.61E-01	0.00252494	0.03276	0.07104461	1.06E-01	1348.57337	0.092612571	12,649	0.0585%	53.8167%
2017	Annual	San Joaquin (SJV)	LHD2	05 MPH	0.61408125	2.05366078	3.11655651	0.01359685	0.01077678	0.08918	0.07116718	1.71E-01	0.00269419	0.03822	0.06799418	1.09E-01	1401.82901	0.057740002	2,555	0.0118%	10.8725%
2017	Annual	San Joaquin (SJV)	MCY	05 MPH	13.106605	1.3844003	60.2549938	0.00680131	0.004	0.01176	0.00861695	2.44E-02	0.001	0.00504	0.0081077	1.41E-02	540.356164	2.222340666		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	MDV	05 MPH	0.33735362	0.48112311	4.12736901	0.01747413	0.008	0.03675	0.01226612	5.70E-02	0.002	0.01575	0.0113112	2.91E-02	1743.82944	0.120417567	136	0.0006%	0.5776%
2017	Annual	San Joaquin (SJV)	MH	05 MPH	1.22288039	4.769996	16.9753795	0.03535398	0.0128818	0.13034	0.11763868	2.61E-01	0.00322045	0.05586	0.11216273	1.71E-01	3533.59437	0.285109851	211	0.0010%	0.8961%
2017	Annual	San Joaquin (SJV)	Motor Coach	05 MPH	1.67886055	19.7600408	4.48079718	0.03265306	0.012	0.13034	0.12294731	2.65E-01	0.003	0.05586	0.11762866	1.76E-01	3422.58516	0.077978724	20	0.0001%	0.0869%
2017	Annual	San Joaquin (SJV)	OBUS	05 MPH	0.6015379	1.16669824	4.92508498	0.03893471	0.012	0.13034	0.00523257	1.48E-01	0.003	0.05586	0.00481638	6.37E-02	3891.398	0.235755335	149	0.0007%	0.6349%
2017	Annual	San Joaquin (SJV)	SBUS	05 MPH	1.09953764	15.8372185	3.06655524	0.02155581	0.01102425	0.7448	0.20234891	9.58E-01	2.756E-03	3.192E-01	0.19348615	5.15E-01	2234.49269	0.139147836		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Ag	05 MPH	7.62785466	23.5075071	8.44539062	0.02287817	0.012	0.13034	1.85361773	2.00E+00	0.003	0.05586	1.77343104	1.83E+00	2398.01345	0.354294093	105	0.0005%	0.4484%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	0.52426391	8.93715321	1.54369898	0.02165121	0.012	0.13034	0.04588726	1.88E-01	0.003	0.05586	0.04390219	1.03E-01	2269.40724	0.024350701	18	0.0001%	0.0776%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	05 MPH	1.45035865	10.4193624	2.56311539	0.02162935	0.012	0.13034	0.17888596	3.21E-01	0.003	0.05586	0.17114743	2.30E-01	2267.11608	0.067365403	56	0.0003%	0.2382%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	1.35956036	13.6396176	2.29444961	0.02208116	0.012	0.13034	0.22517632	3.68E-01	0.003	0.05586	0.21543529	2.74E-01	2314.47361	0.063148058	92	0.0004%	0.3911%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	2.17072633	12.4000214	3.38139524	0.02190491	0.012	0.13034	0.31340182	4.56E-01	0.003	0.05586	0.2998442	3.59E-01	2295.99969	0.100824616	376	0.0017%	1.6009%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	05 MPH	0.68191415	9.68047462	1.78190285	0.02189891	0.012	0.13034	0.07050828	2.13E-01	0.003	0.05586	0.06745812	1.26E-01	2295.37063	0.031673146	489	0.0023%	2.0826%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	05 MPH	2.68140427	13.5868071	3.92106327	0.02203446	0.012	0.13034	0.42370311	5.66E-01	0.003	0.05586	0.40537391	4.64E-01	2309.579	0.124544283	1,169	0.0054%	4.9737%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	05 MPH	0.39786935	8.87323358	1.39479006	0.02168426	0.012	0.13034	0.02272961	1.65E-01	0.003	0.05586	0.02174634	8.06E-02	2272.87199	0.018480001	10	0.0000%	0.0445%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	05 MPH	1.45035865	10.4193624	2.56311539	0.02162935	0.012	0.13034	0.17888596	3.21E-01	0.003	0.05586	0.17114743	2.30E-01	2267.11608	0.067365403	32	0.0001%	0.1365%
2017	Annual	San Joaquin (SJV)	T6 Public	05 MPH	0.41466322	13.0919169	0.89986758	0.0221604	0.012	0.13034	0.07867488	2.21E-01	0.003	0.05586	0.07527144	1.34E-01	2322.77906	0.019260033	54	0.0002%	0.2292%
2017	Annual	San Joaquin (SJV)	T6 Utility	05 MPH	0.17761877	5.02493159	0.93492688	0.02182303	0.012	0.13034	0.00378825	1.46E-01	0.003	0.05586	0.00362437	6.25E-02	2287.41735	0.008249932	10	0.0000%	0.0405%
2017	Annual	San Joaquin (SJV)	T6TS	05 MPH	1.25479519	1.88660797	13.1983964	0.03915254	0.012	0.13034	0.01022242	1.53E-01	0.003	0.05586	0.00943317	6.83E-02	3897.55851	0.459423849	284	0.0013%	1.2085%
2017	Annual	San Joaquin (SJV)	T7 Ag	05 MPH	13.7599067	40.2995641	20.0259754	0.0348776	0.036	0.06174	3.09362294	3.19E+00	0.009	0.02646	2.95979418	3.00E+00	3655.75331	0.639112028	23	0.0001%	0.0987%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	05 MPH	1.36559535	20.1041235	4.84152431	0.03101199	0.036	0.06174	0.0695931	1.67E-01	0.009	0.02646	0.06658254	1.02E-01	3250.57341	0.063428367	825	0.0038%	3.5120%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	1.71125456	21.7115989	4.91870518	0.0316165	0.036	0.06174	0.09836639	1.96E-01	0.009	0.02646	0.09411111	1.30E-01	3313.93611	0.079483342	29	0.0001%	0.1251%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	05 MPH	0.74289621	16.8161654	3.48411291	0.02897513	0.036	0.06174	0.02363246	1.21E-01	0.009	0.02646	0.02261013	5.81E-02	3037.07621	0.034505605	1,024	0.0047%	4.3548%
2017	Annual	San Joaquin (SJV)	T7 NOOS	05 MPH	1.18552621	20.0218289	4.59028386	0.03100144	0.036	0.06174	0.05066947	1.48E-01	0.009	0.02646	0.04847753	8.39E-02	3249.46754	0.055064622	326	0.0015%	1.3872%
2017	Annual	San Joaquin (SJV)	T7 Other Port	05 MPH	1.36880399	18.3721381	4.63310712	0.03152263	0.036	0.06174	0.05258711	1.50E-01	0.009	0.02646	0.05031222	8.58E-02	3304.09652	0.0635774	15	0.0001%	0.0651%
2017	Annual	San Joaquin (SJV)	T7 POAK	05 MPH	1.50712003	19.0773392	4.90598578	0.03199098	0.036	0.06174	0.05967037	1.57E-01	0.009	0.02646	0.05708906	9.25E-02	3353.18778	0.070001822	40	0.0002%	0.1708%
2017	Annual	San Joaquin (SJV)	T7 POLA	05 MPH	1.50712003	19.0773392	4.90598578	0.03199098	0.036	0.06174	0.05967037	1.57E-01	0.009	0.02646	0.05708906	9.25E-02	3353.18778	0.070001822	74	0.0003%	0.3133%
2017	Annual	San Joaquin (SJV)	T7 Public	05 MPH	0.84209815	25.994384	1.98401478	0.03317238	0.036	0.06174	0.17149189	2.69E-01	0.009	0.02646	0.16407323	2.00E-01	3477.01867	0.039113278	32	0.0001%	0.1375%
2017	Annual	San Joaquin (SJV)	T7 Single	05 MPH	2.09842981	20.6290344	4.35930584	0.03216545	0.036	0.06174	0.31631539	4.14E-01	0.009	0.02646	0.30263173	3.38E-01	3371.47542	0.09746663	218	0.0010%	0.9296%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	05 MPH	1.95032301	20.4767083	4.08866041	0.03186698	0.036	0.06174	0.25876879	3.57E-01	0.009	0.02646	0.24757456	2.83E-01	3340.19062	0.090587452	76	0.0004%	0.3236%
2017	Annual	San Joaquin (SJV)	T7 SWCV	05 MPH	0.70929398	25.0982014	3.27702845	0.06537837	0.036	0.06174	0.02820706	1.26E-01	0.009	0.02646	0.02698684	6.24E-02	7498.50218	4.129991201	542	0.0025%	2.3047%
2017	Annual	San Joaquin (SJV)	T7 Tractor	05 MPH	1.64442633	20.2314777	4.89317706	0.03146026	0.036	0.06174	0.11551897	2.13E-01	0.009	0.02646	0.11052167	1.46E-01	3297.55978	0.076379344	1,180	0.0055%	5.0200%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	05 MPH	2.61172653	23.9350404	5.61914239	0.03213802	0.036	0.06174	0.25775679	3.55E-01	0.009	0.02646	0.24660635	2.82E-01	3368.60036	0.121307933	57	0.0003%	0.2413%
2017	Annual	San Joaquin (SJV)	T7 Utility	05 MPH	0.36186868	7.88674582	2.13675051	0.03018706	0.036	0.06174	0.00581631	1.04E-01	0.009	0.02646	0.0055647	4.10E-02	3164.10688	0.016807863	1	0.0000%	0.0062%
2017	Annual	San Joaquin (SJV)	T7IS	05 MPH	3.84698704	6.26758321	64.5032745	0.04403456	0.02	0.06174	0.00467202	8.64E-02	0.005	0.02646	0.00431382	3.58E-02	4295.12077	1.495624749	17	0.0001%	0.0718%
2017	Annual	San Joaquin (SJV)	UBUS	05 MPH	4.39216832	27.3064114	30.9548006	0.02652857	0.012	0.64297644	0.65662744	1.31E+00	0.003	0.27556133	0.62813466	9.07E-01	3678.0138	8.313406451	565	0.0026%	2.4053%
																			23,504	0.11%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	10 MPH	0.7879345	10.5811578	1.70164138	0.01988231	0.012	0.13034	0.11423785	2.57E-01	0.003	0.05586	0.10929597	1.68E-01	2083.99722	0.036597517	207	0.0010%	0.2477%
2017	Annual	San Joaquin (SJV)	LDA	10 MPH	0.08562902	0.12884783	1.58726516	0.00716644	0.008	0.03675	0.00770642	5.25E-02	0.002	0.01575	0.00710773	2.49E-02	715.557907	0.030514211	2,772	0.0128%	3.3234%
2017	Annual	San Joaquin (SJV)	LDT1	10 MPH	0.25775109	0.38213524	4.71157832	0.00854082	0.008	0.03675	0.01507821	5.98E-02	0.002	0.01575	0.01390669	3.17E-02	847.488207	0.083432114	215	0.0010%	0.2580%
2017	Annual	San Joaquin (SJV)	LDT2	10 MPH	0.11957374	0.23928679	2.24630228	0.00975964	0.008	0.03675	0.00748926	5.22E-02	0.002	0.01575	0.0068934	2.46E-02	974.042031	0.043117169	936	0.0043%	1.1220%
2017	Annual	San Joaquin (SJV)	LHD1	10 MPH	0.42373886	2.27511968	2.99438804	0.01204858	0.01009977	0.07644	0.05242872	1.39E-01	0.00252494	0.03276	0.05004617	8.53E-02	1229.08712	0.0618363	36,674	0.1696%	43.9766%
2017	Annual	San Joaquin (SJV)	LHD2	10 MPH	0.43700949	2.08327966	2.3246726	0.01276128	0.01077678	0.08918	0.05117996	1.51E-01	0.00269419	0.03822	0.04890596	8.98E-02	1313.97225	0.039370097	7,736	0.0358%	9.2762%
2017	Annual	San Joaquin (SJV)	MCY	10 MPH	8.66055321	1.2789693	44.8957748	0.00500992	0.004	0.01176	0.00574405	2.15E-02	0.001	0.00504	0.00540648	1.14E-02	400.79865	1.455234078	29	0.0001%	0.0343%
2017	Annual	San Joaquin (SJV)	MDV	10 MPH	0.21877552	0.41165641	3.56846292	0.01298047	0.008	0.03675	0.00788525	5.26E-02	0.002	0.01575	0.00727388	2.50E-02	1294.78679	0.07729664	770	0.0036%	0.9236%
2017	Annual	San Joaquin (SJV)	MH	10 MPH	0.84597873	4.04591021	12.6046414	0.03038531	0.0128818	0.13034	0.09724078	2.40E-01	0.00322045	0.05586	0.09278439	1.52E-01	3041.75347	0.190471276	1,057	0.0049%	1.2670%
2017	Annual	San Joaquin (SJV)	Motor Coach	10 MPH	1.32469289	16.3899944	3.64074269	0.02911759	0.012	0.13034	0.10585236	2.48E-01	0.003	0.05586	0.10127324	1.60E-01	3052.00823	0.061528554	101	0.0005%	0.1210%
2017	Annual	San Joaquin (SJV)	OBUS	10 MPH	0.38082979	1.01537348	4.3516788	0.03323382	0.012	0.13034	0.00330784	1.46E-01	0.003	0.05586	0.00304507	6.19E-02	3321.94395	0.148794037	750	0.0035%	0.8995%
2017	Annual	San Joaquin (SJV)	SBUS	10 MPH	0.81506871	12.9947929	2.7230014	0.01919387	0.01102425	0.7448	0.16761428	9.23E-01	2.756E-03	3.192E-01	0.16029463	4.82E-01	1990.63818	0.093275768	476	0.0022%	0.5706%
2017	Annual	San Joaquin (SJV)	T6 Ag	10 MPH	5.92009764	19.5400067	7.4107588	0.02062969	0.012	0.13034	1.5575467	1.70E+00	0.003	0.05586	1.49016792	1.55E+00	2162.33507	0.274973202	525	0.0024%	0.6291%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	0.4147569	7.28126051	1.25327509	0.01924953	0.012	0.13034	0.03983327	1.82E-01	0.003	0.05586	0.0381101	9.70E-02	2017.67112	0.019264384	91	0.0004%	0.1088%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	10 MPH	1.10554817	8.48876421	2.06601449	0.01928568	0.012	0.13034	0.15725331	3.00E-01	0.003	0.05586	0.1504506	2.09E-01	2021.46034	0.051349849	279	0.0013%	0.3341%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	1.0481812	11.2285669	1.89650916	0.01973718	0.012	0.13034	0.1881826	3.31E-01	0.003	0.05586	0.18004191	2.39E-01	2068.785	0.048685302	458	0.0021%	0.5487%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	1.64979064	10.2119858	2.74916016	0.01957451	0.012	0.13034	0.26913971	4.11E-01	0.003	0.05586	0.25749684	3.16E-01	2051.73446	0.076628502	1,873	0.0087%	2.2459%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	10 MPH	0.53892294	8.0089186	1.45139002	0.01948454	0.012	0.13034	0.06033475	2.03E-01	0.003	0.05586	0.0577247	1.17E-01	2042.30488	0.025031575	2,436	0.0113%	2.9216%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	10 MPH	2.03289354	11.1990924	3.20736779	0.01971483	0.012	0.13034	0.35993637	5.02E-01	0.003	0.05586	0.34436568	4.03E-01	2066.44324	0.09442264	5,819	0.0269%	6.9777%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	10 MPH	0.31828671	7.23445794	1.12904819	0.01927879	0.012	0.13034	0.02021962	1.63E-01	0.003	0.05586	0.01934493	7.82E-02	2020.73877	0.014783593	52	0.0002%	0.0624%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	10 MPH	1.10554817	8.48876421	2.06601449	0.01928568	0.012	0.13034	0.15725331	3.00E-01	0.003	0.05586	0.1504506	2.09E-01	2021.46034	0.051349849	160	0.0007%	0.1915%
2017	Annual	San Joaquin (SJV)	T6 Public	10 MPH	0.32504036	10.7862414	0.74360588	0.01985212	0.012	0.13034	0.06678119	2.09E-01	0.003	0.05586	0.06389226	1.23E-01	2080.83338	0.015097283	268	0.0012%	0.3216%
2017	Annual	San Joaquin (SJV)	T6 Utility	10 MPH	0.14385247	3.93725744	0.7571922	0.0193501	0.012	0.13034	0.00340769	1.46E-01	0.003	0.05586	0.00326027	6.21E-02	2028.21339	0.006681575	47	0.0002%	0.0569%
2017	Annual	San Joaquin (SJV)	T6TS	10 MPH	0.81296055	1.65838669	10.7600896	0.03340436	0.012	0.13034	0.00657295	1.49E-01	0.003	0.05586	0.00606727	6.49E-02	3327.20295	0.295355188	1,428	0.0066%	1.7122%
2017	Annual	San Joaquin (SJV)	T7 Ag	10 MPH	10.7117315	33.001484	17.8270677	0.03141332	0.036	0.06174	2.60904704	2.71E+00	0.009	0.02646	2.49618082	2.53E+00	3292.63935	0.497532185	89	0.0004%	0.1063%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	10 MPH	1.08783048	16.4750481	3.9199875	0.02757911	0.036	0.06174	0.06145507	1.59E-01	0.009	0.02646	0.05879655	9.43E-02	2890.7505	0.050526908	3,153	0.0146%	3.7812%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	1.34879694	17.9414253	3.97029101	0.028195	0.036	0.06174	0.08808401	1.86E-01	0.009	0.02646	0.08427353	1.20E-01	2955.30547	0.062648124	112	0.0005%	0.1347%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	10 MPH	0.59733991	13.3383093	2.81982055	0.02573061	0.036	0.06174	0.02127463	1.19E-01	0.009	0.02646	0.0203543	5.58E-02	2696.99727	0.027744892	3,910	0.0181%	4.6886%
2017	Annual	San Joaquin (SJV)	T7 NOOS	10 MPH	0.95054345	16.3974922	3.71622377	0.02756764	0.036	0.06174	0.04507102	1.43E-01	0.009	0.02646	0.04312127	7.86E-02	2889.5485	0.044150281	1,246	0.0058%	1.4936%
2017	Annual	San Joaquin (SJV)	T7 Other Port	10 MPH	1.10708586	15.1902823	3.75105566	0.02803571	0.036	0.06174	0.04733118	1.45E-01	0.009	0.02646	0.04528365	8.07E-02	2938.60979	0.051421271	58	0.0003%	0.0701%
2017	Annual	San Joaquin (SJV)	T7 POAK	10 MPH	1.21874775	15.8856462	3.97175379	0.02846426	0.036	0.06174	0.0537093	1.51E-01	0.009	0.02646	0.05138586	8.68E-02	2983.52891	0.056607676	153	0.0007%	0.1839%
2017	Annual	San Joaquin (SJV)	T7 POLA	10 MPH	1.21874775	15.8856462	3.97175379	0.02846426	0.036	0.06174	0.0537093	1.51E-01	0.009	0.02646	0.05138586	8.68E-02	2983.52891	0.056607676	281	0.0013%	0.3373%
2017	Annual	San Joaquin (SJV)	T7 Public	10 MPH	0.66349345	21.4237424	1.67454592	0.02979056	0.036	0.06174	0.14640597	2.44E-01	0.009	0.02646	0.14007251	1.76E-01	3122.54755	0.030817552	123	0.0006%	0.1480%
2017	Annual	San Joaquin (SJV)	T7 Single	10 MPH	1.63341971	16.8781759	3.6386858	0.0287366	0.036	0.06174	0.26560701	3.63E-01	0.009	0.02646	0.25411697	2.90E-01	3012.0749	0.075868115	835	0.0039%	1.0008%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	10 MPH	1.51183069	16.6599784	3.37727617	0.02846079	0.036	0.06174	0.21543707	3.13E-01	0.009	0.02646	0.20611736	2.42E-01	2983.16499	0.07022062	291	0.0013%	0.3484%
2017	Annual	San Joaquin (SJV)	T7 SWCV	10 MPH	0.54526107	20.9143825	2.65019415	0.05879232	0.036	0.06174	0.02467846	1.22E-01	0.009	0.02646	0.02361088	5.91E-02	6740.50182	3.181084854	1,302	0.0060%	1.5611%
2017	Annual	San Joaquin (SJV)	T7 Tractor	10 MPH	1.30491894	16.7056929	3.97927298	0.02801264	0.036	0.06174	0.09925057	1.97E-01	0.009	0.02646	0.09495704	1.30E-01	2936.1918	0.060610105	4,507	0.0208%	5.4048%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	10 MPH	2.02458676	19.7694571	4.58585536	0.02872504	0.036	0.06174	0.22025197	3.18E-01	0.009	0.02646	0.21072397	2.46E-01	3010.86287	0.094036811	217	0.0010%	0.2598%
2017	Annual	San Joaquin (SJV)	T7 Utility	10 MPH	0.29307548	6.20963374	1.73054262	0.02676634	0.036	0.06174	0.00523202	1.03E-01	0.009	0.02646	0.00500568	4.05E-02	2805.55883	0.013612597	6	0.0000%	0.0066%
2017	Annual	San Joaquin (SJV)	T7IS	10 MPH	2.43885165	5.46381661	57.1950828	0.03735678	0.02	0.06174	0.00299123	8.47E-02	0.005	0.02646	0.0027629	3.42E-02	3643.38285	0.944512196	83	0.0004%	0.0990%
2017	Annual	San Joaquin (SJV)	UBUS	10 MPH	3.24044387	22.698828	25.0737634	0.02347042	0.012	0.64297644	0.54068102	1.20E+00	0.003	0.27556133	0.51723586	7.96E-01	3280.34534	6.222151544	1,873	0.0087%	2.2456%
																			83,394	0.39%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	15 MPH	0.47468205	7.62098808	1.19754572	0.0166758	0.012	0.13034	0.07954872	2.22E-01	0.003	0.05586	0.07610747	1.35E-01	1747.90171	0.022047752	279	0.0013%	0.1778%
2017	Annual	San Joaquin (SJV)	LDA	15 MPH	0.05802134	0.11378024	1.40956491	0.00552218	0.008	0.03675	0.00519497	4.99E-02	0.002	0.01575	0.00479285	2.25E-02	551.124157	0.020552625	8,390	0.0388%	5.3501%
2017	Annual	San Joaquin (SJV)	LDT1	15 MPH	0.18060215	0.33229224	4.04460119	0.0065814	0.008	0.03675	0.01035367	5.51E-02	0.002	0.01575	0.00955102	2.73E-02	652.484805	0.057887569	651	0.0030%	0.4153%
2017	Annual	San Joaquin (SJV)	LDT2	15 MPH	0.08167073	0.20945593	1.99390915	0.00751762	0.008	0.03675	0.00503297	4.98E-02	0.002	0.01575	0.00463299	2.24E-02	749.911916	0.02923157	2,832	0.0131%	1.8062%
2017	Annual	San Joaquin (SJV)	LHD1	15 MPH	0.28339028	2.31282196	2.26795845	0.00814595	0.01009977	0.07644	0.03851271	1.25E-01	0.00252494	0.03276	0.0367697	7.21E-02	830.010243	0.04230081	81,606	0.3775%	52.0388%
2017	Annual	San Joaquin (SJV)	LHD2	15 MPH	0.27140423	2.09590755	1.61356336	0.00867544	0.01077678	0.08918	0.03818227	1.38E-01	0.00269419	0.03822	0.03649029	7.74E-02	892.577645	0.025728892	17,062	0.0789%	10.8801%
2017	Annual	San Joaquin (SJV)	MCY	15 MPH	6.02715945	1.2025174	35.1566003	0.00384326	0.004	0.01176	0.00402961	1.98E-02	0.001	0.00504	0.00379399	9.83E-03	308.55137	1.004262479	87	0.0004%	0.0552%
2017	Annual	San Joaquin (SJV)	MDV	15 MPH	0.1490616	0.35970795	3.1354273	0.01000619	0.008	0.03675	0.00534277	5.01E-02	0.002	0.01575	0.00493013	2.27E-02	997.605491	0.052270158	2,332	0.0108%	1.4869%
2017	Annual	San Joaquin (SJV)	MH	15 MPH	0.55879985	3.02667961	9.75110537	0.02149266	0.0128818	0.13034	0.06841787	2.12E-01	0.00322045	0.05586	0.06528808	1.24E-01	2152.2953	0.131366356	1,354	0.0063%	0.8631%
2017	Annual	San Joaquin (SJV)	Motor Coach	15 MPH	0.83952995	11.9585905	2.53358714	0.02445051	0.012	0.13034	0.07972009	2.22E-01	0.003	0.05586	0.07627144	1.35E-01	2562.82132	0.038993992	120	0.0006%	0.0764%
2017	Annual	San Joaquin (SJV)	OBUS	15 MPH	0.25436256	0.89805942	3.89560394	0.02292183	0.012	0.13034	0.0022061	1.45E-01	0.003	0.05586	0.00203108	6.09E-02	2289.82203	0.09907365	948	0.0044%	0.6042%
2017	Annual	San Joaquin (SJV)	SBUS	15 MPH	0.46979153	9.03097284	2.30914347	0.01536632	0.01102425	0.7448	0.11272153	8.69E-01	2.756E-03	3.192E-01	0.10779963	4.30E-01	1595.41774	0.058605704	952	0.0044%	0.6068%
2017	Annual	San Joaquin (SJV)	T6 Ag	15 MPH	3.24575225	13.8642572	5.688195	0.01704195	0.012	0.13034	1.0760432	1.22E+00	0.003	0.05586	1.02949404	1.09E+00	1786.28059	0.150756786	708	0.0033%	0.4515%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	0.26512237	5.13703321	0.87458591	0.01615485	0.012	0.13034	0.03048779	1.73E-01	0.003	0.05586	0.0291689	8.80E-02	1693.2974	0.012314247	123	0.0006%	0.0781%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	15 MPH	0.60031623	5.87689761	1.35376304	0.01612136	0.012	0.13034	0.12190641	2.64E-01	0.003	0.05586	0.1166328	1.75E-01	1689.78749	0.027883134	376	0.0017%	0.2398%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	0.5912849	7.95396825	1.32797343	0.01650049	0.012	0.13034	0.12906716	2.71E-01	0.003	0.05586	0.12348377	1.82E-01	1729.52646	0.027463652	618	0.0029%	0.3938%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	0.87917605	7.19571271	1.81848467	0.0163394	0.012	0.13034	0.19719489	3.40E-01	0.003	0.05586	0.18866432	2.48E-01	1712.64152	0.04083545	2,528	0.0117%	1.6120%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	15 MPH	0.34239005	5.83792684	1.01764752	0.01636694	0.012	0.13034	0.04458615	1.87E-01	0.003	0.05586	0.04265738	1.02E-01	1715.5285	0.015903131	3,288	0.0152%	2.0969%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	15 MPH	1.06795463	7.86760294	2.1373337	0.01642698	0.012	0.13034	0.25639037	3.99E-01	0.003	0.05586	0.24529903	3.04E-01	1721.82173	0.049603726	7,854	0.0363%	5.0081%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	15 MPH	0.21396997	5.10969046	0.78926189	0.01617751	0.012	0.13034	0.0166038	1.59E-01	0.003	0.05586	0.01588553	7.47E-02	1695.67249	0.009938351	70	0.0003%	0.0448%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	15 MPH	0.60031623	5.87689761	1.35376304	0.01612136	0.012	0.13034	0.12190641	2.64E-01	0.003	0.05586	0.1166328	1.75E-01	1689.78749	0.027883134	215	0.0010%	0.1374%
2017	Annual	San Joaquin (SJV)	T6 Public	15 MPH	0.19380122	7.56542549	0.53049274	0.01651768	0.012	0.13034	0.04758817	1.90E-01	0.003	0.05586	0.04552953	1.04E-01	1731.32821	0.009001565	362	0.0017%	0.2308%
2017	Annual	San Joaquin (SJV)	T6 Utility	15 MPH	0.10131198	2.56695007	0.53327298	0.01623458	0.012	0.13034	0.00292824	1.45E-01	0.003	0.05586	0.00280157	6.17E-02	1701.65502	0.004705679	64	0.0003%	0.0408%
2017	Annual	San Joaquin (SJV)	T6TS	15 MPH	0.55539932	1.48263323	9.088408	0.02305164	0.012	0.13034	0.00445785	1.47E-01	0.003	0.05586	0.00411609	6.30E-02	2293.44707	0.200279688	1,804	0.0083%	1.1502%
2017	Annual	San Joaquin (SJV)	T7 Ag	15 MPH	5.86912095	23.1203697	14.0957103	0.02585976	0.036	0.06174	1.8256005	1.92E+00	0.009	0.02646	1.74662583	1.78E+00	2710.53432	0.272605467	108	0.0005%	0.0691%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	15 MPH	0.71859174	11.8141972	2.73337589	0.0231609	0.036	0.06174	0.04950093	1.47E-01	0.009	0.02646	0.04735954	8.28E-02	2427.64882	0.033376725	3,856	0.0178%	2.4592%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	0.85424217	12.9663491	2.72278661	0.02364315	0.036	0.06174	0.0726084	1.70E-01	0.009	0.02646	0.06946739	1.05E-01	2478.19662	0.039677336	137	0.0006%	0.0876%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	15 MPH	0.40968961	8.90253326	1.97684944	0.0215866	0.036	0.06174	0.01804721	1.16E-01	0.009	0.02646	0.0172665	5.27E-02	2262.63596	0.019029021	4,782	0.0221%	3.0494%
2017	Annual	San Joaquin (SJV)	T7 NOOS	15 MPH	0.64454608	11.7413351	2.60147266	0.02314825	0.036	0.06174	0.03719485	1.35E-01	0.009	0.02646	0.03558582	7.10E-02	2426.32267	0.029937496	1,523	0.0070%	0.9714%
2017	Annual	San Joaquin (SJV)	T7 Other Port	15 MPH	0.77592331	11.1762738	2.63741641	0.023635	0.036	0.06174	0.04069569	1.38E-01	0.009	0.02646	0.03893521	7.44E-02	2477.34241	0.036039628	72	0.0003%	0.0456%
2017	Annual	San Joaquin (SJV)	T7 POAK	15 MPH	0.85366081	11.8579643	2.79180339	0.02401156	0.036	0.06174	0.04618214	1.44E-01	0.009	0.02646	0.04418432	7.96E-02	2516.81158	0.039650333	188	0.0009%	0.1196%
2017	Annual	San Joaquin (SJV)	T7 POLA	15 MPH	0.85366081	11.8579643	2.79180339	0.02401156	0.036	0.06174	0.04618214	1.44E-01	0.009	0.02646	0.04418432	7.96E-02	2516.81158	0.039650333	344	0.0016%	0.2194%
2017	Annual	San Joaquin (SJV)	T7 Public	15 MPH	0.39563565	15.1374049	1.24189732	0.02468612	0.036	0.06174	0.10579057	2.04E-01	0.009	0.02646	0.10121412	1.37E-01	2587.51702	0.018376251	151	0.0007%	0.0963%
2017	Annual	San Joaquin (SJV)	T7 Single	15 MPH	0.94457187	11.8752821	2.6211957	0.02400799	0.036	0.06174	0.18470809	2.82E-01	0.009	0.02646	0.1767177	2.12E-01	2516.43717	0.043872917	1,021	0.0047%	0.6509%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	15 MPH	0.86761565	11.6100938	2.38054616	0.02377707	0.036	0.06174	0.14687734	2.45E-01	0.009	0.02646	0.1405235	1.76E-01	2492.23369	0.0402985	355	0.0016%	0.2266%
2017	Annual	San Joaquin (SJV)	T7 SWCV	15 MPH	0.31036439	15.0085574	1.84974996	0.04867947	0.036	0.06174	0.01907445	1.17E-01	0.009	0.02646	0.0182493	5.37E-02	5585.20391	1.827285969	595	0.0028%	0.3794%
2017	Annual	San Joaquin (SJV)	T7 Tractor	15 MPH	0.84416523	12.1485324	2.78884997	0.02353397	0.036	0.06174	0.07464639	1.72E-01	0.009	0.02646	0.07141722	1.07E-01	2466.75243	0.039209289	5,512	0.0255%	3.5151%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	15 MPH	1.17612881	14.1787278	3.15209352	0.02401314	0.036	0.06174	0.16091016	2.59E-01	0.009	0.02646	0.15394926	1.89E-01	2516.97761	0.054628137	265	0.0012%	0.1689%
2017	Annual	San Joaquin (SJV)	T7 Utility	15 MPH	0.20640629	4.0967224	1.21878121	0.02245675	0.036	0.06174	0.0044959	1.02E-01	0.009	0.02646	0.00430141	3.98E-02	2353.8417	0.009587038	7	0.0000%	0.0043%
2017	Annual	San Joaquin (SJV)	T7IS	15 MPH	1.63118901	4.8413519	51.3224401	0.02710042	0.02	0.06174	0.00202022	8.38E-02	0.005	0.02646	0.00186668	3.33E-02	2628.22993	0.62927851	90	0.0004%	0.0574%
2017	Annual	San Joaquin (SJV)	UBUS	15 MPH	1.80130621	16.0824161	17.5132138	0.01804444	0.012	0.64297644	0.35424544	1.01E+00	0.003	0.27556133	0.33888369	6.17E-01	2570.6669	3.171495362	3,191	0.0148%	2.0346%
																			156,817	0.73%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	20 MPH	0.28564664	5.85816363	0.85863856	0.01445824	0.012	0.13034	0.05581805	1.98E-01	0.003	0.05586	0.05340339	1.12E-01	1515.46475	0.013267547	296	0.0014%	0.1002%
2017	Annual	San Joaquin (SJV)	LDA	20 MPH	0.04139494	0.10234717	1.26646761	0.00441519	0.008	0.03675	0.00369119	4.84E-02	0.002	0.01575	0.00340645	2.12E-02	440.443782	0.014585938	53,965	0.2496%	18.2904%
2017	Annual	San Joaquin (SJV)	LDT1	20 MPH	0.13281296	0.29608892	3.54340581	0.00526323	0.008	0.03675	0.00747624	5.22E-02	0.002	0.01575	0.00689792	2.46E-02	521.363638	0.042166693	4,189	0.0194%	1.4196%
2017	Annual	San Joaquin (SJV)	LDT2	20 MPH	0.05871656	0.18703104	1.79031779	0.00600969	0.008	0.03675	0.00356485	4.83E-02	0.002	0.01575	0.00328186	2.10E-02	599.209846	0.020866226	18,218	0.0843%	6.1747%
2017	Annual	San Joaquin (SJV)	LHD1	20 MPH	0.1973635	2.36851726	1.80260179	0.00701484	0.01009977	0.07644	0.02952083	1.16E-01	0.00252494	0.03276	0.02818919	6.35E-02	714.696901	0.030379315	92,104	0.4261%	31.2171%
2017	Annual	San Joaquin (SJV)	LHD2	20 MPH	0.17150993	2.13279814	1.17465592	0.00747326	0.01077678	0.08918	0.0295959	1.30E-01	0.00269419	0.03822	0.02828713	6.92E-02	768.717317	0.017479205	19,078	0.0883%	6.4663%
2017	Annual	San Joaquin (SJV)	MCY	20 MPH	4.41512508	1.14867057	28.807344	0.00306774	0.004	0.01176	0.00297326	1.87E-02	0.001	0.00504	0.0028002	8.84E-03	246.537963	0.730008602	557	0.0026%	0.1888%
2017	Annual	San Joaquin (SJV)	MDV	20 MPH	0.10690036	0.32093895	2.79665333	0.00800196	0.008	0.03675	0.00381337	4.86E-02	0.002	0.01575	0.00351994	2.13E-02	797.385883	0.037223456	14,997	0.0694%	5.0831%
2017	Annual	San Joaquin (SJV)	MH	20 MPH	0.38499051	2.4399704	7.89980383	0.01551705	0.0128818	0.13034	0.04839562	1.92E-01	0.00322045	0.05586	0.04617999	1.05E-01	1553.9666	0.095234447	1,411	0.0065%	0.4782%
2017	Annual	San Joaquin (SJV)	Motor Coach	20 MPH	0.54300127	9.18443937	1.80761895	0.0212531	0.012	0.13034	0.06173947	2.04E-01	0.003	0.05586	0.05906865	1.18E-01	2227.67962	0.025221003	129	0.0006%	0.0436%
2017	Annual	San Joaquin (SJV)	OBUS	20 MPH	0.17922075	0.80718555	3.52166282	0.01612825	0.012	0.13034	0.00155213	1.44E-01	0.003	0.05586	0.00142915	6.03E-02	1609.93666	0.069591977	983	0.0045%	0.3331%
2017	Annual	San Joaquin (SJV)	SBUS	20 MPH	0.25937774	6.94426761	1.98635178	0.0125595	0.01102425	0.7448	0.07497299	8.31E-01	2.756E-03	3.192E-01	0.07169774	3.94E-01	1305.1896	0.037806442	1,292	0.0060%	0.4378%
2017	Annual	San Joaquin (SJV)	T6 Ag	20 MPH	1.55957826	10.8464175	4.38228188	0.01424243	0.012	0.13034	0.74045343	8.83E-01	0.003	0.05586	0.70842174	7.67E-01	1492.84434	0.072438371	751	0.0035%	0.2545%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	0.17282928	3.74724589	0.62665435	0.01407678	0.012	0.13034	0.0239692	1.66E-01	0.003	0.05586	0.02293231	8.18E-02	1475.48097	0.008027472	130	0.0006%	0.0440%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	20 MPH	0.31610453	4.21237956	0.91181474	0.01391532	0.012	0.13034	0.09619132	2.39E-01	0.003	0.05586	0.09203013	1.51E-01	1458.55767	0.014682237	399	0.0018%	0.1352%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	0.32210615	6.03027173	0.9444068	0.01420415	0.012	0.13034	0.08839932	2.31E-01	0.003	0.05586	0.08457521	1.43E-01	1488.83127	0.014960996	655	0.0030%	0.2220%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	0.44492981	5.34259861	1.2291937	0.01403619	0.012	0.13034	0.14623165	2.89E-01	0.003	0.05586	0.13990573	1.99E-01	1471.22686	0.020665837	2,681	0.0124%	0.9086%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	20 MPH	0.22093286	4.44743518	0.73114442	0.01426978	0.012	0.13034	0.03374696	1.76E-01	0.003	0.05586	0.03228708	9.11E-02	1495.71072	0.010261759	3,487	0.0161%	1.1820%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	20 MPH	0.52428866	5.87451714	1.44946673	0.01405093	0.012	0.13034	0.18375891	3.26E-01	0.003	0.05586	0.17580958	2.35E-01	1472.77135	0.02435185	8,329	0.0385%	2.8230%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	20 MPH	0.1480125	3.72765472	0.56707264	0.01409412	0.012	0.13034	0.01409172	1.56E-01	0.003	0.05586	0.01348212	7.23E-02	1477.29818	0.006874797	74	0.0003%	0.0252%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	20 MPH	0.31610453	4.21237956	0.91181474	0.01391532	0.012	0.13034	0.09619132	2.39E-01	0.003	0.05586	0.09203013	1.51E-01	1458.55767	0.014682237	229	0.0011%	0.0775%
2017	Annual	San Joaquin (SJV)	T6 Public	20 MPH	0.1120823	5.70848978	0.38722387	0.01407478	0.012	0.13034	0.0341646	1.77E-01	0.003	0.05586	0.03268665	9.15E-02	1475.2717	0.005205932	384	0.0018%	0.1301%
2017	Annual	San Joaquin (SJV)	T6 Utility	20 MPH	0.07329127	1.66435168	0.38578117	0.01418244	0.012	0.13034	0.00261244	1.45E-01	0.003	0.05586	0.00249943	6.14E-02	1486.55652	0.00340419	68	0.0003%	0.0230%
2017	Annual	San Joaquin (SJV)	T6TS	20 MPH	0.39994358	1.34768564	7.89456813	0.01623119	0.012	0.13034	0.00318793	1.46E-01	0.003	0.05586	0.00294434	6.18E-02	1612.48536	0.14320244	1,871	0.0087%	0.6341%
2017	Annual	San Joaquin (SJV)	T7 Ag	20 MPH	2.80590345	17.9668557	11.1630977	0.0214927	0.036	0.06174	1.27802424	1.38E+00	0.009	0.02646	1.22273748	1.26E+00	2252.79267	0.130326948	237	0.0011%	0.0804%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	20 MPH	0.48799219	8.7738897	1.95882927	0.02019701	0.036	0.06174	0.04119855	1.39E-01	0.009	0.02646	0.03941632	7.49E-02	2116.98376	0.022665973	8,444	0.0391%	2.8619%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	0.55530745	9.73555866	1.92332257	0.02050598	0.036	0.06174	0.06147344	1.59E-01	0.009	0.02646	0.05881412	9.43E-02	2149.36886	0.025792593	301	0.0014%	0.1019%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	20 MPH	0.28923824	5.98898707	1.42441402	0.01882462	0.036	0.06174	0.01581333	1.14E-01	0.009	0.02646	0.01512926	5.06E-02	1973.13437	0.013434367	10,470	0.0484%	3.5487%
2017	Annual	San Joaquin (SJV)	T7 NOOS	20 MPH	0.4497171	8.70213078	1.87145722	0.02018365	0.036	0.06174	0.03179092	1.30E-01	0.009	0.02646	0.03041566	6.59E-02	2115.58332	0.020888194	3,335	0.0154%	1.1304%
2017	Annual	San Joaquin (SJV)	T7 Other Port	20 MPH	0.5589319	8.53210684	1.90535692	0.0207319	0.036	0.06174	0.03631305	1.34E-01	0.009	0.02646	0.03474217	7.02E-02	2173.04906	0.025960939	157	0.0007%	0.0531%
2017	Annual	San Joaquin (SJV)	T7 POAK	20 MPH	0.61459697	9.20474116	2.01641939	0.02107315	0.036	0.06174	0.04120931	1.39E-01	0.009	0.02646	0.03942661	7.49E-02	2208.81724	0.028546437	411	0.0019%	0.1392%
2017	Annual	San Joaquin (SJV)	T7 POLA	20 MPH	0.61459697	9.20474116	2.01641939	0.02107315	0.036	0.06174	0.04120931	1.39E-01	0.009	0.02646	0.03942661	7.49E-02	2208.81724	0.028546437	753	0.0035%	0.2553%
2017	Annual	San Joaquin (SJV)	T7 Public	20 MPH	0.22422059	11.6398978	0.94035855	0.02082782	0.036	0.06174	0.07714196	1.75E-01	0.009	0.02646	0.07380483	1.09E-01	2183.1029	0.010414466	331	0.0015%	0.1120%
2017	Annual	San Joaquin (SJV)	T7 Single	20 MPH	0.52570641	8.96872907	1.92174008	0.02065288	0.036	0.06174	0.12878288	2.27E-01	0.009	0.02646	0.12321179	1.59E-01	2164.76647	0.024417701	2,235	0.0103%	0.7575%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	20 MPH	0.48497981	8.6738693	1.70656243	0.02045941	0.036	0.06174	0.09991774	1.98E-01	0.009	0.02646	0.09559534	1.31E-01	2144.48679	0.022526056	778	0.0036%	0.2637%
2017	Annual	San Joaquin (SJV)	T7 SWCV	20 MPH	0.17750538	11.7265714	1.32801679	0.04095165	0.036	0.06174	0.01506756	1.13E-01	0.009	0.02646	0.01441574	4.99E-02	4706.65665	1.058257795	547	0.0025%	0.1853%
2017	Annual	San Joaquin (SJV)	T7 Tractor	20 MPH	0.5578562	9.25173965	2.0038332	0.02050526	0.036	0.06174	0.05782763	1.56E-01	0.009	0.02646	0.05532603	9.08E-02	2149.29269	0.025910976	12,069	0.0558%	4.0907%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	20 MPH	0.67697144	10.751094	2.21956181	0.02066912	0.036	0.06174	0.11951264	2.17E-01	0.009	0.02646	0.11434258	1.50E-01	2166.4685	0.03144357	580	0.0027%	0.1966%
2017	Annual	San Joaquin (SJV)	T7 Utility	20 MPH	0.14931876	2.70498328	0.88169259	0.01961809	0.036	0.06174	0.00401102	1.02E-01	0.009	0.02646	0.00383751	3.93E-02	2056.30324	0.00693547	15	0.0001%	0.0050%
2017	Annual	San Joaquin (SJV)	T7IS	20 MPH	1.15087061	4.35984207	46.4678555	0.02196675	0.02	0.06174	0.00143893	8.32E-02	0.005	0.02646	0.00133003	3.28E-02	2123.43975	0.442287052	154	0.0007%	0.0521%
2017	Annual	San Joaquin (SJV)	UBUS	20 MPH	0.94526512	12.6962638	12.6006543	0.01405696	0.012	0.64297644	0.2263476	8.81E-01	0.003	0.27556133	0.21652954	4.95E-01	2034.05601	1.443559183	27,952	0.1293%	9.4737%
																			295,044	1.3648%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	25 MPH	0.20745506	5.07505687	0.64925819	0.01320483	0.012	0.13034	0.04576861	1.88E-01	0.003	0.05586	0.04378868	1.03E-01	1384.08583	0.00963575	308	0.0014%	0.0194%
2017	Annual	San Joaquin (SJV)	LDA	25 MPH	0.03118507	0.09377553	1.15025854	0.00366325	0.008	0.03675	0.00276343	4.75E-02	0.002	0.01575	0.00255096	2.03E-02	365.28978	0.010906628	832,127	3.8493%	52.4453%
2017	Annual	San Joaquin (SJV)	LDT1	25 MPH	0.10241981	0.27000733	3.15814733	0.00436798	0.008	0.03675	0.00567188	5.04E-02	0.002	0.01575	0.00523407	2.30E-02	432.372694	0.032212396	64,587	0.2988%	4.0706%
2017	Annual	San Joaquin (SJV)	LDT2	25 MPH	0.04442605	0.17027515	1.62295985	0.00498589	0.008	0.03675	0.00266021	4.74E-02	0.002	0.01575	0.00244925	2.02E-02	496.930664	0.015673101	280,921	1.2995%	17.7052%
2017	Annual	San Joaquin (SJV)	LHD1	25 MPH	0.15231747	2.442502	1.53316577	0.00633852	0.01009977	0.07644	0.02362804	1.10E-01	0.00252494	0.03276	0.02256508	5.79E-02	645.653039	0.023330672	83,124	0.3845%	5.2389%
2017	Annual	San Joaquin (SJV)	LHD2	25 MPH	0.1289131	2.19702797	0.96929558	0.00669769	0.01077678	0.08918	0.02387587	1.24E-01	0.00269419	0.03822	0.02282177	6.37E-02	688.868547	0.013249821	18,234	0.0843%	1.1492%
2017	Annual	San Joaquin (SJV)	MCY	25 MPH	3.4026001	1.11278997	24.6032409	0.002546	0.004	0.01176	0.00230623	1.81E-02	0.001	0.00504	0.00217254	8.21E-03	204.454034	0.558680356	8,591	0.0397%	0.5415%
2017	Annual	San Joaquin (SJV)	MDV	25 MPH	0.08080098	0.29223813	2.52729975	0.00664014	0.008	0.03675	0.00286571	4.76E-02	0.002	0.01575	0.00264596	2.04E-02	661.393549	0.02790539	231,259	1.0698%	14.5752%
2017	Annual	San Joaquin (SJV)	MH	25 MPH	0.29743724	2.23735444	6.71012504	0.01361017	0.0128818	0.13034	0.03986825	1.83E-01	0.00322045	0.05586	0.03805124	9.71E-02	1363.69459	0.073521731	1,549	0.0072%	0.0976%
2017	Annual	San Joaquin (SJV)	Motor Coach	25 MPH	0.39795158	7.80699382	1.35210333	0.01941475	0.012	0.13034	0.05329481	1.96E-01	0.003	0.05586	0.0509893	1.10E-01	2034.98914	0.01848382	130	0.0006%	0.0082%
2017	Annual	San Joaquin (SJV)	OBUS	25 MPH	0.13319579	0.73725738	3.20856867	0.01408449	0.012	0.13034	0.00115191	1.43E-01	0.003	0.05586	0.00106075	5.99E-02	1405.81653	0.051566172	1,095	0.0051%	0.0690%
2017	Annual	San Joaquin (SJV)	SBUS	25 MPH	0.18706222	6.37101858	1.75603543	0.01130345	0.01102425	0.7448	0.05972093	8.16E-01	2.756E-03	3.192E-01	0.05711383	3.79E-01	1174.89951	0.027717784	2,039	0.0094%	0.1285%
2017	Annual	San Joaquin (SJV)	T6 Ag	25 MPH	1.11052327	9.93788867	3.61181315	0.01287357	0.012	0.13034	0.60404684	7.46E-01	0.003	0.05586	0.57791604	6.37E-01	1349.36449	0.051580929	782	0.0036%	0.0493%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	0.12687829	2.93658288	0.46739892	0.01293132	0.012	0.13034	0.02089022	1.63E-01	0.003	0.05586	0.01998652	7.88E-02	1355.4182	0.005893168	135	0.0006%	0.0085%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	25 MPH	0.2367214	3.34661383	0.71905786	0.01275051	0.012	0.13034	0.08487314	2.27E-01	0.003	0.05586	0.08120156	1.40E-01	1336.46618	0.010995096	415	0.0019%	0.0262%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	0.23334185	5.22887547	0.73070407	0.01295228	0.012	0.13034	0.07177284	2.14E-01	0.003	0.05586	0.06866798	1.28E-01	1357.61532	0.010838124	682	0.0032%	0.0430%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	0.3297436	4.47060523	0.97685735	0.01282246	0.012	0.13034	0.12489849	2.67E-01	0.003	0.05586	0.11949544	1.78E-01	1344.00737	0.015315736	2,792	0.0129%	0.1760%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	25 MPH	0.16158454	3.66271705	0.54653354	0.01308492	0.012	0.13034	0.02880325	1.71E-01	0.003	0.05586	0.02755723	8.64E-02	1371.51809	0.007505184	3,632	0.0168%	0.2289%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	25 MPH	0.38599002	4.99611994	1.15648691	0.01282219	0.012	0.13034	0.15396341	2.96E-01	0.003	0.05586	0.14730302	2.06E-01	1343.97891	0.017928237	8,674	0.0401%	0.5467%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	25 MPH	0.1087706	2.91285135	0.41857795	0.01294879	0.012	0.13034	0.01265839	1.55E-01	0.003	0.05586	0.01211079	7.10E-02	1357.24906	0.005052113	78	0.0004%	0.0049%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	25 MPH	0.2367214	3.34661383	0.71905786	0.01275051	0.012	0.13034	0.08487314	2.27E-01	0.003	0.05586	0.08120156	1.40E-01	1336.46618	0.010995096	238	0.0011%	0.0150%
2017	Annual	San Joaquin (SJV)	T6 Public	25 MPH	0.08159534	4.97836092	0.29774645	0.01282046	0.012	0.13034	0.02854715	1.71E-01	0.003	0.05586	0.02731221	8.62E-02	1343.79782	0.003789892	400	0.0018%	0.0252%
2017	Annual	San Joaquin (SJV)	T6 Utility	25 MPH	0.05371108	1.08458776	0.28271748	0.01308948	0.012	0.13034	0.00237656	1.45E-01	0.003	0.05586	0.00227375	6.11E-02	1371.99528	0.00249474	71	0.0003%	0.0045%
2017	Annual	San Joaquin (SJV)	T6TS	25 MPH	0.30343986	1.2450772	7.01515493	0.01417327	0.012	0.13034	0.00240308	1.45E-01	0.003	0.05586	0.00222004	6.11E-02	1408.04209	0.107930589	2,085	0.0096%	0.1314%
2017	Annual	San Joaquin (SJV)	T7 Ag	25 MPH	1.98554495	16.3931281	9.29026808	0.01937657	0.036	0.06174	1.05423293	1.15E+00	0.009	0.02646	1.00862728	1.04E+00	2030.988	0.09222342	245	0.0011%	0.0154%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	25 MPH	0.35871262	6.92995739	1.45087911	0.01853809	0.036	0.06174	0.03673493	1.34E-01	0.009	0.02646	0.03514579	7.06E-02	1943.1003	0.016661272	8,710	0.0403%	0.5490%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	0.4107416	7.97271563	1.44212173	0.01874907	0.036	0.06174	0.05550282	1.53E-01	0.009	0.02646	0.05310179	8.86E-02	1965.21452	0.019077884	310	0.0014%	0.0196%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	25 MPH	0.2124579	4.22265082	1.0476055	0.01733105	0.036	0.06174	0.0143707	1.12E-01	0.009	0.02646	0.01374903	4.92E-02	1816.58239	0.009868119	10,801	0.0500%	0.6807%
2017	Annual	San Joaquin (SJV)	T7 NOOS	25 MPH	0.33024387	6.84612537	1.37958557	0.01853012	0.036	0.06174	0.02858212	1.26E-01	0.009	0.02646	0.02734567	6.28E-02	1942.26527	0.015338972	3,441	0.0159%	0.2168%
2017	Annual	San Joaquin (SJV)	T7 Other Port	25 MPH	0.40984984	7.03484177	1.39786676	0.01898379	0.036	0.06174	0.03304723	1.31E-01	0.009	0.02646	0.03161762	6.71E-02	1989.81782	0.019036463	162	0.0007%	0.0102%
2017	Annual	San Joaquin (SJV)	T7 POAK	25 MPH	0.45070111	7.72582976	1.47962639	0.01927562	0.036	0.06174	0.03750449	1.35E-01	0.009	0.02646	0.03588206	7.13E-02	2020.40575	0.020933899	424	0.0020%	0.0267%
2017	Annual	San Joaquin (SJV)	T7 POLA	25 MPH	0.45070111	7.72582976	1.47962639	0.01927562	0.036	0.06174	0.03750449	1.35E-01	0.009	0.02646	0.03588206	7.13E-02	2020.40575	0.020933899	777	0.0036%	0.0490%
2017	Annual	San Joaquin (SJV)	T7 Public	25 MPH	0.16236491	10.3654605	0.7416273	0.01888275	0.036	0.06174	0.06507252	1.63E-01	0.009	0.02646	0.06225751	9.77E-02	1979.2271	0.007541429	341	0.0016%	0.0215%
2017	Annual	San Joaquin (SJV)	T7 Single	25 MPH	0.37963506	7.74044876	1.49644302	0.01883545	0.036	0.06174	0.10574475	2.03E-01	0.009	0.02646	0.10117028	1.37E-01	1974.26893	0.017633065	2,306	0.0107%	0.1453%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	25 MPH	0.35062653	7.43245846	1.31239809	0.01865998	0.036	0.06174	0.08084558	1.79E-01	0.009	0.02646	0.07734824	1.13E-01	1955.87648	0.016285694	803	0.0037%	0.0506%
2017	Annual	San Joaquin (SJV)	T7 SWCV	25 MPH	0.13430593	10.6358493	0.98026239	0.03704796	0.036	0.06174	0.01323348	1.11E-01	0.009	0.02646	0.01266101	4.81E-02	4260.49753	0.799256909	790	0.0037%	0.0498%
2017	Annual	San Joaquin (SJV)	T7 Tractor	25 MPH	0.4081588	7.66851031	1.49207295	0.01877211	0.036	0.06174	0.04984695	1.48E-01	0.009	0.02646	0.04769059	8.32E-02	1967.63038	0.018957919	12,451	0.0576%	0.7847%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	25 MPH	0.49697646	9.14103018	1.70932241	0.01884054	0.036	0.06174	0.10171147	1.99E-01	0.009	0.02646	0.09731148	1.33E-01	1974.80217	0.023083269	598	0.0028%	0.0377%
2017	Annual	San Joaquin (SJV)	T7 Utility	25 MPH	0.10942738	1.79705784	0.64614327	0.01810623	0.036	0.06174	0.00364887	1.01E-01	0.009	0.02646	0.00349102	3.90E-02	1897.83457	0.005082619	15	0.0001%	0.0010%
2017	Annual	San Joaquin (SJV)	T7IS	25 MPH	0.85643975	3.99000286	42.3763261	0.02063513	0.02	0.06174	0.00108057	8.28E-02	0.005	0.02646	0.00099912	3.25E-02	1997.67044	0.327916704	201	0.0009%	0.0127%
2017	Annual	San Joaquin (SJV)	UBUS	25 MPH	0.68730669	11.9045156	10.4697222	0.0124987	0.012	0.64297644	0.1756076	8.31E-01	0.003	0.27556133	0.16799123	4.47E-01	1813.74318	1.026188002	338	0.0016%	0.0213%
																			1,586,658	7.3397%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	30 MPH	0.157563	4.64567823	0.50292073	0.01239478	0.012	0.13034	0.03981427	1.82E-01	0.003	0.05586	0.03809192	9.70E-02	1299.17984	0.007318393	370	0.0017%	0.0205%
2017	Annual	San Joaquin (SJV)	LDA	30 MPH	0.02474327	0.08744317	1.0529099	0.00315414	0.008	0.03675	0.00217961	4.69E-02	0.002	0.01575	0.00201255	1.98E-02	314.433093	0.008586859	951,208	4.4002%	52.5801%
2017	Annual	San Joaquin (SJV)	LDT1	30 MPH	0.0827639	0.251694	2.85796204	0.00376166	0.008	0.03675	0.00451764	4.93E-02	0.002	0.01575	0.00416965	2.19E-02	372.160701	0.025785767	73,830	0.3415%	4.0811%
2017	Annual	San Joaquin (SJV)	LDT2	30 MPH	0.03534248	0.15796918	1.48343665	0.00429279	0.008	0.03675	0.00209079	4.68E-02	0.002	0.01575	0.00192516	1.97E-02	427.728086	0.012379806	321,123	1.4855%	17.7508%
2017	Annual	San Joaquin (SJV)	LHD1	30 MPH	0.12507035	2.52705902	1.36046664	0.00575372	0.01009977	0.07644	0.01978531	1.06E-01	0.00252494	0.03276	0.01889723	5.42E-02	586.124907	0.018917049	71,763	0.3320%	3.9668%
2017	Annual	San Joaquin (SJV)	LHD2	30 MPH	0.10529123	2.27435428	0.84968278	0.00604542	0.01077678	0.08918	0.02012949	1.20E-01	0.00269419	0.03822	0.01924199	6.02E-02	621.778614	0.010725975	15,617	0.0722%	0.8633%
2017	Annual	San Joaquin (SJV)	MCY	30 MPH	2.75746436	1.09145262	21.8373617	0.00219567	0.004	0.01176	0.00187963	1.76E-02	0.001	0.00504	0.00177106	7.81E-03	175.980907	0.449940632	9,821	0.0454%	0.5429%
2017	Annual	San Joaquin (SJV)	MDV	30 MPH	0.06425186	0.27135722	2.30719745	0.00571743	0.008	0.03675	0.00226713	4.70E-02	0.002	0.01575	0.00209385	1.98E-02	569.303654	0.022007015	264,353	1.2229%	14.6127%
2017	Annual	San Joaquin (SJV)	MH	30 MPH	0.24372948	2.12100056	5.93822186	0.01255069	0.0128818	0.13034	0.03527388	1.78E-01	0.00322045	0.05586	0.03367438	9.28E-02	1258.20169	0.059773765	1,775	0.0082%	0.0981%
2017	Annual	San Joaquin (SJV)	Motor Coach	30 MPH	0.30016068	7.04536489	1.03323152	0.0182121	0.012	0.13034	0.04816818	1.91E-01	0.003	0.05586	0.04608445	1.05E-01	1908.93187	0.013941686	169	0.0008%	0.0093%
2017	Annual	San Joaquin (SJV)	OBUS	30 MPH	0.10440281	0.68423504	2.94290798	0.01294222	0.012	0.13034	0.00090168	1.43E-01	0.003	0.05586	0.00083041	5.97E-02	1291.88807	0.040304193	1,238	0.0057%	0.0684%
2017	Annual	San Joaquin (SJV)	SBUS	30 MPH	0.14800593	6.07648317	1.5715401	0.01058064	0.01102425	0.7448	0.05077604	8.07E-01	2.756E-03	3.192E-01	0.0485611	3.71E-01	1099.96797	0.021704667	2,446	0.0113%	0.1352%
2017	Annual	San Joaquin (SJV)	T6 Ag	30 MPH	0.91870975	9.42059695	3.04794956	0.0121042	0.012	0.13034	0.52300745	6.65E-01	0.003	0.05586	0.50038238	5.59E-01	1268.72158	0.042671688	940	0.0043%	0.0520%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	0.09597734	2.48645573	0.35500931	0.01211872	0.012	0.13034	0.01906066	1.61E-01	0.003	0.05586	0.0182361	7.71E-02	1270.24421	0.004457899	163	0.0008%	0.0090%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	30 MPH	0.19213608	2.88420462	0.6025184	0.01202875	0.012	0.13034	0.07968757	2.22E-01	0.003	0.05586	0.07624032	1.35E-01	1260.81321	0.008924223	499	0.0023%	0.0276%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	0.18136578	4.79804887	0.58602679	0.01216694	0.012	0.13034	0.06237609	2.05E-01	0.003	0.05586	0.05967773	1.19E-01	1275.29782	0.008423971	820	0.0038%	0.0453%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	0.26705478	3.98996981	0.82545431	0.01207727	0.012	0.13034	0.11434411	2.57E-01	0.003	0.05586	0.10939764	1.68E-01	1265.89915	0.012404003	3,357	0.0155%	0.1856%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	30 MPH	0.12196957	3.20977062	0.41600908	0.0122372	0.012	0.13034	0.02578263	1.68E-01	0.003	0.05586	0.02466728	8.35E-02	1282.6628	0.005665171	4,367	0.0202%	0.2414%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	30 MPH	0.31268424	4.50733989	0.98092122	0.01208104	0.012	0.13034	0.13877695	2.81E-01	0.003	0.05586	0.13277352	1.92E-01	1266.29401	0.014523373	10,430	0.0482%	0.5765%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	30 MPH	0.08119478	2.45739521	0.31272427	0.01213691	0.012	0.13034	0.0117202	1.54E-01	0.003	0.05586	0.01121319	7.01E-02	1272.15082	0.003771287	93	0.0004%	0.0052%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	30 MPH	0.19213608	2.88420462	0.6025184	0.01202875	0.012	0.13034	0.07968757	2.22E-01	0.003	0.05586	0.07624032	1.35E-01	1260.81321	0.008924223	286	0.0013%	0.0158%
2017	Annual	San Joaquin (SJV)	T6 Public	30 MPH	0.06394003	4.58496214	0.23426573	0.01207165	0.012	0.13034	0.02528459	1.68E-01	0.003	0.05586	0.02419079	8.31E-02	1265.31002	0.002969849	481	0.0022%	0.0266%
2017	Annual	San Joaquin (SJV)	T6 Utility	30 MPH	0.0395812	0.77783645	0.20834244	0.01239376	0.012	0.13034	0.00218822	1.45E-01	0.003	0.05586	0.00209356	6.10E-02	1299.07251	0.001838444	85	0.0004%	0.0047%
2017	Annual	San Joaquin (SJV)	T6TS	30 MPH	0.24246895	1.16857991	6.35556337	0.01302172	0.012	0.13034	0.00190882	1.44E-01	0.003	0.05586	0.00176385	6.06E-02	1293.93328	0.085719626	2,357	0.0109%	0.1303%
2017	Annual	San Joaquin (SJV)	T7 Ag	30 MPH	1.63007362	15.4710586	7.86785033	0.0182042	0.036	0.06174	0.91934401	1.02E+00	0.009	0.02646	0.87957359	9.15E-01	1908.1032	0.075712698	413	0.0019%	0.0228%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	30 MPH	0.2688686	5.87050768	1.09074335	0.01735229	0.036	0.06174	0.03390062	1.32E-01	0.009	0.02646	0.03243409	6.79E-02	1818.80941	0.01248825	14,706	0.0680%	0.8129%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	0.31321629	6.99199325	1.10997561	0.01761799	0.036	0.06174	0.0521092	1.50E-01	0.009	0.02646	0.04985498	8.53E-02	1846.65847	0.014548086	524	0.0024%	0.0290%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	30 MPH	0.1578222	3.30230471	0.77749044	0.01627792	0.036	0.06174	0.01336954	1.11E-01	0.009	0.02646	0.01279118	4.83E-02	1706.19722	0.007330433	18,235	0.0844%	1.0080%
2017	Annual	San Joaquin (SJV)	T7 NOOS	30 MPH	0.24581483	5.7770296	1.02816751	0.01734915	0.036	0.06174	0.02638065	1.24E-01	0.009	0.02646	0.02523943	6.07E-02	1818.48056	0.011417462	5,809	0.0269%	0.3211%
2017	Annual	San Joaquin (SJV)	T7 Other Port	30 MPH	0.30252584	6.22073975	1.0324406	0.01779877	0.036	0.06174	0.03045347	1.28E-01	0.009	0.02646	0.02913607	6.46E-02	1865.60726	0.014051542	273	0.0013%	0.0151%
2017	Annual	San Joaquin (SJV)	T7 POAK	30 MPH	0.33274909	6.91154935	1.09324566	0.01804822	0.036	0.06174	0.03456354	1.32E-01	0.009	0.02646	0.03306834	6.85E-02	1891.75431	0.015455333	715	0.0033%	0.0395%
2017	Annual	San Joaquin (SJV)	T7 POLA	30 MPH	0.33274909	6.91154935	1.09324566	0.01804822	0.036	0.06174	0.03456354	1.32E-01	0.009	0.02646	0.03306834	6.85E-02	1891.75431	0.015455333	1,312	0.0061%	0.0725%
2017	Annual	San Joaquin (SJV)	T7 Public	30 MPH	0.12848816	9.64899897	0.59543056	0.01775196	0.036	0.06174	0.05777455	1.56E-01	0.009	0.02646	0.05527525	9.07E-02	1860.70117	0.005967942	576	0.0027%	0.0318%
2017	Annual	San Joaquin (SJV)	T7 Single	30 MPH	0.29497343	7.07116709	1.1964227	0.0177004	0.036	0.06174	0.09224645	1.90E-01	0.009	0.02646	0.08825591	1.24E-01	1855.29683	0.013700752	3,892	0.0180%	0.2152%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	30 MPH	0.26954931	6.76717518	1.04136523	0.017535	0.036	0.06174	0.07001861	1.68E-01	0.009	0.02646	0.06698963	1.02E-01	1837.9605	0.012519867	1,355	0.0063%	0.0749%
2017	Annual	San Joaquin (SJV)	T7 SWCV	30 MPH	0.10823964	9.99059037	0.73256775	0.03478504	0.036	0.06174	0.01222012	1.10E-01	0.009	0.02646	0.01169148	4.72E-02	4000.34583	0.640980177	887	0.0041%	0.0490%
2017	Annual	San Joaquin (SJV)	T7 Tractor	30 MPH	0.30597707	6.77126294	1.12947594	0.0175331	0.036	0.06174	0.04482647	1.43E-01	0.009	0.02646	0.0428873	7.83E-02	1837.76119	0.014211842	21,020	0.0972%	1.1619%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	30 MPH	0.38650557	8.24558411	1.36723707	0.01769179	0.036	0.06174	0.09191647	1.90E-01	0.009	0.02646	0.08794021	1.23E-01	1854.39442	0.017952183	1,010	0.0047%	0.0558%
2017	Annual	San Joaquin (SJV)	T7 Utility	30 MPH	0.08064011	1.3052521	0.47616111	0.01714387	0.036	0.06174	0.00335969	1.01E-01	0.009	0.02646	0.00321436	3.87E-02	1796.96296	0.003745524	26	0.0001%	0.0014%
2017	Annual	San Joaquin (SJV)	T7IS	30 MPH	0.67213722	3.71030116	38.8852948	0.01961787	0.02	0.06174	0.00085531	8.26E-02	0.005	0.02646	0.00079107	3.23E-02	1901.99499	0.256443249	367	0.0017%	0.0203%
2017	Annual	San Joaquin (SJV)	UBUS	30 MPH	0.55492664	11.4823554	9.15663107	0.01165039	0.012	0.64297644	0.14561744	8.01E-01	0.003	0.27556133	0.13930262	4.18E-01	1694.70813	0.828505377	353	0.0016%	0.0195%
																			1,809,063	8.3686%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	35 MPH	0.12034485	4.34955884	0.39237709	0.01175342	0.012	0.13034	0.03561858	1.78E-01	0.003	0.05586	0.03407773	9.29E-02	1231.95435	0.005589707	437	0.0020%	0.0252%
2017	Annual	San Joaquin (SJV)	LDA	35 MPH	0.02065336	0.08293136	0.97040803	0.00281842	0.008	0.03675	0.00181024	4.66E-02	0.002	0.01575	0.00167189	1.94E-02	280.925706	0.007115108	899,187	4.1596%	51.8014%
2017	Annual	San Joaquin (SJV)	LDT1	35 MPH	0.07004844	0.23960014	2.62345957	0.00336148	0.008	0.03675	0.00377571	4.85E-02	0.002	0.01575	0.00348547	2.12E-02	332.475485	0.021616249	69,792	0.3229%	4.0207%
2017	Annual	San Joaquin (SJV)	LDT2	35 MPH	0.0295454	0.1492829	1.36631147	0.00383558	0.008	0.03675	0.00173016	4.65E-02	0.002	0.01575	0.00159324	1.93E-02	382.116911	0.010278303	303,561	1.4042%	17.4879%
2017	Annual	San Joaquin (SJV)	LHD1	35 MPH	0.10773343	2.61842687	1.24946639	0.00575231	0.01009977	0.07644	0.01730599	1.04E-01	0.00252494	0.03276	0.0165306	5.18E-02	586.124907	0.016120437	32,465	0.1502%	1.8703%
2017	Annual	San Joaquin (SJV)	LHD2	35 MPH	0.09025964	2.35837387	0.77492817	0.00604478	0.01077678	0.08918	0.01768389	1.18E-01	0.00269419	0.03822	0.01690504	5.78E-02	621.778614	0.009126081	7,477	0.0346%	0.4307%
2017	Annual	San Joaquin (SJV)	MCY	35 MPH	2.34886642	1.08218268	20.1110433	0.00196686	0.004	0.01176	0.00160904	1.74E-02	0.001	0.00504	0.00151639	7.56E-03	157.21332	0.381175803	9,284	0.0429%	0.5348%
2017	Annual	San Joaquin (SJV)	MDV	35 MPH	0.05370391	0.25679464	2.12543672	0.00510928	0.008	0.03675	0.00188687	4.66E-02	0.002	0.01575	0.00174309	1.95E-02	508.66593	0.018248658	249,895	1.1560%	14.3963%
2017	Annual	San Joaquin (SJV)	MH	35 MPH	0.20878924	2.03688061	5.460173	0.01163802	0.0128818	0.13034	0.03257858	1.76E-01	0.00322045	0.05586	0.0311075	9.02E-02	1167.01563	0.051021015	2,181	0.0101%	0.1256%
2017	Annual	San Joaquin (SJV)	Motor Coach	35 MPH	0.22730258	6.51730643	0.79634832	0.01726253	0.012	0.13034	0.04469751	1.87E-01	0.003	0.05586	0.04276392	1.02E-01	1809.40074	0.010557616	211	0.0010%	0.0122%
2017	Annual	San Joaquin (SJV)	OBUS	35 MPH	0.08629965	0.64522099	2.71592325	0.01194836	0.012	0.13034	0.0007444	1.43E-01	0.003	0.05586	0.00068562	5.95E-02	1192.72595	0.033227177	1,539	0.0071%	0.0887%
2017	Annual	San Joaquin (SJV)	SBUS	35 MPH	0.11982376	5.86883313	1.41428139	0.00998659	0.01102425	0.7448	0.04424916	8.00E-01	2.756E-03	3.192E-01	0.04231984	3.64E-01	1038.41631	0.017758403	2,511	0.0116%	0.1446%
2017	Annual	San Joaquin (SJV)	T6 Ag	35 MPH	0.76881568	9.04217834	2.57553361	0.01147559	0.012	0.13034	0.46219298	6.05E-01	0.003	0.05586	0.44219872	5.01E-01	1202.83329	0.035709497	1,109	0.0051%	0.0639%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	0.07292615	2.19141945	0.27169796	0.01146734	0.012	0.13034	0.01787034	1.60E-01	0.003	0.05586	0.01709728	7.60E-02	1201.96796	0.003387231	192	0.0009%	0.0111%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	35 MPH	0.15713794	2.57683756	0.51599905	0.01145278	0.012	0.13034	0.0780551	2.20E-01	0.003	0.05586	0.07467847	1.34E-01	1200.44232	0.00729865	589	0.0027%	0.0339%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	0.14209184	4.49962913	0.47484478	0.01154151	0.012	0.13034	0.0560954	1.98E-01	0.003	0.05586	0.05366874	1.13E-01	1209.74234	0.006599798	967	0.0045%	0.0557%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	0.21803515	3.65673025	0.71055923	0.01148104	0.012	0.13034	0.10940024	2.52E-01	0.003	0.05586	0.10466763	1.64E-01	1203.40395	0.010127168	3,959	0.0183%	0.2281%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	35 MPH	0.09247229	2.90079856	0.31878991	0.01155945	0.012	0.13034	0.02365784	1.66E-01	0.003	0.05586	0.02263442	8.15E-02	1211.62326	0.004295098	5,150	0.0238%	0.2967%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	35 MPH	0.25543717	4.16491526	0.84565862	0.0114856	0.012	0.13034	0.13080419	2.73E-01	0.003	0.05586	0.12514566	1.84E-01	1203.8828	0.011864395	12,298	0.0569%	0.7085%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	35 MPH	0.06074874	2.15801708	0.23468161	0.01148581	0.012	0.13034	0.01107862	1.53E-01	0.003	0.05586	0.01059936	6.95E-02	1203.90479	0.002821622	110	0.0005%	0.0063%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	35 MPH	0.15713794	2.57683756	0.51599905	0.01145278	0.012	0.13034	0.0780551	2.20E-01	0.003	0.05586	0.07467847	1.34E-01	1200.44232	0.00729865	337	0.0016%	0.0194%
2017	Annual	San Joaquin (SJV)	T6 Public	35 MPH	0.05056435	4.31130661	0.18592001	0.01146887	0.012	0.13034	0.02299739	1.65E-01	0.003	0.05586	0.02200253	8.09E-02	1202.12923	0.002348583	567	0.0026%	0.0327%
2017	Annual	San Joaquin (SJV)	T6 Utility	35 MPH	0.0291685	0.5935985	0.15353339	0.01184288	0.012	0.13034	0.00203143	1.44E-01	0.003	0.05586	0.00194355	6.08E-02	1241.33111	0.001354801	100	0.0005%	0.0058%
2017	Annual	San Joaquin (SJV)	T6TS	35 MPH	0.20398207	1.11372225	5.86082223	0.01202126	0.012	0.13034	0.00159723	1.44E-01	0.003	0.05586	0.00147625	6.03E-02	1194.61417	0.071717901	2,929	0.0136%	0.1688%
2017	Annual	San Joaquin (SJV)	T7 Ag	35 MPH	1.35298636	14.7993644	6.66571657	0.01725125	0.036	0.06174	0.81537417	9.13E-01	0.009	0.02646	0.78010144	8.16E-01	1808.21812	0.062842712	743	0.0034%	0.0428%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	35 MPH	0.20211405	5.1659667	0.82500732	0.01640331	0.036	0.06174	0.03200044	1.30E-01	0.009	0.02646	0.03061612	6.61E-02	1719.33983	0.009387674	26,456	0.1224%	1.5241%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	0.24004436	6.32111405	0.86548595	0.01672199	0.036	0.06174	0.05032984	1.48E-01	0.009	0.02646	0.04815259	8.36E-02	1752.74327	0.011149439	942	0.0044%	0.0543%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	35 MPH	0.11740433	2.73940849	0.5785016	0.01543256	0.036	0.06174	0.01265734	1.10E-01	0.009	0.02646	0.01210979	4.76E-02	1617.58945	0.005453127	32,805	0.1518%	1.8899%
2017	Annual	San Joaquin (SJV)	T7 NOOS	35 MPH	0.18330076	5.06691981	0.76908673	0.01640357	0.036	0.06174	0.02478166	1.23E-01	0.009	0.02646	0.02370962	5.92E-02	1719.3678	0.008513845	10,450	0.0483%	0.6020%
2017	Annual	San Joaquin (SJV)	T7 Other Port	35 MPH	0.22337297	5.67544233	0.76321973	0.01686992	0.036	0.06174	0.02830803	1.26E-01	0.009	0.02646	0.02708344	6.25E-02	1768.24869	0.010375096	491	0.0023%	0.0283%
2017	Annual	San Joaquin (SJV)	T7 POAK	35 MPH	0.24574909	6.3547393	0.8086	0.01708725	0.036	0.06174	0.03213238	1.30E-01	0.009	0.02646	0.03074235	6.62E-02	1791.02864	0.011414409	1,286	0.0060%	0.0741%
2017	Annual	San Joaquin (SJV)	T7 POLA	35 MPH	0.24574909	6.3547393	0.8086	0.01708725	0.036	0.06174	0.03213238	1.30E-01	0.009	0.02646	0.03074235	6.62E-02	1791.02864	0.011414409	2,360	0.0109%	0.1360%
2017	Annual	San Joaquin (SJV)	T7 Public	35 MPH	0.10270326	9.13657938	0.48117836	0.01683876	0.036	0.06174	0.05223836	1.50E-01	0.009	0.02646	0.04997855	8.54E-02	1764.98245	0.004770301	1,036	0.0048%	0.0597%
2017	Annual	San Joaquin (SJV)	T7 Single	35 MPH	0.23104745	6.61236059	0.96412759	0.01679705	0.036	0.06174	0.08254096	1.80E-01	0.009	0.02646	0.07897028	1.14E-01	1760.61041	0.010731555	7,003	0.0324%	0.4034%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	35 MPH	0.20853576	6.31562505	0.83422137	0.01664051	0.036	0.06174	0.0626543	1.60E-01	0.009	0.02646	0.0599439	9.54E-02	1744.20251	0.009685946	2,438	0.0113%	0.1404%
2017	Annual	San Joaquin (SJV)	T7 SWCV	35 MPH	0.08786584	9.48996889	0.55019388	0.03295586	0.036	0.06174	0.01163207	1.09E-01	0.009	0.02646	0.01112887	4.66E-02	3790.26706	0.517805333	2,192	0.0101%	0.1263%
2017	Annual	San Joaquin (SJV)	T7 Tractor	35 MPH	0.23008172	6.16109381	0.86017634	0.01654427	0.036	0.06174	0.04122204	1.39E-01	0.009	0.02646	0.0394388	7.49E-02	1734.11543	0.0106867	37,815	0.1749%	2.1785%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	35 MPH	0.30270397	7.61755345	1.10988066	0.01677774	0.036	0.06174	0.0859987	1.84E-01	0.009	0.02646	0.08227843	1.18E-01	1758.58673	0.014059815	1,817	0.0084%	0.1047%
2017	Annual	San Joaquin (SJV)	T7 Utility	35 MPH	0.05942596	1.00550318	0.35089649	0.01638185	0.036	0.06174	0.00311896	1.01E-01	0.009	0.02646	0.00298404	3.84E-02	1717.09124	0.002760182	46	0.0002%	0.0027%
2017	Annual	San Joaquin (SJV)	T7IS	35 MPH	0.55623227	3.50529015	35.8871107	0.01878931	0.02	0.06174	0.0007134	8.25E-02	0.005	0.02646	0.00066001	3.21E-02	1824.16488	0.211524741	652	0.0030%	0.0376%
2017	Annual	San Joaquin (SJV)	UBUS	35 MPH	0.459773	11.1762299	8.14814171	0.01093459	0.012	0.64297644	0.12312934	7.78E-01	0.003	0.27556133	0.11778998	3.96E-01	1594.6293	0.680520845	456	0.0021%	0.0263%
																			1,735,835	8.0298%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	40 MPH	0.09328108	4.13628987	0.30971544	0.01123315	0.012	0.13034	0.03312491	1.75E-01	0.003	0.05586	0.03169194	9.06E-02	1177.42089	0.004332665	542	0.0025%	0.0261%
2017	Annual	San Joaquin (SJV)	LDA	40 MPH	0.01813016	0.07996282	0.90040834	0.00261342	0.008	0.03675	0.00158255	4.63E-02	0.002	0.01575	0.0014619	1.92E-02	260.497027	0.006203424	1,110,763	5.1383%	53.5577%
2017	Annual	San Joaquin (SJV)	LDT1	40 MPH	0.06207818	0.23274421	2.44262581	0.00311687	0.008	0.03675	0.0033101	4.81E-02	0.002	0.01575	0.00305617	2.08E-02	308.278602	0.018970297	86,214	0.3988%	4.1570%
2017	Annual	San Joaquin (SJV)	LDT2	40 MPH	0.02594639	0.14366311	1.26799143	0.00355638	0.008	0.03675	0.00150713	4.63E-02	0.002	0.01575	0.00138796	1.91E-02	354.306896	0.008967109	374,988	1.7347%	18.0808%
2017	Annual	San Joaquin (SJV)	LHD1	40 MPH	0.09724734	2.71515486	1.18697991	0.00567199	0.01009977	0.07644	0.01579786	1.02E-01	0.00252494	0.03276	0.01509103	5.04E-02	577.859331	0.014428865	14,494	0.0671%	0.6989%
2017	Annual	San Joaquin (SJV)	LHD2	40 MPH	0.08101876	2.4471577	0.73421354	0.00585638	0.01077678	0.08918	0.01616177	1.16E-01	0.00269419	0.03822	0.0154505	5.64E-02	602.330482	0.008150567	3,634	0.0168%	0.1752%
2017	Annual	San Joaquin (SJV)	MCY	40 MPH	2.10231041	1.08320462	19.2153843	0.0018299	0.004	0.01176	0.00144623	1.72E-02	0.001	0.00504	0.00136317	7.40E-03	145.7705	0.33955813	11,468	0.0530%	0.5530%
2017	Annual	San Joaquin (SJV)	MDV	40 MPH	0.04716619	0.24757332	1.97561172	0.00473775	0.008	0.03675	0.00165124	4.64E-02	0.002	0.01575	0.00152574	1.93E-02	471.682635	0.015906659	308,695	1.4280%	14.8844%
2017	Annual	San Joaquin (SJV)	MH	40 MPH	0.1872548	1.97994648	5.21724963	0.01088148	0.0128818	0.13034	0.03169995	1.75E-01	0.00322045	0.05586	0.03027408	8.94E-02	1091.1817	0.045721439	2,714	0.0126%	0.1308%
2017	Annual	San Joaquin (SJV)	Motor Coach	40 MPH	0.17361166	6.13127366	0.62155469	0.01649214	0.012	0.13034	0.04278221	1.85E-01	0.003	0.05586	0.04093147	9.98E-02	1728.65131	0.008063812	317	0.0015%	0.0153%
2017	Annual	San Joaquin (SJV)	OBUS	40 MPH	0.07522034	0.61815224	2.52184919	0.0111159	0.012	0.13034	0.00064809	1.43E-01	0.003	0.05586	0.00059697	5.95E-02	1109.6556	0.028891515	1,916	0.0089%	0.0924%
2017	Annual	San Joaquin (SJV)	SBUS	40 MPH	0.10037952	5.73049606	1.28085528	0.00950669	0.01102425	0.7448	0.04011223	7.96E-01	2.756E-03	3.192E-01	0.03836388	3.60E-01	988.714141	0.015237911	1,695	0.0078%	0.0817%
2017	Annual	San Joaquin (SJV)	T6 Ag	40 MPH	0.66025179	8.78231023	2.19222753	0.01097279	0.012	0.13034	0.42161479	5.64E-01	0.003	0.05586	0.40337592	4.62E-01	1150.13169	0.030666986	1,376	0.0064%	0.0664%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	0.05587624	1.98423434	0.21024815	0.01092821	0.012	0.13034	0.01728525	1.60E-01	0.003	0.05586	0.0165375	7.54E-02	1145.45802	0.002595307	238	0.0011%	0.0115%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	40 MPH	0.13038284	2.36123374	0.45400942	0.01098411	0.012	0.13034	0.07994309	2.22E-01	0.003	0.05586	0.07648479	1.35E-01	1151.31741	0.006055945	731	0.0034%	0.0353%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	0.11361781	4.28698054	0.39102269	0.01103557	0.012	0.13034	0.05289342	1.95E-01	0.003	0.05586	0.05060527	1.09E-01	1156.71216	0.005277253	1,201	0.0056%	0.0579%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	0.18124995	3.41798359	0.62678728	0.01099763	0.012	0.13034	0.1100345	2.52E-01	0.003	0.05586	0.10527445	1.64E-01	1152.73448	0.008418591	4,914	0.0227%	0.2369%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	40 MPH	0.07077241	2.67729272	0.2467744	0.01099993	0.012	0.13034	0.02237955	1.65E-01	0.003	0.05586	0.02141142	8.03E-02	1152.97549	0.003287195	6,392	0.0296%	0.3082%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	40 MPH	0.21300634	3.91993724	0.74580172	0.01100351	0.012	0.13034	0.13001588	2.72E-01	0.003	0.05586	0.12439145	1.83E-01	1153.35139	0.009893593	15,267	0.0706%	0.7361%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	40 MPH	0.04562362	1.94735865	0.17727307	0.01094676	0.012	0.13034	0.01070083	1.53E-01	0.003	0.05586	0.01023792	6.91E-02	1147.40301	0.002119099	136	0.0006%	0.0066%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	40 MPH	0.13038284	2.36123374	0.45400942	0.01098411	0.012	0.13034	0.07994309	2.22E-01	0.003	0.05586	0.07648479	1.35E-01	1151.31741	0.006055945	419	0.0019%	0.0202%
2017	Annual	San Joaquin (SJV)	T6 Public	40 MPH	0.04068879	4.12064218	0.14944983	0.01098224	0.012	0.13034	0.02167479	1.64E-01	0.003	0.05586	0.02073715	7.96E-02	1151.12134	0.001889889	704	0.0033%	0.0339%
2017	Annual	San Joaquin (SJV)	T6 Utility	40 MPH	0.02149508	0.47288168	0.11314307	0.0113905	0.012	0.13034	0.00189711	1.44E-01	0.003	0.05586	0.00181505	6.07E-02	1193.9143	0.000998391	124	0.0006%	0.0060%
2017	Annual	San Joaquin (SJV)	T6TS	40 MPH	0.18060724	1.07731771	5.50052918	0.01118438	0.012	0.13034	0.00140751	1.44E-01	0.003	0.05586	0.00130115	6.02E-02	1111.41231	0.063192211	3,647	0.0169%	0.1758%
2017	Annual	San Joaquin (SJV)	T7 Ag	40 MPH	1.15319022	14.3467089	5.67963184	0.01649853	0.036	0.06174	0.74253873	8.40E-01	0.009	0.02646	0.71041683	7.46E-01	1729.32068	0.053562699	702	0.0032%	0.0338%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	40 MPH	0.15270606	4.66512588	0.62958286	0.0156187	0.036	0.06174	0.03094765	1.29E-01	0.009	0.02646	0.02960887	6.51E-02	1637.10036	0.007092801	24,966	0.1155%	1.2038%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	0.18537871	5.83497369	0.68693127	0.01599434	0.036	0.06174	0.05006492	1.48E-01	0.009	0.02646	0.04789914	8.34E-02	1676.47371	0.008610361	889	0.0041%	0.0429%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	40 MPH	0.0875247	2.36417119	0.43207517	0.01473088	0.036	0.06174	0.01219171	1.10E-01	0.009	0.02646	0.0116643	4.71E-02	1544.04189	0.004065296	30,958	0.1432%	1.4927%
2017	Annual	San Joaquin (SJV)	T7 NOOS	40 MPH	0.13710337	4.56277885	0.57843338	0.01562145	0.036	0.06174	0.02370247	1.21E-01	0.009	0.02646	0.02267711	5.81E-02	1637.38783	0.006368097	9,862	0.0456%	0.4755%
2017	Annual	San Joaquin (SJV)	T7 Other Port	40 MPH	0.16499619	5.2796007	0.56494417	0.01611387	0.036	0.06174	0.02648612	1.24E-01	0.009	0.02646	0.02534034	6.08E-02	1689.00247	0.007663646	463	0.0021%	0.0223%
2017	Annual	San Joaquin (SJV)	T7 POAK	40 MPH	0.18157832	5.94397096	0.59898642	0.01630586	0.036	0.06174	0.03006952	1.28E-01	0.009	0.02646	0.02876873	6.42E-02	1709.12564	0.008433843	1,214	0.0056%	0.0585%
2017	Annual	San Joaquin (SJV)	T7 POLA	40 MPH	0.18157832	5.94397096	0.59898642	0.01630586	0.036	0.06174	0.03006952	1.28E-01	0.009	0.02646	0.02876873	6.42E-02	1709.12564	0.008433843	2,227	0.0103%	0.1074%
2017	Annual	San Joaquin (SJV)	T7 Public	40 MPH	0.08365227	8.78166654	0.39278319	0.01610827	0.036	0.06174	0.04845618	1.46E-01	0.009	0.02646	0.04635998	8.18E-02	1688.4148	0.003885431	977	0.0045%	0.0471%
2017	Annual	San Joaquin (SJV)	T7 Single	40 MPH	0.18455142	6.28989321	0.78675464	0.0160674	0.036	0.06174	0.07659672	1.74E-01	0.009	0.02646	0.07328318	1.09E-01	1684.13125	0.008571936	6,608	0.0306%	0.3186%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	40 MPH	0.16429649	6.00028105	0.67825825	0.0159185	0.036	0.06174	0.05872847	1.56E-01	0.009	0.02646	0.0561879	9.16E-02	1668.52401	0.007631146	2,300	0.0106%	0.1109%
2017	Annual	San Joaquin (SJV)	T7 SWCV	40 MPH	0.07203035	9.12172821	0.41620825	0.03149607	0.036	0.06174	0.01145776	1.09E-01	0.009	0.02646	0.01096211	4.64E-02	3622.41822	0.422421192	1,578	0.0073%	0.0761%
2017	Annual	San Joaquin (SJV)	T7 Tractor	40 MPH	0.17423777	5.72028776	0.6610715	0.01573028	0.036	0.06174	0.03893199	1.37E-01	0.009	0.02646	0.03724781	7.27E-02	1648.79545	0.008092893	35,687	0.1651%	1.7207%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	40 MPH	0.24061965	7.16166057	0.91947419	0.0160391	0.036	0.06174	0.08388607	1.82E-01	0.009	0.02646	0.08025719	1.16E-01	1681.16528	0.01117616	1,715	0.0079%	0.0827%
2017	Annual	San Joaquin (SJV)	T7 Utility	40 MPH	0.04379266	0.80683782	0.25858547	0.01575609	0.036	0.06174	0.00291275	1.01E-01	0.009	0.02646	0.00278674	3.82E-02	1651.50118	0.002034055	44	0.0002%	0.0021%
2017	Annual	San Joaquin (SJV)	T7IS	40 MPH	0.48532972	3.36397032	33.3096101	0.01808728	0.02	0.06174	0.00062687	8.24E-02	0.005	0.02646	0.0005801	3.20E-02	1758.16375	0.184011373	568	0.0026%	0.0274%
2017	Annual	San Joaquin (SJV)	UBUS	40 MPH	0.39598424	10.9799617	7.39321488	0.01035439	0.012	0.64297644	0.10811288	7.63E-01	0.003	0.27556133	0.10342474	3.82E-01	1513.8784	0.575277188	608	0.0028%	0.0293%
																			2,073,957	9.5939%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	45 MPH	0.07451015	3.9811811	0.2491113	0.01080585	0.012	0.13034	0.03230004	1.75E-01	0.003	0.05586	0.03090275	8.98E-02	1132.63296	0.003460803	444	0.0021%	0.0302%
2017	Annual	San Joaquin (SJV)	LDA	45 MPH	0.01673418	0.07836051	0.84141473	0.00251469	0.008	0.03675	0.0014559	4.62E-02	0.002	0.01575	0.00134513	1.91E-02	250.698018	0.005690314	731,030	3.3817%	49.7731%
2017	Annual	San Joaquin (SJV)	LDT1	45 MPH	0.05760116	0.23057973	2.30870828	0.0029988	0.008	0.03675	0.00304357	4.78E-02	0.002	0.01575	0.00281056	2.06E-02	296.674316	0.017426957	56,740	0.2625%	3.8632%
2017	Annual	San Joaquin (SJV)	LDT2	45 MPH	0.02393249	0.14077139	1.18618725	0.00342193	0.008	0.03675	0.00138181	4.61E-02	0.002	0.01575	0.00127263	1.90E-02	340.969912	0.008219724	246,792	1.1416%	16.8031%
2017	Annual	San Joaquin (SJV)	LHD1	45 MPH	0.09194563	2.81631786	1.16794645	0.00559794	0.01009977	0.07644	0.01504362	1.02E-01	0.00252494	0.03276	0.01437123	4.97E-02	570.215563	0.013559644	16,232	0.0751%	1.1052%
2017	Annual	San Joaquin (SJV)	LHD2	45 MPH	0.0760788	2.53958965	0.7232184	0.00566476	0.01077678	0.08918	0.01535383	1.15E-01	0.00269419	0.03822	0.01467846	5.56E-02	582.525697	0.007636116	4,005	0.0185%	0.2727%
2017	Annual	San Joaquin (SJV)	MCY	45 MPH	1.97646439	1.09330777	19.0744664	0.00176847	0.004	0.01176	0.00136445	1.71E-02	0.001	0.00504	0.00128626	7.33E-03	140.283056	0.317967428	7,547	0.0349%	0.5139%
2017	Annual	San Joaquin (SJV)	MDV	45 MPH	0.04351948	0.24310748	1.85399267	0.00455858	0.008	0.03675	0.00151895	4.63E-02	0.002	0.01575	0.00140374	1.92E-02	453.926423	0.014573311	203,163	0.9398%	13.8326%
2017	Annual	San Joaquin (SJV)	MH	45 MPH	0.17616306	1.9473879	5.18825777	0.01018902	0.0128818	0.13034	0.03259218	1.76E-01	0.00322045	0.05586	0.03113154	9.02E-02	1021.5205	0.043020097	2,421	0.0112%	0.1649%
2017	Annual	San Joaquin (SJV)	Motor Coach	45 MPH	0.1348194	5.84303227	0.49421338	0.01585732	0.012	0.13034	0.0423661	1.85E-01	0.003	0.05586	0.04053336	9.94E-02	1662.1119	0.006262012	203	0.0009%	0.0138%
2017	Annual	San Joaquin (SJV)	OBUS	45 MPH	0.06912705	0.60163853	2.35709938	0.01032853	0.012	0.13034	0.000595	1.43E-01	0.003	0.05586	0.00054811	5.94E-02	1031.03733	0.026494637	1,747	0.0081%	0.1189%
2017	Annual	San Joaquin (SJV)	SBUS	45 MPH	0.08835915	5.65335671	1.16859487	0.00911793	0.01102425	0.7448	0.03835536	7.94E-01	2.756E-03	3.192E-01	0.03668412	3.59E-01	948.518118	0.013780876	813	0.0038%	0.0554%
2017	Annual	San Joaquin (SJV)	T6 Ag	45 MPH	0.59246933	8.63081279	1.8964498	0.01058692	0.012	0.13034	0.40132975	5.44E-01	0.003	0.05586	0.38396841	4.43E-01	1109.68571	0.027518666	1,127	0.0052%	0.0767%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	0.04346158	1.8330579	0.16534644	0.01047218	0.012	0.13034	0.01728581	1.60E-01	0.003	0.05586	0.01653804	7.54E-02	1097.65909	0.002018678	195	0.0009%	0.0133%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	45 MPH	0.11086994	2.20921689	0.41251615	0.01059985	0.012	0.13034	0.0853356	2.28E-01	0.003	0.05586	0.08164402	1.41E-01	1111.04048	0.005149622	599	0.0028%	0.0408%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	0.09450998	4.13828917	0.33007855	0.01062524	0.012	0.13034	0.05276048	1.95E-01	0.003	0.05586	0.05047809	1.09E-01	1113.70251	0.004389744	983	0.0045%	0.0669%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	0.15561871	3.24945842	0.5701988	0.0106056	0.012	0.13034	0.11623656	2.59E-01	0.003	0.05586	0.11120822	1.70E-01	1111.64414	0.007228086	4,024	0.0186%	0.2740%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	45 MPH	0.05515571	2.51021802	0.19399759	0.01052787	0.012	0.13034	0.02191885	1.64E-01	0.003	0.05586	0.02097065	7.98E-02	1103.49667	0.00256184	5,234	0.0242%	0.3564%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	45 MPH	0.18445194	3.7496762	0.67777139	0.01061553	0.012	0.13034	0.13640405	2.79E-01	0.003	0.05586	0.13050328	1.89E-01	1112.68452	0.008567315	12,501	0.0578%	0.8512%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	45 MPH	0.03448634	1.79340686	0.13520991	0.01049073	0.012	0.13034	0.01056643	1.53E-01	0.003	0.05586	0.01010933	6.90E-02	1099.6034	0.001601801	112	0.0005%	0.0076%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	45 MPH	0.11086994	2.20921689	0.41251615	0.01059985	0.012	0.13034	0.0853356	2.28E-01	0.003	0.05586	0.08164402	1.41E-01	1111.04048	0.005149622	343	0.0016%	0.0234%
2017	Annual	San Joaquin (SJV)	T6 Public	45 MPH	0.0337338	3.99673408	0.1224595	0.01059399	0.012	0.13034	0.02131291	1.64E-01	0.003	0.05586	0.02039093	7.93E-02	1110.42626	0.001566847	576	0.0027%	0.0392%
2017	Annual	San Joaquin (SJV)	T6 Utility	45 MPH	0.01584033	0.38872399	0.0833783	0.01100902	0.012	0.13034	0.00177964	1.44E-01	0.003	0.05586	0.00170265	6.06E-02	1153.9285	0.000735742	102	0.0005%	0.0069%
2017	Annual	San Joaquin (SJV)	T6TS	45 MPH	0.16825057	1.05721578	5.26161081	0.01039435	0.012	0.13034	0.0013059	1.44E-01	0.003	0.05586	0.00120742	6.01E-02	1032.66958	0.058624203	3,325	0.0154%	0.2264%
2017	Annual	San Joaquin (SJV)	T7 Ag	45 MPH	1.02857248	14.0975992	4.90826756	0.01593464	0.036	0.06174	0.70141877	7.99E-01	0.009	0.02646	0.6710757	7.07E-01	1670.21605	0.047774528	982	0.0045%	0.0669%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	45 MPH	0.11640567	4.2941114	0.48672814	0.01495542	0.036	0.06174	0.03069051	1.28E-01	0.009	0.02646	0.02936285	6.48E-02	1567.57736	0.005406742	34,955	0.1617%	2.3799%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	0.14490134	5.47448819	0.55831697	0.01539558	0.036	0.06174	0.05125531	1.49E-01	0.009	0.02646	0.04903803	8.45E-02	1613.71355	0.006730292	1,245	0.0058%	0.0848%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	45 MPH	0.0654717	2.09990848	0.32453102	0.01413467	0.036	0.06174	0.01194624	1.10E-01	0.009	0.02646	0.01142945	4.69E-02	1481.54922	0.003040991	43,344	0.2005%	2.9511%
2017	Annual	San Joaquin (SJV)	T7 NOOS	45 MPH	0.10309524	4.18977862	0.43859028	0.01495999	0.036	0.06174	0.02309224	1.21E-01	0.009	0.02646	0.02209328	5.76E-02	1568.05656	0.004788507	13,807	0.0639%	0.9401%
2017	Annual	San Joaquin (SJV)	T7 Other Port	45 MPH	0.12194587	4.97605184	0.41899912	0.01548142	0.036	0.06174	0.02491006	1.23E-01	0.009	0.02646	0.02383246	5.93E-02	1622.71124	0.00566407	648	0.0030%	0.0441%
2017	Annual	San Joaquin (SJV)	T7 POAK	45 MPH	0.13425086	5.62494525	0.44472675	0.01565284	0.036	0.06174	0.0282869	1.26E-01	0.009	0.02646	0.02706322	6.25E-02	1640.67894	0.006235605	1,700	0.0079%	0.1157%
2017	Annual	San Joaquin (SJV)	T7 POLA	45 MPH	0.13425086	5.62494525	0.44472675	0.01565284	0.036	0.06174	0.0282869	1.26E-01	0.009	0.02646	0.02706322	6.25E-02	1640.67894	0.006235605	3,118	0.0144%	0.2123%
2017	Annual	San Joaquin (SJV)	T7 Public	45 MPH	0.07029975	8.56361771	0.3258066	0.01553981	0.036	0.06174	0.046439	1.44E-01	0.009	0.02646	0.04443007	7.99E-02	1628.83115	0.003265241	1,368	0.0063%	0.0932%
2017	Annual	San Joaquin (SJV)	T7 Single	45 MPH	0.15292768	6.0687952	0.65503568	0.01547716	0.036	0.06174	0.07443799	1.72E-01	0.009	0.02646	0.07121784	1.07E-01	1622.26381	0.007103095	9,252	0.0428%	0.6300%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	45 MPH	0.13426054	5.78520988	0.56431224	0.01533467	0.036	0.06174	0.05827864	1.56E-01	0.009	0.02646	0.05575753	9.12E-02	1607.3294	0.006236054	3,221	0.0149%	0.2193%
2017	Annual	San Joaquin (SJV)	T7 SWCV	45 MPH	0.05988259	8.87932656	0.31813392	0.03036761	0.036	0.06174	0.01169191	1.09E-01	0.009	0.02646	0.01118612	4.66E-02	3492.16167	0.349439933	1,287	0.0060%	0.0876%
2017	Annual	San Joaquin (SJV)	T7 Tractor	45 MPH	0.13381678	5.39106151	0.51518262	0.0150464	0.036	0.06174	0.03790408	1.36E-01	0.009	0.02646	0.03626437	7.17E-02	1577.11312	0.006215443	49,964	0.2311%	3.4019%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	45 MPH	0.19650094	6.83289991	0.7830563	0.01544084	0.036	0.06174	0.08556735	1.83E-01	0.009	0.02646	0.08186575	1.17E-01	1618.45783	0.00912696	2,401	0.0111%	0.1635%
2017	Annual	San Joaquin (SJV)	T7 Utility	45 MPH	0.03227204	0.66705998	0.19055889	0.0152284	0.036	0.06174	0.00273238	1.00E-01	0.009	0.02646	0.00261418	3.81E-02	1596.19018	0.001498953	61	0.0003%	0.0042%
2017	Annual	San Joaquin (SJV)	T7IS	45 MPH	0.44642547	3.27892739	31.1065967	0.01766523	0.02	0.06174	0.00058019	8.23E-02	0.005	0.02646	0.00053701	3.20E-02	1719.49613	0.168816469	601	0.0028%	0.0409%
2017	Annual	San Joaquin (SJV)	UBUS	45 MPH	0.36031411	10.8900426	6.86875513	0.00987694	0.012	0.64297644	0.10055107	7.56E-01	0.003	0.27556133	0.09619093	3.75E-01	1449.19097	0.509273596	509	0.0024%	0.0346%
																			1,468,724	6.7942%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	50 MPH	0.06265415	3.87070704	0.2062799	0.01045366	0.012	0.13034	0.0331244	1.75E-01	0.003	0.05586	0.03169145	9.06E-02	1095.71767	0.002910123	497	0.0023%	0.0394%
2017	Annual	San Joaquin (SJV)	LDA	50 MPH	0.01623936	0.07802884	0.79263047	0.00251104	0.008	0.03675	0.00140931	4.62E-02	0.002	0.01575	0.00130224	1.91E-02	250.411745	0.005491642	557,889	2.5807%	44.2995%
2017	Annual	San Joaquin (SJV)	LDT1	50 MPH	0.05596594	0.23292591	2.21935272	0.00299387	0.008	0.03675	0.00293537	4.77E-02	0.002	0.01575	0.00271108	2.05E-02	296.327934	0.016760569	43,302	0.2003%	3.4384%
2017	Annual	San Joaquin (SJV)	LDT2	50 MPH	0.02318568	0.1404479	1.11970126	0.00341689	0.008	0.03675	0.00133347	4.61E-02	0.002	0.01575	0.00122818	1.90E-02	340.571675	0.00791703	188,340	0.8712%	14.9553%
2017	Annual	San Joaquin (SJV)	LHD1	50 MPH	0.09104527	2.92122037	1.19391622	0.00588828	0.01009977	0.07644	0.01494389	1.01E-01	0.00252494	0.03276	0.01427641	4.96E-02	599.822745	0.013375801	79,460	0.3676%	6.3096%
2017	Annual	San Joaquin (SJV)	LHD2	50 MPH	0.07472762	2.63488863	0.74248141	0.00588611	0.01077678	0.08918	0.01516254	1.15E-01	0.00269419	0.03822	0.01449577	5.54E-02	605.278298	0.007503212	17,840	0.0825%	1.4166%
2017	Annual	San Joaquin (SJV)	MCY	50 MPH	1.95128746	1.11172673	19.7263036	0.00177613	0.004	0.01176	0.0013509	1.71E-02	0.001	0.00504	0.00127362	7.31E-03	140.118786	0.312905805	5,760	0.0266%	0.4574%
2017	Annual	San Joaquin (SJV)	MDV	50 MPH	0.04218465	0.24313597	1.75908671	0.004552	0.008	0.03675	0.00146858	4.62E-02	0.002	0.01575	0.00135735	1.91E-02	453.422273	0.014034414	155,044	0.7172%	12.3114%
2017	Annual	San Joaquin (SJV)	MH	50 MPH	0.17411526	1.93757264	5.3840837	0.00962071	0.0128818	0.13034	0.03523204	1.78E-01	0.00322045	0.05586	0.0336583	9.27E-02	964.03834	0.042505298	2,425	0.0112%	0.1925%
2017	Annual	San Joaquin (SJV)	Motor Coach	50 MPH	0.10775556	5.62859203	0.40357137	0.01533037	0.012	0.13034	0.04341985	1.86E-01	0.003	0.05586	0.04154153	1.00E-01	1606.87879	0.005004966	326	0.0015%	0.0259%
2017	Annual	San Joaquin (SJV)	OBUS	50 MPH	0.0669745	0.59483999	2.21995013	0.00966219	0.012	0.13034	0.00057598	1.43E-01	0.003	0.05586	0.00053062	5.94E-02	964.487295	0.025623395	1,700	0.0079%	0.1350%
2017	Annual	San Joaquin (SJV)	SBUS	50 MPH	0.08296234	5.63325805	1.0754008	0.00882307	0.01102425	0.7448	0.03898138	7.95E-01	2.756E-03	3.192E-01	0.03728347	3.59E-01	918.080301	0.013194486	407	0.0019%	0.0323%
2017	Annual	San Joaquin (SJV)	T6 Ag	50 MPH	0.56492008	8.58211828	1.68721115	0.01031233	0.012	0.13034	0.40143787	5.44E-01	0.003	0.05586	0.38407185	4.43E-01	1080.90449	0.026239074	1,261	0.0058%	0.1002%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	0.03467066	1.72098539	0.13308307	0.01008058	0.012	0.13034	0.01786107	1.60E-01	0.003	0.05586	0.01708841	7.59E-02	1056.61314	0.001610363	218	0.0010%	0.0173%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	50 MPH	0.09784879	2.10659858	0.38856281	0.01028538	0.012	0.13034	0.09422745	2.37E-01	0.003	0.05586	0.09015121	1.49E-01	1078.07964	0.004544823	670	0.0031%	0.0532%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	0.08367169	4.04206717	0.28875864	0.01029533	0.012	0.13034	0.05570711	1.98E-01	0.003	0.05586	0.05329724	1.12E-01	1079.12184	0.003886333	1,100	0.0051%	0.0874%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	0.14031611	3.13860439	0.53792617	0.0102913	0.012	0.13034	0.12801179	2.70E-01	0.003	0.05586	0.12247406	1.81E-01	1078.70003	0.00651732	4,503	0.0208%	0.3576%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	50 MPH	0.04435355	2.3835629	0.15607034	0.01012363	0.012	0.13034	0.02225884	1.65E-01	0.003	0.05586	0.02129593	8.02E-02	1061.12492	0.002060108	5,858	0.0271%	0.4652%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	50 MPH	0.16905091	3.6422656	0.63896735	0.01030939	0.012	0.13034	0.14997625	2.92E-01	0.003	0.05586	0.14348834	2.02E-01	1080.59597	0.007851977	13,991	0.0647%	1.1110%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	50 MPH	0.02635439	1.67912038	0.10459486	0.01009912	0.012	0.13034	0.01066191	1.53E-01	0.003	0.05586	0.01020068	6.91E-02	1058.5559	0.001224093	125	0.0006%	0.0099%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	50 MPH	0.09784879	2.10659858	0.38856281	0.01028538	0.012	0.13034	0.09422745	2.37E-01	0.003	0.05586	0.09015121	1.49E-01	1078.07964	0.004544823	384	0.0018%	0.0305%
2017	Annual	San Joaquin (SJV)	T6 Public	50 MPH	0.02926591	3.93148677	0.10319138	0.01029282	0.012	0.13034	0.02191268	1.64E-01	0.003	0.05586	0.02096475	7.98E-02	1078.85891	0.001359326	645	0.0030%	0.0512%
2017	Annual	San Joaquin (SJV)	T6 Utility	50 MPH	0.01167318	0.32726821	0.06144381	0.01068075	0.012	0.13034	0.00167525	1.44E-01	0.003	0.05586	0.00160278	6.05E-02	1119.52052	0.000542189	114	0.0005%	0.0091%
2017	Annual	San Joaquin (SJV)	T6TS	50 MPH	0.16487146	1.05210972	5.14583462	0.00972724	0.012	0.13034	0.00127537	1.44E-01	0.003	0.05586	0.00117936	6.00E-02	966.014185	0.057249425	3,236	0.0150%	0.2570%
2017	Annual	San Joaquin (SJV)	T7 Ag	50 MPH	0.97593397	14.0441938	4.35288055	0.01555265	0.036	0.06174	0.6929582	7.91E-01	0.009	0.02646	0.66298113	6.98E-01	1630.17715	0.045329605	1,022	0.0047%	0.0811%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	50 MPH	0.09008041	4.01274111	0.38338046	0.0143859	0.036	0.06174	0.0311974	1.29E-01	0.009	0.02646	0.02984781	6.53E-02	1507.88187	0.004184002	36,352	0.1682%	2.8865%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	0.11541865	5.2082657	0.46787181	0.0149006	0.036	0.06174	0.05386544	1.52E-01	0.009	0.02646	0.05153524	8.70E-02	1561.83124	0.005360897	1,295	0.0060%	0.1028%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	50 MPH	0.04924706	1.90754957	0.24578785	0.01361942	0.036	0.06174	0.01190341	1.10E-01	0.009	0.02646	0.01138848	4.68E-02	1427.54225	0.002287398	45,076	0.2085%	3.5793%
2017	Annual	San Joaquin (SJV)	T7 NOOS	50 MPH	0.07823233	3.90719906	0.3365781	0.01439182	0.036	0.06174	0.02291793	1.21E-01	0.009	0.02646	0.02192651	5.74E-02	1508.50309	0.003633689	14,359	0.0664%	1.1402%
2017	Annual	San Joaquin (SJV)	T7 Other Port	50 MPH	0.09020603	4.73398013	0.31166684	0.01494131	0.036	0.06174	0.02352818	1.21E-01	0.009	0.02646	0.02251036	5.80E-02	1566.0987	0.004189836	674	0.0031%	0.0535%
2017	Annual	San Joaquin (SJV)	T7 POAK	50 MPH	0.09935553	5.36794391	0.33131956	0.01509571	0.036	0.06174	0.02672594	1.24E-01	0.009	0.02646	0.02556979	6.10E-02	1582.28247	0.004614807	1,768	0.0082%	0.1404%
2017	Annual	San Joaquin (SJV)	T7 POLA	50 MPH	0.09935553	5.36794391	0.33131956	0.01509571	0.036	0.06174	0.02672594	1.24E-01	0.009	0.02646	0.02556979	6.10E-02	1582.28247	0.004614807	3,243	0.0150%	0.2575%
2017	Annual	San Joaquin (SJV)	T7 Public	50 MPH	0.0618391	8.47229678	0.27703713	0.01512036	0.036	0.06174	0.04621387	1.44E-01	0.009	0.02646	0.04421468	7.97E-02	1584.86545	0.002872266	1,423	0.0066%	0.1130%
2017	Annual	San Joaquin (SJV)	T7 Single	50 MPH	0.13413857	5.93063045	0.5623488	0.01500455	0.036	0.06174	0.07613563	1.74E-01	0.009	0.02646	0.07284203	1.08E-01	1572.7271	0.006230389	9,622	0.0445%	0.7640%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	50 MPH	0.11634875	5.65177167	0.48588163	0.01486729	0.036	0.06174	0.06139538	1.59E-01	0.009	0.02646	0.05873944	9.42E-02	1558.33977	0.005404098	3,349	0.0155%	0.2660%
2017	Annual	San Joaquin (SJV)	T7 SWCV	50 MPH	0.05079567	8.75912696	0.24677771	0.02954659	0.036	0.06174	0.01233331	1.10E-01	0.009	0.02646	0.01179978	4.73E-02	3396.57945	0.294891118	448	0.0021%	0.0356%
2017	Annual	San Joaquin (SJV)	T7 Tractor	50 MPH	0.10536562	5.14179359	0.41005516	0.01446404	0.036	0.06174	0.03811742	1.36E-01	0.009	0.02646	0.03646847	7.19E-02	1516.07195	0.00489396	51,961	0.2404%	4.1260%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	50 MPH	0.1674544	6.60741051	0.69125058	0.01496073	0.036	0.06174	0.09107705	1.89E-01	0.009	0.02646	0.0871371	1.23E-01	1568.13377	0.007777823	2,497	0.0116%	0.1983%
2017	Annual	San Joaquin (SJV)	T7 Utility	50 MPH	0.02378217	0.56421683	0.14042819	0.01477432	0.036	0.06174	0.0025721	1.00E-01	0.009	0.02646	0.00246083	3.79E-02	1548.59479	0.00110462	64	0.0003%	0.0051%
2017	Annual	San Joaquin (SJV)	T7IS	50 MPH	0.43285982	3.2456781	29.2540669	0.01742251	0.02	0.06174	0.00056547	8.23E-02	0.005	0.02646	0.00052348	3.20E-02	1698.14236	0.163323296	629	0.0029%	0.0500%
2017	Annual	San Joaquin (SJV)	UBUS	50 MPH	0.35115924	10.9044388	6.56968892	0.00952353	0.012	0.64297644	0.10043497	7.55E-01	0.003	0.27556133	0.09608016	3.75E-01	1402.70303	0.4806616	479	0.0022%	0.0380%
																			1,259,359	5.8257%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	55 MPH	0.05669034	3.79682842	0.17807258	0.01016458	0.012	0.13034	0.03558727	1.78E-01	0.003	0.05586	0.03404778	9.29E-02	1065.41747	0.00263312	728	0.0034%	0.0660%
2017	Annual	San Joaquin (SJV)	LDA	55 MPH	0.01656971	0.07894581	0.7539686	0.00260228	0.008	0.03675	0.0014355	4.62E-02	0.002	0.01575	0.00132655	1.91E-02	259.617774	0.005576801	464,905	2.1506%	42.1228%
2017	Annual	San Joaquin (SJV)	LDT1	55 MPH	0.05695564	0.2399538	2.176733	0.00310174	0.008	0.03675	0.00297027	4.77E-02	0.002	0.01575	0.00274374	2.05E-02	307.202562	0.016882695	36,084	0.1669%	3.2694%
2017	Annual	San Joaquin (SJV)	LDT2	55 MPH	0.02359564	0.1426986	1.06844654	0.00354081	0.008	0.03675	0.00135457	4.61E-02	0.002	0.01575	0.00124767	1.90E-02	353.069522	0.008014295	156,949	0.7260%	14.2204%
2017	Annual	San Joaquin (SJV)	LHD1	55 MPH	0.09442769	3.02939506	1.27349793	0.00618269	0.01009977	0.07644	0.01549274	1.02E-01	0.00252494	0.03276	0.014801	5.01E-02	629.772338	0.013848093	36,341	0.1681%	3.2927%
2017	Annual	San Joaquin (SJV)	LHD2	55 MPH	0.07680981	2.73252403	0.79744793	0.0061172	0.01077678	0.08918	0.01557789	1.16E-01	0.00269419	0.03822	0.0148929	5.58E-02	628.97793	0.007732926	9,115	0.0422%	0.8259%
2017	Annual	San Joaquin (SJV)	MCY	55 MPH	2.02256395	1.13810662	21.3344214	0.00185513	0.004	0.01176	0.00140331	1.72E-02	0.001	0.00504	0.00132314	7.36E-03	145.259339	0.323527697	4,800	0.0222%	0.4349%
2017	Annual	San Joaquin (SJV)	MDV	55 MPH	0.04296277	0.24770092	1.69172778	0.00471769	0.008	0.03675	0.00149255	4.62E-02	0.002	0.01575	0.0013796	1.91E-02	470.140138	0.014209543	129,203	0.5977%	11.7065%
2017	Annual	San Joaquin (SJV)	MH	55 MPH	0.18090442	1.94961283	5.8509158	0.0093968	0.0128818	0.13034	0.03961247	1.83E-01	0.00322045	0.05586	0.03784779	9.69E-02	940.736287	0.044097106	3,254	0.0151%	0.2948%
2017	Annual	San Joaquin (SJV)	Motor Coach	55 MPH	0.09005418	5.47380949	0.34174474	0.01489271	0.012	0.13034	0.04593229	1.88E-01	0.003	0.05586	0.04394528	1.03E-01	1561.00445	0.004182784	603	0.0028%	0.0546%
2017	Annual	San Joaquin (SJV)	OBUS	55 MPH	0.0684047	0.59740084	2.11065037	0.00939525	0.012	0.13034	0.00058788	1.43E-01	0.003	0.05586	0.00054162	5.94E-02	937.903314	0.026132939	2,224	0.0103%	0.2015%
2017	Annual	San Joaquin (SJV)	SBUS	55 MPH	0.08374288	5.66799607	0.9996162	0.00865035	0.01102425	0.7448	0.04200323	7.98E-01	2.756E-03	3.192E-01	0.0401744	3.62E-01	900.214179	0.013402213	606	0.0028%	0.0549%
2017	Annual	San Joaquin (SJV)	T6 Ag	55 MPH	0.57702684	8.6330196	1.56399374	0.0101453	0.012	0.13034	0.422081	5.64E-01	0.003	0.05586	0.40382196	4.63E-01	1063.39644	0.026801402	1,848	0.0086%	0.1675%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	0.02875229	1.63825452	0.11058397	0.00980289	0.012	0.13034	0.0190057	1.61E-01	0.003	0.05586	0.01818352	7.70E-02	1027.50609	0.001335469	320	0.0015%	0.0290%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	55 MPH	0.09075077	2.04555549	0.37998969	0.01003086	0.012	0.13034	0.10662133	2.49E-01	0.003	0.05586	0.10200893	1.61E-01	1051.4017	0.004215138	982	0.0045%	0.0890%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	0.0802465	3.99173843	0.26472404	0.01003565	0.012	0.13034	0.06176025	2.04E-01	0.003	0.05586	0.05908853	1.18E-01	1051.90385	0.003727242	1,612	0.0075%	0.1461%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	0.13469894	3.07834118	0.52789887	0.01004552	0.012	0.13034	0.14537811	2.88E-01	0.003	0.05586	0.13908911	1.98E-01	1052.93764	0.006256417	6,599	0.0305%	0.5979%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	55 MPH	0.03742449	2.28778268	0.12976613	0.00983574	0.012	0.13034	0.02339035	1.66E-01	0.003	0.05586	0.02237849	8.12E-02	1030.94908	0.001738271	8,585	0.0397%	0.7778%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	55 MPH	0.1662338	3.59096418	0.6275181	0.01007683	0.012	0.13034	0.17075255	3.13E-01	0.003	0.05586	0.16336587	2.22E-01	1056.21949	0.00772113	20,503	0.0948%	1.8576%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	55 MPH	0.0205036	1.59463613	0.08255607	0.00982193	0.012	0.13034	0.01097788	1.53E-01	0.003	0.05586	0.01050298	6.94E-02	1029.50171	0.000952339	183	0.0008%	0.0166%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	55 MPH	0.09075077	2.04555549	0.37998969	0.01003086	0.012	0.13034	0.10662133	2.49E-01	0.003	0.05586	0.10200893	1.61E-01	1051.4017	0.004215138	563	0.0026%	0.0510%
2017	Annual	San Joaquin (SJV)	T6 Public	55 MPH	0.02695802	3.92051028	0.09035958	0.01007115	0.012	0.13034	0.02347879	1.66E-01	0.003	0.05586	0.0224631	8.13E-02	1055.6245	0.00125213	945	0.0044%	0.0856%
2017	Annual	San Joaquin (SJV)	T6 Utility	55 MPH	0.0086023	0.28074754	0.04527967	0.01039374	0.012	0.13034	0.00158131	1.44E-01	0.003	0.05586	0.0015129	6.04E-02	1089.43724	0.000399554	167	0.0008%	0.0151%
2017	Annual	San Joaquin (SJV)	T6TS	55 MPH	0.1699065	1.06143919	5.17120963	0.00946214	0.012	0.13034	0.00131087	1.44E-01	0.003	0.05586	0.00121231	6.01E-02	939.388119	0.058838897	4,233	0.0196%	0.3835%
2017	Annual	San Joaquin (SJV)	T7 Ag	55 MPH	0.99093983	14.1829716	4.01707662	0.0153485	0.036	0.06174	0.71846235	8.16E-01	0.009	0.02646	0.68738199	7.23E-01	1608.77831	0.046026589	1,246	0.0058%	0.1129%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	55 MPH	0.07141149	3.79735452	0.30992764	0.01398092	0.036	0.06174	0.03244946	1.30E-01	0.009	0.02646	0.03104572	6.65E-02	1465.43386	0.003316879	44,329	0.2051%	4.0164%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	0.09456337	5.01812301	0.40694002	0.01449253	0.036	0.06174	0.05787478	1.56E-01	0.009	0.02646	0.05537114	9.08E-02	1519.05829	0.004392224	1,579	0.0073%	0.1431%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	55 MPH	0.03737817	1.76533036	0.18841653	0.01325077	0.036	0.06174	0.01205096	1.10E-01	0.009	0.02646	0.01152964	4.70E-02	1388.90145	0.001736119	54,968	0.2543%	4.9804%
2017	Annual	San Joaquin (SJV)	T7 NOOS	55 MPH	0.0602685	3.69105778	0.26283596	0.01398845	0.036	0.06174	0.02315737	1.21E-01	0.009	0.02646	0.02215559	5.76E-02	1466.22314	0.002799316	17,510	0.0810%	1.5865%
2017	Annual	San Joaquin (SJV)	T7 Other Port	55 MPH	0.06681719	4.53526629	0.2328383	0.01447256	0.036	0.06174	0.0223044	1.20E-01	0.009	0.02646	0.02133952	5.68E-02	1516.96508	0.003103485	822	0.0038%	0.0745%
2017	Annual	San Joaquin (SJV)	T7 POAK	55 MPH	0.07364159	5.15525842	0.24807837	0.01461267	0.036	0.06174	0.02534573	1.23E-01	0.009	0.02646	0.02424928	5.97E-02	1531.65108	0.003420461	2,156	0.0100%	0.1953%
2017	Annual	San Joaquin (SJV)	T7 POLA	55 MPH	0.07364159	5.15525842	0.24807837	0.01461267	0.036	0.06174	0.02534573	1.23E-01	0.009	0.02646	0.02424928	5.97E-02	1531.65108	0.003420461	3,955	0.0183%	0.3583%
2017	Annual	San Joaquin (SJV)	T7 Public	55 MPH	0.05762338	8.50254306	0.24417928	0.0148414	0.036	0.06174	0.04782256	1.46E-01	0.009	0.02646	0.04575378	8.12E-02	1555.626	0.002676457	1,735	0.0080%	0.1572%
2017	Annual	San Joaquin (SJV)	T7 Single	55 MPH	0.12649849	5.8649487	0.50406348	0.01463509	0.036	0.06174	0.08180255	1.80E-01	0.009	0.02646	0.0782638	1.14E-01	1534.00101	0.005875527	11,734	0.0543%	1.0631%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	55 MPH	0.10880673	5.58958849	0.43847628	0.01450189	0.036	0.06174	0.06821793	1.66E-01	0.009	0.02646	0.06526686	1.01E-01	1520.0402	0.005053791	4,084	0.0189%	0.3701%
2017	Annual	San Joaquin (SJV)	T7 SWCV	55 MPH	0.04430754	8.75918777	0.19536656	0.02901752	0.036	0.06174	0.01338387	1.11E-01	0.009	0.02646	0.01280489	4.83E-02	3333.76928	0.255848815	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Tractor	55 MPH	0.08628862	4.95375435	0.33658008	0.01404881	0.036	0.06174	0.03957339	1.37E-01	0.009	0.02646	0.03786146	7.33E-02	1472.5491	0.004007883	63,363	0.2931%	5.7411%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	55 MPH	0.15119283	6.47148792	0.63735731	0.0145839	0.036	0.06174	0.10048786	1.98E-01	0.009	0.02646	0.0961408	1.32E-01	1528.63588	0.007022515	3,045	0.0141%	0.2759%
2017	Annual	San Joaquin (SJV)	T7 Utility	55 MPH	0.01752575	0.485877	0.10348548	0.01437731	0.036	0.06174	0.00242788	1.00E-01	0.009	0.02646	0.00232285	3.78E-02	1506.98161	0.000814026	78	0.0004%	0.0070%
2017	Annual	San Joaquin (SJV)	T7IS	55 MPH	0.44237656	3.26231949	27.7514028	0.01708027	0.02	0.06174	0.00058027	8.23E-02	0.005	0.02646	0.00053726	3.20E-02	1666.16799	0.166618545	924	0.0043%	0.0837%
2017	Annual	San Joaquin (SJV)	UBUS	55 MPH	0.36810778	11.0220854	6.50699616	0.00937244	0.012	0.64297644	0.10776117	7.63E-01	0.003	0.27556133	0.10308919	3.82E-01	1382.23885	0.488509411	808	0.0037%	0.0732%
																			1,103,688	5.1056%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	60 MPH	0.05570122	3.77152323	0.16864597	0.01004072	0.012	0.13034	0.03741902	1.80E-01	0.003	0.05586	0.03580029	9.47E-02	1052.43433	0.002587177	875	0.0040%	0.0279%
2017	Annual	San Joaquin (SJV)	LDA	60 MPH	0.01778072	0.08116645	0.72626146	0.00279881	0.008	0.03675	0.00153938	4.63E-02	0.002	0.01575	0.00142262	1.92E-02	279.359376	0.005960614	1,763,955	8.1599%	56.2783%
2017	Annual	San Joaquin (SJV)	LDT1	60 MPH	0.06073667	0.25222218	2.18879151	0.00333499	0.008	0.03675	0.00315488	4.79E-02	0.002	0.01575	0.00291469	2.07E-02	330.545456	0.017821217	136,913	0.6333%	4.3681%
2017	Annual	San Joaquin (SJV)	LDT2	60 MPH	0.02523145	0.14770273	1.03372346	0.00380803	0.008	0.03675	0.00144884	4.62E-02	0.002	0.01575	0.00133454	1.91E-02	379.897263	0.008529594	595,502	2.7547%	18.9992%
2017	Annual	San Joaquin (SJV)	LHD1	60 MPH	0.10276544	3.14095289	1.42552194	0.00626236	0.01009977	0.07644	0.01680984	1.03E-01	0.00252494	0.03276	0.01605944	5.13E-02	637.748536	0.01505415		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LHD2	60 MPH	0.08302713	2.83301364	0.90134648	0.00615628	0.01077678	0.08918	0.01674299	1.17E-01	0.00269419	0.03822	0.01600673	5.69E-02	632.900656	0.008377549		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	MCY	60 MPH	2.20070162	1.17246713	24.2352612	0.00201698	0.004	0.01176	0.00152926	1.73E-02	0.001	0.00504	0.00144199	7.48E-03	156.295629	0.351399717	18,212	0.0842%	0.5810%
2017	Annual	San Joaquin (SJV)	MDV	60 MPH	0.04598587	0.25716995	1.65579744	0.00507384	0.008	0.03675	0.00159582	4.63E-02	0.002	0.01575	0.00147512	1.92E-02	505.891786	0.01513117	490,226	2.2677%	15.6405%
2017	Annual	San Joaquin (SJV)	MH	60 MPH	0.19750587	1.98542604	6.6837093	0.00945936	0.0128818	0.13034	0.04575544	1.89E-01	0.00322045	0.05586	0.04372079	1.03E-01	945.656206	0.048026842	3,792	0.0175%	0.1210%
2017	Annual	San Joaquin (SJV)	Motor Coach	60 MPH	0.08426031	5.4144337	0.31950439	0.01470229	0.012	0.13034	0.04769612	1.90E-01	0.003	0.05586	0.04563281	1.04E-01	1541.0452	0.003913673	635	0.0029%	0.0202%
2017	Annual	San Joaquin (SJV)	OBUS	60 MPH	0.07364614	0.60941884	2.03201656	0.00945239	0.012	0.13034	0.00063262	1.43E-01	0.003	0.05586	0.00058285	5.94E-02	943.730343	0.028105912	2,566	0.0119%	0.0819%
2017	Annual	San Joaquin (SJV)	SBUS	60 MPH	0.08766412	5.70459475	0.94142588	0.00861105	0.01102425	0.7448	0.04439408	8.00E-01	2.756E-03	3.192E-01	0.04246093	3.64E-01	896.14342	0.014291332	337	0.0016%	0.0108%
2017	Annual	San Joaquin (SJV)	T6 Ag	60 MPH	0.59845631	8.69157009	1.53319647	0.01009897	0.012	0.13034	0.43985205	5.82E-01	0.003	0.05586	0.42082425	4.80E-01	1058.54047	0.027796746	2,221	0.0103%	0.0709%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	0.02671268	1.60580409	0.10226603	0.00967931	0.012	0.13034	0.01978098	1.62E-01	0.003	0.05586	0.01892526	7.78E-02	1014.55319	0.001240735	384	0.0018%	0.0123%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	60 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	1,180	0.0055%	0.0376%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	0.08128875	3.98047117	0.25826195	0.00992859	0.012	0.13034	0.06588058	2.08E-01	0.003	0.05586	0.06303062	1.22E-01	1040.6818	0.003775652	1,937	0.0090%	0.0618%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	0.13549895	3.06508847	0.53046577	0.00994579	0.012	0.13034	0.15610612	2.98E-01	0.003	0.05586	0.14935304	2.08E-01	1042.48465	0.006293575	7,930	0.0367%	0.2530%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	60 MPH	0.03521201	2.24936495	0.12015319	0.00970791	0.012	0.13034	0.02424029	1.67E-01	0.003	0.05586	0.02319166	8.21E-02	1017.55096	0.001635507	10,316	0.0477%	0.3291%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	60 MPH	0.1695444	3.58429267	0.63132511	0.0099858	0.012	0.13034	0.18378834	3.26E-01	0.003	0.05586	0.17583774	2.35E-01	1046.67868	0.007874898	24,637	0.1140%	0.7860%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	60 MPH	0.01826142	1.56156881	0.07406667	0.00969869	0.012	0.13034	0.01121612	1.54E-01	0.003	0.05586	0.01073092	6.96E-02	1016.58407	0.000848195	220	0.0010%	0.0070%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	60 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	676	0.0031%	0.0216%
2017	Annual	San Joaquin (SJV)	T6 Public	60 MPH	0.02656457	3.93260682	0.08599186	0.00998699	0.012	0.13034	0.0246093	1.67E-01	0.003	0.05586	0.02354471	8.24E-02	1046.80283	0.001233856	1,135	0.0053%	0.0362%
2017	Annual	San Joaquin (SJV)	T6 Utility	60 MPH	0.0073846	0.26155617	0.03887011	0.01026297	0.012	0.13034	0.00153765	1.44E-01	0.003	0.05586	0.00147113	6.03E-02	1075.7307	0.000342996	201	0.0009%	0.0064%
2017	Annual	San Joaquin (SJV)	T6TS	60 MPH	0.18410997	1.08534085	5.37791672	0.00952419	0.012	0.13034	0.00141777	1.44E-01	0.003	0.05586	0.00131128	6.02E-02	945.224372	0.063634408	4,885	0.0226%	0.1558%
2017	Annual	San Joaquin (SJV)	T7 Ag	60 MPH	1.03011409	14.2874986	3.91559027	0.01529081	0.036	0.06174	0.74170615	8.39E-01	0.009	0.02646	0.70962027	7.45E-01	1602.73126	0.047846132	380	0.0018%	0.0121%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	60 MPH	0.06443362	3.70937243	0.28203068	0.01380051	0.036	0.06174	0.0333377	1.31E-01	0.009	0.02646	0.03189553	6.74E-02	1446.52365	0.002992775	13,504	0.0625%	0.4308%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	0.08685772	4.9473092	0.38535935	0.0143169	0.036	0.06174	0.06038218	1.58E-01	0.009	0.02646	0.05777008	9.32E-02	1500.64966	0.004034316	481	0.0022%	0.0153%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	60 MPH	0.03272594	1.70874724	0.16597303	0.01308522	0.036	0.06174	0.01219322	1.10E-01	0.009	0.02646	0.01166574	4.71E-02	1371.54871	0.001520035	16,745	0.0775%	0.5342%
2017	Annual	San Joaquin (SJV)	T7 NOOS	60 MPH	0.05334873	3.60292996	0.23426088	0.0138088	0.036	0.06174	0.02342346	1.21E-01	0.009	0.02646	0.02241017	5.79E-02	1447.39187	0.00247791	5,334	0.0247%	0.1702%
2017	Annual	San Joaquin (SJV)	T7 Other Port	60 MPH	0.05754845	4.44843827	0.20170158	0.01426016	0.036	0.06174	0.02174331	1.19E-01	0.009	0.02646	0.02080271	5.63E-02	1494.70248	0.002672976	250	0.0012%	0.0080%
2017	Annual	San Joaquin (SJV)	T7 POAK	60 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	657	0.0030%	0.0210%
2017	Annual	San Joaquin (SJV)	T7 POLA	60 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	1,205	0.0056%	0.0384%
2017	Annual	San Joaquin (SJV)	T7 Public	60 MPH	0.05714789	8.54833489	0.23272396	0.01474327	0.036	0.06174	0.04923405	1.47E-01	0.009	0.02646	0.04710421	8.26E-02	1545.34061	0.002654371	529	0.0024%	0.0169%
2017	Annual	San Joaquin (SJV)	T7 Single	60 MPH	0.12714016	5.84964785	0.48515463	0.01448107	0.036	0.06174	0.08590049	1.84E-01	0.009	0.02646	0.08218447	1.18E-01	1517.85772	0.005905331	3,574	0.0165%	0.1140%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	60 MPH	0.1093306	5.57361341	0.42345043	0.01434825	0.036	0.06174	0.07275138	1.70E-01	0.009	0.02646	0.06960419	1.05E-01	1503.93523	0.005078123	1,244	0.0058%	0.0397%
2017	Annual	San Joaquin (SJV)	T7 SWCV	60 MPH	0.04192809	8.79206293	0.17551422	0.0288392	0.036	0.06174	0.01405228	1.12E-01	0.009	0.02646	0.01344439	4.89E-02	3312.15317	0.241444678	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Tractor	60 MPH	0.07983538	4.87730699	0.30910672	0.01386512	0.036	0.06174	0.04070445	1.38E-01	0.009	0.02646	0.03894359	7.44E-02	1453.29535	0.003708147	19,303	0.0893%	0.6158%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	60 MPH	0.14788592	6.42907838	0.62171413	0.01442777	0.036	0.06174	0.10648122	2.04E-01	0.009	0.02646	0.10187489	1.37E-01	1512.27049	0.006868918	928	0.0043%	0.0296%
2017	Annual	San Joaquin (SJV)	T7 Utility	60 MPH	0.01504489	0.4534245	0.0888366	0.01419642	0.036	0.06174	0.00236084	1.00E-01	0.009	0.02646	0.00225871	3.77E-02	1488.02181	0.000698796	24	0.0001%	0.0008%
2017	Annual	San Joaquin (SJV)	T7IS	60 MPH	0.47648696	3.32936482	26.6281935	0.01683139	0.02	0.06174	0.00062686	8.24E-02	0.005	0.02646	0.00058046	3.20E-02	1642.85039	0.179234989	228	0.0011%	0.0073%
2017	Annual	San Joaquin (SJV)	UBUS	60 MPH	0.41186709	11.2451509	6.72221141	0.00940307	0.012	0.64297644	0.12254494	7.78E-01	0.003	0.27556133	0.11723263	3.96E-01	1385.67954	0.534577442	1,224	0.0057%	0.0390%
																			3,134,343	14.4992%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	65 MPH	0.05570122	3.77152323	0.16864597	0.01004072	0.012	0.13034	0.03741902	1.80E-01	0.003	0.05586	0.03580029	9.47E-02	1052.43433	0.002587177	138	0.0006%	0.0028%
2017	Annual	San Joaquin (SJV)	LDA	65 MPH	0.02006978	0.08482182	0.711603	0.0031242	0.008	0.03675	0.00173816	4.65E-02	0.002	0.01575	0.00160634	1.94E-02	311.993247	0.006707369	2,822,723	13.0577%	58.1552%
2017	Annual	San Joaquin (SJV)	LDT1	65 MPH	0.06790437	0.27077366	2.27209352	0.0037217	0.008	0.03675	0.00351948	4.83E-02	0.002	0.01575	0.00325197	2.10E-02	369.14171	0.019729356	219,091	1.0135%	4.5138%
2017	Annual	San Joaquin (SJV)	LDT2	65 MPH	0.02835989	0.15584077	1.01885401	0.00425055	0.008	0.03675	0.00163211	4.64E-02	0.002	0.01575	0.00150338	1.93E-02	424.25574	0.009549165	952,936	4.4082%	19.6329%
2017	Annual	San Joaquin (SJV)	LHD1	65 MPH	0.11726991	3.25560231	1.68300127	0.00634813	0.01009977	0.07644	0.01908755	1.06E-01	0.00252494	0.03276	0.01823545	5.35E-02	646.276334	0.017178451		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LHD2	65 MPH	0.09421698	2.93584549	1.07573047	0.00619144	0.01077678	0.08918	0.01882361	1.19E-01	0.00269419	0.03822	0.01799572	5.89E-02	636.375849	0.009532084		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	MCY	65 MPH	2.51333444	1.21521399	29.0385422	0.00228537	0.004	0.01176	0.00174811	1.75E-02	0.001	0.00504	0.00164841	7.69E-03	174.54429	0.400896738	29,143	0.1348%	0.6004%
2017	Annual	San Joaquin (SJV)	MDV	65 MPH	0.05174622	0.27228344	1.65962452	0.00566358	0.008	0.03675	0.00179546	4.65E-02	0.002	0.01575	0.00165968	1.94E-02	564.989422	0.016954019	784,471	3.6289%	16.1621%
2017	Annual	San Joaquin (SJV)	MH	65 MPH	0.22618681	2.04455217	8.05407796	0.00964792	0.0128818	0.13034	0.05368149	1.97E-01	0.00322045	0.05586	0.05129629	1.10E-01	962.439181	0.054888582	594	0.0027%	0.0122%
2017	Annual	San Joaquin (SJV)	Motor Coach	65 MPH	0.08426031	5.4144337	0.31950439	0.01470229	0.012	0.13034	0.04769612	1.90E-01	0.003	0.05586	0.04563281	1.04E-01	1541.0452	0.003913673	68	0.0003%	0.0014%
2017	Annual	San Joaquin (SJV)	OBUS	65 MPH	0.08357627	0.63145281	1.99073941	0.00962673	0.012	0.13034	0.00071771	1.43E-01	0.003	0.05586	0.00066126	5.95E-02	961.224924	0.031875384	401	0.0019%	0.0083%
2017	Annual	San Joaquin (SJV)	SBUS	65 MPH	0.09147508	5.71203767	0.89296341	0.00863066	0.01102425	0.7448	0.04443942	8.00E-01	2.756E-03	3.192E-01	0.04250263	3.64E-01	898.169022	0.015831267	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Ag	65 MPH	0.59845631	8.69157009	1.53319647	0.01009897	0.012	0.13034	0.43985205	5.82E-01	0.003	0.05586	0.42082425	4.80E-01	1058.54047	0.027796746	350	0.0016%	0.0072%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	0.02671268	1.60580409	0.10226603	0.00967931	0.012	0.13034	0.01978098	1.62E-01	0.003	0.05586	0.01892526	7.78E-02	1014.55319	0.001240735	60	0.0003%	0.0012%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	65 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	186	0.0009%	0.0038%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	0.08128875	3.98047117	0.25826195	0.00992859	0.012	0.13034	0.06588058	2.08E-01	0.003	0.05586	0.06303062	1.22E-01	1040.6818	0.003775652	305	0.0014%	0.0063%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	0.13549895	3.06508847	0.53046577	0.00994579	0.012	0.13034	0.15610612	2.98E-01	0.003	0.05586	0.14935304	2.08E-01	1042.48465	0.006293575	1,248	0.0058%	0.0257%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	65 MPH	0.03521201	2.24936495	0.12015319	0.00970791	0.012	0.13034	0.02424029	1.67E-01	0.003	0.05586	0.02319166	8.21E-02	1017.55096	0.001635507	1,623	0.0075%	0.0334%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	65 MPH	0.1695444	3.58429267	0.63132511	0.0099858	0.012	0.13034	0.18378834	3.26E-01	0.003	0.05586	0.17583774	2.35E-01	1046.67868	0.007874898	3,877	0.0179%	0.0799%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	65 MPH	0.01826142	1.56156881	0.07406667	0.00969869	0.012	0.13034	0.01121612	1.54E-01	0.003	0.05586	0.01073092	6.96E-02	1016.58407	0.000848195	35	0.0002%	0.0007%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	65 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	106	0.0005%	0.0022%
2017	Annual	San Joaquin (SJV)	T6 Public	65 MPH	0.02656457	3.93260682	0.08599186	0.00998699	0.012	0.13034	0.0246093	1.67E-01	0.003	0.05586	0.02354471	8.24E-02	1046.80283	0.001233856	179	0.0008%	0.0037%
2017	Annual	San Joaquin (SJV)	T6 Utility	65 MPH	0.0073846	0.26155617	0.03887011	0.01026297	0.012	0.13034	0.00153765	1.44E-01	0.003	0.05586	0.00147113	6.03E-02	1075.7307	0.000342996	32	0.0001%	0.0007%
2017	Annual	San Joaquin (SJV)	T6TS	65 MPH	0.20974775	1.12466114	5.84092821	0.00970735	0.012	0.13034	0.00161337	1.44E-01	0.003	0.05586	0.00149226	6.04E-02	962.746649	0.072411648	763	0.0035%	0.0157%
2017	Annual	San Joaquin (SJV)	T7 Ag	65 MPH	1.03011409	14.2874986	3.91559027	0.01529081	0.036	0.06174	0.74170615	8.39E-01	0.009	0.02646	0.70962027	7.45E-01	1602.73126	0.047846132	208	0.0010%	0.0043%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	65 MPH	0.06443362	3.70937243	0.28203068	0.01380051	0.036	0.06174	0.0333377	1.31E-01	0.009	0.02646	0.03189553	6.74E-02	1446.52365	0.002992775	7,396	0.0342%	0.1524%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	0.08685772	4.9473092	0.38535935	0.0143169	0.036	0.06174	0.06038218	1.58E-01	0.009	0.02646	0.05777008	9.32E-02	1500.64966	0.004034316	263	0.0012%	0.0054%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	65 MPH	0.03272594	1.70874724	0.16597303	0.01308522	0.036	0.06174	0.01219322	1.10E-01	0.009	0.02646	0.01166574	4.71E-02	1371.54871	0.001520035	9,172	0.0424%	0.1890%
2017	Annual	San Joaquin (SJV)	T7 NOOS	65 MPH	0.05334873	3.60292996	0.23426088	0.0138088	0.036	0.06174	0.02342346	1.21E-01	0.009	0.02646	0.02241017	5.79E-02	1447.39187	0.00247791	2,922	0.0135%	0.0602%
2017	Annual	San Joaquin (SJV)	T7 Other Port	65 MPH	0.05754845	4.44843827	0.20170158	0.01426016	0.036	0.06174	0.02174331	1.19E-01	0.009	0.02646	0.02080271	5.63E-02	1494.70248	0.002672976	137	0.0006%	0.0028%
2017	Annual	San Joaquin (SJV)	T7 POAK	65 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	360	0.0017%	0.0074%
2017	Annual	San Joaquin (SJV)	T7 POLA	65 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	660	0.0031%	0.0136%
2017	Annual	San Joaquin (SJV)	T7 Public	65 MPH	0.05714789	8.54833489	0.23272396	0.01474327	0.036	0.06174	0.04923405	1.47E-01	0.009	0.02646	0.04710421	8.26E-02	1545.34061	0.002654371	290	0.0013%	0.0060%
2017	Annual	San Joaquin (SJV)	T7 Single	65 MPH	0.12714016	5.84964785	0.48515463	0.01448107	0.036	0.06174	0.08590049	1.84E-01	0.009	0.02646	0.08218447	1.18E-01	1517.85772	0.005905331	1,958	0.0091%	0.0403%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	65 MPH	0.1093306	5.57361341	0.42345043	0.01434825	0.036	0.06174	0.07275138	1.70E-01	0.009	0.02646	0.06960419	1.05E-01	1503.93523	0.005078123	682	0.0032%	0.0140%
2017	Annual	San Joaquin (SJV)	T7 SWCV	65 MPH	0.04192809	8.79206293	0.17551422	0.0288392	0.036	0.06174	0.01405228	1.12E-01	0.009	0.02646	0.01344439	4.89E-02	3312.15317	0.241444678	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Tractor	65 MPH	0.07983538	4.87730699	0.30910672	0.01386512	0.036	0.06174	0.04070445	1.38E-01	0.009	0.02646	0.03894359	7.44E-02	1453.29535	0.003708147	10,572	0.0489%	0.2178%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	65 MPH	0.14788592	6.42907838	0.62171413	0.01442777	0.036	0.06174	0.10648122	2.04E-01	0.009	0.02646	0.10187489	1.37E-01	1512.27049	0.006868918	508	0.0024%	0.0105%
2017	Annual	San Joaquin (SJV)	T7 Utility	65 MPH	0.01504489	0.4534245	0.0888366	0.01419642	0.036	0.06174	0.00236084	1.00E-01	0.009	0.02646	0.00225871	3.77E-02	1488.02181	0.000698796	13	0.0001%	0.0003%
2017	Annual	San Joaquin (SJV)	T7IS	65 MPH	0.54088115	3.44978431	25.95931	0.01677888	0.02	0.06174	0.00071285	8.25E-02	0.005	0.02646	0.00066012	3.21E-02	1638.36989	0.203298925	122	0.0006%	0.0025%
2017	Annual	San Joaquin (SJV)	UBUS	65 MPH	0.484328	11.5733325	7.27172276	0.00955841	0.012	0.64297644	0.14479	8.00E-01	0.003	0.27556133	0.13851387	4.17E-01	1407.20734	0.618479718	184	0.0009%	0.0038%
																			4,853,775	22.4531%	100%

2017	Annual	San Joaquin (SJV)	All Other Buses	70 MPH	0.05570122	3.77152323	0.16864597	0.01004072	0.012	0.13034	0.03741902	1.80E-01	0.003	0.05586	0.03580029	9.47E-02	1052.43433	0.002587177	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LDA	70 MPH	0.02173148	0.08725345	0.71036281	0.00334732	0.008	0.03675	0.00188298	4.66E-02	0.002	0.01575	0.00174018	1.95E-02	334.357128	0.007254572	1,193,571	5.5214%	58.7044%
2017	Annual	San Joaquin (SJV)	LDT1	70 MPH	0.07309716	0.28290441	2.34932484	0.00398692	0.008	0.03675	0.00378712	4.85E-02	0.002	0.01575	0.00349948	2.12E-02	395.580961	0.021138667	92,641	0.4285%	4.5565%
2017	Annual	San Joaquin (SJV)	LDT2	70 MPH	0.03063786	0.16127241	1.02075649	0.00455387	0.008	0.03675	0.00176641	4.65E-02	0.002	0.01575	0.0016271	1.94E-02	454.642002	0.010299128	402,943	1.8640%	19.8183%
2017	Annual	San Joaquin (SJV)	LHD1	70 MPH	0.12744126	3.31387007	1.86801222	0.00628499	0.01009977	0.07644	0.02067791	1.07E-01	0.00252494	0.03276	0.01975472	5.50E-02	639.652723	0.018683216		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	LHD2	70 MPH	0.1020475	2.98769628	1.2000846	0.00609728	0.01077678	0.08918	0.0202755	1.20E-01	0.00269419	0.03822	0.01938363	6.03E-02	626.668721	0.010348659		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	MCY	70 MPH	2.73506608	1.23996689	32.4645721	0.00247161	0.004	0.01176	0.00190276	1.77E-02	0.001	0.00504	0.00179425	7.83E-03	187.044193	0.436151569	12,323	0.0570%	0.6061%
2017	Annual	San Joaquin (SJV)	MDV	70 MPH	0.05593597	0.28231736	1.68097036	0.00606793	0.008	0.03675	0.00194115	4.67E-02	0.002	0.01575	0.00179433	1.95E-02	605.478872	0.018295066	331,708	1.5345%	16.3147%
2017	Annual	San Joaquin (SJV)	MH	70 MPH	0.24838287	2.10706469	9.03364378	0.00995508	0.0128818	0.13034	0.06317376	2.06E-01	0.00322045	0.05586	0.06037243	1.19E-01	991.872311	0.059837771		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	Motor Coach	70 MPH	0.08426031	5.4144337	0.31950439	0.01470229	0.012	0.13034	0.04769612	1.90E-01	0.003	0.05586	0.04563281	1.04E-01	1541.0452	0.003913673	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	OBUS	70 MPH	0.09080725	0.64653691	1.98786336	0.00992796	0.012	0.13034	0.00077974	1.43E-01	0.003	0.05586	0.00071842	5.96E-02	991.385114	0.034627791		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	SBUS	70 MPH	0.09426583	5.71716635	0.87058908	0.00866528	0.01102425	0.7448	0.04447263	8.00E-01	2.756E-03	3.192E-01	0.04253316	3.64E-01	901.661105	0.016958955	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Ag	70 MPH	0.59845631	8.69157009	1.53319647	0.01009897	0.012	0.13034	0.43985205	5.82E-01	0.003	0.05586	0.42082425	4.80E-01	1058.54047	0.027796746	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	0.02671268	1.60580409	0.10226603	0.00967931	0.012	0.13034	0.01978098	1.62E-01	0.003	0.05586	0.01892526	7.78E-02	1014.55319	0.001240735	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	70 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	0.08128875	3.98047117	0.25826195	0.00992859	0.012	0.13034	0.06588058	2.08E-01	0.003	0.05586	0.06303062	1.22E-01	1040.6818	0.003775652	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	0.13549895	3.06508847	0.53046577	0.00994579	0.012	0.13034	0.15610612	2.98E-01	0.003	0.05586	0.14935304	2.08E-01	1042.48465	0.006293575	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	70 MPH	0.03521201	2.24936495	0.12015319	0.00970791	0.012	0.13034	0.02424029	1.67E-01	0.003	0.05586	0.02319166	8.21E-02	1017.55096	0.001635507	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Instate Small	70 MPH	0.1695444	3.58429267	0.63132511	0.0099858	0.012	0.13034	0.18378834	3.26E-01	0.003	0.05586	0.17583774	2.35E-01	1046.67868	0.007874898	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	70 MPH	0.01826142	1.56156881	0.07406667	0.00969869	0.012	0.13034	0.01121612	1.54E-01	0.003	0.05586	0.01073092	6.96E-02	1016.58407	0.000848195	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 OOS Small	70 MPH	0.08934508	2.02879527	0.38083663	0.00992364	0.012	0.13034	0.11410726	2.56E-01	0.003	0.05586	0.10917103	1.68E-01	1040.16296	0.004149848	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Public	70 MPH	0.02656457	3.93260682	0.08599186	0.00998699	0.012	0.13034	0.0246093	1.67E-01	0.003	0.05586	0.02354471	8.24E-02	1046.80283	0.001233856	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6 Utility	70 MPH	0.0073846	0.26155617	0.03887011	0.01026297	0.012	0.13034	0.00153765	1.44E-01	0.003	0.05586	0.00147113	6.03E-02	1075.7307	0.000342996	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T6TS	70 MPH	0.22811389	1.15057645	6.20724953	0.01001529	0.012	0.13034	0.00175415	1.44E-01	0.003	0.05586	0.00162249	6.05E-02	992.954585	0.078729705		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Ag	70 MPH	1.03011409	14.2874986	3.91559027	0.01529081	0.036	0.06174	0.74170615	8.39E-01	0.009	0.02646	0.70962027	7.45E-01	1602.73126	0.047846132	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 CAIRP	70 MPH	0.06443362	3.70937243	0.28203068	0.01380051	0.036	0.06174	0.0333377	1.31E-01	0.009	0.02646	0.03189553	6.74E-02	1446.52365	0.002992775	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	0.08685772	4.9473092	0.38535935	0.0143169	0.036	0.06174	0.06038218	1.58E-01	0.009	0.02646	0.05777008	9.32E-02	1500.64966	0.004034316	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 NNOOS	70 MPH	0.03272594	1.70874724	0.16597303	0.01308522	0.036	0.06174	0.01219322	1.10E-01	0.009	0.02646	0.01166574	4.71E-02	1371.54871	0.001520035	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 NOOS	70 MPH	0.05334873	3.60292996	0.23426088	0.0138088	0.036	0.06174	0.02342346	1.21E-01	0.009	0.02646	0.02241017	5.79E-02	1447.39187	0.00247791	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Other Port	70 MPH	0.05754845	4.44843827	0.20170158	0.01426016	0.036	0.06174	0.02174331	1.19E-01	0.009	0.02646	0.02080271	5.63E-02	1494.70248	0.002672976	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 POAK	70 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 POLA	70 MPH	0.06345223	5.0618491	0.2152209	0.01439397	0.036	0.06174	0.02471378	1.22E-01	0.009	0.02646	0.02364468	5.91E-02	1508.7278	0.002947192	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Public	70 MPH	0.05714789	8.54833489	0.23272396	0.01474327	0.036	0.06174	0.04923405	1.47E-01	0.009	0.02646	0.04710421	8.26E-02	1545.34061	0.002654371	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Single	70 MPH	0.12714016	5.84964785	0.48515463	0.01448107	0.036	0.06174	0.08590049	1.84E-01	0.009	0.02646	0.08218447	1.18E-01	1517.85772	0.005905331	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Single Construction	70 MPH	0.1093306	5.57361341	0.42345043	0.01434825	0.036	0.06174	0.07275138	1.70E-01	0.009	0.02646	0.06960419	1.05E-01	1503.93523	0.005078123	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 SWCV	70 MPH	0.04192809	8.79206293	0.17551422	0.0288392	0.036	0.06174	0.01405228	1.12E-01	0.009	0.02646	0.01344439	4.89E-02	3312.15317	0.241444678	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Tractor	70 MPH	0.07983538	4.87730699	0.30910672	0.01386512	0.036	0.06174	0.04070445	1.38E-01	0.009	0.02646	0.03894359	7.44E-02	1453.29535	0.003708147	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	70 MPH	0.14788592	6.42907838	0.62171413	0.01442777	0.036	0.06174	0.10648122	2.04E-01	0.009	0.02646	0.10187489	1.37E-01	1512.27049	0.006868918	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7 Utility	70 MPH	0.01504489	0.4534245	0.0888366	0.01419642	0.036	0.06174	0.00236084	1.00E-01	0.009	0.02646	0.00225871	3.77E-02	1488.02181	0.000698796	0	0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	T7IS	70 MPH	0.58771745	3.53166409	25.8379979	0.01673422	0.02	0.06174	0.00077492	8.25E-02	0.005	0.02646	0.00071761	3.22E-02	1633.88939	0.220860452		0.0000%	0.0000%
2017	Annual	San Joaquin (SJV)	UBUS	70 MPH	0.56869862	11.9755885	7.87229251	0.00983597	0.012	0.64297644	0.17452342	8.29E-01	0.003	0.27556133	0.16695994	4.46E-01	1447.10219	0.728157053		0.0000%	0.0000%
																			2,033,186	9.4053%	100%
																		TOTAL	**21,617,346**	**100%**	**n/a**

Source: EMFAC2014, Version 1.0.7.

Stockton 2017 - all Model Years

2.205E-03 lbs/Mile

calendar_year	season_month	sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX
2017	Annual	San Joaquin (SJV)	All Other Buses	05 MPH	2.225E-03	2.821E-02	4.569E-03	4.912E-05	2.646E-05	2.873E-04	3.003E-04	6.141E-04	6.614E-06	1.231E-04	2.873E-04	4.171E-04	5.149E+00	1.033E-04
2017	Annual	San Joaquin (SJV)	LDA	05 MPH	2.923E-04	3.274E-04	3.981E-03	2.128E-05	1.764E-05	8.102E-05	2.658E-05	1.252E-04	4.409E-06	3.472E-05	2.450E-05	6.363E-05	2.125E+00	1.052E-04
2017	Annual	San Joaquin (SJV)	LDT1	05 MPH	8.520E-04	9.941E-04	1.241E-02	2.536E-05	1.764E-05	8.102E-05	5.096E-05	1.496E-04	4.409E-06	3.472E-05	4.699E-05	8.612E-05	2.519E+00	2.787E-04
2017	Annual	San Joaquin (SJV)	LDT2	05 MPH	4.063E-04	6.151E-04	5.660E-03	2.899E-05	1.764E-05	8.102E-05	2.591E-05	1.246E-04	4.409E-06	3.472E-05	2.384E-05	6.297E-05	2.895E+00	1.477E-04
2017	Annual	San Joaquin (SJV)	LHD1	05 MPH	1.345E-03	4.932E-03	8.752E-03	2.911E-05	2.227E-05	1.685E-04	1.641E-04	3.549E-04	5.566E-06	7.222E-05	1.566E-04	2.344E-04	2.973E+00	2.042E-04
2017	Annual	San Joaquin (SJV)	LHD2	05 MPH	1.354E-03	4.528E-03	6.871E-03	2.998E-05	2.376E-05	1.966E-04	1.569E-04	3.773E-04	5.940E-06	8.426E-05	1.499E-04	2.401E-04	3.090E+00	1.273E-04
2017	Annual	San Joaquin (SJV)	MCY	05 MPH	2.889E-02	3.052E-03	1.328E-01	1.499E-05	8.818E-06	2.593E-05	1.900E-05	5.374E-05	2.205E-06	1.111E-05	1.787E-05	3.119E-05	1.191E+00	4.899E-03
2017	Annual	San Joaquin (SJV)	MDV	05 MPH	7.437E-04	1.061E-03	9.099E-03	3.852E-05	1.764E-05	8.102E-05	2.704E-05	1.257E-04	4.409E-06	3.472E-05	2.494E-05	6.407E-05	3.844E+00	2.655E-04
2017	Annual	San Joaquin (SJV)	MH	05 MPH	2.696E-03	1.052E-02	3.742E-02	7.794E-05	2.840E-05	2.873E-04	2.593E-04	5.751E-04	7.100E-06	1.231E-04	2.473E-04	3.775E-04	7.790E+00	6.286E-04
2017	Annual	San Joaquin (SJV)	Motor Coach	05 MPH	3.701E-03	4.356E-02	9.878E-03	7.199E-05	2.646E-05	2.873E-04	2.710E-04	5.849E-04	6.614E-06	1.231E-04	2.593E-04	3.891E-04	7.545E+00	1.719E-04
2017	Annual	San Joaquin (SJV)	OBUS	05 MPH	1.326E-03	2.572E-03	1.086E-02	8.584E-05	2.646E-05	2.873E-04	1.154E-05	3.253E-04	6.614E-06	1.231E-04	1.062E-05	1.404E-04	8.579E+00	5.197E-04
2017	Annual	San Joaquin (SJV)	SBUS	05 MPH	2.424E-03	3.491E-02	6.761E-03	4.752E-05	2.430E-05	1.642E-03	4.461E-04	2.112E-03	6.076E-06	7.037E-04	4.266E-04	1.136E-03	4.926E+00	3.068E-04
2017	Annual	San Joaquin (SJV)	T6 Ag	05 MPH	1.682E-02	5.182E-02	1.862E-02	5.044E-05	2.646E-05	2.873E-04	4.086E-03	4.400E-03	6.614E-06	1.231E-04	3.910E-03	4.039E-03	5.287E+00	7.811E-04
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	1.156E-03	1.970E-02	3.403E-03	4.773E-05	2.646E-05	2.873E-04	1.012E-04	4.150E-04	6.614E-06	1.231E-04	9.679E-05	2.265E-04	5.003E+00	5.368E-05
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	05 MPH	3.197E-03	2.297E-02	5.651E-03	4.768E-05	2.646E-05	2.873E-04	3.944E-04	7.082E-04	6.614E-06	1.231E-04	3.773E-04	5.071E-04	4.998E+00	1.485E-04
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	2.997E-03	3.007E-02	5.058E-03	4.868E-05	2.646E-05	2.873E-04	4.964E-04	8.102E-04	6.614E-06	1.231E-04	4.749E-04	6.047E-04	5.102E+00	1.392E-04
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	4.786E-03	2.734E-02	7.455E-03	4.829E-05	2.646E-05	2.873E-04	6.909E-04	1.005E-03	6.614E-06	1.231E-04	6.610E-04	7.908E-04	5.062E+00	2.223E-04
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	05 MPH	1.503E-03	2.134E-02	3.928E-03	4.828E-05	2.646E-05	2.873E-04	1.554E-04	4.692E-04	6.614E-06	1.231E-04	1.487E-04	2.785E-04	5.060E+00	6.983E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Small	05 MPH	5.911E-03	2.995E-02	8.644E-03	4.858E-05	2.646E-05	2.873E-04	9.341E-04	1.248E-03	6.614E-06	1.231E-04	8.937E-04	1.023E-03	5.092E+00	2.746E-04
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	05 MPH	8.771E-04	1.956E-02	3.075E-03	4.781E-05	2.646E-05	2.873E-04	5.011E-05	3.639E-04	6.614E-06	1.231E-04	4.794E-05	1.777E-04	5.011E+00	4.074E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Small	05 MPH	3.197E-03	2.297E-02	5.651E-03	4.768E-05	2.646E-05	2.873E-04	3.944E-04	7.082E-04	6.614E-06	1.231E-04	3.773E-04	5.071E-04	4.998E+00	1.485E-04
2017	Annual	San Joaquin (SJV)	T6 Public	05 MPH	9.142E-04	2.886E-02	1.984E-03	4.885E-05	2.646E-05	2.873E-04	1.734E-04	4.872E-04	6.614E-06	1.231E-04	1.659E-04	2.957E-04	5.121E+00	4.246E-05
2017	Annual	San Joaquin (SJV)	T6 Utility	05 MPH	3.916E-04	1.108E-02	2.061E-03	4.811E-05	2.646E-05	2.873E-04	8.352E-06	3.222E-04	6.614E-06	1.231E-04	7.990E-06	1.378E-04	5.043E+00	1.819E-05
2017	Annual	San Joaquin (SJV)	T6TS	05 MPH	2.766E-03	4.159E-03	2.910E-02	8.632E-05	2.646E-05	2.873E-04	2.254E-05	3.363E-04	6.614E-06	1.231E-04	2.080E-05	1.506E-04	8.593E+00	1.013E-03
2017	Annual	San Joaquin (SJV)	T7 Ag	05 MPH	3.034E-02	8.884E-02	4.415E-02	7.689E-05	7.937E-05	1.361E-04	6.820E-03	7.036E-03	1.984E-05	5.833E-05	6.525E-03	6.603E-03	8.059E+00	1.409E-03
2017	Annual	San Joaquin (SJV)	T7 CAIRP	05 MPH	3.011E-03	4.432E-02	1.067E-02	6.837E-05	7.937E-05	1.361E-04	1.534E-04	3.689E-04	1.984E-05	5.833E-05	1.468E-04	2.250E-04	7.166E+00	1.398E-04
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	3.773E-03	4.787E-02	1.084E-02	6.970E-05	7.937E-05	1.361E-04	2.169E-04	4.323E-04	1.984E-05	5.833E-05	2.075E-04	2.857E-04	7.306E+00	1.752E-04
2017	Annual	San Joaquin (SJV)	T7 NNOOS	05 MPH	1.638E-03	3.707E-02	7.681E-03	6.388E-05	7.937E-05	1.361E-04	5.210E-05	2.676E-04	1.984E-05	5.833E-05	4.985E-05	1.280E-04	6.696E+00	7.607E-05
2017	Annual	San Joaquin (SJV)	T7 NOOS	05 MPH	2.614E-03	4.414E-02	1.012E-02	6.835E-05	7.937E-05	1.361E-04	1.117E-04	3.272E-04	1.984E-05	5.833E-05	1.069E-04	1.850E-04	7.164E+00	1.214E-04
2017	Annual	San Joaquin (SJV)	T7 Other Port	05 MPH	3.018E-03	4.050E-02	1.021E-02	6.949E-05	7.937E-05	1.361E-04	1.159E-04	3.314E-04	1.984E-05	5.833E-05	1.109E-04	1.891E-04	7.284E+00	1.402E-04
2017	Annual	San Joaquin (SJV)	T7 POAK	05 MPH	3.323E-03	4.206E-02	1.082E-02	7.053E-05	7.937E-05	1.361E-04	1.315E-04	3.470E-04	1.984E-05	5.833E-05	1.259E-04	2.040E-04	7.392E+00	1.543E-04
2017	Annual	San Joaquin (SJV)	T7 POLA	05 MPH	3.323E-03	4.206E-02	1.082E-02	7.053E-05	7.937E-05	1.361E-04	1.315E-04	3.470E-04	1.984E-05	5.833E-05	1.259E-04	2.040E-04	7.392E+00	1.543E-04
2017	Annual	San Joaquin (SJV)	T7 Public	05 MPH	1.856E-03	5.731E-02	4.374E-03	7.313E-05	7.937E-05	1.361E-04	3.781E-04	5.935E-04	1.984E-05	5.833E-05	3.617E-04	4.399E-04	7.665E+00	8.623E-05
2017	Annual	San Joaquin (SJV)	T7 Single	05 MPH	4.626E-03	4.548E-02	9.611E-03	7.091E-05	7.937E-05	1.361E-04	6.973E-04	9.128E-04	1.984E-05	5.833E-05	6.672E-04	7.454E-04	7.433E+00	2.149E-04
2017	Annual	San Joaquin (SJV)	T7 Single Construction	05 MPH	4.300E-03	4.514E-02	9.014E-03	7.025E-05	7.937E-05	1.361E-04	5.705E-04	7.860E-04	1.984E-05	5.833E-05	5.458E-04	6.240E-04	7.364E+00	1.997E-04
2017	Annual	San Joaquin (SJV)	T7 SWCV	05 MPH	1.564E-03	5.533E-02	7.225E-03	1.441E-04	7.937E-05	1.361E-04	6.219E-05	2.777E-04	1.984E-05	5.833E-05	5.950E-05	1.377E-04	1.653E+01	9.105E-03
2017	Annual	San Joaquin (SJV)	T7 Tractor	05 MPH	3.625E-03	4.460E-02	1.079E-02	6.936E-05	7.937E-05	1.361E-04	2.547E-04	4.702E-04	1.984E-05	5.833E-05	2.437E-04	3.218E-04	7.270E+00	1.684E-04
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	05 MPH	5.758E-03	5.277E-02	1.239E-02	7.085E-05	7.937E-05	1.361E-04	5.683E-04	7.837E-04	1.984E-05	5.833E-05	5.437E-04	6.218E-04	7.426E+00	2.674E-04
2017	Annual	San Joaquin (SJV)	T7 Utility	05 MPH	7.978E-04	1.739E-02	4.711E-03	6.655E-05	7.937E-05	1.361E-04	1.282E-05	2.283E-04	1.984E-05	5.833E-05	1.227E-05	9.044E-05	6.976E+00	3.705E-05
2017	Annual	San Joaquin (SJV)	T7IS	05 MPH	8.481E-03	1.382E-02	1.422E-01	9.708E-05	4.409E-05	1.361E-04	1.030E-05	1.905E-04	1.102E-05	5.833E-05	9.510E-06	7.887E-05	9.469E+00	3.297E-03
2017	Annual	San Joaquin (SJV)	UBUS	05 MPH	9.683E-03	6.020E-02	6.824E-02	5.848E-05	2.646E-05	1.418E-03	1.448E-03	2.892E-03	6.614E-06	6.075E-04	1.385E-03	1.999E-03	8.109E+00	1.833E-02

2017 Annual	San Joaquin (SJV)	All Other Buses	10 MPH	1.737E-03	2.333E-02	3.751E-03	4.383E-05	2.646E-05	2.873E-04	2.518E-04	5.657E-04	6.614E-06	1.231E-04	2.410E-04	3.707E-04	4.594E+00	8.068E-05
2017 Annual	San Joaquin (SJV)	LDA	10 MPH	1.888E-04	2.841E-04	3.499E-03	1.580E-05	1.764E-05	8.102E-05	1.699E-05	1.156E-04	4.409E-06	3.472E-05	1.567E-05	5.480E-05	1.578E+00	6.727E-05
2017 Annual	San Joaquin (SJV)	LDT1	10 MPH	5.682E-04	8.425E-04	1.039E-02	1.883E-05	1.764E-05	8.102E-05	3.324E-05	1.319E-04	4.409E-06	3.472E-05	3.066E-05	6.979E-05	1.868E+00	1.839E-04
2017 Annual	San Joaquin (SJV)	LDT2	10 MPH	2.636E-04	5.275E-04	4.952E-03	2.152E-05	1.764E-05	8.102E-05	1.651E-05	1.152E-04	4.409E-06	3.472E-05	1.520E-05	5.433E-05	2.147E+00	9.506E-05
2017 Annual	San Joaquin (SJV)	LHD1	10 MPH	9.342E-04	5.016E-03	6.601E-03	2.656E-05	2.227E-05	1.685E-04	1.156E-04	3.064E-04	5.566E-06	7.222E-05	1.103E-04	1.881E-04	2.710E+00	1.363E-04
2017 Annual	San Joaquin (SJV)	LHD2	10 MPH	9.634E-04	4.593E-03	5.125E-03	2.813E-05	2.376E-05	1.966E-04	1.128E-04	3.332E-04	5.940E-06	8.426E-05	1.078E-04	1.980E-04	2.897E+00	8.680E-05
2017 Annual	San Joaquin (SJV)	MCY	10 MPH	1.909E-02	2.820E-03	9.898E-02	1.104E-05	8.818E-06	2.593E-05	1.266E-05	4.741E-05	2.205E-06	1.111E-05	1.192E-05	2.523E-05	8.836E-01	3.208E-03
2017 Annual	San Joaquin (SJV)	MDV	10 MPH	4.823E-04	9.075E-04	7.867E-03	2.862E-05	1.764E-05	8.102E-05	1.738E-05	1.160E-04	4.409E-06	3.472E-05	1.604E-05	5.517E-05	2.854E+00	1.704E-04
2017 Annual	San Joaquin (SJV)	MH	10 MPH	1.865E-03	8.920E-03	2.779E-02	6.699E-05	2.840E-05	2.873E-04	2.144E-04	5.301E-04	7.100E-06	1.231E-04	2.046E-04	3.348E-04	6.706E+00	4.199E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	10 MPH	2.920E-03	3.613E-02	8.026E-03	6.419E-05	2.646E-05	2.873E-04	2.334E-04	5.472E-04	6.614E-06	1.231E-04	2.233E-04	3.530E-04	6.728E+00	1.356E-04
2017 Annual	San Joaquin (SJV)	OBUS	10 MPH	8.396E-04	2.238E-03	9.594E-03	7.327E-05	2.646E-05	2.873E-04	7.292E-06	3.211E-04	6.614E-06	1.231E-04	6.713E-06	1.365E-04	7.324E+00	3.280E-04
2017 Annual	San Joaquin (SJV)	SBUS	10 MPH	1.797E-03	2.865E-02	6.003E-03	4.231E-05	2.430E-05	1.642E-03	3.695E-04	2.036E-03	6.076E-06	7.037E-04	3.534E-04	1.063E-03	4.389E+00	2.056E-04
2017 Annual	San Joaquin (SJV)	T6 Ag	10 MPH	1.305E-02	4.308E-02	1.634E-02	4.548E-05	2.646E-05	2.873E-04	3.434E-03	3.748E-03	6.614E-06	1.231E-04	3.285E-03	3.415E-03	4.767E+00	6.062E-04
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	9.144E-04	1.605E-02	2.763E-03	4.244E-05	2.646E-05	2.873E-04	8.782E-05	4.016E-04	6.614E-06	1.231E-04	8.402E-05	2.138E-04	4.448E+00	4.247E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	10 MPH	2.437E-03	1.871E-02	4.555E-03	4.252E-05	2.646E-05	2.873E-04	3.467E-04	6.605E-04	6.614E-06	1.231E-04	3.317E-04	4.614E-04	4.457E+00	1.132E-04
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	2.311E-03	2.475E-02	4.181E-03	4.351E-05	2.646E-05	2.873E-04	4.149E-04	7.287E-04	6.614E-06	1.231E-04	3.969E-04	5.267E-04	4.561E+00	1.073E-04
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	3.637E-03	2.251E-02	6.061E-03	4.315E-05	2.646E-05	2.873E-04	5.933E-04	9.071E-04	6.614E-06	1.231E-04	5.677E-04	6.974E-04	4.523E+00	1.689E-04
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	10 MPH	1.188E-03	1.766E-02	3.200E-03	4.296E-05	2.646E-05	2.873E-04	1.330E-04	4.468E-04	6.614E-06	1.231E-04	1.273E-04	2.570E-04	4.502E+00	5.518E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Small	10 MPH	4.482E-03	2.469E-02	7.071E-03	4.346E-05	2.646E-05	2.873E-04	7.935E-04	1.107E-03	6.614E-06	1.231E-04	7.592E-04	8.890E-04	4.556E+00	2.082E-04
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	10 MPH	7.017E-04	1.595E-02	2.489E-03	4.250E-05	2.646E-05	2.873E-04	4.458E-05	3.584E-04	6.614E-06	1.231E-04	4.265E-05	1.724E-04	4.455E+00	3.259E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Small	10 MPH	2.437E-03	1.871E-02	4.555E-03	4.252E-05	2.646E-05	2.873E-04	3.467E-04	6.605E-04	6.614E-06	1.231E-04	3.317E-04	4.614E-04	4.457E+00	1.132E-04
2017 Annual	San Joaquin (SJV)	T6 Public	10 MPH	7.166E-04	2.378E-02	1.639E-03	4.377E-05	2.646E-05	2.873E-04	1.472E-04	4.610E-04	6.614E-06	1.231E-04	1.409E-04	2.706E-04	4.587E+00	3.328E-05
2017 Annual	San Joaquin (SJV)	T6 Utility	10 MPH	3.171E-04	8.680E-03	1.669E-03	4.266E-05	2.646E-05	2.873E-04	7.513E-06	3.213E-04	6.614E-06	1.231E-04	7.188E-06	1.370E-04	4.471E+00	1.473E-05
2017 Annual	San Joaquin (SJV)	T6TS	10 MPH	1.792E-03	3.656E-03	2.372E-02	7.364E-05	2.646E-05	2.873E-04	1.449E-05	3.283E-04	6.614E-06	1.231E-04	1.338E-05	1.431E-04	7.335E+00	6.511E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	10 MPH	2.362E-02	7.276E-02	3.930E-02	6.925E-05	7.937E-05	1.361E-04	5.752E-03	5.967E-03	1.984E-05	5.833E-05	5.503E-03	5.581E-03	7.259E+00	1.097E-03
2017 Annual	San Joaquin (SJV)	T7 CAIRP	10 MPH	2.398E-03	3.632E-02	8.642E-03	6.080E-05	7.937E-05	1.361E-04	1.355E-04	3.510E-04	1.984E-05	5.833E-05	1.296E-04	2.078E-04	6.373E+00	1.114E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	2.974E-03	3.955E-02	8.753E-03	6.216E-05	7.937E-05	1.361E-04	1.942E-04	4.097E-04	1.984E-05	5.833E-05	1.858E-04	2.640E-04	6.515E+00	1.381E-04
2017 Annual	San Joaquin (SJV)	T7 NNOOS	10 MPH	1.317E-03	2.941E-02	6.217E-03	5.673E-05	7.937E-05	1.361E-04	4.690E-05	2.624E-04	1.984E-05	5.833E-05	4.487E-05	1.230E-04	5.946E+00	6.117E-05
2017 Annual	San Joaquin (SJV)	T7 NOOS	10 MPH	2.096E-03	3.615E-02	8.193E-03	6.078E-05	7.937E-05	1.361E-04	9.936E-05	3.148E-04	1.984E-05	5.833E-05	9.507E-05	1.732E-04	6.370E+00	9.733E-05
2017 Annual	San Joaquin (SJV)	T7 Other Port	10 MPH	2.441E-03	3.349E-02	8.270E-03	6.181E-05	7.937E-05	1.361E-04	1.043E-04	3.198E-04	1.984E-05	5.833E-05	9.983E-05	1.780E-04	6.478E+00	1.134E-04
2017 Annual	San Joaquin (SJV)	T7 POAK	10 MPH	2.687E-03	3.502E-02	8.756E-03	6.275E-05	7.937E-05	1.361E-04	1.184E-04	3.339E-04	1.984E-05	5.833E-05	1.133E-04	1.915E-04	6.577E+00	1.248E-04
2017 Annual	San Joaquin (SJV)	T7 POLA	10 MPH	2.687E-03	3.502E-02	8.756E-03	6.275E-05	7.937E-05	1.361E-04	1.184E-04	3.339E-04	1.984E-05	5.833E-05	1.133E-04	1.915E-04	6.577E+00	1.248E-04
2017 Annual	San Joaquin (SJV)	T7 Public	10 MPH	1.463E-03	4.723E-02	3.692E-03	6.568E-05	7.937E-05	1.361E-04	3.228E-04	5.382E-04	1.984E-05	5.833E-05	3.088E-04	3.870E-04	6.884E+00	6.794E-05
2017 Annual	San Joaquin (SJV)	T7 Single	10 MPH	3.601E-03	3.721E-02	8.022E-03	6.335E-05	7.937E-05	1.361E-04	5.856E-04	8.010E-04	1.984E-05	5.833E-05	5.602E-04	6.384E-04	6.640E+00	1.673E-04
2017 Annual	San Joaquin (SJV)	T7 Single Construction	10 MPH	3.333E-03	3.673E-02	7.446E-03	6.274E-05	7.937E-05	1.361E-04	4.750E-04	6.904E-04	1.984E-05	5.833E-05	4.544E-04	5.326E-04	6.577E+00	1.548E-04
2017 Annual	San Joaquin (SJV)	T7 SWCV	10 MPH	1.202E-03	4.611E-02	5.843E-03	1.296E-04	7.937E-05	1.361E-04	5.441E-05	2.699E-04	1.984E-05	5.833E-05	5.205E-05	1.302E-04	1.486E+01	7.013E-03
2017 Annual	San Joaquin (SJV)	T7 Tractor	10 MPH	2.877E-03	3.683E-02	8.773E-03	6.176E-05	7.937E-05	1.361E-04	2.188E-04	4.343E-04	1.984E-05	5.833E-05	2.093E-04	2.875E-04	6.473E+00	1.336E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	10 MPH	4.463E-03	4.358E-02	1.011E-02	6.333E-05	7.937E-05	1.361E-04	4.856E-04	7.010E-04	1.984E-05	5.833E-05	4.646E-04	5.427E-04	6.638E+00	2.073E-04
2017 Annual	San Joaquin (SJV)	T7 Utility	10 MPH	6.461E-04	1.369E-02	3.815E-03	5.901E-05	7.937E-05	1.361E-04	1.153E-05	2.270E-04	1.984E-05	5.833E-05	1.104E-05	8.921E-05	6.185E+00	3.001E-05
2017 Annual	San Joaquin (SJV)	T7IS	10 MPH	5.377E-03	1.205E-02	1.261E-01	8.236E-05	4.409E-05	1.361E-04	6.594E-06	1.868E-04	1.102E-05	5.833E-05	6.091E-06	7.545E-05	8.032E+00	2.082E-03
2017 Annual	San Joaquin (SJV)	UBUS	10 MPH	7.144E-03	5.004E-02	5.528E-02	5.174E-05	2.646E-05	1.418E-03	1.192E-03	2.636E-03	6.614E-06	6.075E-04	1.140E-03	1.754E-03	7.232E+00	1.372E-02

2017 Annual	San Joaquin (SJV)	All Other Buses	15 MPH	1.046E-03	1.680E-02	2.640E-03	3.676E-05	2.646E-05	2.873E-04	1.754E-04	4.892E-04	6.614E-06	1.231E-04	1.678E-04	2.975E-04	3.853E+00	4.861E-05
2017 Annual	San Joaquin (SJV)	LDA	15 MPH	1.279E-04	2.508E-04	3.108E-03	1.217E-05	1.764E-05	8.102E-05	1.145E-05	1.101E-04	4.409E-06	3.472E-05	1.057E-05	4.970E-05	1.215E+00	4.531E-05
2017 Annual	San Joaquin (SJV)	LDT1	15 MPH	3.982E-04	7.326E-04	8.917E-03	1.451E-05	1.764E-05	8.102E-05	2.283E-05	1.215E-04	4.409E-06	3.472E-05	2.106E-05	6.019E-05	1.438E+00	1.276E-04
2017 Annual	San Joaquin (SJV)	LDT2	15 MPH	1.801E-04	4.618E-04	4.396E-03	1.657E-05	1.764E-05	8.102E-05	1.110E-05	1.098E-04	4.409E-06	3.472E-05	1.021E-05	4.935E-05	1.653E+00	6.444E-05
2017 Annual	San Joaquin (SJV)	LHD1	15 MPH	6.248E-04	5.099E-03	5.000E-03	1.796E-05	2.227E-05	1.685E-04	8.491E-05	2.757E-04	5.566E-06	7.222E-05	8.106E-05	1.589E-04	1.830E+00	9.326E-05
2017 Annual	San Joaquin (SJV)	LHD2	15 MPH	5.983E-04	4.621E-03	3.557E-03	1.913E-05	2.376E-05	1.966E-04	8.418E-05	3.045E-04	5.940E-06	8.426E-05	8.045E-05	1.706E-04	1.968E+00	5.672E-05
2017 Annual	San Joaquin (SJV)	MCY	15 MPH	1.329E-02	2.651E-03	7.751E-02	8.473E-06	8.818E-06	2.593E-05	8.884E-06	4.363E-05	2.205E-06	1.111E-05	8.364E-06	2.168E-05	6.802E-01	2.214E-03
2017 Annual	San Joaquin (SJV)	MDV	15 MPH	3.286E-04	7.930E-04	6.912E-03	2.206E-05	1.764E-05	8.102E-05	1.178E-05	1.104E-04	4.409E-06	3.472E-05	1.087E-05	5.000E-05	2.199E+00	1.152E-04
2017 Annual	San Joaquin (SJV)	MH	15 MPH	1.232E-03	6.673E-03	2.150E-02	4.738E-05	2.840E-05	2.873E-04	1.508E-04	4.666E-04	7.100E-06	1.231E-04	1.439E-04	2.742E-04	4.745E+00	2.896E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	15 MPH	1.851E-03	2.636E-02	5.586E-03	5.390E-05	2.646E-05	2.873E-04	1.758E-04	4.896E-04	6.614E-06	1.231E-04	1.681E-04	2.979E-04	5.650E+00	8.597E-05
2017 Annual	San Joaquin (SJV)	OBUS	15 MPH	5.608E-04	1.980E-03	8.588E-03	5.053E-05	2.646E-05	2.873E-04	4.864E-06	3.187E-04	6.614E-06	1.231E-04	4.478E-06	1.342E-04	5.048E+00	2.184E-04
2017 Annual	San Joaquin (SJV)	SBUS	15 MPH	1.036E-03	1.991E-02	5.091E-03	3.388E-05	2.430E-05	1.642E-03	2.485E-04	1.915E-03	6.076E-06	7.037E-04	2.377E-04	9.474E-04	3.517E+00	1.292E-04
2017 Annual	San Joaquin (SJV)	T6 Ag	15 MPH	7.156E-03	3.057E-02	1.254E-02	3.757E-05	2.646E-05	2.873E-04	2.372E-03	2.686E-03	6.614E-06	1.231E-04	2.270E-03	2.399E-03	3.938E+00	3.324E-04
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	5.845E-04	1.133E-02	1.928E-03	3.561E-05	2.646E-05	2.873E-04	6.721E-05	3.810E-04	6.614E-06	1.231E-04	6.431E-05	1.941E-04	3.733E+00	2.715E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	15 MPH	1.323E-03	1.296E-02	2.985E-03	3.554E-05	2.646E-05	2.873E-04	2.688E-04	5.826E-04	6.614E-06	1.231E-04	2.571E-04	3.869E-04	3.725E+00	6.147E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	1.304E-03	1.754E-02	2.928E-03	3.638E-05	2.646E-05	2.873E-04	2.845E-04	5.983E-04	6.614E-06	1.231E-04	2.722E-04	4.020E-04	3.813E+00	6.055E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	1.938E-03	1.586E-02	4.009E-03	3.602E-05	2.646E-05	2.873E-04	4.347E-04	7.485E-04	6.614E-06	1.231E-04	4.159E-04	5.457E-04	3.776E+00	9.003E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	15 MPH	7.548E-04	1.287E-02	2.244E-03	3.608E-05	2.646E-05	2.873E-04	9.829E-05	4.121E-04	6.614E-06	1.231E-04	9.404E-05	2.238E-04	3.782E+00	3.506E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Small	15 MPH	2.354E-03	1.734E-02	4.712E-03	3.621E-05	2.646E-05	2.873E-04	5.652E-04	8.790E-04	6.614E-06	1.231E-04	5.408E-04	6.705E-04	3.796E+00	1.094E-04
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	15 MPH	4.717E-04	1.126E-02	1.740E-03	3.566E-05	2.646E-05	2.873E-04	3.660E-05	3.504E-04	6.614E-06	1.231E-04	3.502E-05	1.648E-04	3.738E+00	2.191E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Small	15 MPH	1.323E-03	1.296E-02	2.985E-03	3.554E-05	2.646E-05	2.873E-04	2.688E-04	5.826E-04	6.614E-06	1.231E-04	2.571E-04	3.869E-04	3.725E+00	6.147E-05
2017 Annual	San Joaquin (SJV)	T6 Public	15 MPH	4.273E-04	1.668E-02	1.170E-03	3.641E-05	2.646E-05	2.873E-04	1.049E-04	4.187E-04	6.614E-06	1.231E-04	1.004E-04	2.301E-04	3.817E+00	1.984E-05
2017 Annual	San Joaquin (SJV)	T6 Utility	15 MPH	2.234E-04	5.659E-03	1.176E-03	3.579E-05	2.646E-05	2.873E-04	6.456E-06	3.203E-04	6.614E-06	1.231E-04	6.176E-06	1.359E-04	3.751E+00	1.037E-05
2017 Annual	San Joaquin (SJV)	T6TS	15 MPH	1.224E-03	3.269E-03	2.004E-02	5.082E-05	2.646E-05	2.873E-04	9.828E-06	3.236E-04	6.614E-06	1.231E-04	9.074E-06	1.388E-04	5.056E+00	4.415E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	15 MPH	1.294E-02	5.097E-02	3.108E-02	5.701E-05	7.937E-05	1.361E-04	4.025E-03	4.240E-03	1.984E-05	5.833E-05	3.851E-03	3.929E-03	5.976E+00	6.010E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	15 MPH	1.584E-03	2.605E-02	6.026E-03	5.106E-05	7.937E-05	1.361E-04	1.091E-04	3.246E-04	1.984E-05	5.833E-05	1.044E-04	1.826E-04	5.352E+00	7.358E-05
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	1.883E-03	2.859E-02	6.003E-03	5.212E-05	7.937E-05	1.361E-04	1.601E-04	3.756E-04	1.984E-05	5.833E-05	1.531E-04	2.313E-04	5.463E+00	8.747E-05
2017 Annual	San Joaquin (SJV)	T7 NNOOS	15 MPH	9.032E-04	1.963E-02	4.358E-03	4.759E-05	7.937E-05	1.361E-04	3.979E-05	2.553E-04	1.984E-05	5.833E-05	3.807E-05	1.162E-04	4.988E+00	4.195E-05
2017 Annual	San Joaquin (SJV)	T7 NOOS	15 MPH	1.421E-03	2.588E-02	5.735E-03	5.103E-05	7.937E-05	1.361E-04	8.200E-05	2.975E-04	1.984E-05	5.833E-05	7.845E-05	1.566E-04	5.349E+00	6.600E-05
2017 Annual	San Joaquin (SJV)	T7 Other Port	15 MPH	1.711E-03	2.464E-02	5.814E-03	5.211E-05	7.937E-05	1.361E-04	8.972E-05	3.052E-04	1.984E-05	5.833E-05	8.584E-05	1.640E-04	5.462E+00	7.945E-05
2017 Annual	San Joaquin (SJV)	T7 POAK	15 MPH	1.882E-03	2.614E-02	6.155E-03	5.294E-05	7.937E-05	1.361E-04	1.018E-04	3.173E-04	1.984E-05	5.833E-05	9.741E-05	1.756E-04	5.549E+00	8.741E-05
2017 Annual	San Joaquin (SJV)	T7 POLA	15 MPH	1.882E-03	2.614E-02	6.155E-03	5.294E-05	7.937E-05	1.361E-04	1.018E-04	3.173E-04	1.984E-05	5.833E-05	9.741E-05	1.756E-04	5.549E+00	8.741E-05
2017 Annual	San Joaquin (SJV)	T7 Public	15 MPH	8.722E-04	3.337E-02	2.738E-03	5.442E-05	7.937E-05	1.361E-04	2.332E-04	4.487E-04	1.984E-05	5.833E-05	2.231E-04	3.013E-04	5.704E+00	4.051E-05
2017 Annual	San Joaquin (SJV)	T7 Single	15 MPH	2.082E-03	2.618E-02	5.779E-03	5.293E-05	7.937E-05	1.361E-04	4.072E-04	6.227E-04	1.984E-05	5.833E-05	3.896E-04	4.678E-04	5.548E+00	9.672E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	15 MPH	1.913E-03	2.560E-02	5.248E-03	5.242E-05	7.937E-05	1.361E-04	3.238E-04	5.393E-04	1.984E-05	5.833E-05	3.098E-04	3.880E-04	5.494E+00	8.884E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	15 MPH	6.842E-04	3.309E-02	4.078E-03	1.073E-04	7.937E-05	1.361E-04	4.205E-05	2.575E-04	1.984E-05	5.833E-05	4.023E-05	1.184E-04	1.231E+01	4.028E-03
2017 Annual	San Joaquin (SJV)	T7 Tractor	15 MPH	1.861E-03	2.678E-02	6.148E-03	5.188E-05	7.937E-05	1.361E-04	1.646E-04	3.800E-04	1.984E-05	5.833E-05	1.574E-04	2.356E-04	5.438E+00	8.644E-05
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	15 MPH	2.593E-03	3.126E-02	6.949E-03	5.294E-05	7.937E-05	1.361E-04	3.547E-04	5.702E-04	1.984E-05	5.833E-05	3.394E-04	4.176E-04	5.549E+00	1.204E-04
2017 Annual	San Joaquin (SJV)	T7 Utility	15 MPH	4.550E-04	9.032E-03	2.687E-03	4.951E-05	7.937E-05	1.361E-04	9.912E-06	2.254E-04	1.984E-05	5.833E-05	9.483E-06	8.766E-05	5.189E+00	2.114E-05
2017 Annual	San Joaquin (SJV)	T7IS	15 MPH	3.596E-03	1.067E-02	1.131E-01	5.975E-05	4.409E-05	1.361E-04	4.454E-06	1.847E-04	1.102E-05	5.833E-05	4.115E-06	7.347E-05	5.794E+00	1.387E-03
2017 Annual	San Joaquin (SJV)	UBUS	15 MPH	3.971E-03	3.546E-02	3.861E-02	3.978E-05	2.646E-05	1.418E-03	7.810E-04	2.225E-03	6.614E-06	6.075E-04	7.471E-04	1.361E-03	5.667E+00	6.992E-03

2017	Annual	San Joaquin (SJV)	All Other Buses	20 MPH	6.297E-04	1.291E-02	1.893E-03	3.187E-05	2.646E-05	2.873E-04	1.231E-04	4.369E-04	6.614E-06	1.231E-04	1.177E-04	2.475E-04	3.341E+00	2.925E-05
2017	Annual	San Joaquin (SJV)	LDA	20 MPH	9.126E-05	2.256E-04	2.792E-03	9.734E-06	1.764E-05	8.102E-05	8.138E-06	1.068E-04	4.409E-06	3.472E-05	7.510E-06	4.664E-05	9.710E-01	3.216E-05
2017	Annual	San Joaquin (SJV)	LDT1	20 MPH	2.928E-04	6.528E-04	7.812E-03	1.160E-05	1.764E-05	8.102E-05	1.648E-05	1.151E-04	4.409E-06	3.472E-05	1.521E-05	5.434E-05	1.149E+00	9.296E-05
2017	Annual	San Joaquin (SJV)	LDT2	20 MPH	1.294E-04	4.123E-04	3.947E-03	1.325E-05	1.764E-05	8.102E-05	7.859E-06	1.065E-04	4.409E-06	3.472E-05	7.235E-06	4.637E-05	1.321E+00	4.600E-05
2017	Annual	San Joaquin (SJV)	LHD1	20 MPH	4.351E-04	5.222E-03	3.974E-03	1.546E-05	2.227E-05	1.685E-04	6.508E-05	2.559E-04	5.566E-06	7.222E-05	6.215E-05	1.399E-04	1.576E+00	6.697E-05
2017	Annual	San Joaquin (SJV)	LHD2	20 MPH	3.781E-04	4.702E-03	2.590E-03	1.648E-05	2.376E-05	1.966E-04	6.525E-05	2.856E-04	5.940E-06	8.426E-05	6.236E-05	1.526E-04	1.695E+00	3.853E-05
2017	Annual	San Joaquin (SJV)	MCY	20 MPH	9.734E-03	2.532E-03	6.351E-02	6.763E-06	8.818E-06	2.593E-05	6.555E-06	4.130E-05	2.205E-06	1.111E-05	6.173E-06	1.949E-05	5.435E-01	1.609E-03
2017	Annual	San Joaquin (SJV)	MDV	20 MPH	2.357E-04	7.075E-04	6.166E-03	1.764E-05	1.764E-05	8.102E-05	8.407E-06	1.071E-04	4.409E-06	3.472E-05	7.760E-06	4.689E-05	1.758E+00	8.206E-05
2017	Annual	San Joaquin (SJV)	MH	20 MPH	8.488E-04	5.379E-03	1.742E-02	3.421E-05	2.840E-05	2.873E-04	1.067E-04	4.224E-04	7.100E-06	1.231E-04	1.018E-04	2.321E-04	3.426E+00	2.100E-04
2017	Annual	San Joaquin (SJV)	Motor Coach	20 MPH	1.197E-03	2.025E-02	3.985E-03	4.685E-05	2.646E-05	2.873E-04	1.361E-04	4.499E-04	6.614E-06	1.231E-04	1.302E-04	2.600E-04	4.911E+00	5.560E-05
2017	Annual	San Joaquin (SJV)	OBUS	20 MPH	3.951E-04	1.780E-03	7.764E-03	3.556E-05	2.646E-05	2.873E-04	3.422E-06	3.172E-04	6.614E-06	1.231E-04	3.151E-06	1.329E-04	3.549E+00	1.534E-04
2017	Annual	San Joaquin (SJV)	SBUS	20 MPH	5.718E-04	1.531E-02	4.379E-03	2.769E-05	2.430E-05	1.642E-03	1.653E-04	1.832E-03	6.076E-06	7.037E-04	1.581E-04	8.678E-04	2.877E+00	8.335E-05
2017	Annual	San Joaquin (SJV)	T6 Ag	20 MPH	3.438E-03	2.391E-02	9.661E-03	3.140E-05	2.646E-05	2.873E-04	1.632E-03	1.946E-03	6.614E-06	1.231E-04	1.562E-03	1.692E-03	3.291E+00	1.597E-04
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	3.810E-04	8.261E-03	1.382E-03	3.103E-05	2.646E-05	2.873E-04	5.284E-05	3.666E-04	6.614E-06	1.231E-04	5.056E-05	1.803E-04	3.253E+00	1.770E-05
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	20 MPH	6.969E-04	9.287E-03	2.010E-03	3.068E-05	2.646E-05	2.873E-04	2.121E-04	5.259E-04	6.614E-06	1.231E-04	2.029E-04	3.327E-04	3.216E+00	3.237E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	7.101E-04	1.329E-02	2.082E-03	3.131E-05	2.646E-05	2.873E-04	1.949E-04	5.087E-04	6.614E-06	1.231E-04	1.865E-04	3.162E-04	3.282E+00	3.298E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	9.809E-04	1.178E-02	2.710E-03	3.094E-05	2.646E-05	2.873E-04	3.224E-04	6.362E-04	6.614E-06	1.231E-04	3.084E-04	4.382E-04	3.243E+00	4.556E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	20 MPH	4.871E-04	9.805E-03	1.612E-03	3.146E-05	2.646E-05	2.873E-04	7.440E-05	3.882E-04	6.614E-06	1.231E-04	7.118E-05	2.009E-04	3.297E+00	2.262E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Small	20 MPH	1.156E-03	1.295E-02	3.195E-03	3.098E-05	2.646E-05	2.873E-04	4.051E-04	7.189E-04	6.614E-06	1.231E-04	3.876E-04	5.174E-04	3.247E+00	5.369E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	20 MPH	3.263E-04	8.218E-03	1.250E-03	3.107E-05	2.646E-05	2.873E-04	3.107E-05	3.449E-04	6.614E-06	1.231E-04	2.972E-05	1.595E-04	3.257E+00	1.516E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Small	20 MPH	6.969E-04	9.287E-03	2.010E-03	3.068E-05	2.646E-05	2.873E-04	2.121E-04	5.259E-04	6.614E-06	1.231E-04	2.029E-04	3.327E-04	3.216E+00	3.237E-05
2017	Annual	San Joaquin (SJV)	T6 Public	20 MPH	2.471E-04	1.258E-02	8.537E-04	3.103E-05	2.646E-05	2.873E-04	7.532E-05	3.891E-04	6.614E-06	1.231E-04	7.206E-05	2.018E-04	3.252E+00	1.148E-05
2017	Annual	San Joaquin (SJV)	T6 Utility	20 MPH	1.616E-04	3.669E-03	8.505E-04	3.127E-05	2.646E-05	2.873E-04	5.759E-06	3.196E-04	6.614E-06	1.231E-04	5.510E-06	1.353E-04	3.277E+00	7.505E-06
2017	Annual	San Joaquin (SJV)	T6TS	20 MPH	8.817E-04	2.971E-03	1.740E-02	3.578E-05	2.646E-05	2.873E-04	7.028E-06	3.208E-04	6.614E-06	1.231E-04	6.491E-06	1.363E-04	3.555E+00	3.157E-04
2017	Annual	San Joaquin (SJV)	T7 Ag	20 MPH	6.186E-03	3.961E-02	2.461E-02	4.738E-05	7.937E-05	1.361E-04	2.818E-03	3.033E-03	1.984E-05	5.833E-05	2.696E-03	2.774E-03	4.967E+00	2.873E-04
2017	Annual	San Joaquin (SJV)	T7 CAIRP	20 MPH	1.076E-03	1.934E-02	4.318E-03	4.453E-05	7.937E-05	1.361E-04	9.083E-05	3.063E-04	1.984E-05	5.833E-05	8.690E-05	1.651E-04	4.667E+00	4.997E-05
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	1.224E-03	2.146E-02	4.240E-03	4.521E-05	7.937E-05	1.361E-04	1.355E-04	3.510E-04	1.984E-05	5.833E-05	1.297E-04	2.078E-04	4.738E+00	5.686E-05
2017	Annual	San Joaquin (SJV)	T7 NNOOS	20 MPH	6.377E-04	1.320E-02	3.140E-03	4.150E-05	7.937E-05	1.361E-04	3.486E-05	2.503E-04	1.984E-05	5.833E-05	3.335E-05	1.115E-04	4.350E+00	2.962E-05
2017	Annual	San Joaquin (SJV)	T7 NOOS	20 MPH	9.914E-04	1.918E-02	4.126E-03	4.450E-05	7.937E-05	1.361E-04	7.009E-05	2.856E-04	1.984E-05	5.833E-05	6.705E-05	1.452E-04	4.664E+00	4.605E-05
2017	Annual	San Joaquin (SJV)	T7 Other Port	20 MPH	1.232E-03	1.881E-02	4.201E-03	4.571E-05	7.937E-05	1.361E-04	8.006E-05	2.955E-04	1.984E-05	5.833E-05	7.659E-05	1.548E-04	4.791E+00	5.723E-05
2017	Annual	San Joaquin (SJV)	T7 POAK	20 MPH	1.355E-03	2.029E-02	4.445E-03	4.646E-05	7.937E-05	1.361E-04	9.085E-05	3.063E-04	1.984E-05	5.833E-05	8.692E-05	1.651E-04	4.870E+00	6.293E-05
2017	Annual	San Joaquin (SJV)	T7 POLA	20 MPH	1.355E-03	2.029E-02	4.445E-03	4.646E-05	7.937E-05	1.361E-04	9.085E-05	3.063E-04	1.984E-05	5.833E-05	8.692E-05	1.651E-04	4.870E+00	6.293E-05
2017	Annual	San Joaquin (SJV)	T7 Public	20 MPH	4.943E-04	2.566E-02	2.073E-03	4.592E-05	7.937E-05	1.361E-04	1.701E-04	3.855E-04	1.984E-05	5.833E-05	1.627E-04	2.409E-04	4.813E+00	2.296E-05
2017	Annual	San Joaquin (SJV)	T7 Single	20 MPH	1.159E-03	1.977E-02	4.237E-03	4.553E-05	7.937E-05	1.361E-04	2.839E-04	4.994E-04	1.984E-05	5.833E-05	2.716E-04	3.498E-04	4.772E+00	5.383E-05
2017	Annual	San Joaquin (SJV)	T7 Single Construction	20 MPH	1.069E-03	1.912E-02	3.762E-03	4.510E-05	7.937E-05	1.361E-04	2.203E-04	4.358E-04	1.984E-05	5.833E-05	2.107E-04	2.889E-04	4.728E+00	4.966E-05
2017	Annual	San Joaquin (SJV)	T7 SWCV	20 MPH	3.913E-04	2.585E-02	2.928E-03	9.028E-05	7.937E-05	1.361E-04	3.322E-05	2.487E-04	1.984E-05	5.833E-05	3.178E-05	1.100E-04	1.038E+01	2.333E-03
2017	Annual	San Joaquin (SJV)	T7 Tractor	20 MPH	1.230E-03	2.040E-02	4.418E-03	4.521E-05	7.937E-05	1.361E-04	1.275E-04	3.430E-04	1.984E-05	5.833E-05	1.220E-04	2.001E-04	4.738E+00	5.712E-05
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	20 MPH	1.492E-03	2.370E-02	4.893E-03	4.557E-05	7.937E-05	1.361E-04	2.635E-04	4.790E-04	1.984E-05	5.833E-05	2.521E-04	3.303E-04	4.776E+00	6.932E-05
2017	Annual	San Joaquin (SJV)	T7 Utility	20 MPH	3.292E-04	5.963E-03	1.944E-03	4.325E-05	7.937E-05	1.361E-04	8.843E-06	2.243E-04	1.984E-05	5.833E-05	8.460E-06	8.664E-05	4.533E+00	1.529E-05
2017	Annual	San Joaquin (SJV)	T7IS	20 MPH	2.537E-03	9.612E-03	1.024E-01	4.843E-05	4.409E-05	1.361E-04	3.172E-06	1.834E-04	1.102E-05	5.833E-05	2.932E-06	7.229E-05	4.681E+00	9.751E-04
2017	Annual	San Joaquin (SJV)	UBUS	20 MPH	2.084E-03	2.799E-02	2.778E-02	3.099E-05	2.646E-05	1.418E-03	4.990E-04	1.943E-03	6.614E-06	6.075E-04	4.774E-04	1.091E-03	4.484E+00	3.182E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	25 MPH	4.574E-04	1.119E-02	1.431E-03	2.911E-05	2.646E-05	2.873E-04	1.009E-04	4.147E-04	6.614E-06	1.231E-04	9.654E-05	2.263E-04	3.051E+00	2.124E-05
2017 Annual	San Joaquin (SJV)	LDA	25 MPH	6.875E-05	2.067E-04	2.536E-03	8.076E-06	1.764E-05	8.102E-05	6.092E-06	1.047E-04	4.409E-06	3.472E-05	5.624E-06	4.476E-05	8.053E-01	2.404E-05
2017 Annual	San Joaquin (SJV)	LDT1	25 MPH	2.258E-04	5.953E-04	6.962E-03	9.630E-06	1.764E-05	8.102E-05	1.250E-05	1.112E-04	4.409E-06	3.472E-05	1.154E-05	5.067E-05	9.532E-01	7.102E-05
2017 Annual	San Joaquin (SJV)	LDT2	25 MPH	9.794E-05	3.754E-04	3.578E-03	1.099E-05	1.764E-05	8.102E-05	5.865E-06	1.045E-04	4.409E-06	3.472E-05	5.400E-06	4.453E-05	1.096E+00	3.455E-05
2017 Annual	San Joaquin (SJV)	LHD1	25 MPH	3.358E-04	5.385E-03	3.380E-03	1.397E-05	2.227E-05	1.685E-04	5.209E-05	2.429E-04	5.566E-06	7.222E-05	4.975E-05	1.275E-04	1.423E+00	5.143E-05
2017 Annual	San Joaquin (SJV)	LHD2	25 MPH	2.842E-04	4.844E-03	2.137E-03	1.477E-05	2.376E-05	1.966E-04	5.264E-05	2.730E-04	5.940E-06	8.426E-05	5.031E-05	1.405E-04	1.519E+00	2.921E-05
2017 Annual	San Joaquin (SJV)	MCY	25 MPH	7.501E-03	2.453E-03	5.424E-02	5.613E-06	8.818E-06	2.593E-05	5.084E-06	3.983E-05	2.205E-06	1.111E-05	4.790E-06	1.811E-05	4.507E-01	1.232E-03
2017 Annual	San Joaquin (SJV)	MDV	25 MPH	1.781E-04	6.443E-04	5.572E-03	1.464E-05	1.764E-05	8.102E-05	6.318E-06	1.050E-04	4.409E-06	3.472E-05	5.833E-06	4.496E-05	1.458E+00	6.152E-05
2017 Annual	San Joaquin (SJV)	MH	25 MPH	6.557E-04	4.932E-03	1.479E-02	3.000E-05	2.840E-05	2.873E-04	8.789E-05	4.036E-04	7.100E-06	1.231E-04	8.389E-05	2.141E-04	3.006E+00	1.621E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	25 MPH	8.773E-04	1.721E-02	2.981E-03	4.280E-05	2.646E-05	2.873E-04	1.175E-04	4.313E-04	6.614E-06	1.231E-04	1.124E-04	2.422E-04	4.486E+00	4.075E-05
2017 Annual	San Joaquin (SJV)	OBUS	25 MPH	2.936E-04	1.625E-03	7.074E-03	3.105E-05	2.646E-05	2.873E-04	2.539E-06	3.163E-04	6.614E-06	1.231E-04	2.339E-06	1.321E-04	3.099E+00	1.137E-04
2017 Annual	San Joaquin (SJV)	SBUS	25 MPH	4.124E-04	1.405E-02	3.871E-03	2.492E-05	2.430E-05	1.642E-03	1.317E-04	1.798E-03	6.076E-06	7.037E-04	1.259E-04	8.357E-04	2.590E+00	6.111E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	25 MPH	2.448E-03	2.191E-02	7.963E-03	2.838E-05	2.646E-05	2.873E-04	1.332E-03	1.645E-03	6.614E-06	1.231E-04	1.274E-03	1.404E-03	2.975E+00	1.137E-04
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	2.797E-04	6.474E-03	1.030E-03	2.851E-05	2.646E-05	2.873E-04	4.605E-05	3.599E-04	6.614E-06	1.231E-04	4.406E-05	1.738E-04	2.988E+00	1.299E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	25 MPH	5.219E-04	7.378E-03	1.585E-03	2.811E-05	2.646E-05	2.873E-04	1.871E-04	5.009E-04	6.614E-06	1.231E-04	1.790E-04	3.088E-04	2.946E+00	2.424E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	5.144E-04	1.153E-02	1.611E-03	2.855E-05	2.646E-05	2.873E-04	1.582E-04	4.720E-04	6.614E-06	1.231E-04	1.514E-04	2.811E-04	2.993E+00	2.389E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	7.270E-04	9.856E-03	2.154E-03	2.827E-05	2.646E-05	2.873E-04	2.754E-04	5.892E-04	6.614E-06	1.231E-04	2.634E-04	3.932E-04	2.963E+00	3.377E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	25 MPH	3.562E-04	8.075E-03	1.205E-03	2.885E-05	2.646E-05	2.873E-04	6.350E-05	3.773E-04	6.614E-06	1.231E-04	6.075E-05	1.905E-04	3.024E+00	1.655E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Small	25 MPH	8.510E-04	1.101E-02	2.550E-03	2.827E-05	2.646E-05	2.873E-04	3.394E-04	6.532E-04	6.614E-06	1.231E-04	3.247E-04	4.545E-04	2.963E+00	3.952E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	25 MPH	2.398E-04	6.422E-03	9.228E-04	2.855E-05	2.646E-05	2.873E-04	2.791E-05	3.417E-04	6.614E-06	1.231E-04	2.670E-05	1.565E-04	2.992E+00	1.114E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Small	25 MPH	5.219E-04	7.378E-03	1.585E-03	2.811E-05	2.646E-05	2.873E-04	1.871E-04	5.009E-04	6.614E-06	1.231E-04	1.790E-04	3.088E-04	2.946E+00	2.424E-05
2017 Annual	San Joaquin (SJV)	T6 Public	25 MPH	1.799E-04	1.098E-02	6.564E-04	2.826E-05	2.646E-05	2.873E-04	6.294E-05	3.767E-04	6.614E-06	1.231E-04	6.021E-05	1.900E-04	2.963E+00	8.355E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	25 MPH	1.184E-04	2.391E-03	6.233E-04	2.886E-05	2.646E-05	2.873E-04	5.239E-06	3.190E-04	6.614E-06	1.231E-04	5.013E-06	1.348E-04	3.025E+00	5.500E-06
2017 Annual	San Joaquin (SJV)	T6TS	25 MPH	6.690E-04	2.745E-03	1.547E-02	3.125E-05	2.646E-05	2.873E-04	5.298E-06	3.191E-04	6.614E-06	1.231E-04	4.894E-06	1.347E-04	3.104E+00	2.379E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	25 MPH	4.377E-03	3.614E-02	2.048E-02	4.272E-05	7.937E-05	1.361E-04	2.324E-03	2.540E-03	1.984E-05	5.833E-05	2.224E-03	2.302E-03	4.478E+00	2.033E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	25 MPH	7.908E-04	1.528E-02	3.199E-03	4.087E-05	7.937E-05	1.361E-04	8.099E-05	2.965E-04	1.984E-05	5.833E-05	7.748E-05	1.557E-04	4.284E+00	3.673E-05
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	9.055E-04	1.758E-02	3.179E-03	4.133E-05	7.937E-05	1.361E-04	1.224E-04	3.378E-04	1.984E-05	5.833E-05	1.171E-04	1.952E-04	4.333E+00	4.206E-05
2017 Annual	San Joaquin (SJV)	T7 NNOOS	25 MPH	4.684E-04	9.309E-03	2.310E-03	3.821E-05	7.937E-05	1.361E-04	3.168E-05	2.472E-04	1.984E-05	5.833E-05	3.031E-05	1.085E-04	4.005E+00	2.176E-05
2017 Annual	San Joaquin (SJV)	T7 NOOS	25 MPH	7.281E-04	1.509E-02	3.041E-03	4.085E-05	7.937E-05	1.361E-04	6.301E-05	2.785E-04	1.984E-05	5.833E-05	6.029E-05	1.385E-04	4.282E+00	3.382E-05
2017 Annual	San Joaquin (SJV)	T7 Other Port	25 MPH	9.036E-04	1.551E-02	3.082E-03	4.185E-05	7.937E-05	1.361E-04	7.286E-05	2.883E-04	1.984E-05	5.833E-05	6.970E-05	1.479E-04	4.387E+00	4.197E-05
2017 Annual	San Joaquin (SJV)	T7 POAK	25 MPH	9.936E-04	1.703E-02	3.262E-03	4.250E-05	7.937E-05	1.361E-04	8.268E-05	2.982E-04	1.984E-05	5.833E-05	7.911E-05	1.573E-04	4.454E+00	4.615E-05
2017 Annual	San Joaquin (SJV)	T7 POLA	25 MPH	9.936E-04	1.703E-02	3.262E-03	4.250E-05	7.937E-05	1.361E-04	8.268E-05	2.982E-04	1.984E-05	5.833E-05	7.911E-05	1.573E-04	4.454E+00	4.615E-05
2017 Annual	San Joaquin (SJV)	T7 Public	25 MPH	3.579E-04	2.285E-02	1.635E-03	4.163E-05	7.937E-05	1.361E-04	1.435E-04	3.589E-04	1.984E-05	5.833E-05	1.373E-04	2.154E-04	4.363E+00	1.663E-05
2017 Annual	San Joaquin (SJV)	T7 Single	25 MPH	8.369E-04	1.706E-02	3.299E-03	4.152E-05	7.937E-05	1.361E-04	2.331E-04	4.486E-04	1.984E-05	5.833E-05	2.230E-04	3.012E-04	4.352E+00	3.887E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	25 MPH	7.730E-04	1.639E-02	2.893E-03	4.114E-05	7.937E-05	1.361E-04	1.782E-04	3.937E-04	1.984E-05	5.833E-05	1.705E-04	2.487E-04	4.312E+00	3.590E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	25 MPH	2.961E-04	2.345E-02	2.161E-03	8.168E-05	7.937E-05	1.361E-04	2.917E-05	2.447E-04	1.984E-05	5.833E-05	2.791E-05	1.061E-04	9.393E+00	1.762E-03
2017 Annual	San Joaquin (SJV)	T7 Tractor	25 MPH	8.998E-04	1.691E-02	3.289E-03	4.139E-05	7.937E-05	1.361E-04	1.099E-04	3.254E-04	1.984E-05	5.833E-05	1.051E-04	1.833E-04	4.338E+00	4.179E-05
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	25 MPH	1.096E-03	2.015E-02	3.768E-03	4.154E-05	7.937E-05	1.361E-04	2.242E-04	4.397E-04	1.984E-05	5.833E-05	2.145E-04	2.927E-04	4.354E+00	5.089E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	25 MPH	2.412E-04	3.962E-03	1.424E-03	3.992E-05	7.937E-05	1.361E-04	8.044E-06	2.235E-04	1.984E-05	5.833E-05	7.696E-06	8.587E-05	4.184E+00	1.121E-05
2017 Annual	San Joaquin (SJV)	T7IS	25 MPH	1.888E-03	8.796E-03	9.342E-02	4.549E-05	4.409E-05	1.361E-04	2.382E-06	1.826E-04	1.102E-05	5.833E-05	2.203E-06	7.156E-05	4.404E+00	7.229E-04
2017 Annual	San Joaquin (SJV)	UBUS	25 MPH	1.515E-03	2.624E-02	2.308E-02	2.755E-05	2.646E-05	1.418E-03	3.871E-04	1.831E-03	6.614E-06	6.075E-04	3.704E-04	9.845E-04	3.999E+00	2.262E-03

2017	Annual	San Joaquin (SJV)	All Other Buses	30 MPH	3.474E-04	1.024E-02	1.109E-03	2.733E-05	2.646E-05	2.873E-04	8.777E-05	4.016E-04	6.614E-06	1.231E-04	8.398E-05	2.137E-04	2.864E+00	1.613E-05
2017	Annual	San Joaquin (SJV)	LDA	30 MPH	5.455E-05	1.928E-04	2.321E-03	6.954E-06	1.764E-05	8.102E-05	4.805E-06	1.035E-04	4.409E-06	3.472E-05	4.437E-06	4.357E-05	6.932E-01	1.893E-05
2017	Annual	San Joaquin (SJV)	LDT1	30 MPH	1.825E-04	5.549E-04	6.301E-03	8.293E-06	1.764E-05	8.102E-05	9.960E-06	1.086E-04	4.409E-06	3.472E-05	9.192E-06	4.832E-05	8.205E-01	5.685E-05
2017	Annual	San Joaquin (SJV)	LDT2	30 MPH	7.792E-05	3.483E-04	3.270E-03	9.464E-06	1.764E-05	8.102E-05	4.609E-06	1.033E-04	4.409E-06	3.472E-05	4.244E-06	4.338E-05	9.430E-01	2.729E-05
2017	Annual	San Joaquin (SJV)	LHD1	30 MPH	2.757E-04	5.571E-03	2.999E-03	1.268E-05	2.227E-05	1.685E-04	4.362E-05	2.344E-04	5.566E-06	7.222E-05	4.166E-05	1.195E-04	1.292E+00	4.170E-05
2017	Annual	San Joaquin (SJV)	LHD2	30 MPH	2.321E-04	5.014E-03	1.873E-03	1.333E-05	2.376E-05	1.966E-04	4.438E-05	2.647E-04	5.940E-06	8.426E-05	4.242E-05	1.326E-04	1.371E+00	2.365E-05
2017	Annual	San Joaquin (SJV)	MCY	30 MPH	6.079E-03	2.406E-03	4.814E-02	4.841E-06	8.818E-06	2.593E-05	4.144E-06	3.889E-05	2.205E-06	1.111E-05	3.904E-06	1.722E-05	3.880E-01	9.919E-04
2017	Annual	San Joaquin (SJV)	MDV	30 MPH	1.416E-04	5.982E-04	5.086E-03	1.260E-05	1.764E-05	8.102E-05	4.998E-06	1.037E-04	4.409E-06	3.472E-05	4.616E-06	4.375E-05	1.255E+00	4.852E-05
2017	Annual	San Joaquin (SJV)	MH	30 MPH	5.373E-04	4.676E-03	1.309E-02	2.767E-05	2.840E-05	2.873E-04	7.776E-05	3.935E-04	7.100E-06	1.231E-04	7.424E-05	2.045E-04	2.774E+00	1.318E-04
2017	Annual	San Joaquin (SJV)	Motor Coach	30 MPH	6.617E-04	1.553E-02	2.278E-03	4.015E-05	2.646E-05	2.873E-04	1.062E-04	4.200E-04	6.614E-06	1.231E-04	1.016E-04	2.314E-04	4.208E+00	3.074E-05
2017	Annual	San Joaquin (SJV)	OBUS	30 MPH	2.302E-04	1.508E-03	6.488E-03	2.853E-05	2.646E-05	2.873E-04	1.988E-06	3.158E-04	6.614E-06	1.231E-04	1.831E-06	1.316E-04	2.848E+00	8.885E-05
2017	Annual	San Joaquin (SJV)	SBUS	30 MPH	3.263E-04	1.340E-02	3.465E-03	2.333E-05	2.430E-05	1.642E-03	1.119E-04	1.778E-03	6.076E-06	7.037E-04	1.071E-04	8.168E-04	2.425E+00	4.785E-05
2017	Annual	San Joaquin (SJV)	T6 Ag	30 MPH	2.025E-03	2.077E-02	6.720E-03	2.668E-05	2.646E-05	2.873E-04	1.153E-03	1.467E-03	6.614E-06	1.231E-04	1.103E-03	1.233E-03	2.797E+00	9.407E-05
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	2.116E-04	5.482E-03	7.827E-04	2.672E-05	2.646E-05	2.873E-04	4.202E-05	3.558E-04	6.614E-06	1.231E-04	4.020E-05	1.700E-04	2.800E+00	9.828E-06
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	30 MPH	4.236E-04	6.359E-03	1.328E-03	2.652E-05	2.646E-05	2.873E-04	1.757E-04	4.895E-04	6.614E-06	1.231E-04	1.681E-04	2.978E-04	2.780E+00	1.967E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	3.998E-04	1.058E-02	1.292E-03	2.682E-05	2.646E-05	2.873E-04	1.375E-04	4.513E-04	6.614E-06	1.231E-04	1.316E-04	2.613E-04	2.812E+00	1.857E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	5.887E-04	8.796E-03	1.820E-03	2.663E-05	2.646E-05	2.873E-04	2.521E-04	5.659E-04	6.614E-06	1.231E-04	2.412E-04	3.709E-04	2.791E+00	2.735E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	30 MPH	2.689E-04	7.076E-03	9.171E-04	2.698E-05	2.646E-05	2.873E-04	5.684E-05	3.706E-04	6.614E-06	1.231E-04	5.438E-05	1.841E-04	2.828E+00	1.249E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Small	30 MPH	6.893E-04	9.937E-03	2.163E-03	2.663E-05	2.646E-05	2.873E-04	3.059E-04	6.198E-04	6.614E-06	1.231E-04	2.927E-04	4.225E-04	2.792E+00	3.202E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	30 MPH	1.790E-04	5.418E-03	6.894E-04	2.676E-05	2.646E-05	2.873E-04	2.584E-05	3.396E-04	6.614E-06	1.231E-04	2.472E-05	1.545E-04	2.805E+00	8.314E-06
2017	Annual	San Joaquin (SJV)	T6 OOS Small	30 MPH	4.236E-04	6.359E-03	1.328E-03	2.652E-05	2.646E-05	2.873E-04	1.757E-04	4.895E-04	6.614E-06	1.231E-04	1.681E-04	2.978E-04	2.780E+00	1.967E-05
2017	Annual	San Joaquin (SJV)	T6 Public	30 MPH	1.410E-04	1.011E-02	5.165E-04	2.661E-05	2.646E-05	2.873E-04	5.574E-05	3.695E-04	6.614E-06	1.231E-04	5.333E-05	1.831E-04	2.790E+00	6.547E-06
2017	Annual	San Joaquin (SJV)	T6 Utility	30 MPH	8.726E-05	1.715E-03	4.593E-04	2.732E-05	2.646E-05	2.873E-04	4.824E-06	3.186E-04	6.614E-06	1.231E-04	4.615E-06	1.344E-04	2.864E+00	4.053E-06
2017	Annual	San Joaquin (SJV)	T6TS	30 MPH	5.345E-04	2.576E-03	1.401E-02	2.871E-05	2.646E-05	2.873E-04	4.208E-06	3.180E-04	6.614E-06	1.231E-04	3.889E-06	1.337E-04	2.853E+00	1.890E-04
2017	Annual	San Joaquin (SJV)	T7 Ag	30 MPH	3.594E-03	3.411E-02	1.735E-02	4.013E-05	7.937E-05	1.361E-04	2.027E-03	2.242E-03	1.984E-05	5.833E-05	1.939E-03	2.017E-03	4.207E+00	1.669E-04
2017	Annual	San Joaquin (SJV)	T7 CAIRP	30 MPH	5.927E-04	1.294E-02	2.405E-03	3.825E-05	7.937E-05	1.361E-04	7.474E-05	2.902E-04	1.984E-05	5.833E-05	7.150E-05	1.497E-04	4.010E+00	2.753E-05
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	6.905E-04	1.541E-02	2.447E-03	3.884E-05	7.937E-05	1.361E-04	1.149E-04	3.304E-04	1.984E-05	5.833E-05	1.099E-04	1.881E-04	4.071E+00	3.207E-05
2017	Annual	San Joaquin (SJV)	T7 NNOOS	30 MPH	3.479E-04	7.280E-03	1.714E-03	3.589E-05	7.937E-05	1.361E-04	2.947E-05	2.450E-04	1.984E-05	5.833E-05	2.820E-05	1.064E-04	3.761E+00	1.616E-05
2017	Annual	San Joaquin (SJV)	T7 NOOS	30 MPH	5.419E-04	1.274E-02	2.267E-03	3.825E-05	7.937E-05	1.361E-04	5.816E-05	2.736E-04	1.984E-05	5.833E-05	5.564E-05	1.338E-04	4.009E+00	2.517E-05
2017	Annual	San Joaquin (SJV)	T7 Other Port	30 MPH	6.669E-04	1.371E-02	2.276E-03	3.924E-05	7.937E-05	1.361E-04	6.714E-05	2.826E-04	1.984E-05	5.833E-05	6.423E-05	1.424E-04	4.113E+00	3.098E-05
2017	Annual	San Joaquin (SJV)	T7 POAK	30 MPH	7.336E-04	1.524E-02	2.410E-03	3.979E-05	7.937E-05	1.361E-04	7.620E-05	2.917E-04	1.984E-05	5.833E-05	7.290E-05	1.511E-04	4.171E+00	3.407E-05
2017	Annual	San Joaquin (SJV)	T7 POLA	30 MPH	7.336E-04	1.524E-02	2.410E-03	3.979E-05	7.937E-05	1.361E-04	7.620E-05	2.917E-04	1.984E-05	5.833E-05	7.290E-05	1.511E-04	4.171E+00	3.407E-05
2017	Annual	San Joaquin (SJV)	T7 Public	30 MPH	2.833E-04	2.127E-02	1.313E-03	3.914E-05	7.937E-05	1.361E-04	1.274E-04	3.428E-04	1.984E-05	5.833E-05	1.219E-04	2.000E-04	4.102E+00	1.316E-05
2017	Annual	San Joaquin (SJV)	T7 Single	30 MPH	6.503E-04	1.559E-02	2.638E-03	3.902E-05	7.937E-05	1.361E-04	2.034E-04	4.188E-04	1.984E-05	5.833E-05	1.946E-04	2.727E-04	4.090E+00	3.020E-05
2017	Annual	San Joaquin (SJV)	T7 Single Construction	30 MPH	5.942E-04	1.492E-02	2.296E-03	3.866E-05	7.937E-05	1.361E-04	1.544E-04	3.698E-04	1.984E-05	5.833E-05	1.477E-04	2.259E-04	4.052E+00	2.760E-05
2017	Annual	San Joaquin (SJV)	T7 SWCV	30 MPH	2.386E-04	2.203E-02	1.615E-03	7.669E-05	7.937E-05	1.361E-04	2.694E-05	2.424E-04	1.984E-05	5.833E-05	2.578E-05	1.040E-04	8.819E+00	1.413E-03
2017	Annual	San Joaquin (SJV)	T7 Tractor	30 MPH	6.746E-04	1.493E-02	2.490E-03	3.865E-05	7.937E-05	1.361E-04	9.882E-05	3.143E-04	1.984E-05	5.833E-05	9.455E-05	1.727E-04	4.052E+00	3.133E-05
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	30 MPH	8.521E-04	1.818E-02	3.014E-03	3.900E-05	7.937E-05	1.361E-04	2.026E-04	4.181E-04	1.984E-05	5.833E-05	1.939E-04	2.720E-04	4.088E+00	3.958E-05
2017	Annual	San Joaquin (SJV)	T7 Utility	30 MPH	1.778E-04	2.878E-03	1.050E-03	3.780E-05	7.937E-05	1.361E-04	7.407E-06	2.229E-04	1.984E-05	5.833E-05	7.086E-06	8.526E-05	3.962E+00	8.257E-06
2017	Annual	San Joaquin (SJV)	T7IS	30 MPH	1.482E-03	8.180E-03	8.573E-02	4.325E-05	4.409E-05	1.361E-04	1.886E-06	1.821E-04	1.102E-05	5.833E-05	1.744E-06	7.110E-05	4.193E+00	5.654E-04
2017	Annual	San Joaquin (SJV)	UBUS	30 MPH	1.223E-03	2.531E-02	2.019E-02	2.568E-05	2.646E-05	1.418E-03	3.210E-04	1.765E-03	6.614E-06	6.075E-04	3.071E-04	9.212E-04	3.736E+00	1.827E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	35 MPH	2.653E-04	9.589E-03	8.650E-04	2.591E-05	2.646E-05	2.873E-04	7.852E-05	3.923E-04	6.614E-06	1.231E-04	7.513E-05	2.049E-04	2.716E+00	1.232E-05
2017 Annual	San Joaquin (SJV)	LDA	35 MPH	4.553E-05	1.828E-04	2.139E-03	6.213E-06	1.764E-05	8.102E-05	3.991E-06	1.026E-04	4.409E-06	3.472E-05	3.686E-06	4.282E-05	6.193E-01	1.569E-05
2017 Annual	San Joaquin (SJV)	LDT1	35 MPH	1.544E-04	5.282E-04	5.784E-03	7.411E-06	1.764E-05	8.102E-05	8.324E-06	1.070E-04	4.409E-06	3.472E-05	7.684E-06	4.682E-05	7.330E-01	4.766E-05
2017 Annual	San Joaquin (SJV)	LDT2	35 MPH	6.514E-05	3.291E-04	3.012E-03	8.456E-06	1.764E-05	8.102E-05	3.814E-06	1.025E-04	4.409E-06	3.472E-05	3.512E-06	4.264E-05	8.424E-01	2.266E-05
2017 Annual	San Joaquin (SJV)	LHD1	35 MPH	2.375E-04	5.773E-03	2.755E-03	1.268E-05	2.227E-05	1.685E-04	3.815E-05	2.289E-04	5.566E-06	7.222E-05	3.644E-05	1.142E-04	1.292E+00	3.554E-05
2017 Annual	San Joaquin (SJV)	LHD2	35 MPH	1.990E-04	5.199E-03	1.708E-03	1.333E-05	2.376E-05	1.966E-04	3.899E-05	2.594E-04	5.940E-06	8.426E-05	3.727E-05	1.275E-04	1.371E+00	2.012E-05
2017 Annual	San Joaquin (SJV)	MCY	35 MPH	5.178E-03	2.386E-03	4.434E-02	4.336E-06	8.818E-06	2.593E-05	3.547E-06	3.829E-05	2.205E-06	1.111E-05	3.343E-06	1.666E-05	3.466E-01	8.403E-04
2017 Annual	San Joaquin (SJV)	MDV	35 MPH	1.184E-04	5.661E-04	4.686E-03	1.126E-05	1.764E-05	8.102E-05	4.160E-06	1.028E-04	4.409E-06	3.472E-05	3.843E-06	4.297E-05	1.121E+00	4.023E-05
2017 Annual	San Joaquin (SJV)	MH	35 MPH	4.603E-04	4.491E-03	1.204E-02	2.566E-05	2.840E-05	2.873E-04	7.182E-05	3.876E-04	7.100E-06	1.231E-04	6.858E-05	1.988E-04	2.573E+00	1.125E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	35 MPH	5.011E-04	1.437E-02	1.756E-03	3.806E-05	2.646E-05	2.873E-04	9.854E-05	4.123E-04	6.614E-06	1.231E-04	9.428E-05	2.240E-04	3.989E+00	2.328E-05
2017 Annual	San Joaquin (SJV)	OBUS	35 MPH	1.903E-04	1.422E-03	5.988E-03	2.634E-05	2.646E-05	2.873E-04	1.641E-06	3.154E-04	6.614E-06	1.231E-04	1.512E-06	1.313E-04	2.629E+00	7.325E-05
2017 Annual	San Joaquin (SJV)	SBUS	35 MPH	2.642E-04	1.294E-02	3.118E-03	2.202E-05	2.430E-05	1.642E-03	9.755E-05	1.764E-03	6.076E-06	7.037E-04	9.330E-05	8.031E-04	2.289E+00	3.915E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	35 MPH	1.695E-03	1.993E-02	5.678E-03	2.530E-05	2.646E-05	2.873E-04	1.019E-03	1.333E-03	6.614E-06	1.231E-04	9.749E-04	1.105E-03	2.652E+00	7.873E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	1.608E-04	4.831E-03	5.990E-04	2.528E-05	2.646E-05	2.873E-04	3.940E-05	3.532E-04	6.614E-06	1.231E-04	3.769E-05	1.675E-04	2.650E+00	7.467E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	35 MPH	3.464E-04	5.681E-03	1.138E-03	2.525E-05	2.646E-05	2.873E-04	1.721E-04	4.859E-04	6.614E-06	1.231E-04	1.646E-04	2.944E-04	2.646E+00	1.609E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	3.133E-04	9.920E-03	1.047E-03	2.544E-05	2.646E-05	2.873E-04	1.237E-04	4.375E-04	6.614E-06	1.231E-04	1.183E-04	2.481E-04	2.667E+00	1.455E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	4.807E-04	8.062E-03	1.566E-03	2.531E-05	2.646E-05	2.873E-04	2.412E-04	5.550E-04	6.614E-06	1.231E-04	2.308E-04	3.605E-04	2.653E+00	2.233E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	35 MPH	2.039E-04	6.395E-03	7.028E-04	2.548E-05	2.646E-05	2.873E-04	5.216E-05	3.660E-04	6.614E-06	1.231E-04	4.990E-05	1.797E-04	2.671E+00	9.469E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	35 MPH	5.631E-04	9.182E-03	1.864E-03	2.532E-05	2.646E-05	2.873E-04	2.884E-04	6.022E-04	6.614E-06	1.231E-04	2.759E-04	4.057E-04	2.654E+00	2.616E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	35 MPH	1.339E-04	4.758E-03	5.174E-04	2.532E-05	2.646E-05	2.873E-04	2.442E-05	3.382E-04	6.614E-06	1.231E-04	2.337E-05	1.531E-04	2.654E+00	6.221E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	35 MPH	3.464E-04	5.681E-03	1.138E-03	2.525E-05	2.646E-05	2.873E-04	1.721E-04	4.859E-04	6.614E-06	1.231E-04	1.646E-04	2.944E-04	2.646E+00	1.609E-05
2017 Annual	San Joaquin (SJV)	T6 Public	35 MPH	1.115E-04	9.505E-03	4.099E-04	2.528E-05	2.646E-05	2.873E-04	5.070E-05	3.645E-04	6.614E-06	1.231E-04	4.851E-05	1.783E-04	2.650E+00	5.178E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	35 MPH	6.430E-05	1.309E-03	3.385E-04	2.611E-05	2.646E-05	2.873E-04	4.478E-06	3.183E-04	6.614E-06	1.231E-04	4.285E-06	1.340E-04	2.737E+00	2.987E-06
2017 Annual	San Joaquin (SJV)	T6TS	35 MPH	4.497E-04	2.455E-03	1.292E-02	2.650E-05	2.646E-05	2.873E-04	3.521E-06	3.173E-04	6.614E-06	1.231E-04	3.255E-06	1.330E-04	2.634E+00	1.581E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	35 MPH	2.983E-03	3.263E-02	1.470E-02	3.803E-05	7.937E-05	1.361E-04	1.798E-03	2.013E-03	1.984E-05	5.833E-05	1.720E-03	1.798E-03	3.986E+00	1.385E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	35 MPH	4.456E-04	1.139E-02	1.819E-03	3.616E-05	7.937E-05	1.361E-04	7.055E-05	2.860E-04	1.984E-05	5.833E-05	6.750E-05	1.457E-04	3.790E+00	2.070E-05
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	5.292E-04	1.394E-02	1.908E-03	3.687E-05	7.937E-05	1.361E-04	1.110E-04	3.264E-04	1.984E-05	5.833E-05	1.062E-04	1.843E-04	3.864E+00	2.458E-05
2017 Annual	San Joaquin (SJV)	T7 NNOOS	35 MPH	2.588E-04	6.039E-03	1.275E-03	3.402E-05	7.937E-05	1.361E-04	2.790E-05	2.434E-04	1.984E-05	5.833E-05	2.670E-05	1.049E-04	3.566E+00	1.202E-05
2017 Annual	San Joaquin (SJV)	T7 NOOS	35 MPH	4.041E-04	1.117E-02	1.696E-03	3.616E-05	7.937E-05	1.361E-04	5.463E-05	2.701E-04	1.984E-05	5.833E-05	5.227E-05	1.304E-04	3.791E+00	1.877E-05
2017 Annual	San Joaquin (SJV)	T7 Other Port	35 MPH	4.924E-04	1.251E-02	1.683E-03	3.719E-05	7.937E-05	1.361E-04	6.241E-05	2.779E-04	1.984E-05	5.833E-05	5.971E-05	1.379E-04	3.898E+00	2.287E-05
2017 Annual	San Joaquin (SJV)	T7 POAK	35 MPH	5.418E-04	1.401E-02	1.783E-03	3.767E-05	7.937E-05	1.361E-04	7.084E-05	2.863E-04	1.984E-05	5.833E-05	6.777E-05	1.459E-04	3.949E+00	2.516E-05
2017 Annual	San Joaquin (SJV)	T7 POLA	35 MPH	5.418E-04	1.401E-02	1.783E-03	3.767E-05	7.937E-05	1.361E-04	7.084E-05	2.863E-04	1.984E-05	5.833E-05	6.777E-05	1.459E-04	3.949E+00	2.516E-05
2017 Annual	San Joaquin (SJV)	T7 Public	35 MPH	2.264E-04	2.014E-02	1.061E-03	3.712E-05	7.937E-05	1.361E-04	1.152E-04	3.306E-04	1.984E-05	5.833E-05	1.102E-04	1.884E-04	3.891E+00	1.052E-05
2017 Annual	San Joaquin (SJV)	T7 Single	35 MPH	5.094E-04	1.458E-02	2.126E-03	3.703E-05	7.937E-05	1.361E-04	1.820E-04	3.974E-04	1.984E-05	5.833E-05	1.741E-04	2.523E-04	3.881E+00	2.366E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	35 MPH	4.597E-04	1.392E-02	1.839E-03	3.669E-05	7.937E-05	1.361E-04	1.381E-04	3.536E-04	1.984E-05	5.833E-05	1.322E-04	2.103E-04	3.845E+00	2.135E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	35 MPH	1.937E-04	2.092E-02	1.213E-03	7.265E-05	7.937E-05	1.361E-04	2.564E-05	2.411E-04	1.984E-05	5.833E-05	2.453E-05	1.027E-04	8.356E+00	1.142E-03
2017 Annual	San Joaquin (SJV)	T7 Tractor	35 MPH	5.072E-04	1.358E-02	1.896E-03	3.647E-05	7.937E-05	1.361E-04	9.088E-05	3.064E-04	1.984E-05	5.833E-05	8.695E-05	1.651E-04	3.823E+00	2.356E-05
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	35 MPH	6.673E-04	1.679E-02	2.447E-03	3.699E-05	7.937E-05	1.361E-04	1.896E-04	4.051E-04	1.984E-05	5.833E-05	1.814E-04	2.596E-04	3.877E+00	3.100E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	35 MPH	1.310E-04	2.217E-03	7.736E-04	3.612E-05	7.937E-05	1.361E-04	6.876E-06	2.224E-04	1.984E-05	5.833E-05	6.579E-06	8.475E-05	3.785E+00	6.085E-06
2017 Annual	San Joaquin (SJV)	T7IS	35 MPH	1.226E-03	7.728E-03	7.912E-02	4.142E-05	4.409E-05	1.361E-04	1.573E-06	1.818E-04	1.102E-05	5.833E-05	1.455E-06	7.081E-05	4.022E+00	4.663E-04
2017 Annual	San Joaquin (SJV)	UBUS	35 MPH	1.014E-03	2.464E-02	1.796E-02	2.411E-05	2.646E-05	1.418E-03	2.715E-04	1.715E-03	6.614E-06	6.075E-04	2.597E-04	8.738E-04	3.516E+00	1.500E-03

2017	Annual	San Joaquin (SJV)	All Other Buses	40 MPH	2.056E-04	9.119E-03	6.828E-04	2.476E-05	2.646E-05	2.873E-04	7.303E-05	3.868E-04	6.614E-06	1.231E-04	6.987E-05	1.996E-04	2.596E+00	9.552E-06
2017	Annual	San Joaquin (SJV)	LDA	40 MPH	3.997E-05	1.763E-04	1.985E-03	5.762E-06	1.764E-05	8.102E-05	3.489E-06	1.021E-04	4.409E-06	3.472E-05	3.223E-06	4.235E-05	5.743E-01	1.368E-05
2017	Annual	San Joaquin (SJV)	LDT1	40 MPH	1.369E-04	5.131E-04	5.385E-03	6.871E-06	1.764E-05	8.102E-05	7.297E-06	1.060E-04	4.409E-06	3.472E-05	6.738E-06	4.587E-05	6.796E-01	4.182E-05
2017	Annual	San Joaquin (SJV)	LDT2	40 MPH	5.720E-05	3.167E-04	2.795E-03	7.840E-06	1.764E-05	8.102E-05	3.323E-06	1.020E-04	4.409E-06	3.472E-05	3.060E-06	4.219E-05	7.811E-01	1.977E-05
2017	Annual	San Joaquin (SJV)	LHD1	40 MPH	2.144E-04	5.986E-03	2.617E-03	1.250E-05	2.227E-05	1.685E-04	3.483E-05	2.256E-04	5.566E-06	7.222E-05	3.327E-05	1.111E-04	1.274E+00	3.181E-05
2017	Annual	San Joaquin (SJV)	LHD2	40 MPH	1.786E-04	5.395E-03	1.619E-03	1.291E-05	2.376E-05	1.966E-04	3.563E-05	2.560E-04	5.940E-06	8.426E-05	3.406E-05	1.243E-04	1.328E+00	1.797E-05
2017	Annual	San Joaquin (SJV)	MCY	40 MPH	4.635E-03	2.388E-03	4.236E-02	4.034E-06	8.818E-06	2.593E-05	3.188E-06	3.793E-05	2.205E-06	1.111E-05	3.005E-06	1.632E-05	3.214E-01	7.486E-04
2017	Annual	San Joaquin (SJV)	MDV	40 MPH	1.040E-04	5.458E-04	4.355E-03	1.044E-05	1.764E-05	8.102E-05	3.640E-06	1.023E-04	4.409E-06	3.472E-05	3.364E-06	4.250E-05	1.040E+00	3.507E-05
2017	Annual	San Joaquin (SJV)	MH	40 MPH	4.128E-04	4.365E-03	1.150E-02	2.399E-05	2.840E-05	2.873E-04	6.989E-05	3.856E-04	7.100E-06	1.231E-04	6.674E-05	1.970E-04	2.406E+00	1.008E-04
2017	Annual	San Joaquin (SJV)	Motor Coach	40 MPH	3.827E-04	1.352E-02	1.370E-03	3.636E-05	2.646E-05	2.873E-04	9.432E-05	4.081E-04	6.614E-06	1.231E-04	9.024E-05	2.200E-04	3.811E+00	1.778E-05
2017	Annual	San Joaquin (SJV)	OBUS	40 MPH	1.658E-04	1.363E-03	5.560E-03	2.451E-05	2.646E-05	2.873E-04	1.429E-06	3.152E-04	6.614E-06	1.231E-04	1.316E-06	1.311E-04	2.446E+00	6.369E-05
2017	Annual	San Joaquin (SJV)	SBUS	40 MPH	2.213E-04	1.263E-02	2.824E-03	2.096E-05	2.430E-05	1.642E-03	8.843E-05	1.755E-03	6.076E-06	7.037E-04	8.458E-05	7.944E-04	2.180E+00	3.359E-05
2017	Annual	San Joaquin (SJV)	T6 Ag	40 MPH	1.456E-03	1.936E-02	4.833E-03	2.419E-05	2.646E-05	2.873E-04	9.295E-04	1.243E-03	6.614E-06	1.231E-04	8.893E-04	1.019E-03	2.536E+00	6.761E-05
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	1.232E-04	4.374E-03	4.635E-04	2.409E-05	2.646E-05	2.873E-04	3.811E-05	3.519E-04	6.614E-06	1.231E-04	3.646E-05	1.662E-04	2.525E+00	5.722E-06
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	40 MPH	2.874E-04	5.206E-03	1.001E-03	2.422E-05	2.646E-05	2.873E-04	1.762E-04	4.900E-04	6.614E-06	1.231E-04	1.686E-04	2.984E-04	2.538E+00	1.335E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	2.505E-04	9.451E-03	8.620E-04	2.433E-05	2.646E-05	2.873E-04	1.166E-04	4.304E-04	6.614E-06	1.231E-04	1.116E-04	2.413E-04	2.550E+00	1.163E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	3.996E-04	7.535E-03	1.382E-03	2.425E-05	2.646E-05	2.873E-04	2.426E-04	5.564E-04	6.614E-06	1.231E-04	2.321E-04	3.619E-04	2.541E+00	1.856E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	40 MPH	1.560E-04	5.902E-03	5.440E-04	2.425E-05	2.646E-05	2.873E-04	4.934E-05	3.631E-04	6.614E-06	1.231E-04	4.720E-05	1.770E-04	2.542E+00	7.247E-06
2017	Annual	San Joaquin (SJV)	T6 Instate Small	40 MPH	4.696E-04	8.642E-03	1.644E-03	2.426E-05	2.646E-05	2.873E-04	2.866E-04	6.004E-04	6.614E-06	1.231E-04	2.742E-04	4.040E-04	2.543E+00	2.181E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	40 MPH	1.006E-04	4.293E-03	3.908E-04	2.413E-05	2.646E-05	2.873E-04	2.359E-05	3.374E-04	6.614E-06	1.231E-04	2.257E-05	1.523E-04	2.530E+00	4.672E-06
2017	Annual	San Joaquin (SJV)	T6 OOS Small	40 MPH	2.874E-04	5.206E-03	1.001E-03	2.422E-05	2.646E-05	2.873E-04	1.762E-04	4.900E-04	6.614E-06	1.231E-04	1.686E-04	2.984E-04	2.538E+00	1.335E-05
2017	Annual	San Joaquin (SJV)	T6 Public	40 MPH	8.970E-05	9.084E-03	3.295E-04	2.421E-05	2.646E-05	2.873E-04	4.778E-05	3.616E-04	6.614E-06	1.231E-04	4.572E-05	1.755E-04	2.538E+00	4.166E-06
2017	Annual	San Joaquin (SJV)	T6 Utility	40 MPH	4.739E-05	1.043E-03	2.494E-04	2.511E-05	2.646E-05	2.873E-04	4.182E-06	3.180E-04	6.614E-06	1.231E-04	4.001E-06	1.338E-04	2.632E+00	2.201E-06
2017	Annual	San Joaquin (SJV)	T6TS	40 MPH	3.982E-04	2.375E-03	1.213E-02	2.466E-05	2.646E-05	2.873E-04	3.103E-06	3.169E-04	6.614E-06	1.231E-04	2.869E-06	1.326E-04	2.450E+00	1.393E-04
2017	Annual	San Joaquin (SJV)	T7 Ag	40 MPH	2.542E-03	3.163E-02	1.252E-02	3.637E-05	7.937E-05	1.361E-04	1.637E-03	1.852E-03	1.984E-05	5.833E-05	1.566E-03	1.644E-03	3.812E+00	1.181E-04
2017	Annual	San Joaquin (SJV)	T7 CAIRP	40 MPH	3.367E-04	1.028E-02	1.388E-03	3.443E-05	7.937E-05	1.361E-04	6.823E-05	2.837E-04	1.984E-05	5.833E-05	6.528E-05	1.435E-04	3.609E+00	1.564E-05
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	4.087E-04	1.286E-02	1.514E-03	3.526E-05	7.937E-05	1.361E-04	1.104E-04	3.259E-04	1.984E-05	5.833E-05	1.056E-04	1.838E-04	3.696E+00	1.898E-05
2017	Annual	San Joaquin (SJV)	T7 NNOOS	40 MPH	1.930E-04	5.212E-03	9.526E-04	3.248E-05	7.937E-05	1.361E-04	2.688E-05	2.424E-04	1.984E-05	5.833E-05	2.572E-05	1.039E-04	3.404E+00	8.962E-06
2017	Annual	San Joaquin (SJV)	T7 NOOS	40 MPH	3.023E-04	1.006E-02	1.275E-03	3.444E-05	7.937E-05	1.361E-04	5.225E-05	2.677E-04	1.984E-05	5.833E-05	4.999E-05	1.282E-04	3.610E+00	1.404E-05
2017	Annual	San Joaquin (SJV)	T7 Other Port	40 MPH	3.638E-04	1.164E-02	1.245E-03	3.552E-05	7.937E-05	1.361E-04	5.839E-05	2.739E-04	1.984E-05	5.833E-05	5.587E-05	1.340E-04	3.724E+00	1.690E-05
2017	Annual	San Joaquin (SJV)	T7 POAK	40 MPH	4.003E-04	1.310E-02	1.321E-03	3.595E-05	7.937E-05	1.361E-04	6.629E-05	2.818E-04	1.984E-05	5.833E-05	6.342E-05	1.416E-04	3.768E+00	1.859E-05
2017	Annual	San Joaquin (SJV)	T7 POLA	40 MPH	4.003E-04	1.310E-02	1.321E-03	3.595E-05	7.937E-05	1.361E-04	6.629E-05	2.818E-04	1.984E-05	5.833E-05	6.342E-05	1.416E-04	3.768E+00	1.859E-05
2017	Annual	San Joaquin (SJV)	T7 Public	40 MPH	1.844E-04	1.936E-02	8.659E-04	3.551E-05	7.937E-05	1.361E-04	1.068E-04	3.223E-04	1.984E-05	5.833E-05	1.022E-04	1.804E-04	3.722E+00	8.566E-06
2017	Annual	San Joaquin (SJV)	T7 Single	40 MPH	4.069E-04	1.387E-02	1.734E-03	3.542E-05	7.937E-05	1.361E-04	1.689E-04	3.843E-04	1.984E-05	5.833E-05	1.616E-04	2.397E-04	3.713E+00	1.890E-05
2017	Annual	San Joaquin (SJV)	T7 Single Construction	40 MPH	3.622E-04	1.323E-02	1.495E-03	3.509E-05	7.937E-05	1.361E-04	1.295E-04	3.450E-04	1.984E-05	5.833E-05	1.239E-04	2.020E-04	3.678E+00	1.682E-05
2017	Annual	San Joaquin (SJV)	T7 SWCV	40 MPH	1.588E-04	2.011E-02	9.176E-04	6.944E-05	7.937E-05	1.361E-04	2.526E-05	2.407E-04	1.984E-05	5.833E-05	2.417E-05	1.023E-04	7.986E+00	9.313E-04
2017	Annual	San Joaquin (SJV)	T7 Tractor	40 MPH	3.841E-04	1.261E-02	1.457E-03	3.468E-05	7.937E-05	1.361E-04	8.583E-05	3.013E-04	1.984E-05	5.833E-05	8.212E-05	1.603E-04	3.635E+00	1.784E-05
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	40 MPH	5.305E-04	1.579E-02	2.027E-03	3.536E-05	7.937E-05	1.361E-04	1.849E-04	4.004E-04	1.984E-05	5.833E-05	1.769E-04	2.551E-04	3.706E+00	2.464E-05
2017	Annual	San Joaquin (SJV)	T7 Utility	40 MPH	9.655E-05	1.779E-03	5.701E-04	3.474E-05	7.937E-05	1.361E-04	6.421E-06	2.219E-04	1.984E-05	5.833E-05	6.144E-06	8.432E-05	3.641E+00	4.484E-06
2017	Annual	San Joaquin (SJV)	T7IS	40 MPH	1.070E-03	7.416E-03	7.343E-02	3.988E-05	4.409E-05	1.361E-04	1.382E-06	1.816E-04	1.102E-05	5.833E-05	1.279E-06	7.064E-05	3.876E+00	4.057E-04
2017	Annual	San Joaquin (SJV)	UBUS	40 MPH	8.730E-04	2.421E-02	1.630E-02	2.283E-05	2.646E-05	1.418E-03	2.383E-04	1.682E-03	6.614E-06	6.075E-04	2.280E-04	8.421E-04	3.337E+00	1.268E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	45 MPH	1.643E-04	8.777E-03	5.492E-04	2.382E-05	2.646E-05	2.873E-04	7.121E-05	3.850E-04	6.614E-06	1.231E-04	6.813E-05	1.979E-04	2.497E+00	7.630E-06
2017 Annual	San Joaquin (SJV)	LDA	45 MPH	3.689E-05	1.728E-04	1.855E-03	5.544E-06	1.764E-05	8.102E-05	3.210E-06	1.019E-04	4.409E-06	3.472E-05	2.965E-06	4.210E-05	5.527E-01	1.254E-05
2017 Annual	San Joaquin (SJV)	LDT1	45 MPH	1.270E-04	5.083E-04	5.090E-03	6.611E-06	1.764E-05	8.102E-05	6.710E-06	1.054E-04	4.409E-06	3.472E-05	6.196E-06	4.533E-05	6.540E-01	3.842E-05
2017 Annual	San Joaquin (SJV)	LDT2	45 MPH	5.276E-05	3.103E-04	2.615E-03	7.544E-06	1.764E-05	8.102E-05	3.046E-06	1.017E-04	4.409E-06	3.472E-05	2.806E-06	4.194E-05	7.517E-01	1.812E-05
2017 Annual	San Joaquin (SJV)	LHD1	45 MPH	2.027E-04	6.209E-03	2.575E-03	1.234E-05	2.227E-05	1.685E-04	3.317E-05	2.240E-04	5.566E-06	7.222E-05	3.168E-05	1.095E-04	1.257E+00	2.989E-05
2017 Annual	San Joaquin (SJV)	LHD2	45 MPH	1.677E-04	5.599E-03	1.594E-03	1.249E-05	2.376E-05	1.966E-04	3.385E-05	2.542E-04	5.940E-06	8.426E-05	3.236E-05	1.226E-04	1.284E+00	1.683E-05
2017 Annual	San Joaquin (SJV)	MCY	45 MPH	4.357E-03	2.410E-03	4.205E-02	3.899E-06	8.818E-06	2.593E-05	3.008E-06	3.775E-05	2.205E-06	1.111E-05	2.836E-06	1.615E-05	3.093E-01	7.010E-04
2017 Annual	San Joaquin (SJV)	MDV	45 MPH	9.594E-05	5.360E-04	4.087E-03	1.005E-05	1.764E-05	8.102E-05	3.349E-06	1.020E-04	4.409E-06	3.472E-05	3.095E-06	4.223E-05	1.001E+00	3.213E-05
2017 Annual	San Joaquin (SJV)	MH	45 MPH	3.884E-04	4.293E-03	1.144E-02	2.246E-05	2.840E-05	2.873E-04	7.185E-05	3.876E-04	7.100E-06	1.231E-04	6.863E-05	1.989E-04	2.252E+00	9.484E-05
2017 Annual	San Joaquin (SJV)	Motor Coach	45 MPH	2.972E-04	1.288E-02	1.090E-03	3.496E-05	2.646E-05	2.873E-04	9.340E-05	4.072E-04	6.614E-06	1.231E-04	8.936E-05	2.191E-04	3.664E+00	1.381E-05
2017 Annual	San Joaquin (SJV)	OBUS	45 MPH	1.524E-04	1.326E-03	5.196E-03	2.277E-05	2.646E-05	2.873E-04	1.312E-06	3.151E-04	6.614E-06	1.231E-04	1.208E-06	1.310E-04	2.273E+00	5.841E-05
2017 Annual	San Joaquin (SJV)	SBUS	45 MPH	1.948E-04	1.246E-02	2.576E-03	2.010E-05	2.430E-05	1.642E-03	8.456E-05	1.751E-03	6.076E-06	7.037E-04	8.087E-05	7.907E-04	2.091E+00	3.038E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	45 MPH	1.306E-03	1.903E-02	4.181E-03	2.334E-05	2.646E-05	2.873E-04	8.848E-04	1.199E-03	6.614E-06	1.231E-04	8.465E-04	9.763E-04	2.446E+00	6.067E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	9.582E-05	4.041E-03	3.645E-04	2.309E-05	2.646E-05	2.873E-04	3.811E-05	3.519E-04	6.614E-06	1.231E-04	3.646E-05	1.662E-04	2.420E+00	4.450E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	45 MPH	2.444E-04	4.870E-03	9.094E-04	2.337E-05	2.646E-05	2.873E-04	1.881E-04	5.019E-04	6.614E-06	1.231E-04	1.800E-04	3.098E-04	2.449E+00	1.135E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	2.084E-04	9.123E-03	7.277E-04	2.342E-05	2.646E-05	2.873E-04	1.163E-04	4.301E-04	6.614E-06	1.231E-04	1.113E-04	2.410E-04	2.455E+00	9.678E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	3.431E-04	7.164E-03	1.257E-03	2.338E-05	2.646E-05	2.873E-04	2.563E-04	5.701E-04	6.614E-06	1.231E-04	2.452E-04	3.749E-04	2.451E+00	1.594E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	45 MPH	1.216E-04	5.534E-03	4.277E-04	2.321E-05	2.646E-05	2.873E-04	4.832E-05	3.621E-04	6.614E-06	1.231E-04	4.623E-05	1.760E-04	2.433E+00	5.648E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	45 MPH	4.066E-04	8.267E-03	1.494E-03	2.340E-05	2.646E-05	2.873E-04	3.007E-04	6.145E-04	6.614E-06	1.231E-04	2.877E-04	4.175E-04	2.453E+00	1.889E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	45 MPH	7.603E-05	3.954E-03	2.981E-04	2.313E-05	2.646E-05	2.873E-04	2.329E-05	3.371E-04	6.614E-06	1.231E-04	2.229E-05	1.520E-04	2.424E+00	3.531E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	45 MPH	2.444E-04	4.870E-03	9.094E-04	2.337E-05	2.646E-05	2.873E-04	1.881E-04	5.019E-04	6.614E-06	1.231E-04	1.800E-04	3.098E-04	2.449E+00	1.135E-05
2017 Annual	San Joaquin (SJV)	T6 Public	45 MPH	7.437E-05	8.811E-03	2.700E-04	2.336E-05	2.646E-05	2.873E-04	4.699E-05	3.608E-04	6.614E-06	1.231E-04	4.495E-05	1.747E-04	2.448E+00	3.454E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	45 MPH	3.492E-05	8.570E-04	1.838E-04	2.427E-05	2.646E-05	2.873E-04	3.923E-06	3.177E-04	6.614E-06	1.231E-04	3.754E-06	1.335E-04	2.544E+00	1.622E-06
2017 Annual	San Joaquin (SJV)	T6TS	45 MPH	3.709E-04	2.331E-03	1.160E-02	2.292E-05	2.646E-05	2.873E-04	2.879E-06	3.167E-04	6.614E-06	1.231E-04	2.662E-06	1.324E-04	2.277E+00	1.292E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	45 MPH	2.268E-03	3.108E-02	1.082E-02	3.513E-05	7.937E-05	1.361E-04	1.546E-03	1.762E-03	1.984E-05	5.833E-05	1.479E-03	1.558E-03	3.682E+00	1.053E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	45 MPH	2.566E-04	9.467E-03	1.073E-03	3.297E-05	7.937E-05	1.361E-04	6.766E-05	2.831E-04	1.984E-05	5.833E-05	6.473E-05	1.429E-04	3.456E+00	1.192E-05
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	3.194E-04	1.207E-02	1.231E-03	3.394E-05	7.937E-05	1.361E-04	1.130E-04	3.285E-04	1.984E-05	5.833E-05	1.081E-04	1.863E-04	3.558E+00	1.484E-05
2017 Annual	San Joaquin (SJV)	T7 NNOOS	45 MPH	1.443E-04	4.629E-03	7.155E-04	3.116E-05	7.937E-05	1.361E-04	2.634E-05	2.418E-04	1.984E-05	5.833E-05	2.520E-05	1.034E-04	3.266E+00	6.704E-06
2017 Annual	San Joaquin (SJV)	T7 NOOS	45 MPH	2.273E-04	9.237E-03	9.669E-04	3.298E-05	7.937E-05	1.361E-04	5.091E-05	2.664E-04	1.984E-05	5.833E-05	4.871E-05	1.269E-04	3.457E+00	1.056E-05
2017 Annual	San Joaquin (SJV)	T7 Other Port	45 MPH	2.688E-04	1.097E-02	9.237E-04	3.413E-05	7.937E-05	1.361E-04	5.492E-05	2.704E-04	1.984E-05	5.833E-05	5.254E-05	1.307E-04	3.577E+00	1.249E-05
2017 Annual	San Joaquin (SJV)	T7 POAK	45 MPH	2.960E-04	1.240E-02	9.804E-04	3.451E-05	7.937E-05	1.361E-04	6.236E-05	2.778E-04	1.984E-05	5.833E-05	5.966E-05	1.378E-04	3.617E+00	1.375E-05
2017 Annual	San Joaquin (SJV)	T7 POLA	45 MPH	2.960E-04	1.240E-02	9.804E-04	3.451E-05	7.937E-05	1.361E-04	6.236E-05	2.778E-04	1.984E-05	5.833E-05	5.966E-05	1.378E-04	3.617E+00	1.375E-05
2017 Annual	San Joaquin (SJV)	T7 Public	45 MPH	1.550E-04	1.888E-02	7.183E-04	3.426E-05	7.937E-05	1.361E-04	1.024E-04	3.179E-04	1.984E-05	5.833E-05	9.795E-05	1.761E-04	3.591E+00	7.199E-06
2017 Annual	San Joaquin (SJV)	T7 Single	45 MPH	3.371E-04	1.338E-02	1.444E-03	3.412E-05	7.937E-05	1.361E-04	1.641E-04	3.796E-04	1.984E-05	5.833E-05	1.570E-04	2.352E-04	3.576E+00	1.566E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	45 MPH	2.960E-04	1.275E-02	1.244E-03	3.381E-05	7.937E-05	1.361E-04	1.285E-04	3.440E-04	1.984E-05	5.833E-05	1.229E-04	2.011E-04	3.544E+00	1.375E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	45 MPH	1.320E-04	1.958E-02	7.014E-04	6.695E-05	7.937E-05	1.361E-04	2.578E-05	2.413E-04	1.984E-05	5.833E-05	2.466E-05	1.028E-04	7.699E+00	7.704E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor	45 MPH	2.950E-04	1.189E-02	1.136E-03	3.317E-05	7.937E-05	1.361E-04	8.356E-05	2.990E-04	1.984E-05	5.833E-05	7.995E-05	1.581E-04	3.477E+00	1.370E-05
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	45 MPH	4.332E-04	1.506E-02	1.726E-03	3.404E-05	7.937E-05	1.361E-04	1.886E-04	4.041E-04	1.984E-05	5.833E-05	1.805E-04	2.587E-04	3.568E+00	2.012E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	45 MPH	7.115E-05	1.471E-03	4.201E-04	3.357E-05	7.937E-05	1.361E-04	6.024E-06	2.215E-04	1.984E-05	5.833E-05	5.763E-06	8.394E-05	3.519E+00	3.305E-06
2017 Annual	San Joaquin (SJV)	T7IS	45 MPH	9.842E-04	7.229E-03	6.858E-02	3.894E-05	4.409E-05	1.361E-04	1.279E-06	1.815E-04	1.102E-05	5.833E-05	1.184E-06	7.054E-05	3.791E+00	3.722E-04
2017 Annual	San Joaquin (SJV)	UBUS	45 MPH	7.943E-04	2.401E-02	1.514E-02	2.177E-05	2.646E-05	1.418E-03	2.217E-04	1.666E-03	6.614E-06	6.075E-04	2.121E-04	8.262E-04	3.195E+00	1.123E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	50 MPH	1.381E-04	8.533E-03	4.548E-04	2.305E-05	2.646E-05	2.873E-04	7.303E-05	3.868E-04	6.614E-06	1.231E-04	6.987E-05	1.996E-04	2.416E+00	6.416E-06
2017 Annual	San Joaquin (SJV)	LDA	50 MPH	3.580E-05	1.720E-04	1.747E-03	5.536E-06	1.764E-05	8.102E-05	3.107E-06	1.018E-04	4.409E-06	3.472E-05	2.871E-06	4.200E-05	5.521E-01	1.211E-05
2017 Annual	San Joaquin (SJV)	LDT1	50 MPH	1.234E-04	5.135E-04	4.893E-03	6.600E-06	1.764E-05	8.102E-05	6.471E-06	1.051E-04	4.409E-06	3.472E-05	5.977E-06	4.511E-05	6.533E-01	3.695E-05
2017 Annual	San Joaquin (SJV)	LDT2	50 MPH	5.112E-05	3.096E-04	2.468E-03	7.533E-06	1.764E-05	8.102E-05	2.940E-06	1.016E-04	4.409E-06	3.472E-05	2.708E-06	4.184E-05	7.508E-01	1.745E-05
2017 Annual	San Joaquin (SJV)	LHD1	50 MPH	2.007E-04	6.440E-03	2.632E-03	1.298E-05	2.227E-05	1.685E-04	3.295E-05	2.237E-04	5.566E-06	7.222E-05	3.147E-05	1.093E-04	1.322E+00	2.949E-05
2017 Annual	San Joaquin (SJV)	LHD2	50 MPH	1.647E-04	5.809E-03	1.637E-03	1.298E-05	2.376E-05	1.966E-04	3.343E-05	2.538E-04	5.940E-06	8.426E-05	3.196E-05	1.222E-04	1.334E+00	1.654E-05
2017 Annual	San Joaquin (SJV)	MCY	50 MPH	4.302E-03	2.451E-03	4.349E-02	3.916E-06	8.818E-06	2.593E-05	2.978E-06	3.772E-05	2.205E-06	1.111E-05	2.808E-06	1.612E-05	3.089E-01	6.898E-04
2017 Annual	San Joaquin (SJV)	MDV	50 MPH	9.300E-05	5.360E-04	3.878E-03	1.004E-05	1.764E-05	8.102E-05	3.238E-06	1.019E-04	4.409E-06	3.472E-05	2.992E-06	4.212E-05	9.996E-01	3.094E-05
2017 Annual	San Joaquin (SJV)	MH	50 MPH	3.839E-04	4.272E-03	1.187E-02	2.121E-05	2.840E-05	2.873E-04	7.767E-05	3.934E-04	7.100E-06	1.231E-04	7.420E-05	2.045E-04	2.125E+00	9.371E-05
2017 Annual	San Joaquin (SJV)	Motor Coach	50 MPH	2.376E-04	1.241E-02	8.897E-04	3.380E-05	2.646E-05	2.873E-04	9.572E-05	4.095E-04	6.614E-06	1.231E-04	9.158E-05	2.213E-04	3.543E+00	1.103E-05
2017 Annual	San Joaquin (SJV)	OBUS	50 MPH	1.477E-04	1.311E-03	4.894E-03	2.130E-05	2.646E-05	2.873E-04	1.270E-06	3.151E-04	6.614E-06	1.231E-04	1.170E-06	1.309E-04	2.126E+00	5.649E-05
2017 Annual	San Joaquin (SJV)	SBUS	50 MPH	1.829E-04	1.242E-02	2.371E-03	1.945E-05	2.430E-05	1.642E-03	8.594E-05	1.752E-03	6.076E-06	7.037E-04	8.220E-05	7.920E-04	2.024E+00	2.909E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	50 MPH	1.245E-03	1.892E-02	3.720E-03	2.273E-05	2.646E-05	2.873E-04	8.850E-04	1.199E-03	6.614E-06	1.231E-04	8.467E-04	9.765E-04	2.383E+00	5.785E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	7.643E-05	3.794E-03	2.934E-04	2.222E-05	2.646E-05	2.873E-04	3.938E-05	3.532E-04	6.614E-06	1.231E-04	3.767E-05	1.674E-04	2.329E+00	3.550E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	50 MPH	2.157E-04	4.644E-03	8.566E-04	2.268E-05	2.646E-05	2.873E-04	2.077E-04	5.215E-04	6.614E-06	1.231E-04	1.987E-04	3.285E-04	2.377E+00	1.002E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	1.845E-04	8.911E-03	6.366E-04	2.270E-05	2.646E-05	2.873E-04	1.228E-04	4.366E-04	6.614E-06	1.231E-04	1.175E-04	2.473E-04	2.379E+00	8.568E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	3.093E-04	6.919E-03	1.186E-03	2.269E-05	2.646E-05	2.873E-04	2.822E-04	5.960E-04	6.614E-06	1.231E-04	2.700E-04	3.998E-04	2.378E+00	1.437E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	50 MPH	9.778E-05	5.255E-03	3.441E-04	2.232E-05	2.646E-05	2.873E-04	4.907E-05	3.629E-04	6.614E-06	1.231E-04	4.695E-05	1.767E-04	2.339E+00	4.542E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	50 MPH	3.727E-04	8.030E-03	1.409E-03	2.273E-05	2.646E-05	2.873E-04	3.306E-04	6.444E-04	6.614E-06	1.231E-04	3.163E-04	4.461E-04	2.382E+00	1.731E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	50 MPH	5.810E-05	3.702E-03	2.306E-04	2.226E-05	2.646E-05	2.873E-04	2.351E-05	3.373E-04	6.614E-06	1.231E-04	2.249E-05	1.523E-04	2.334E+00	2.699E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	50 MPH	2.157E-04	4.644E-03	8.566E-04	2.268E-05	2.646E-05	2.873E-04	2.077E-04	5.215E-04	6.614E-06	1.231E-04	1.987E-04	3.285E-04	2.377E+00	1.002E-05
2017 Annual	San Joaquin (SJV)	T6 Public	50 MPH	6.452E-05	8.667E-03	2.275E-04	2.269E-05	2.646E-05	2.873E-04	4.831E-05	3.621E-04	6.614E-06	1.231E-04	4.622E-05	1.760E-04	2.378E+00	2.997E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	50 MPH	2.573E-05	7.215E-04	1.355E-04	2.355E-05	2.646E-05	2.873E-04	3.693E-06	3.175E-04	6.614E-06	1.231E-04	3.533E-06	1.333E-04	2.468E+00	1.195E-06
2017 Annual	San Joaquin (SJV)	T6TS	50 MPH	3.635E-04	2.319E-03	1.134E-02	2.144E-05	2.646E-05	2.873E-04	2.812E-06	3.166E-04	6.614E-06	1.231E-04	2.600E-06	1.324E-04	2.130E+00	1.262E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	50 MPH	2.152E-03	3.096E-02	9.596E-03	3.429E-05	7.937E-05	1.361E-04	1.528E-03	1.743E-03	1.984E-05	5.833E-05	1.462E-03	1.540E-03	3.594E+00	9.993E-05
2017 Annual	San Joaquin (SJV)	T7 CAIRP	50 MPH	1.986E-04	8.846E-03	8.452E-04	3.172E-05	7.937E-05	1.361E-04	6.878E-05	2.843E-04	1.984E-05	5.833E-05	6.580E-05	1.440E-04	3.324E+00	9.224E-06
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	2.545E-04	1.148E-02	1.031E-03	3.285E-05	7.937E-05	1.361E-04	1.188E-04	3.342E-04	1.984E-05	5.833E-05	1.136E-04	1.918E-04	3.443E+00	1.182E-05
2017 Annual	San Joaquin (SJV)	T7 NNOOS	50 MPH	1.086E-04	4.205E-03	5.419E-04	3.003E-05	7.937E-05	1.361E-04	2.624E-05	2.417E-04	1.984E-05	5.833E-05	2.511E-05	1.033E-04	3.147E+00	5.043E-06
2017 Annual	San Joaquin (SJV)	T7 NOOS	50 MPH	1.725E-04	8.614E-03	7.420E-04	3.173E-05	7.937E-05	1.361E-04	5.052E-05	2.660E-04	1.984E-05	5.833E-05	4.834E-05	1.265E-04	3.326E+00	8.011E-06
2017 Annual	San Joaquin (SJV)	T7 Other Port	50 MPH	1.989E-04	1.044E-02	6.871E-04	3.294E-05	7.937E-05	1.361E-04	5.187E-05	2.673E-04	1.984E-05	5.833E-05	4.963E-05	1.278E-04	3.453E+00	9.237E-06
2017 Annual	San Joaquin (SJV)	T7 POAK	50 MPH	2.190E-04	1.183E-02	7.304E-04	3.328E-05	7.937E-05	1.361E-04	5.892E-05	2.744E-04	1.984E-05	5.833E-05	5.637E-05	1.345E-04	3.488E+00	1.017E-05
2017 Annual	San Joaquin (SJV)	T7 POLA	50 MPH	2.190E-04	1.183E-02	7.304E-04	3.328E-05	7.937E-05	1.361E-04	5.892E-05	2.744E-04	1.984E-05	5.833E-05	5.637E-05	1.345E-04	3.488E+00	1.017E-05
2017 Annual	San Joaquin (SJV)	T7 Public	50 MPH	1.363E-04	1.868E-02	6.108E-04	3.333E-05	7.937E-05	1.361E-04	1.019E-04	3.174E-04	1.984E-05	5.833E-05	9.748E-05	1.757E-04	3.494E+00	6.332E-06
2017 Annual	San Joaquin (SJV)	T7 Single	50 MPH	2.957E-04	1.307E-02	1.240E-03	3.308E-05	7.937E-05	1.361E-04	1.678E-04	3.833E-04	1.984E-05	5.833E-05	1.606E-04	2.388E-04	3.467E+00	1.374E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	50 MPH	2.565E-04	1.246E-02	1.071E-03	3.278E-05	7.937E-05	1.361E-04	1.354E-04	3.508E-04	1.984E-05	5.833E-05	1.295E-04	2.077E-04	3.436E+00	1.191E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	50 MPH	1.120E-04	1.931E-02	5.440E-04	6.514E-05	7.937E-05	1.361E-04	2.719E-05	2.427E-04	1.984E-05	5.833E-05	2.601E-05	1.042E-04	7.488E+00	6.501E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor	50 MPH	2.323E-04	1.134E-02	9.040E-04	3.189E-05	7.937E-05	1.361E-04	8.403E-05	2.995E-04	1.984E-05	5.833E-05	8.040E-05	1.586E-04	3.342E+00	1.079E-05
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	50 MPH	3.692E-04	1.457E-02	1.524E-03	3.298E-05	7.937E-05	1.361E-04	2.008E-04	4.163E-04	1.984E-05	5.833E-05	1.921E-04	2.703E-04	3.457E+00	1.715E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	50 MPH	5.243E-05	1.244E-03	3.096E-04	3.257E-05	7.937E-05	1.361E-04	5.670E-06	2.211E-04	1.984E-05	5.833E-05	5.425E-06	8.360E-05	3.414E+00	2.435E-06
2017 Annual	San Joaquin (SJV)	T7IS	50 MPH	9.543E-04	7.155E-03	6.449E-02	3.841E-05	4.409E-05	1.361E-04	1.247E-06	1.815E-04	1.102E-05	5.833E-05	1.154E-06	7.051E-05	3.744E+00	3.601E-04
2017 Annual	San Joaquin (SJV)	UBUS	50 MPH	7.742E-04	2.404E-02	1.448E-02	2.100E-05	2.646E-05	1.418E-03	2.214E-04	1.665E-03	6.614E-06	6.075E-04	2.118E-04	8.259E-04	3.092E+00	1.060E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	55 MPH	1.250E-04	8.370E-03	3.926E-04	2.241E-05	2.646E-05	2.873E-04	7.846E-05	3.923E-04	6.614E-06	1.231E-04	7.506E-05	2.048E-04	2.349E+00	5.805E-06
2017 Annual	San Joaquin (SJV)	LDA	55 MPH	3.653E-05	1.740E-04	1.662E-03	5.737E-06	1.764E-05	8.102E-05	3.165E-06	1.018E-04	4.409E-06	3.472E-05	2.925E-06	4.206E-05	5.724E-01	1.229E-05
2017 Annual	San Joaquin (SJV)	LDT1	55 MPH	1.256E-04	5.290E-04	4.799E-03	6.838E-06	1.764E-05	8.102E-05	6.548E-06	1.052E-04	4.409E-06	3.472E-05	6.049E-06	4.518E-05	6.773E-01	3.722E-05
2017 Annual	San Joaquin (SJV)	LDT2	55 MPH	5.202E-05	3.146E-04	2.355E-03	7.806E-06	1.764E-05	8.102E-05	2.986E-06	1.016E-04	4.409E-06	3.472E-05	2.751E-06	4.188E-05	7.784E-01	1.767E-05
2017 Annual	San Joaquin (SJV)	LHD1	55 MPH	2.082E-04	6.679E-03	2.808E-03	1.363E-05	2.227E-05	1.685E-04	3.416E-05	2.249E-04	5.566E-06	7.222E-05	3.263E-05	1.104E-04	1.388E+00	3.053E-05
2017 Annual	San Joaquin (SJV)	LHD2	55 MPH	1.693E-04	6.024E-03	1.758E-03	1.349E-05	2.376E-05	1.966E-04	3.434E-05	2.547E-04	5.940E-06	8.426E-05	3.283E-05	1.230E-04	1.387E+00	1.705E-05
2017 Annual	San Joaquin (SJV)	MCY	55 MPH	4.459E-03	2.509E-03	4.703E-02	4.090E-06	8.818E-06	2.593E-05	3.094E-06	3.784E-05	2.205E-06	1.111E-05	2.917E-06	1.623E-05	3.202E-01	7.132E-04
2017 Annual	San Joaquin (SJV)	MDV	55 MPH	9.472E-05	5.461E-04	3.730E-03	1.040E-05	1.764E-05	8.102E-05	3.290E-06	1.019E-04	4.409E-06	3.472E-05	3.041E-06	4.217E-05	1.036E+00	3.133E-05
2017 Annual	San Joaquin (SJV)	MH	55 MPH	3.988E-04	4.298E-03	1.290E-02	2.072E-05	2.840E-05	2.873E-04	8.733E-05	4.031E-04	7.100E-06	1.231E-04	8.344E-05	2.137E-04	2.074E+00	9.722E-05
2017 Annual	San Joaquin (SJV)	Motor Coach	55 MPH	1.985E-04	1.207E-02	7.534E-04	3.283E-05	2.646E-05	2.873E-04	1.013E-04	4.151E-04	6.614E-06	1.231E-04	9.688E-05	2.266E-04	3.441E+00	9.221E-06
2017 Annual	San Joaquin (SJV)	OBUS	55 MPH	1.508E-04	1.317E-03	4.653E-03	2.071E-05	2.646E-05	2.873E-04	1.296E-06	3.151E-04	6.614E-06	1.231E-04	1.194E-06	1.310E-04	2.068E+00	5.761E-05
2017 Annual	San Joaquin (SJV)	SBUS	55 MPH	1.846E-04	1.250E-02	2.204E-03	1.907E-05	2.430E-05	1.642E-03	9.260E-05	1.759E-03	6.076E-06	7.037E-04	8.857E-05	7.984E-04	1.985E+00	2.955E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	55 MPH	1.272E-03	1.903E-02	3.448E-03	2.237E-05	2.646E-05	2.873E-04	9.305E-04	1.244E-03	6.614E-06	1.231E-04	8.903E-04	1.020E-03	2.344E+00	5.909E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	6.339E-05	3.612E-03	2.438E-04	2.161E-05	2.646E-05	2.873E-04	4.190E-05	3.557E-04	6.614E-06	1.231E-04	4.009E-05	1.699E-04	2.265E+00	2.944E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	55 MPH	2.001E-04	4.510E-03	8.377E-04	2.211E-05	2.646E-05	2.873E-04	2.351E-04	5.489E-04	6.614E-06	1.231E-04	2.249E-04	3.547E-04	2.318E+00	9.293E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	1.769E-04	8.800E-03	5.836E-04	2.212E-05	2.646E-05	2.873E-04	1.362E-04	4.500E-04	6.614E-06	1.231E-04	1.303E-04	2.600E-04	2.319E+00	8.217E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	2.970E-04	6.787E-03	1.164E-03	2.215E-05	2.646E-05	2.873E-04	3.205E-04	6.343E-04	6.614E-06	1.231E-04	3.066E-04	4.364E-04	2.321E+00	1.379E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	55 MPH	8.251E-05	5.044E-03	2.861E-04	2.168E-05	2.646E-05	2.873E-04	5.157E-05	3.654E-04	6.614E-06	1.231E-04	4.934E-05	1.791E-04	2.273E+00	3.832E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	55 MPH	3.665E-04	7.917E-03	1.383E-03	2.222E-05	2.646E-05	2.873E-04	3.764E-04	6.902E-04	6.614E-06	1.231E-04	3.602E-04	4.899E-04	2.329E+00	1.702E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	55 MPH	4.520E-05	3.516E-03	1.820E-04	2.165E-05	2.646E-05	2.873E-04	2.420E-05	3.380E-04	6.614E-06	1.231E-04	2.315E-05	1.529E-04	2.270E+00	2.100E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	55 MPH	2.001E-04	4.510E-03	8.377E-04	2.211E-05	2.646E-05	2.873E-04	2.351E-04	5.489E-04	6.614E-06	1.231E-04	2.249E-04	3.547E-04	2.318E+00	9.293E-06
2017 Annual	San Joaquin (SJV)	T6 Public	55 MPH	5.943E-05	8.643E-03	1.992E-04	2.220E-05	2.646E-05	2.873E-04	5.176E-05	3.656E-04	6.614E-06	1.231E-04	4.952E-05	1.793E-04	2.327E+00	2.760E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	55 MPH	1.896E-05	6.189E-04	9.982E-05	2.291E-05	2.646E-05	2.873E-04	3.486E-06	3.173E-04	6.614E-06	1.231E-04	3.335E-06	1.331E-04	2.402E+00	8.809E-07
2017 Annual	San Joaquin (SJV)	T6TS	55 MPH	3.746E-04	2.340E-03	1.140E-02	2.086E-05	2.646E-05	2.873E-04	2.890E-06	3.167E-04	6.614E-06	1.231E-04	2.673E-06	1.324E-04	2.071E+00	1.297E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	55 MPH	2.185E-03	3.127E-02	8.856E-03	3.384E-05	7.937E-05	1.361E-04	1.584E-03	1.799E-03	1.984E-05	5.833E-05	1.515E-03	1.594E-03	3.547E+00	1.015E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	55 MPH	1.574E-04	8.372E-03	6.833E-04	3.082E-05	7.937E-05	1.361E-04	7.154E-05	2.870E-04	1.984E-05	5.833E-05	6.844E-05	1.466E-04	3.231E+00	7.312E-06
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	2.085E-04	1.106E-02	8.971E-04	3.195E-05	7.937E-05	1.361E-04	1.276E-04	3.431E-04	1.984E-05	5.833E-05	1.221E-04	2.002E-04	3.349E+00	9.683E-06
2017 Annual	San Joaquin (SJV)	T7 NNOOS	55 MPH	8.240E-05	3.892E-03	4.154E-04	2.921E-05	7.937E-05	1.361E-04	2.657E-05	2.420E-04	1.984E-05	5.833E-05	2.542E-05	1.036E-04	3.062E+00	3.827E-06
2017 Annual	San Joaquin (SJV)	T7 NOOS	55 MPH	1.329E-04	8.137E-03	5.794E-04	3.084E-05	7.937E-05	1.361E-04	5.105E-05	2.665E-04	1.984E-05	5.833E-05	4.884E-05	1.270E-04	3.232E+00	6.171E-06
2017 Annual	San Joaquin (SJV)	T7 Other Port	55 MPH	1.473E-04	9.998E-03	5.133E-04	3.191E-05	7.937E-05	1.361E-04	4.917E-05	2.646E-04	1.984E-05	5.833E-05	4.705E-05	1.252E-04	3.344E+00	6.842E-06
2017 Annual	San Joaquin (SJV)	T7 POAK	55 MPH	1.624E-04	1.137E-02	5.469E-04	3.222E-05	7.937E-05	1.361E-04	5.588E-05	2.714E-04	1.984E-05	5.833E-05	5.346E-05	1.316E-04	3.377E+00	7.541E-06
2017 Annual	San Joaquin (SJV)	T7 POLA	55 MPH	1.624E-04	1.137E-02	5.469E-04	3.222E-05	7.937E-05	1.361E-04	5.588E-05	2.714E-04	1.984E-05	5.833E-05	5.346E-05	1.316E-04	3.377E+00	7.541E-06
2017 Annual	San Joaquin (SJV)	T7 Public	55 MPH	1.270E-04	1.874E-02	5.383E-04	3.272E-05	7.937E-05	1.361E-04	1.054E-04	3.209E-04	1.984E-05	5.833E-05	1.009E-04	1.790E-04	3.430E+00	5.901E-06
2017 Annual	San Joaquin (SJV)	T7 Single	55 MPH	2.789E-04	1.293E-02	1.111E-03	3.226E-05	7.937E-05	1.361E-04	1.803E-04	3.958E-04	1.984E-05	5.833E-05	1.725E-04	2.507E-04	3.382E+00	1.295E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	55 MPH	2.399E-04	1.232E-02	9.667E-04	3.197E-05	7.937E-05	1.361E-04	1.504E-04	3.659E-04	1.984E-05	5.833E-05	1.439E-04	2.221E-04	3.351E+00	1.114E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	55 MPH	9.768E-05	1.931E-02	4.307E-04	6.397E-05	7.937E-05	1.361E-04	2.951E-05	2.450E-04	1.984E-05	5.833E-05	2.823E-05	1.064E-04	7.350E+00	5.640E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor	55 MPH	1.902E-04	1.092E-02	7.420E-04	3.097E-05	7.937E-05	1.361E-04	8.724E-05	3.027E-04	1.984E-05	5.833E-05	8.347E-05	1.616E-04	3.246E+00	8.836E-06
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	55 MPH	3.333E-04	1.427E-02	1.405E-03	3.215E-05	7.937E-05	1.361E-04	2.215E-04	4.370E-04	1.984E-05	5.833E-05	2.120E-04	2.901E-04	3.370E+00	1.548E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	55 MPH	3.864E-05	1.071E-03	2.281E-04	3.170E-05	7.937E-05	1.361E-04	5.352E-06	2.208E-04	1.984E-05	5.833E-05	5.121E-06	8.330E-05	3.322E+00	1.795E-06
2017 Annual	San Joaquin (SJV)	T7IS	55 MPH	9.753E-04	7.192E-03	6.118E-02	3.766E-05	4.409E-05	1.361E-04	1.279E-06	1.815E-04	1.102E-05	5.833E-05	1.184E-06	7.054E-05	3.673E+00	3.673E-04
2017 Annual	San Joaquin (SJV)	UBUS	55 MPH	8.115E-04	2.430E-02	1.435E-02	2.066E-05	2.646E-05	1.418E-03	2.376E-04	1.682E-03	6.614E-06	6.075E-04	2.273E-04	8.414E-04	3.047E+00	1.077E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	60 MPH	1.228E-04	8.315E-03	3.718E-04	2.214E-05	2.646E-05	2.873E-04	8.249E-05	3.963E-04	6.614E-06	1.231E-04	7.893E-05	2.087E-04	2.320E+00	5.704E-06
2017 Annual	San Joaquin (SJV)	LDA	60 MPH	3.920E-05	1.789E-04	1.601E-03	6.170E-06	1.764E-05	8.102E-05	3.394E-06	1.020E-04	4.409E-06	3.472E-05	3.136E-06	4.227E-05	6.159E-01	1.314E-05
2017 Annual	San Joaquin (SJV)	LDT1	60 MPH	1.339E-04	5.560E-04	4.825E-03	7.352E-06	1.764E-05	8.102E-05	6.955E-06	1.056E-04	4.409E-06	3.472E-05	6.426E-06	4.556E-05	7.287E-01	3.929E-05
2017 Annual	San Joaquin (SJV)	LDT2	60 MPH	5.563E-05	3.256E-04	2.279E-03	8.395E-06	1.764E-05	8.102E-05	3.194E-06	1.018E-04	4.409E-06	3.472E-05	2.942E-06	4.207E-05	8.375E-01	1.880E-05
2017 Annual	San Joaquin (SJV)	LHD1	60 MPH	2.266E-04	6.925E-03	3.143E-03	1.381E-05	2.227E-05	1.685E-04	3.706E-05	2.278E-04	5.566E-06	7.222E-05	3.540E-05	1.132E-04	1.406E+00	3.319E-05
2017 Annual	San Joaquin (SJV)	LHD2	60 MPH	1.830E-04	6.246E-03	1.987E-03	1.357E-05	2.376E-05	1.966E-04	3.691E-05	2.573E-04	5.940E-06	8.426E-05	3.529E-05	1.255E-04	1.395E+00	1.847E-05
2017 Annual	San Joaquin (SJV)	MCY	60 MPH	4.852E-03	2.585E-03	5.343E-02	4.447E-06	8.818E-06	2.593E-05	3.371E-06	3.812E-05	2.205E-06	1.111E-05	3.179E-06	1.649E-05	3.446E-01	7.747E-04
2017 Annual	San Joaquin (SJV)	MDV	60 MPH	1.014E-04	5.670E-04	3.650E-03	1.119E-05	1.764E-05	8.102E-05	3.518E-06	1.022E-04	4.409E-06	3.472E-05	3.252E-06	4.238E-05	1.115E+00	3.336E-05
2017 Annual	San Joaquin (SJV)	MH	60 MPH	4.354E-04	4.377E-03	1.473E-02	2.085E-05	2.840E-05	2.873E-04	1.009E-04	4.166E-04	7.100E-06	1.231E-04	9.639E-05	2.266E-04	2.085E+00	1.059E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	60 MPH	1.858E-04	1.194E-02	7.044E-04	3.241E-05	2.646E-05	2.873E-04	1.052E-04	4.190E-04	6.614E-06	1.231E-04	1.006E-04	2.304E-04	3.397E+00	8.628E-06
2017 Annual	San Joaquin (SJV)	OBUS	60 MPH	1.624E-04	1.344E-03	4.480E-03	2.084E-05	2.646E-05	2.873E-04	1.395E-06	3.152E-04	6.614E-06	1.231E-04	1.285E-06	1.310E-04	2.081E+00	6.196E-05
2017 Annual	San Joaquin (SJV)	SBUS	60 MPH	1.933E-04	1.258E-02	2.075E-03	1.898E-05	2.430E-05	1.642E-03	9.787E-05	1.764E-03	6.076E-06	7.037E-04	9.361E-05	8.034E-04	1.976E+00	3.151E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	60 MPH	1.319E-03	1.916E-02	3.380E-03	2.226E-05	2.646E-05	2.873E-04	9.697E-04	1.284E-03	6.614E-06	1.231E-04	9.277E-04	1.058E-03	2.334E+00	6.128E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	5.889E-05	3.540E-03	2.255E-04	2.134E-05	2.646E-05	2.873E-04	4.361E-05	3.574E-04	6.614E-06	1.231E-04	4.172E-05	1.715E-04	2.237E+00	2.735E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	60 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	1.792E-04	8.775E-03	5.694E-04	2.189E-05	2.646E-05	2.873E-04	1.452E-04	4.590E-04	6.614E-06	1.231E-04	1.390E-04	2.687E-04	2.294E+00	8.324E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	2.987E-04	6.757E-03	1.169E-03	2.193E-05	2.646E-05	2.873E-04	3.442E-04	6.580E-04	6.614E-06	1.231E-04	3.293E-04	4.590E-04	2.298E+00	1.387E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	60 MPH	7.763E-05	4.959E-03	2.649E-04	2.140E-05	2.646E-05	2.873E-04	5.344E-05	3.672E-04	6.614E-06	1.231E-04	5.113E-05	1.809E-04	2.243E+00	3.606E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	60 MPH	3.738E-04	7.902E-03	1.392E-03	2.201E-05	2.646E-05	2.873E-04	4.052E-04	7.190E-04	6.614E-06	1.231E-04	3.877E-04	5.174E-04	2.308E+00	1.736E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	60 MPH	4.026E-05	3.443E-03	1.633E-04	2.138E-05	2.646E-05	2.873E-04	2.473E-05	3.385E-04	6.614E-06	1.231E-04	2.366E-05	1.534E-04	2.241E+00	1.870E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	60 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017 Annual	San Joaquin (SJV)	T6 Public	60 MPH	5.856E-05	8.670E-03	1.896E-04	2.202E-05	2.646E-05	2.873E-04	5.425E-05	3.681E-04	6.614E-06	1.231E-04	5.191E-05	1.817E-04	2.308E+00	2.720E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	60 MPH	1.628E-05	5.766E-04	8.569E-05	2.263E-05	2.646E-05	2.873E-04	3.390E-06	3.172E-04	6.614E-06	1.231E-04	3.243E-06	1.330E-04	2.372E+00	7.562E-07
2017 Annual	San Joaquin (SJV)	T6TS	60 MPH	4.059E-04	2.393E-03	1.186E-02	2.100E-05	2.646E-05	2.873E-04	3.126E-06	3.169E-04	6.614E-06	1.231E-04	2.891E-06	1.327E-04	2.084E+00	1.403E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	60 MPH	2.271E-03	3.150E-02	8.632E-03	3.371E-05	7.937E-05	1.361E-04	1.635E-03	1.851E-03	1.984E-05	5.833E-05	1.564E-03	1.643E-03	3.533E+00	1.055E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	60 MPH	1.421E-04	8.178E-03	6.218E-04	3.042E-05	7.937E-05	1.361E-04	7.350E-05	2.890E-04	1.984E-05	5.833E-05	7.032E-05	1.485E-04	3.189E+00	6.598E-06
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	1.915E-04	1.091E-02	8.496E-04	3.156E-05	7.937E-05	1.361E-04	1.331E-04	3.486E-04	1.984E-05	5.833E-05	1.274E-04	2.055E-04	3.308E+00	8.894E-06
2017 Annual	San Joaquin (SJV)	T7 NNOOS	60 MPH	7.215E-05	3.767E-03	3.659E-04	2.885E-05	7.937E-05	1.361E-04	2.688E-05	2.424E-04	1.984E-05	5.833E-05	2.572E-05	1.039E-04	3.024E+00	3.351E-06
2017 Annual	San Joaquin (SJV)	T7 NOOS	60 MPH	1.176E-04	7.943E-03	5.165E-04	3.044E-05	7.937E-05	1.361E-04	5.164E-05	2.671E-04	1.984E-05	5.833E-05	4.941E-05	1.276E-04	3.191E+00	5.463E-06
2017 Annual	San Joaquin (SJV)	T7 Other Port	60 MPH	1.269E-04	9.807E-03	4.447E-04	3.144E-05	7.937E-05	1.361E-04	4.794E-05	2.634E-04	1.984E-05	5.833E-05	4.586E-05	1.240E-04	3.295E+00	5.893E-06
2017 Annual	San Joaquin (SJV)	T7 POAK	60 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017 Annual	San Joaquin (SJV)	T7 POLA	60 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017 Annual	San Joaquin (SJV)	T7 Public	60 MPH	1.260E-04	1.885E-02	5.131E-04	3.250E-05	7.937E-05	1.361E-04	1.085E-04	3.240E-04	1.984E-05	5.833E-05	1.038E-04	1.820E-04	3.407E+00	5.852E-06
2017 Annual	San Joaquin (SJV)	T7 Single	60 MPH	2.803E-04	1.290E-02	1.070E-03	3.192E-05	7.937E-05	1.361E-04	1.894E-04	4.049E-04	1.984E-05	5.833E-05	1.812E-04	2.594E-04	3.346E+00	1.302E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	60 MPH	2.410E-04	1.229E-02	9.335E-04	3.163E-05	7.937E-05	1.361E-04	1.604E-04	3.759E-04	1.984E-05	5.833E-05	1.534E-04	2.316E-04	3.316E+00	1.120E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	60 MPH	9.243E-05	1.938E-02	3.869E-04	6.358E-05	7.937E-05	1.361E-04	3.098E-05	2.465E-04	1.984E-05	5.833E-05	2.964E-05	1.078E-04	7.302E+00	5.323E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor	60 MPH	1.760E-04	1.075E-02	6.815E-04	3.057E-05	7.937E-05	1.361E-04	8.974E-05	3.052E-04	1.984E-05	5.833E-05	8.586E-05	1.640E-04	3.204E+00	8.175E-06
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	60 MPH	3.260E-04	1.417E-02	1.371E-03	3.181E-05	7.937E-05	1.361E-04	2.347E-04	4.502E-04	1.984E-05	5.833E-05	2.246E-04	3.028E-04	3.334E+00	1.514E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	60 MPH	3.317E-05	9.996E-04	1.958E-04	3.130E-05	7.937E-05	1.361E-04	5.205E-06	2.207E-04	1.984E-05	5.833E-05	4.980E-06	8.315E-05	3.280E+00	1.541E-06
2017 Annual	San Joaquin (SJV)	T7IS	60 MPH	1.050E-03	7.340E-03	5.870E-02	3.711E-05	4.409E-05	1.361E-04	1.382E-06	1.816E-04	1.102E-05	5.833E-05	1.280E-06	7.064E-05	3.622E+00	3.951E-04
2017 Annual	San Joaquin (SJV)	UBUS	60 MPH	9.080E-04	2.479E-02	1.482E-02	2.073E-05	2.646E-05	1.418E-03	2.702E-04	1.714E-03	6.614E-06	6.075E-04	2.585E-04	8.726E-04	3.055E+00	1.179E-03

2017 Annual	San Joaquin (SJV)	All Other Buses	65 MPH	1.228E-04	8.315E-03	3.718E-04	2.214E-05	2.646E-05	2.873E-04	8.249E-05	3.963E-04	6.614E-06	1.231E-04	7.893E-05	2.087E-04	2.320E+00	5.704E-06
2017 Annual	San Joaquin (SJV)	LDA	65 MPH	4.425E-05	1.870E-04	1.569E-03	6.888E-06	1.764E-05	8.102E-05	3.832E-06	1.025E-04	4.409E-06	3.472E-05	3.541E-06	4.267E-05	6.878E-01	1.479E-05
2017 Annual	San Joaquin (SJV)	LDT1	65 MPH	1.497E-04	5.969E-04	5.009E-03	8.205E-06	1.764E-05	8.102E-05	7.759E-06	1.064E-04	4.409E-06	3.472E-05	7.169E-06	4.630E-05	8.138E-01	4.350E-05
2017 Annual	San Joaquin (SJV)	LDT2	65 MPH	6.252E-05	3.436E-04	2.246E-03	9.371E-06	1.764E-05	8.102E-05	3.598E-06	1.023E-04	4.409E-06	3.472E-05	3.314E-06	4.245E-05	9.353E-01	2.105E-05
2017 Annual	San Joaquin (SJV)	LHD1	65 MPH	2.585E-04	7.177E-03	3.710E-03	1.400E-05	2.227E-05	1.685E-04	4.208E-05	2.329E-04	5.566E-06	7.222E-05	4.020E-05	1.180E-04	1.425E+00	3.787E-05
2017 Annual	San Joaquin (SJV)	LHD2	65 MPH	2.077E-04	6.472E-03	2.372E-03	1.365E-05	2.376E-05	1.966E-04	4.150E-05	2.619E-04	5.940E-06	8.426E-05	3.967E-05	1.299E-04	1.403E+00	2.101E-05
2017 Annual	San Joaquin (SJV)	MCY	65 MPH	5.541E-03	2.679E-03	6.402E-02	5.038E-06	8.818E-06	2.593E-05	3.854E-06	3.860E-05	2.205E-06	1.111E-05	3.634E-06	1.695E-05	3.848E-01	8.838E-04
2017 Annual	San Joaquin (SJV)	MDV	65 MPH	1.141E-04	6.003E-04	3.659E-03	1.249E-05	1.764E-05	8.102E-05	3.958E-06	1.026E-04	4.409E-06	3.472E-05	3.659E-06	4.279E-05	1.246E+00	3.738E-05
2017 Annual	San Joaquin (SJV)	MH	65 MPH	4.987E-04	4.507E-03	1.776E-02	2.127E-05	2.840E-05	2.873E-04	1.183E-04	4.341E-04	7.100E-06	1.231E-04	1.131E-04	2.433E-04	2.122E+00	1.210E-04
2017 Annual	San Joaquin (SJV)	Motor Coach	65 MPH	1.858E-04	1.194E-02	7.044E-04	3.241E-05	2.646E-05	2.873E-04	1.052E-04	4.190E-04	6.614E-06	1.231E-04	1.006E-04	2.304E-04	3.397E+00	8.628E-06
2017 Annual	San Joaquin (SJV)	OBUS	65 MPH	1.843E-04	1.392E-03	4.389E-03	2.122E-05	2.646E-05	2.873E-04	1.582E-06	3.154E-04	6.614E-06	1.231E-04	1.458E-06	1.312E-04	2.119E+00	7.027E-05
2017 Annual	San Joaquin (SJV)	SBUS	65 MPH	2.017E-04	1.259E-02	1.969E-03	1.903E-05	2.430E-05	1.642E-03	9.797E-05	1.764E-03	6.076E-06	7.037E-04	9.370E-05	8.035E-04	1.980E+00	3.490E-05
2017 Annual	San Joaquin (SJV)	T6 Ag	65 MPH	1.319E-03	1.916E-02	3.380E-03	2.226E-05	2.646E-05	2.873E-04	9.697E-04	1.284E-03	6.614E-06	1.231E-04	9.277E-04	1.058E-03	2.334E+00	6.128E-05
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	5.889E-05	3.540E-03	2.255E-04	2.134E-05	2.646E-05	2.873E-04	4.361E-05	3.574E-04	6.614E-06	1.231E-04	4.172E-05	1.715E-04	2.237E+00	2.735E-06
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	65 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	1.792E-04	8.775E-03	5.694E-04	2.189E-05	2.646E-05	2.873E-04	1.452E-04	4.590E-04	6.614E-06	1.231E-04	1.390E-04	2.687E-04	2.294E+00	8.324E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	2.987E-04	6.757E-03	1.169E-03	2.193E-05	2.646E-05	2.873E-04	3.442E-04	6.580E-04	6.614E-06	1.231E-04	3.293E-04	4.590E-04	2.298E+00	1.387E-05
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	65 MPH	7.763E-05	4.959E-03	2.649E-04	2.140E-05	2.646E-05	2.873E-04	5.344E-05	3.672E-04	6.614E-06	1.231E-04	5.113E-05	1.809E-04	2.243E+00	3.606E-06
2017 Annual	San Joaquin (SJV)	T6 Instate Small	65 MPH	3.738E-04	7.902E-03	1.392E-03	2.201E-05	2.646E-05	2.873E-04	4.052E-04	7.190E-04	6.614E-06	1.231E-04	3.877E-04	5.174E-04	2.308E+00	1.736E-05
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	65 MPH	4.026E-05	3.443E-03	1.633E-04	2.138E-05	2.646E-05	2.873E-04	2.473E-05	3.385E-04	6.614E-06	1.231E-04	2.366E-05	1.534E-04	2.241E+00	1.870E-06
2017 Annual	San Joaquin (SJV)	T6 OOS Small	65 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017 Annual	San Joaquin (SJV)	T6 Public	65 MPH	5.856E-05	8.670E-03	1.896E-04	2.202E-05	2.646E-05	2.873E-04	5.425E-05	3.681E-04	6.614E-06	1.231E-04	5.191E-05	1.817E-04	2.308E+00	2.720E-06
2017 Annual	San Joaquin (SJV)	T6 Utility	65 MPH	1.628E-05	5.766E-04	8.569E-05	2.263E-05	2.646E-05	2.873E-04	3.390E-06	3.172E-04	6.614E-06	1.231E-04	3.243E-06	1.330E-04	2.372E+00	7.562E-07
2017 Annual	San Joaquin (SJV)	T6TS	65 MPH	4.624E-04	2.479E-03	1.288E-02	2.140E-05	2.646E-05	2.873E-04	3.557E-06	3.174E-04	6.614E-06	1.231E-04	3.290E-06	1.331E-04	2.122E+00	1.596E-04
2017 Annual	San Joaquin (SJV)	T7 Ag	65 MPH	2.271E-03	3.150E-02	8.632E-03	3.371E-05	7.937E-05	1.361E-04	1.635E-03	1.851E-03	1.984E-05	5.833E-05	1.564E-03	1.643E-03	3.533E+00	1.055E-04
2017 Annual	San Joaquin (SJV)	T7 CAIRP	65 MPH	1.421E-04	8.178E-03	6.218E-04	3.042E-05	7.937E-05	1.361E-04	7.350E-05	2.890E-04	1.984E-05	5.833E-05	7.032E-05	1.485E-04	3.189E+00	6.598E-06
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	1.915E-04	1.091E-02	8.496E-04	3.156E-05	7.937E-05	1.361E-04	1.331E-04	3.486E-04	1.984E-05	5.833E-05	1.274E-04	2.055E-04	3.308E+00	8.894E-06
2017 Annual	San Joaquin (SJV)	T7 NNOOS	65 MPH	7.215E-05	3.767E-03	3.659E-04	2.885E-05	7.937E-05	1.361E-04	2.688E-05	2.424E-04	1.984E-05	5.833E-05	2.572E-05	1.039E-04	3.024E+00	3.351E-06
2017 Annual	San Joaquin (SJV)	T7 NOOS	65 MPH	1.176E-04	7.943E-03	5.165E-04	3.044E-05	7.937E-05	1.361E-04	5.164E-05	2.671E-04	1.984E-05	5.833E-05	4.941E-05	1.276E-04	3.191E+00	5.463E-06
2017 Annual	San Joaquin (SJV)	T7 Other Port	65 MPH	1.269E-04	9.807E-03	4.447E-04	3.144E-05	7.937E-05	1.361E-04	4.794E-05	2.634E-04	1.984E-05	5.833E-05	4.586E-05	1.240E-04	3.295E+00	5.893E-06
2017 Annual	San Joaquin (SJV)	T7 POAK	65 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017 Annual	San Joaquin (SJV)	T7 POLA	65 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017 Annual	San Joaquin (SJV)	T7 Public	65 MPH	1.260E-04	1.885E-02	5.131E-04	3.250E-05	7.937E-05	1.361E-04	1.085E-04	3.240E-04	1.984E-05	5.833E-05	1.038E-04	1.820E-04	3.407E+00	5.852E-06
2017 Annual	San Joaquin (SJV)	T7 Single	65 MPH	2.803E-04	1.290E-02	1.070E-03	3.192E-05	7.937E-05	1.361E-04	1.894E-04	4.049E-04	1.984E-05	5.833E-05	1.812E-04	2.594E-04	3.346E+00	1.302E-05
2017 Annual	San Joaquin (SJV)	T7 Single Construction	65 MPH	2.410E-04	1.229E-02	9.335E-04	3.163E-05	7.937E-05	1.361E-04	1.604E-04	3.759E-04	1.984E-05	5.833E-05	1.534E-04	2.316E-04	3.316E+00	1.120E-05
2017 Annual	San Joaquin (SJV)	T7 SWCV	65 MPH	9.243E-05	1.938E-02	3.869E-04	6.358E-05	7.937E-05	1.361E-04	3.098E-05	2.465E-04	1.984E-05	5.833E-05	2.964E-05	1.078E-04	7.302E+00	5.323E-04
2017 Annual	San Joaquin (SJV)	T7 Tractor	65 MPH	1.760E-04	1.075E-02	6.815E-04	3.057E-05	7.937E-05	1.361E-04	8.974E-05	3.052E-04	1.984E-05	5.833E-05	8.586E-05	1.640E-04	3.204E+00	8.175E-06
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	65 MPH	3.260E-04	1.417E-02	1.371E-03	3.181E-05	7.937E-05	1.361E-04	2.347E-04	4.502E-04	1.984E-05	5.833E-05	2.246E-04	3.028E-04	3.334E+00	1.514E-05
2017 Annual	San Joaquin (SJV)	T7 Utility	65 MPH	3.317E-05	9.996E-04	1.958E-04	3.130E-05	7.937E-05	1.361E-04	5.205E-06	2.207E-04	1.984E-05	5.833E-05	4.980E-06	8.315E-05	3.280E+00	1.541E-06
2017 Annual	San Joaquin (SJV)	T7IS	65 MPH	1.192E-03	7.605E-03	5.723E-02	3.699E-05	4.409E-05	1.361E-04	1.572E-06	1.818E-04	1.102E-05	5.833E-05	1.455E-06	7.081E-05	3.612E+00	4.482E-04
2017 Annual	San Joaquin (SJV)	UBUS	65 MPH	1.068E-03	2.551E-02	1.603E-02	2.107E-05	2.646E-05	1.418E-03	3.192E-04	1.763E-03	6.614E-06	6.075E-04	3.054E-04	9.195E-04	3.102E+00	1.364E-03

2017	Annual	San Joaquin (SJV)	All Other Buses	70 MPH	1.228E-04	8.315E-03	3.718E-04	2.214E-05	2.646E-05	2.873E-04	8.249E-05	3.963E-04	6.614E-06	1.231E-04	7.893E-05	2.087E-04	2.320E+00	5.704E-06
2017	Annual	San Joaquin (SJV)	LDA	70 MPH	4.791E-05	1.924E-04	1.566E-03	7.380E-06	1.764E-05	8.102E-05	4.151E-06	1.028E-04	4.409E-06	3.472E-05	3.836E-06	4.297E-05	7.371E-01	1.599E-05
2017	Annual	San Joaquin (SJV)	LDT1	70 MPH	1.612E-04	6.237E-04	5.179E-03	8.790E-06	1.764E-05	8.102E-05	8.349E-06	1.070E-04	4.409E-06	3.472E-05	7.715E-06	4.685E-05	8.721E-01	4.660E-05
2017	Annual	San Joaquin (SJV)	LDT2	70 MPH	6.754E-05	3.555E-04	2.250E-03	1.004E-05	1.764E-05	8.102E-05	3.894E-06	1.026E-04	4.409E-06	3.472E-05	3.587E-06	4.272E-05	1.002E+00	2.271E-05
2017	Annual	San Joaquin (SJV)	LHD1	70 MPH	2.810E-04	7.306E-03	4.118E-03	1.386E-05	2.227E-05	1.685E-04	4.559E-05	2.364E-04	5.566E-06	7.222E-05	4.355E-05	1.213E-04	1.410E+00	4.119E-05
2017	Annual	San Joaquin (SJV)	LHD2	70 MPH	2.250E-04	6.587E-03	2.646E-03	1.344E-05	2.376E-05	1.966E-04	4.470E-05	2.651E-04	5.940E-06	8.426E-05	4.273E-05	1.329E-04	1.382E+00	2.281E-05
2017	Annual	San Joaquin (SJV)	MCY	70 MPH	6.030E-03	2.734E-03	7.157E-02	5.449E-06	8.818E-06	2.593E-05	4.195E-06	3.894E-05	2.205E-06	1.111E-05	3.956E-06	1.727E-05	4.124E-01	9.615E-04
2017	Annual	San Joaquin (SJV)	MDV	70 MPH	1.233E-04	6.224E-04	3.706E-03	1.338E-05	1.764E-05	8.102E-05	4.279E-06	1.029E-04	4.409E-06	3.472E-05	3.956E-06	4.309E-05	1.335E+00	4.033E-05
2017	Annual	San Joaquin (SJV)	MH	70 MPH	5.476E-04	4.645E-03	1.992E-02	2.195E-05	2.840E-05	2.873E-04	1.393E-04	4.550E-04	7.100E-06	1.231E-04	1.331E-04	2.633E-04	2.187E+00	1.319E-04
2017	Annual	San Joaquin (SJV)	Motor Coach	70 MPH	1.858E-04	1.194E-02	7.044E-04	3.241E-05	2.646E-05	2.873E-04	1.052E-04	4.190E-04	6.614E-06	1.231E-04	1.006E-04	2.304E-04	3.397E+00	8.628E-06
2017	Annual	San Joaquin (SJV)	OBUS	70 MPH	2.002E-04	1.425E-03	4.382E-03	2.189E-05	2.646E-05	2.873E-04	1.719E-06	3.155E-04	6.614E-06	1.231E-04	1.584E-06	1.313E-04	2.186E+00	7.634E-05
2017	Annual	San Joaquin (SJV)	SBUS	70 MPH	2.078E-04	1.260E-02	1.919E-03	1.910E-05	2.430E-05	1.642E-03	9.804E-05	1.764E-03	6.076E-06	7.037E-04	9.377E-05	8.036E-04	1.988E+00	3.739E-05
2017	Annual	San Joaquin (SJV)	T6 Ag	70 MPH	1.319E-03	1.916E-02	3.380E-03	2.226E-05	2.646E-05	2.873E-04	9.697E-04	1.284E-03	6.614E-06	1.231E-04	9.277E-04	1.058E-03	2.334E+00	6.128E-05
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	5.889E-05	3.540E-03	2.255E-04	2.134E-05	2.646E-05	2.873E-04	4.361E-05	3.574E-04	6.614E-06	1.231E-04	4.172E-05	1.715E-04	2.237E+00	2.735E-06
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	70 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	1.792E-04	8.775E-03	5.694E-04	2.189E-05	2.646E-05	2.873E-04	1.452E-04	4.590E-04	6.614E-06	1.231E-04	1.390E-04	2.687E-04	2.294E+00	8.324E-06
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	2.987E-04	6.757E-03	1.169E-03	2.193E-05	2.646E-05	2.873E-04	3.442E-04	6.580E-04	6.614E-06	1.231E-04	3.293E-04	4.590E-04	2.298E+00	1.387E-05
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	70 MPH	7.763E-05	4.959E-03	2.649E-04	2.140E-05	2.646E-05	2.873E-04	5.344E-05	3.672E-04	6.614E-06	1.231E-04	5.113E-05	1.809E-04	2.243E+00	3.606E-06
2017	Annual	San Joaquin (SJV)	T6 Instate Small	70 MPH	3.738E-04	7.902E-03	1.392E-03	2.201E-05	2.646E-05	2.873E-04	4.052E-04	7.190E-04	6.614E-06	1.231E-04	3.877E-04	5.174E-04	2.308E+00	1.736E-05
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	70 MPH	4.026E-05	3.443E-03	1.633E-04	2.138E-05	2.646E-05	2.873E-04	2.473E-05	3.385E-04	6.614E-06	1.231E-04	2.366E-05	1.534E-04	2.241E+00	1.870E-06
2017	Annual	San Joaquin (SJV)	T6 OOS Small	70 MPH	1.970E-04	4.473E-03	8.396E-04	2.188E-05	2.646E-05	2.873E-04	2.516E-04	5.654E-04	6.614E-06	1.231E-04	2.407E-04	3.704E-04	2.293E+00	9.149E-06
2017	Annual	San Joaquin (SJV)	T6 Public	70 MPH	5.856E-05	8.670E-03	1.896E-04	2.202E-05	2.646E-05	2.873E-04	5.425E-05	3.681E-04	6.614E-06	1.231E-04	5.191E-05	1.817E-04	2.308E+00	2.720E-06
2017	Annual	San Joaquin (SJV)	T6 Utility	70 MPH	1.628E-05	5.766E-04	8.569E-05	2.263E-05	2.646E-05	2.873E-04	3.390E-06	3.172E-04	6.614E-06	1.231E-04	3.243E-06	1.330E-04	2.372E+00	7.562E-07
2017	Annual	San Joaquin (SJV)	T6TS	70 MPH	5.029E-04	2.537E-03	1.368E-02	2.208E-05	2.646E-05	2.873E-04	3.867E-06	3.177E-04	6.614E-06	1.231E-04	3.577E-06	1.333E-04	2.189E+00	1.736E-04
2017	Annual	San Joaquin (SJV)	T7 Ag	70 MPH	2.271E-03	3.150E-02	8.632E-03	3.371E-05	7.937E-05	1.361E-04	1.635E-03	1.851E-03	1.984E-05	5.833E-05	1.564E-03	1.643E-03	3.533E+00	1.055E-04
2017	Annual	San Joaquin (SJV)	T7 CAIRP	70 MPH	1.421E-04	8.178E-03	6.218E-04	3.042E-05	7.937E-05	1.361E-04	7.350E-05	2.890E-04	1.984E-05	5.833E-05	7.032E-05	1.485E-04	3.189E+00	6.598E-06
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	1.915E-04	1.091E-02	8.496E-04	3.156E-05	7.937E-05	1.361E-04	1.331E-04	3.486E-04	1.984E-05	5.833E-05	1.274E-04	2.055E-04	3.308E+00	8.894E-06
2017	Annual	San Joaquin (SJV)	T7 NNOOS	70 MPH	7.215E-05	3.767E-03	3.659E-04	2.885E-05	7.937E-05	1.361E-04	2.688E-05	2.424E-04	1.984E-05	5.833E-05	2.572E-05	1.039E-04	3.024E+00	3.351E-06
2017	Annual	San Joaquin (SJV)	T7 NOOS	70 MPH	1.176E-04	7.943E-03	5.165E-04	3.044E-05	7.937E-05	1.361E-04	5.164E-05	2.671E-04	1.984E-05	5.833E-05	4.941E-05	1.276E-04	3.191E+00	5.463E-06
2017	Annual	San Joaquin (SJV)	T7 Other Port	70 MPH	1.269E-04	9.807E-03	4.447E-04	3.144E-05	7.937E-05	1.361E-04	4.794E-05	2.634E-04	1.984E-05	5.833E-05	4.586E-05	1.240E-04	3.295E+00	5.893E-06
2017	Annual	San Joaquin (SJV)	T7 POAK	70 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017	Annual	San Joaquin (SJV)	T7 POLA	70 MPH	1.399E-04	1.116E-02	4.745E-04	3.173E-05	7.937E-05	1.361E-04	5.448E-05	2.700E-04	1.984E-05	5.833E-05	5.213E-05	1.303E-04	3.326E+00	6.497E-06
2017	Annual	San Joaquin (SJV)	T7 Public	70 MPH	1.260E-04	1.885E-02	5.131E-04	3.250E-05	7.937E-05	1.361E-04	1.085E-04	3.240E-04	1.984E-05	5.833E-05	1.038E-04	1.820E-04	3.407E+00	5.852E-06
2017	Annual	San Joaquin (SJV)	T7 Single	70 MPH	2.803E-04	1.290E-02	1.070E-03	3.192E-05	7.937E-05	1.361E-04	1.894E-04	4.049E-04	1.984E-05	5.833E-05	1.812E-04	2.594E-04	3.346E+00	1.302E-05
2017	Annual	San Joaquin (SJV)	T7 Single Construction	70 MPH	2.410E-04	1.229E-02	9.335E-04	3.163E-05	7.937E-05	1.361E-04	1.604E-04	3.759E-04	1.984E-05	5.833E-05	1.534E-04	2.316E-04	3.316E+00	1.120E-05
2017	Annual	San Joaquin (SJV)	T7 SWCV	70 MPH	9.243E-05	1.938E-02	3.869E-04	6.358E-05	7.937E-05	1.361E-04	3.098E-05	2.465E-04	1.984E-05	5.833E-05	2.964E-05	1.078E-04	7.302E+00	5.323E-04
2017	Annual	San Joaquin (SJV)	T7 Tractor	70 MPH	1.760E-04	1.075E-02	6.815E-04	3.057E-05	7.937E-05	1.361E-04	8.974E-05	3.052E-04	1.984E-05	5.833E-05	8.586E-05	1.640E-04	3.204E+00	8.175E-06
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	70 MPH	3.260E-04	1.417E-02	1.371E-03	3.181E-05	7.937E-05	1.361E-04	2.347E-04	4.502E-04	1.984E-05	5.833E-05	2.246E-04	3.028E-04	3.334E+00	1.514E-05
2017	Annual	San Joaquin (SJV)	T7 Utility	70 MPH	3.317E-05	9.996E-04	1.958E-04	3.130E-05	7.937E-05	1.361E-04	5.205E-06	2.207E-04	1.984E-05	5.833E-05	4.980E-06	8.315E-05	3.280E+00	1.541E-06
2017	Annual	San Joaquin (SJV)	T7IS	70 MPH	1.296E-03	7.786E-03	5.696E-02	3.689E-05	4.409E-05	1.361E-04	1.708E-06	1.819E-04	1.102E-05	5.833E-05	1.582E-06	7.094E-05	3.602E+00	4.869E-04
2017	Annual	San Joaquin (SJV)	UBUS	70 MPH	1.254E-03	2.640E-02	1.736E-02	2.168E-05	2.646E-05	1.418E-03	3.848E-04	1.829E-03	6.614E-06	6.075E-04	3.681E-04	9.822E-04	3.190E+00	1.605E-03

Source: EMFAC2014, Version 1.0.7.

Stockton 2017 - all Model Years 1.0E-06 **MTons/Mile**

calendar_year	season_month	sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX
2017	Annual	San Joaquin (SJV)	All Other Buses	05 MPH	1.009E-06	1.280E-05	2.073E-06	2.228E-08	1.200E-08	1.303E-07	1.362E-07	2.786E-07	3.000E-09	5.586E-08	1.303E-07	1.892E-07	2.336E-03	4.687E-08
2017	Annual	San Joaquin (SJV)	LDA	05 MPH	1.326E-07	1.485E-07	1.806E-06	9.650E-09	8.000E-09	3.675E-08	1.205E-08	5.680E-08	2.000E-09	1.575E-08	1.111E-08	2.886E-08	9.640E-04	4.773E-08
2017	Annual	San Joaquin (SJV)	LDT1	05 MPH	3.865E-07	4.509E-07	5.627E-06	1.150E-08	8.000E-09	3.675E-08	2.311E-08	6.786E-08	2.000E-09	1.575E-08	2.131E-08	3.906E-08	1.142E-03	1.264E-07
2017	Annual	San Joaquin (SJV)	LDT2	05 MPH	1.843E-07	2.790E-07	2.567E-06	1.315E-08	8.000E-09	3.675E-08	1.175E-08	5.650E-08	2.000E-09	1.575E-08	1.081E-08	2.856E-08	1.313E-03	6.701E-08
2017	Annual	San Joaquin (SJV)	LHD1	05 MPH	6.103E-07	2.237E-06	3.970E-06	1.320E-08	1.010E-08	7.644E-08	7.444E-08	1.610E-07	2.525E-09	3.276E-08	7.104E-08	1.063E-07	1.349E-03	9.261E-08
2017	Annual	San Joaquin (SJV)	LHD2	05 MPH	6.141E-07	2.054E-06	3.117E-06	1.360E-08	1.078E-08	8.918E-08	7.117E-08	1.711E-07	2.694E-09	3.822E-08	6.799E-08	1.089E-07	1.402E-03	5.774E-08
2017	Annual	San Joaquin (SJV)	MCY	05 MPH	1.311E-05	1.384E-06	6.025E-05	6.801E-09	4.000E-09	1.176E-08	8.617E-09	2.438E-08	1.000E-09	5.040E-09	8.108E-09	1.415E-08	5.404E-04	2.222E-06
2017	Annual	San Joaquin (SJV)	MDV	05 MPH	3.374E-07	4.811E-07	4.127E-06	1.747E-08	8.000E-09	3.675E-08	1.227E-08	5.702E-08	2.000E-09	1.575E-08	1.131E-08	2.906E-08	1.744E-03	1.204E-07
2017	Annual	San Joaquin (SJV)	MH	05 MPH	1.223E-06	4.770E-06	1.698E-05	3.535E-08	1.288E-08	1.303E-07	1.176E-07	2.609E-07	3.220E-09	5.586E-08	1.122E-07	1.712E-07	3.534E-03	2.851E-07
2017	Annual	San Joaquin (SJV)	Motor Coach	05 MPH	1.679E-06	1.976E-05	4.481E-06	3.265E-08	1.200E-08	1.303E-07	1.229E-07	2.653E-07	3.000E-09	5.586E-08	1.176E-07	1.765E-07	3.423E-03	7.798E-08
2017	Annual	San Joaquin (SJV)	OBUS	05 MPH	6.015E-07	1.167E-06	4.925E-06	3.893E-08	1.200E-08	1.303E-07	5.233E-09	1.476E-07	3.000E-09	5.586E-08	4.816E-09	6.368E-08	3.891E-03	2.358E-07
2017	Annual	San Joaquin (SJV)	SBUS	05 MPH	1.100E-06	1.584E-05	3.067E-06	2.156E-08	1.102E-08	7.448E-07	2.023E-07	9.582E-07	2.756E-09	3.192E-07	1.935E-07	5.154E-07	2.234E-03	1.391E-07
2017	Annual	San Joaquin (SJV)	T6 Ag	05 MPH	7.628E-06	2.351E-05	8.445E-06	2.288E-08	1.200E-08	1.303E-07	1.854E-06	1.996E-06	3.000E-09	5.586E-08	1.773E-06	1.832E-06	2.398E-03	3.543E-07
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	5.243E-07	8.937E-06	1.544E-06	2.165E-08	1.200E-08	1.303E-07	4.589E-08	1.882E-07	3.000E-09	5.586E-08	4.390E-08	1.028E-07	2.269E-03	2.435E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	05 MPH	1.450E-06	1.042E-05	2.563E-06	2.163E-08	1.200E-08	1.303E-07	1.789E-07	3.212E-07	3.000E-09	5.586E-08	1.711E-07	2.300E-07	2.267E-03	6.737E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	1.360E-06	1.364E-05	2.294E-06	2.208E-08	1.200E-08	1.303E-07	2.252E-07	3.675E-07	3.000E-09	5.586E-08	2.154E-07	2.743E-07	2.314E-03	6.315E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	2.171E-06	1.240E-05	3.381E-06	2.190E-08	1.200E-08	1.303E-07	3.134E-07	4.557E-07	3.000E-09	5.586E-08	2.998E-07	3.587E-07	2.296E-03	1.008E-07
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	05 MPH	6.819E-07	9.680E-06	1.782E-06	2.190E-08	1.200E-08	1.303E-07	7.051E-08	2.128E-07	3.000E-09	5.586E-08	6.746E-08	1.263E-07	2.295E-03	3.167E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Small	05 MPH	2.681E-06	1.359E-05	3.921E-06	2.203E-08	1.200E-08	1.303E-07	4.237E-07	5.660E-07	3.000E-09	5.586E-08	4.054E-07	4.642E-07	2.310E-03	1.245E-07
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	05 MPH	3.979E-07	8.873E-06	1.395E-06	2.168E-08	1.200E-08	1.303E-07	2.273E-08	1.651E-07	3.000E-09	5.586E-08	2.175E-08	8.061E-08	2.273E-03	1.848E-08
2017	Annual	San Joaquin (SJV)	T6 OOS Small	05 MPH	1.450E-06	1.042E-05	2.563E-06	2.163E-08	1.200E-08	1.303E-07	1.789E-07	3.212E-07	3.000E-09	5.586E-08	1.711E-07	2.300E-07	2.267E-03	6.737E-08
2017	Annual	San Joaquin (SJV)	T6 Public	05 MPH	4.147E-07	1.309E-05	8.999E-07	2.216E-08	1.200E-08	1.303E-07	7.867E-08	2.210E-07	3.000E-09	5.586E-08	7.527E-08	1.341E-07	2.323E-03	1.926E-08
2017	Annual	San Joaquin (SJV)	T6 Utility	05 MPH	1.776E-07	5.025E-06	9.349E-07	2.182E-08	1.200E-08	1.303E-07	3.788E-09	1.461E-07	3.000E-09	5.586E-08	3.624E-09	6.248E-08	2.287E-03	8.250E-09
2017	Annual	San Joaquin (SJV)	T6TS	05 MPH	1.255E-06	1.887E-06	1.320E-05	3.915E-08	1.200E-08	1.303E-07	1.022E-08	1.526E-07	3.000E-09	5.586E-08	9.433E-09	6.829E-08	3.898E-03	4.594E-07
2017	Annual	San Joaquin (SJV)	T7 Ag	05 MPH	1.376E-05	4.030E-05	2.003E-05	3.488E-08	3.600E-08	6.174E-08	3.094E-06	3.191E-06	9.000E-09	2.646E-08	2.960E-06	2.995E-06	3.656E-03	6.391E-07
2017	Annual	San Joaquin (SJV)	T7 CAIRP	05 MPH	1.366E-06	2.010E-05	4.842E-06	3.101E-08	3.600E-08	6.174E-08	6.959E-08	1.673E-07	9.000E-09	2.646E-08	6.658E-08	1.020E-07	3.251E-03	6.343E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	1.711E-06	2.171E-05	4.919E-06	3.162E-08	3.600E-08	6.174E-08	9.837E-08	1.961E-07	9.000E-09	2.646E-08	9.411E-08	1.296E-07	3.314E-03	7.948E-08
2017	Annual	San Joaquin (SJV)	T7 NNOOS	05 MPH	7.429E-07	1.682E-05	3.484E-06	2.898E-08	3.600E-08	6.174E-08	2.363E-08	1.214E-07	9.000E-09	2.646E-08	2.261E-08	5.807E-08	3.037E-03	3.451E-08
2017	Annual	San Joaquin (SJV)	T7 NOOS	05 MPH	1.186E-06	2.002E-05	4.590E-06	3.100E-08	3.600E-08	6.174E-08	5.067E-08	1.484E-07	9.000E-09	2.646E-08	4.848E-08	8.394E-08	3.249E-03	5.506E-08
2017	Annual	San Joaquin (SJV)	T7 Other Port	05 MPH	1.369E-06	1.837E-05	4.633E-06	3.152E-08	3.600E-08	6.174E-08	5.259E-08	1.503E-07	9.000E-09	2.646E-08	5.031E-08	8.577E-08	3.304E-03	6.358E-08
2017	Annual	San Joaquin (SJV)	T7 POAK	05 MPH	1.507E-06	1.908E-05	4.906E-06	3.199E-08	3.600E-08	6.174E-08	5.967E-08	1.574E-07	9.000E-09	2.646E-08	5.709E-08	9.255E-08	3.353E-03	7.000E-08
2017	Annual	San Joaquin (SJV)	T7 POLA	05 MPH	1.507E-06	1.908E-05	4.906E-06	3.199E-08	3.600E-08	6.174E-08	5.967E-08	1.574E-07	9.000E-09	2.646E-08	5.709E-08	9.255E-08	3.353E-03	7.000E-08
2017	Annual	San Joaquin (SJV)	T7 Public	05 MPH	8.421E-07	2.599E-05	1.984E-06	3.317E-08	3.600E-08	6.174E-08	1.715E-07	2.692E-07	9.000E-09	2.646E-08	1.641E-07	1.995E-07	3.477E-03	3.911E-08
2017	Annual	San Joaquin (SJV)	T7 Single	05 MPH	2.098E-06	2.063E-05	4.359E-06	3.217E-08	3.600E-08	6.174E-08	3.163E-07	4.141E-07	9.000E-09	2.646E-08	3.026E-07	3.381E-07	3.371E-03	9.747E-08
2017	Annual	San Joaquin (SJV)	T7 Single Construction	05 MPH	1.950E-06	2.048E-05	4.089E-06	3.187E-08	3.600E-08	6.174E-08	2.588E-07	3.565E-07	9.000E-09	2.646E-08	2.476E-07	2.830E-07	3.340E-03	9.059E-08
2017	Annual	San Joaquin (SJV)	T7 SWCV	05 MPH	7.093E-07	2.510E-05	3.277E-06	6.538E-08	3.600E-08	6.174E-08	2.821E-08	1.259E-07	9.000E-09	2.646E-08	2.699E-08	6.245E-08	7.499E-03	4.130E-06
2017	Annual	San Joaquin (SJV)	T7 Tractor	05 MPH	1.644E-06	2.023E-05	4.893E-06	3.146E-08	3.600E-08	6.174E-08	1.155E-07	2.133E-07	9.000E-09	2.646E-08	1.105E-07	1.460E-07	3.298E-03	7.638E-08
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	05 MPH	2.612E-06	2.394E-05	5.619E-06	3.214E-08	3.600E-08	6.174E-08	2.578E-07	3.555E-07	9.000E-09	2.646E-08	2.466E-07	2.821E-07	3.369E-03	1.213E-07
2017	Annual	San Joaquin (SJV)	T7 Utility	05 MPH	3.619E-07	7.887E-06	2.137E-06	3.019E-08	3.600E-08	6.174E-08	5.816E-09	1.036E-07	9.000E-09	2.646E-08	5.565E-09	4.102E-08	3.164E-03	1.681E-08
2017	Annual	San Joaquin (SJV)	T7IS	05 MPH	3.847E-06	6.268E-06	6.450E-05	4.403E-08	2.000E-08	6.174E-08	4.672E-09	8.641E-08	5.000E-09	2.646E-08	4.314E-09	3.577E-08	4.295E-03	1.496E-06
2017	Annual	San Joaquin (SJV)	UBUS	05 MPH	4.392E-06	2.731E-05	3.095E-05	2.653E-08	1.200E-08	6.430E-07	6.566E-07	1.312E-06	3.000E-09	2.756E-07	6.281E-07	9.067E-07	3.678E-03	8.313E-06

2017 Annual	San Joaquin (SJV)	All Other Buses	10 MPH	7.879E-07	1.058E-05	1.702E-06	1.988E-08	1.200E-08	1.303E-07	1.142E-07	2.566E-07	3.000E-09	5.586E-08	1.093E-07	1.682E-07	2.084E-03	3.660E-08
2017 Annual	San Joaquin (SJV)	LDA	10 MPH	8.563E-08	1.288E-07	1.587E-06	7.166E-09	8.000E-09	3.675E-08	7.706E-09	5.246E-08	2.000E-09	1.575E-08	7.108E-09	2.486E-08	7.156E-04	3.051E-08
2017 Annual	San Joaquin (SJV)	LDT1	10 MPH	2.578E-07	3.821E-07	4.712E-06	8.541E-09	8.000E-09	3.675E-08	1.508E-08	5.983E-08	2.000E-09	1.575E-08	1.391E-08	3.166E-08	8.475E-04	8.343E-08
2017 Annual	San Joaquin (SJV)	LDT2	10 MPH	1.196E-07	2.393E-07	2.246E-06	9.760E-09	8.000E-09	3.675E-08	7.489E-09	5.224E-08	2.000E-09	1.575E-08	6.893E-09	2.464E-08	9.740E-04	4.312E-08
2017 Annual	San Joaquin (SJV)	LHD1	10 MPH	4.237E-07	2.275E-06	2.994E-06	1.205E-08	1.010E-08	7.644E-08	5.243E-08	1.390E-07	2.525E-09	3.276E-08	5.005E-08	8.533E-08	1.229E-03	6.184E-08
2017 Annual	San Joaquin (SJV)	LHD2	10 MPH	4.370E-07	2.083E-06	2.325E-06	1.276E-08	1.078E-08	8.918E-08	5.118E-08	1.511E-07	2.694E-09	3.822E-08	4.891E-08	8.982E-08	1.314E-03	3.937E-08
2017 Annual	San Joaquin (SJV)	MCY	10 MPH	8.661E-06	1.279E-06	4.490E-05	5.010E-09	4.000E-09	1.176E-08	5.744E-09	2.150E-08	1.000E-09	5.040E-09	5.406E-09	1.145E-08	4.008E-04	1.455E-06
2017 Annual	San Joaquin (SJV)	MDV	10 MPH	2.188E-07	4.117E-07	3.568E-06	1.298E-08	8.000E-09	3.675E-08	7.885E-09	5.264E-08	2.000E-09	1.575E-08	7.274E-09	2.502E-08	1.295E-03	7.730E-08
2017 Annual	San Joaquin (SJV)	MH	10 MPH	8.460E-07	4.046E-06	1.260E-05	3.039E-08	1.288E-08	1.303E-07	9.724E-08	2.405E-07	3.220E-09	5.586E-08	9.278E-08	1.519E-07	3.042E-03	1.905E-07
2017 Annual	San Joaquin (SJV)	Motor Coach	10 MPH	1.325E-06	1.639E-05	3.641E-06	2.912E-08	1.200E-08	1.303E-07	1.059E-07	2.482E-07	3.000E-09	5.586E-08	1.013E-07	1.601E-07	3.052E-03	6.153E-08
2017 Annual	San Joaquin (SJV)	OBUS	10 MPH	3.808E-07	1.015E-06	4.352E-06	3.323E-08	1.200E-08	1.303E-07	3.308E-09	1.456E-07	3.000E-09	5.586E-08	3.045E-09	6.191E-08	3.322E-03	1.488E-07
2017 Annual	San Joaquin (SJV)	SBUS	10 MPH	8.151E-07	1.299E-05	2.723E-06	1.919E-08	1.102E-08	7.448E-07	1.676E-07	9.234E-07	2.756E-09	3.192E-07	1.603E-07	4.823E-07	1.991E-03	9.328E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	10 MPH	5.920E-06	1.954E-05	7.411E-06	2.063E-08	1.200E-08	1.303E-07	1.558E-06	1.700E-06	3.000E-09	5.586E-08	1.490E-06	1.549E-06	2.162E-03	2.750E-07
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	4.148E-07	7.281E-06	1.253E-06	1.925E-08	1.200E-08	1.303E-07	3.983E-08	1.822E-07	3.000E-09	5.586E-08	3.811E-08	9.697E-08	2.018E-03	1.926E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	10 MPH	1.106E-06	8.489E-06	2.066E-06	1.929E-08	1.200E-08	1.303E-07	1.573E-07	2.996E-07	3.000E-09	5.586E-08	1.505E-07	2.093E-07	2.021E-03	5.135E-08
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	1.048E-06	1.123E-05	1.897E-06	1.974E-08	1.200E-08	1.303E-07	1.882E-07	3.305E-07	3.000E-09	5.586E-08	1.800E-07	2.389E-07	2.069E-03	4.869E-08
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	1.650E-06	1.021E-05	2.749E-06	1.957E-08	1.200E-08	1.303E-07	2.691E-07	4.115E-07	3.000E-09	5.586E-08	2.575E-07	3.164E-07	2.052E-03	7.663E-08
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	10 MPH	5.389E-07	8.009E-06	1.451E-06	1.948E-08	1.200E-08	1.303E-07	6.033E-08	2.027E-07	3.000E-09	5.586E-08	5.772E-08	1.166E-07	2.042E-03	2.503E-08
2017 Annual	San Joaquin (SJV)	T6 Instate Small	10 MPH	2.033E-06	1.120E-05	3.207E-06	1.971E-08	1.200E-08	1.303E-07	3.599E-07	5.023E-07	3.000E-09	5.586E-08	3.444E-07	4.032E-07	2.066E-03	9.442E-08
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	10 MPH	3.183E-07	7.234E-06	1.129E-06	1.928E-08	1.200E-08	1.303E-07	2.022E-08	1.626E-07	3.000E-09	5.586E-08	1.934E-08	7.820E-08	2.021E-03	1.478E-08
2017 Annual	San Joaquin (SJV)	T6 OOS Small	10 MPH	1.106E-06	8.489E-06	2.066E-06	1.929E-08	1.200E-08	1.303E-07	1.573E-07	2.996E-07	3.000E-09	5.586E-08	1.505E-07	2.093E-07	2.021E-03	5.135E-08
2017 Annual	San Joaquin (SJV)	T6 Public	10 MPH	3.250E-07	1.079E-05	7.436E-07	1.985E-08	1.200E-08	1.303E-07	6.678E-08	2.091E-07	3.000E-09	5.586E-08	6.389E-08	1.228E-07	2.081E-03	1.510E-08
2017 Annual	San Joaquin (SJV)	T6 Utility	10 MPH	1.439E-07	3.937E-06	7.572E-07	1.935E-08	1.200E-08	1.303E-07	3.408E-09	1.457E-07	3.000E-09	5.586E-08	3.260E-09	6.212E-08	2.028E-03	6.682E-09
2017 Annual	San Joaquin (SJV)	T6TS	10 MPH	8.130E-07	1.658E-06	1.076E-05	3.340E-08	1.200E-08	1.303E-07	6.573E-09	1.489E-07	3.000E-09	5.586E-08	6.067E-09	6.493E-08	3.327E-03	2.954E-07
2017 Annual	San Joaquin (SJV)	T7 Ag	10 MPH	1.071E-05	3.300E-05	1.783E-05	3.141E-08	3.600E-08	6.174E-08	2.609E-06	2.707E-06	9.000E-09	2.646E-08	2.496E-06	2.532E-06	3.293E-03	4.975E-07
2017 Annual	San Joaquin (SJV)	T7 CAIRP	10 MPH	1.088E-06	1.648E-05	3.920E-06	2.758E-08	3.600E-08	6.174E-08	6.146E-08	1.592E-07	9.000E-09	2.646E-08	5.880E-08	9.426E-08	2.891E-03	5.053E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	1.349E-06	1.794E-05	3.970E-06	2.819E-08	3.600E-08	6.174E-08	8.808E-08	1.858E-07	9.000E-09	2.646E-08	8.427E-08	1.197E-07	2.955E-03	6.265E-08
2017 Annual	San Joaquin (SJV)	T7 NNOOS	10 MPH	5.973E-07	1.334E-05	2.820E-06	2.573E-08	3.600E-08	6.174E-08	2.127E-08	1.190E-07	9.000E-09	2.646E-08	2.035E-08	5.581E-08	2.697E-03	2.774E-08
2017 Annual	San Joaquin (SJV)	T7 NOOS	10 MPH	9.505E-07	1.640E-05	3.716E-06	2.757E-08	3.600E-08	6.174E-08	4.507E-08	1.428E-07	9.000E-09	2.646E-08	4.312E-08	7.858E-08	2.890E-03	4.415E-08
2017 Annual	San Joaquin (SJV)	T7 Other Port	10 MPH	1.107E-06	1.519E-05	3.751E-06	2.804E-08	3.600E-08	6.174E-08	4.733E-08	1.451E-07	9.000E-09	2.646E-08	4.528E-08	8.074E-08	2.939E-03	5.142E-08
2017 Annual	San Joaquin (SJV)	T7 POAK	10 MPH	1.219E-06	1.589E-05	3.972E-06	2.846E-08	3.600E-08	6.174E-08	5.371E-08	1.514E-07	9.000E-09	2.646E-08	5.139E-08	8.685E-08	2.984E-03	5.661E-08
2017 Annual	San Joaquin (SJV)	T7 POLA	10 MPH	1.219E-06	1.589E-05	3.972E-06	2.846E-08	3.600E-08	6.174E-08	5.371E-08	1.514E-07	9.000E-09	2.646E-08	5.139E-08	8.685E-08	2.984E-03	5.661E-08
2017 Annual	San Joaquin (SJV)	T7 Public	10 MPH	6.635E-07	2.142E-05	1.675E-06	2.979E-08	3.600E-08	6.174E-08	1.464E-07	2.441E-07	9.000E-09	2.646E-08	1.401E-07	1.755E-07	3.123E-03	3.082E-08
2017 Annual	San Joaquin (SJV)	T7 Single	10 MPH	1.633E-06	1.688E-05	3.639E-06	2.874E-08	3.600E-08	6.174E-08	2.656E-07	3.633E-07	9.000E-09	2.646E-08	2.541E-07	2.896E-07	3.012E-03	7.587E-08
2017 Annual	San Joaquin (SJV)	T7 Single Construction	10 MPH	1.512E-06	1.666E-05	3.377E-06	2.846E-08	3.600E-08	6.174E-08	2.154E-07	3.132E-07	9.000E-09	2.646E-08	2.061E-07	2.416E-07	2.983E-03	7.022E-08
2017 Annual	San Joaquin (SJV)	T7 SWCV	10 MPH	5.453E-07	2.091E-05	2.650E-06	5.879E-08	3.600E-08	6.174E-08	2.468E-08	1.224E-07	9.000E-09	2.646E-08	2.361E-08	5.907E-08	6.741E-03	3.181E-06
2017 Annual	San Joaquin (SJV)	T7 Tractor	10 MPH	1.305E-06	1.671E-05	3.979E-06	2.801E-08	3.600E-08	6.174E-08	9.925E-08	1.970E-07	9.000E-09	2.646E-08	9.496E-08	1.304E-07	2.936E-03	6.061E-08
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	10 MPH	2.025E-06	1.977E-05	4.586E-06	2.873E-08	3.600E-08	6.174E-08	2.203E-07	3.180E-07	9.000E-09	2.646E-08	2.107E-07	2.462E-07	3.011E-03	9.404E-08
2017 Annual	San Joaquin (SJV)	T7 Utility	10 MPH	2.931E-07	6.210E-06	1.731E-06	2.677E-08	3.600E-08	6.174E-08	5.232E-09	1.030E-07	9.000E-09	2.646E-08	5.006E-09	4.047E-08	2.806E-03	1.361E-08
2017 Annual	San Joaquin (SJV)	T7IS	10 MPH	2.439E-06	5.464E-06	5.720E-05	3.736E-08	2.000E-08	6.174E-08	2.991E-09	8.473E-08	5.000E-09	2.646E-08	2.763E-09	3.422E-08	3.643E-03	9.445E-07
2017 Annual	San Joaquin (SJV)	UBUS	10 MPH	3.240E-06	2.270E-05	2.507E-05	2.347E-08	1.200E-08	6.430E-07	5.407E-07	1.196E-06	3.000E-09	2.756E-07	5.172E-07	7.958E-07	3.280E-03	6.222E-06

2017	Annual	San Joaquin (SJV)	All Other Buses	15 MPH	4.747E-07	7.621E-06	1.198E-06	1.668E-08	1.200E-08	1.303E-07	7.955E-08	2.219E-07	3.000E-09	5.586E-08	7.611E-08	1.350E-07	1.748E-03	2.205E-08
2017	Annual	San Joaquin (SJV)	LDA	15 MPH	5.802E-08	1.138E-07	1.410E-06	5.522E-09	8.000E-09	3.675E-08	5.195E-09	4.994E-08	2.000E-09	1.575E-08	4.793E-09	2.254E-08	5.511E-04	2.055E-08
2017	Annual	San Joaquin (SJV)	LDT1	15 MPH	1.806E-07	3.323E-07	4.045E-06	6.581E-09	8.000E-09	3.675E-08	1.035E-08	5.510E-08	2.000E-09	1.575E-08	9.551E-09	2.730E-08	6.525E-04	5.789E-08
2017	Annual	San Joaquin (SJV)	LDT2	15 MPH	8.167E-08	2.095E-07	1.994E-06	7.518E-09	8.000E-09	3.675E-08	5.033E-09	4.978E-08	2.000E-09	1.575E-08	4.633E-09	2.238E-08	7.499E-04	2.923E-08
2017	Annual	San Joaquin (SJV)	LHD1	15 MPH	2.834E-07	2.313E-06	2.268E-06	8.146E-09	1.010E-08	7.644E-08	3.851E-08	1.251E-07	2.525E-09	3.276E-08	3.677E-08	7.205E-08	8.300E-04	4.230E-08
2017	Annual	San Joaquin (SJV)	LHD2	15 MPH	2.714E-07	2.096E-06	1.614E-06	8.675E-09	1.078E-08	8.918E-08	3.818E-08	1.381E-07	2.694E-09	3.822E-08	3.649E-08	7.740E-08	8.926E-04	2.573E-08
2017	Annual	San Joaquin (SJV)	MCY	15 MPH	6.027E-06	1.203E-06	3.516E-05	3.843E-09	4.000E-09	1.176E-08	4.030E-09	1.979E-08	1.000E-09	5.040E-09	3.794E-09	9.834E-09	3.086E-04	1.004E-06
2017	Annual	San Joaquin (SJV)	MDV	15 MPH	1.491E-07	3.597E-07	3.135E-06	1.001E-08	8.000E-09	3.675E-08	5.343E-09	5.009E-08	2.000E-09	1.575E-08	4.930E-09	2.268E-08	9.976E-04	5.227E-08
2017	Annual	San Joaquin (SJV)	MH	15 MPH	5.588E-07	3.027E-06	9.751E-06	2.149E-08	1.288E-08	1.303E-07	6.842E-08	2.116E-07	3.220E-09	5.586E-08	6.529E-08	1.244E-07	2.152E-03	1.314E-07
2017	Annual	San Joaquin (SJV)	Motor Coach	15 MPH	8.395E-07	1.196E-05	2.534E-06	2.445E-08	1.200E-08	1.303E-07	7.972E-08	2.221E-07	3.000E-09	5.586E-08	7.627E-08	1.351E-07	2.563E-03	3.899E-08
2017	Annual	San Joaquin (SJV)	OBUS	15 MPH	2.544E-07	8.981E-07	3.896E-06	2.292E-08	1.200E-08	1.303E-07	2.206E-09	1.445E-07	3.000E-09	5.586E-08	2.031E-09	6.089E-08	2.290E-03	9.907E-08
2017	Annual	San Joaquin (SJV)	SBUS	15 MPH	4.698E-07	9.031E-06	2.309E-06	1.537E-08	1.102E-08	7.448E-07	1.127E-07	8.685E-07	2.756E-09	3.192E-07	1.078E-07	4.298E-07	1.595E-03	5.861E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	15 MPH	3.246E-06	1.386E-05	5.688E-06	1.704E-08	1.200E-08	1.303E-07	1.076E-06	1.218E-06	3.000E-09	5.586E-08	1.029E-06	1.088E-06	1.786E-03	1.508E-07
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	2.651E-07	5.137E-06	8.746E-07	1.615E-08	1.200E-08	1.303E-07	3.049E-08	1.728E-07	3.000E-09	5.586E-08	2.917E-08	8.803E-08	1.693E-03	1.231E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	15 MPH	6.003E-07	5.877E-06	1.354E-06	1.612E-08	1.200E-08	1.303E-07	1.219E-07	2.642E-07	3.000E-09	5.586E-08	1.166E-07	1.755E-07	1.690E-03	2.788E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	5.913E-07	7.954E-06	1.328E-06	1.650E-08	1.200E-08	1.303E-07	1.291E-07	2.714E-07	3.000E-09	5.586E-08	1.235E-07	1.823E-07	1.730E-03	2.746E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	8.792E-07	7.196E-06	1.818E-06	1.634E-08	1.200E-08	1.303E-07	1.972E-07	3.395E-07	3.000E-09	5.586E-08	1.887E-07	2.475E-07	1.713E-03	4.084E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	15 MPH	3.424E-07	5.838E-06	1.018E-06	1.637E-08	1.200E-08	1.303E-07	4.459E-08	1.869E-07	3.000E-09	5.586E-08	4.266E-08	1.015E-07	1.716E-03	1.590E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Small	15 MPH	1.068E-06	7.868E-06	2.137E-06	1.643E-08	1.200E-08	1.303E-07	2.564E-07	3.987E-07	3.000E-09	5.586E-08	2.453E-07	3.042E-07	1.722E-03	4.960E-08
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	15 MPH	2.140E-07	5.110E-06	7.893E-07	1.618E-08	1.200E-08	1.303E-07	1.660E-08	1.589E-07	3.000E-09	5.586E-08	1.589E-08	7.475E-08	1.696E-03	9.938E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Small	15 MPH	6.003E-07	5.877E-06	1.354E-06	1.612E-08	1.200E-08	1.303E-07	1.219E-07	2.642E-07	3.000E-09	5.586E-08	1.166E-07	1.755E-07	1.690E-03	2.788E-08
2017	Annual	San Joaquin (SJV)	T6 Public	15 MPH	1.938E-07	7.565E-06	5.305E-07	1.652E-08	1.200E-08	1.303E-07	4.759E-08	1.899E-07	3.000E-09	5.586E-08	4.553E-08	1.044E-07	1.731E-03	9.002E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	15 MPH	1.013E-07	2.567E-06	5.333E-07	1.623E-08	1.200E-08	1.303E-07	2.928E-09	1.453E-07	3.000E-09	5.586E-08	2.802E-09	6.166E-08	1.702E-03	4.706E-09
2017	Annual	San Joaquin (SJV)	T6TS	15 MPH	5.554E-07	1.483E-06	9.088E-06	2.305E-08	1.200E-08	1.303E-07	4.458E-09	1.468E-07	3.000E-09	5.586E-08	4.116E-09	6.298E-08	2.293E-03	2.003E-07
2017	Annual	San Joaquin (SJV)	T7 Ag	15 MPH	5.869E-06	2.312E-05	1.410E-05	2.586E-08	3.600E-08	6.174E-08	1.826E-06	1.923E-06	9.000E-09	2.646E-08	1.747E-06	1.782E-06	2.711E-03	2.726E-07
2017	Annual	San Joaquin (SJV)	T7 CAIRP	15 MPH	7.186E-07	1.181E-05	2.733E-06	2.316E-08	3.600E-08	6.174E-08	4.950E-08	1.472E-07	9.000E-09	2.646E-08	4.736E-08	8.282E-08	2.428E-03	3.338E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	8.542E-07	1.297E-05	2.723E-06	2.364E-08	3.600E-08	6.174E-08	7.261E-08	1.703E-07	9.000E-09	2.646E-08	6.947E-08	1.049E-07	2.478E-03	3.968E-08
2017	Annual	San Joaquin (SJV)	T7 NNOOS	15 MPH	4.097E-07	8.903E-06	1.977E-06	2.159E-08	3.600E-08	6.174E-08	1.805E-08	1.158E-07	9.000E-09	2.646E-08	1.727E-08	5.273E-08	2.263E-03	1.903E-08
2017	Annual	San Joaquin (SJV)	T7 NOOS	15 MPH	6.445E-07	1.174E-05	2.601E-06	2.315E-08	3.600E-08	6.174E-08	3.719E-08	1.349E-07	9.000E-09	2.646E-08	3.559E-08	7.105E-08	2.426E-03	2.994E-08
2017	Annual	San Joaquin (SJV)	T7 Other Port	15 MPH	7.759E-07	1.118E-05	2.637E-06	2.364E-08	3.600E-08	6.174E-08	4.070E-08	1.384E-07	9.000E-09	2.646E-08	3.894E-08	7.440E-08	2.477E-03	3.604E-08
2017	Annual	San Joaquin (SJV)	T7 POAK	15 MPH	8.537E-07	1.186E-05	2.792E-06	2.401E-08	3.600E-08	6.174E-08	4.618E-08	1.439E-07	9.000E-09	2.646E-08	4.418E-08	7.964E-08	2.517E-03	3.965E-08
2017	Annual	San Joaquin (SJV)	T7 POLA	15 MPH	8.537E-07	1.186E-05	2.792E-06	2.401E-08	3.600E-08	6.174E-08	4.618E-08	1.439E-07	9.000E-09	2.646E-08	4.418E-08	7.964E-08	2.517E-03	3.965E-08
2017	Annual	San Joaquin (SJV)	T7 Public	15 MPH	3.956E-07	1.514E-05	1.242E-06	2.469E-08	3.600E-08	6.174E-08	1.058E-07	2.035E-07	9.000E-09	2.646E-08	1.012E-07	1.367E-07	2.588E-03	1.838E-08
2017	Annual	San Joaquin (SJV)	T7 Single	15 MPH	9.446E-07	1.188E-05	2.621E-06	2.401E-08	3.600E-08	6.174E-08	1.847E-07	2.824E-07	9.000E-09	2.646E-08	1.767E-07	2.122E-07	2.516E-03	4.387E-08
2017	Annual	San Joaquin (SJV)	T7 Single Construction	15 MPH	8.676E-07	1.161E-05	2.381E-06	2.378E-08	3.600E-08	6.174E-08	1.469E-07	2.446E-07	9.000E-09	2.646E-08	1.405E-07	1.760E-07	2.492E-03	4.030E-08
2017	Annual	San Joaquin (SJV)	T7 SWCV	15 MPH	3.104E-07	1.501E-05	1.850E-06	4.868E-08	3.600E-08	6.174E-08	1.907E-08	1.168E-07	9.000E-09	2.646E-08	1.825E-08	5.371E-08	5.585E-03	1.827E-06
2017	Annual	San Joaquin (SJV)	T7 Tractor	15 MPH	8.442E-07	1.215E-05	2.789E-06	2.353E-08	3.600E-08	6.174E-08	7.465E-08	1.724E-07	9.000E-09	2.646E-08	7.142E-08	1.069E-07	2.467E-03	3.921E-08
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	15 MPH	1.176E-06	1.418E-05	3.152E-06	2.401E-08	3.600E-08	6.174E-08	1.609E-07	2.587E-07	9.000E-09	2.646E-08	1.539E-07	1.894E-07	2.517E-03	5.463E-08
2017	Annual	San Joaquin (SJV)	T7 Utility	15 MPH	2.064E-07	4.097E-06	1.219E-06	2.246E-08	3.600E-08	6.174E-08	4.496E-09	1.022E-07	9.000E-09	2.646E-08	4.301E-09	3.976E-08	2.354E-03	9.587E-09
2017	Annual	San Joaquin (SJV)	T7IS	15 MPH	1.631E-06	4.841E-06	5.132E-05	2.710E-08	2.000E-08	6.174E-08	2.020E-09	8.376E-08	5.000E-09	2.646E-08	1.867E-09	3.333E-08	2.628E-03	6.293E-07
2017	Annual	San Joaquin (SJV)	UBUS	15 MPH	1.801E-06	1.608E-05	1.751E-05	1.804E-08	1.200E-08	6.430E-07	3.542E-07	1.009E-06	3.000E-09	2.756E-07	3.389E-07	6.174E-07	2.571E-03	3.171E-06

2017	Annual	San Joaquin (SJV)	All Other Buses	20 MPH	2.856E-07	5.858E-06	8.586E-07	1.446E-08	1.200E-08	1.303E-07	5.582E-08	1.982E-07	3.000E-09	5.586E-08	5.340E-08	1.123E-07	1.515E-03	1.327E-08
2017	Annual	San Joaquin (SJV)	LDA	20 MPH	4.139E-08	1.023E-07	1.266E-06	4.415E-09	8.000E-09	3.675E-08	3.691E-09	4.844E-08	2.000E-09	1.575E-08	3.406E-09	2.116E-08	4.404E-04	1.459E-08
2017	Annual	San Joaquin (SJV)	LDT1	20 MPH	1.328E-07	2.961E-07	3.543E-06	5.263E-09	8.000E-09	3.675E-08	7.476E-09	5.223E-08	2.000E-09	1.575E-08	6.898E-09	2.465E-08	5.214E-04	4.217E-08
2017	Annual	San Joaquin (SJV)	LDT2	20 MPH	5.872E-08	1.870E-07	1.790E-06	6.010E-09	8.000E-09	3.675E-08	3.565E-09	4.831E-08	2.000E-09	1.575E-08	3.282E-09	2.103E-08	5.992E-04	2.087E-08
2017	Annual	San Joaquin (SJV)	LHD1	20 MPH	1.974E-07	2.369E-06	1.803E-06	7.015E-09	1.010E-08	7.644E-08	2.952E-08	1.161E-07	2.525E-09	3.276E-08	2.819E-08	6.347E-08	7.147E-04	3.038E-08
2017	Annual	San Joaquin (SJV)	LHD2	20 MPH	1.715E-07	2.133E-06	1.175E-06	7.473E-09	1.078E-08	8.918E-08	2.960E-08	1.296E-07	2.694E-09	3.822E-08	2.829E-08	6.920E-08	7.687E-04	1.748E-08
2017	Annual	San Joaquin (SJV)	MCY	20 MPH	4.415E-06	1.149E-06	2.881E-05	3.068E-09	4.000E-09	1.176E-08	2.973E-09	1.873E-08	1.000E-09	5.040E-09	2.800E-09	8.840E-09	2.465E-04	7.300E-07
2017	Annual	San Joaquin (SJV)	MDV	20 MPH	1.069E-07	3.209E-07	2.797E-06	8.002E-09	8.000E-09	3.675E-08	3.813E-09	4.856E-08	2.000E-09	1.575E-08	3.520E-09	2.127E-08	7.974E-04	3.722E-08
2017	Annual	San Joaquin (SJV)	MH	20 MPH	3.850E-07	2.440E-06	7.900E-06	1.552E-08	1.288E-08	1.303E-07	4.840E-08	1.916E-07	3.220E-09	5.586E-08	4.618E-08	1.053E-07	1.554E-03	9.523E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	20 MPH	5.430E-07	9.184E-06	1.808E-06	2.125E-08	1.200E-08	1.303E-07	6.174E-08	2.041E-07	3.000E-09	5.586E-08	5.907E-08	1.179E-07	2.228E-03	2.522E-08
2017	Annual	San Joaquin (SJV)	OBUS	20 MPH	1.792E-07	8.072E-07	3.522E-06	1.613E-08	1.200E-08	1.303E-07	1.552E-09	1.439E-07	3.000E-09	5.586E-08	1.429E-09	6.029E-08	1.610E-03	6.959E-08
2017	Annual	San Joaquin (SJV)	SBUS	20 MPH	2.594E-07	6.944E-06	1.986E-06	1.256E-08	1.102E-08	7.448E-07	7.497E-08	8.308E-07	2.756E-09	3.192E-07	7.170E-08	3.937E-07	1.305E-03	3.781E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	20 MPH	1.560E-06	1.085E-05	4.382E-06	1.424E-08	1.200E-08	1.303E-07	7.405E-07	8.828E-07	3.000E-09	5.586E-08	7.084E-07	7.673E-07	1.493E-03	7.244E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	1.728E-07	3.747E-06	6.267E-07	1.408E-08	1.200E-08	1.303E-07	2.397E-08	1.663E-07	3.000E-09	5.586E-08	2.293E-08	8.179E-08	1.475E-03	8.027E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	20 MPH	3.161E-07	4.212E-06	9.118E-07	1.392E-08	1.200E-08	1.303E-07	9.619E-08	2.385E-07	3.000E-09	5.586E-08	9.203E-08	1.509E-07	1.459E-03	1.468E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	3.221E-07	6.030E-06	9.444E-07	1.420E-08	1.200E-08	1.303E-07	8.840E-08	2.307E-07	3.000E-09	5.586E-08	8.458E-08	1.434E-07	1.489E-03	1.496E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	4.449E-07	5.343E-06	1.229E-06	1.404E-08	1.200E-08	1.303E-07	1.462E-07	2.886E-07	3.000E-09	5.586E-08	1.399E-07	1.988E-07	1.471E-03	2.067E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	20 MPH	2.209E-07	4.447E-06	7.311E-07	1.427E-08	1.200E-08	1.303E-07	3.375E-08	1.761E-07	3.000E-09	5.586E-08	3.229E-08	9.115E-08	1.496E-03	1.026E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Small	20 MPH	5.243E-07	5.875E-06	1.449E-06	1.405E-08	1.200E-08	1.303E-07	1.838E-07	3.261E-07	3.000E-09	5.586E-08	1.758E-07	2.347E-07	1.473E-03	2.435E-08
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	20 MPH	1.480E-07	3.728E-06	5.671E-07	1.409E-08	1.200E-08	1.303E-07	1.409E-08	1.564E-07	3.000E-09	5.586E-08	1.348E-08	7.234E-08	1.477E-03	6.875E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Small	20 MPH	3.161E-07	4.212E-06	9.118E-07	1.392E-08	1.200E-08	1.303E-07	9.619E-08	2.385E-07	3.000E-09	5.586E-08	9.203E-08	1.509E-07	1.459E-03	1.468E-08
2017	Annual	San Joaquin (SJV)	T6 Public	20 MPH	1.121E-07	5.708E-06	3.872E-07	1.407E-08	1.200E-08	1.303E-07	3.416E-08	1.765E-07	3.000E-09	5.586E-08	3.269E-08	9.155E-08	1.475E-03	5.206E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	20 MPH	7.329E-08	1.664E-06	3.858E-07	1.418E-08	1.200E-08	1.303E-07	2.612E-09	1.450E-07	3.000E-09	5.586E-08	2.499E-09	6.136E-08	1.487E-03	3.404E-09
2017	Annual	San Joaquin (SJV)	T6TS	20 MPH	3.999E-07	1.348E-06	7.895E-06	1.623E-08	1.200E-08	1.303E-07	3.188E-09	1.455E-07	3.000E-09	5.586E-08	2.944E-09	6.180E-08	1.612E-03	1.432E-07
2017	Annual	San Joaquin (SJV)	T7 Ag	20 MPH	2.806E-06	1.797E-05	1.116E-05	2.149E-08	3.600E-08	6.174E-08	1.278E-06	1.376E-06	9.000E-09	2.646E-08	1.223E-06	1.258E-06	2.253E-03	1.303E-07
2017	Annual	San Joaquin (SJV)	T7 CAIRP	20 MPH	4.880E-07	8.774E-06	1.959E-06	2.020E-08	3.600E-08	6.174E-08	4.120E-08	1.389E-07	9.000E-09	2.646E-08	3.942E-08	7.488E-08	2.117E-03	2.267E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	5.553E-07	9.736E-06	1.923E-06	2.051E-08	3.600E-08	6.174E-08	6.147E-08	1.592E-07	9.000E-09	2.646E-08	5.881E-08	9.427E-08	2.149E-03	2.579E-08
2017	Annual	San Joaquin (SJV)	T7 NNOOS	20 MPH	2.892E-07	5.989E-06	1.424E-06	1.882E-08	3.600E-08	6.174E-08	1.581E-08	1.136E-07	9.000E-09	2.646E-08	1.513E-08	5.059E-08	1.973E-03	1.343E-08
2017	Annual	San Joaquin (SJV)	T7 NOOS	20 MPH	4.497E-07	8.702E-06	1.871E-06	2.018E-08	3.600E-08	6.174E-08	3.179E-08	1.295E-07	9.000E-09	2.646E-08	3.042E-08	6.588E-08	2.116E-03	2.089E-08
2017	Annual	San Joaquin (SJV)	T7 Other Port	20 MPH	5.589E-07	8.532E-06	1.905E-06	2.073E-08	3.600E-08	6.174E-08	3.631E-08	1.341E-07	9.000E-09	2.646E-08	3.474E-08	7.020E-08	2.173E-03	2.596E-08
2017	Annual	San Joaquin (SJV)	T7 POAK	20 MPH	6.146E-07	9.205E-06	2.016E-06	2.107E-08	3.600E-08	6.174E-08	4.121E-08	1.389E-07	9.000E-09	2.646E-08	3.943E-08	7.489E-08	2.209E-03	2.855E-08
2017	Annual	San Joaquin (SJV)	T7 POLA	20 MPH	6.146E-07	9.205E-06	2.016E-06	2.107E-08	3.600E-08	6.174E-08	4.121E-08	1.389E-07	9.000E-09	2.646E-08	3.943E-08	7.489E-08	2.209E-03	2.855E-08
2017	Annual	San Joaquin (SJV)	T7 Public	20 MPH	2.242E-07	1.164E-05	9.404E-07	2.083E-08	3.600E-08	6.174E-08	7.714E-08	1.749E-07	9.000E-09	2.646E-08	7.380E-08	1.093E-07	2.183E-03	1.041E-08
2017	Annual	San Joaquin (SJV)	T7 Single	20 MPH	5.257E-07	8.969E-06	1.922E-06	2.065E-08	3.600E-08	6.174E-08	1.288E-07	2.265E-07	9.000E-09	2.646E-08	1.232E-07	1.587E-07	2.165E-03	2.442E-08
2017	Annual	San Joaquin (SJV)	T7 Single Construction	20 MPH	4.850E-07	8.674E-06	1.707E-06	2.046E-08	3.600E-08	6.174E-08	9.992E-08	1.977E-07	9.000E-09	2.646E-08	9.560E-08	1.311E-07	2.144E-03	2.253E-08
2017	Annual	San Joaquin (SJV)	T7 SWCV	20 MPH	1.775E-07	1.173E-05	1.328E-06	4.095E-08	3.600E-08	6.174E-08	1.507E-08	1.128E-07	9.000E-09	2.646E-08	1.442E-08	4.988E-08	4.707E-03	1.058E-06
2017	Annual	San Joaquin (SJV)	T7 Tractor	20 MPH	5.579E-07	9.252E-06	2.004E-06	2.051E-08	3.600E-08	6.174E-08	5.783E-08	1.556E-07	9.000E-09	2.646E-08	5.533E-08	9.079E-08	2.149E-03	2.591E-08
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	20 MPH	6.770E-07	1.075E-05	2.220E-06	2.067E-08	3.600E-08	6.174E-08	1.195E-07	2.173E-07	9.000E-09	2.646E-08	1.143E-07	1.498E-07	2.166E-03	3.144E-08
2017	Annual	San Joaquin (SJV)	T7 Utility	20 MPH	1.493E-07	2.705E-06	8.817E-07	1.962E-08	3.600E-08	6.174E-08	4.011E-09	1.018E-07	9.000E-09	2.646E-08	3.838E-09	3.930E-08	2.056E-03	6.935E-09
2017	Annual	San Joaquin (SJV)	T7IS	20 MPH	1.151E-06	4.360E-06	4.647E-05	2.197E-08	2.000E-08	6.174E-08	1.439E-09	8.318E-08	5.000E-09	2.646E-08	1.330E-09	3.279E-08	2.123E-03	4.423E-07
2017	Annual	San Joaquin (SJV)	UBUS	20 MPH	9.453E-07	1.270E-05	1.260E-05	1.406E-08	1.200E-08	6.430E-07	2.263E-07	8.813E-07	3.000E-09	2.756E-07	2.165E-07	4.951E-07	2.034E-03	1.444E-06

2017	Annual	San Joaquin (SJV)	All Other Buses	25 MPH	2.075E-07	5.075E-06	6.493E-07	1.320E-08	1.200E-08	1.303E-07	4.577E-08	1.881E-07	3.000E-09	5.586E-08	4.379E-08	1.026E-07	1.384E-03	9.636E-09
2017	Annual	San Joaquin (SJV)	LDA	25 MPH	3.119E-08	9.378E-08	1.150E-06	3.663E-09	8.000E-09	3.675E-08	2.763E-09	4.751E-08	2.000E-09	1.575E-08	2.551E-09	2.030E-08	3.653E-04	1.091E-08
2017	Annual	San Joaquin (SJV)	LDT1	25 MPH	1.024E-07	2.700E-07	3.158E-06	4.368E-09	8.000E-09	3.675E-08	5.672E-09	5.042E-08	2.000E-09	1.575E-08	5.234E-09	2.298E-08	4.324E-04	3.221E-08
2017	Annual	San Joaquin (SJV)	LDT2	25 MPH	4.443E-08	1.703E-07	1.623E-06	4.986E-09	8.000E-09	3.675E-08	2.660E-09	4.741E-08	2.000E-09	1.575E-08	2.449E-09	2.020E-08	4.969E-04	1.567E-08
2017	Annual	San Joaquin (SJV)	LHD1	25 MPH	1.523E-07	2.443E-06	1.533E-06	6.339E-09	1.010E-08	7.644E-08	2.363E-08	1.102E-07	2.525E-09	3.276E-08	2.257E-08	5.785E-08	6.457E-04	2.333E-08
2017	Annual	San Joaquin (SJV)	LHD2	25 MPH	1.289E-07	2.197E-06	9.693E-07	6.698E-09	1.078E-08	8.918E-08	2.388E-08	1.238E-07	2.694E-09	3.822E-08	2.282E-08	6.374E-08	6.889E-04	1.325E-08
2017	Annual	San Joaquin (SJV)	MCY	25 MPH	3.403E-06	1.113E-06	2.460E-05	2.546E-09	4.000E-09	1.176E-08	2.306E-09	1.807E-08	1.000E-09	5.040E-09	2.173E-09	8.213E-09	2.045E-04	5.587E-07
2017	Annual	San Joaquin (SJV)	MDV	25 MPH	8.080E-08	2.922E-07	2.527E-06	6.640E-09	8.000E-09	3.675E-08	2.866E-09	4.762E-08	2.000E-09	1.575E-08	2.646E-09	2.040E-08	6.614E-04	2.791E-08
2017	Annual	San Joaquin (SJV)	MH	25 MPH	2.974E-07	2.237E-06	6.710E-06	1.361E-08	1.288E-08	1.303E-07	3.987E-08	1.831E-07	3.220E-09	5.586E-08	3.805E-08	9.713E-08	1.364E-03	7.352E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	25 MPH	3.980E-07	7.807E-06	1.352E-06	1.941E-08	1.200E-08	1.303E-07	5.329E-08	1.956E-07	3.000E-09	5.586E-08	5.099E-08	1.098E-07	2.035E-03	1.848E-08
2017	Annual	San Joaquin (SJV)	OBUS	25 MPH	1.332E-07	7.373E-07	3.209E-06	1.408E-08	1.200E-08	1.303E-07	1.152E-09	1.435E-07	3.000E-09	5.586E-08	1.061E-09	5.992E-08	1.406E-03	5.157E-08
2017	Annual	San Joaquin (SJV)	SBUS	25 MPH	1.871E-07	6.371E-06	1.756E-06	1.130E-08	1.102E-08	7.448E-07	5.972E-08	8.155E-07	2.756E-09	3.192E-07	5.711E-08	3.791E-07	1.175E-03	2.772E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	25 MPH	1.111E-06	9.938E-06	3.612E-06	1.287E-08	1.200E-08	1.303E-07	6.040E-07	7.464E-07	3.000E-09	5.586E-08	5.779E-07	6.368E-07	1.349E-03	5.158E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	1.269E-07	2.937E-06	4.674E-07	1.293E-08	1.200E-08	1.303E-07	2.089E-08	1.632E-07	3.000E-09	5.586E-08	1.999E-08	7.885E-08	1.355E-03	5.893E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	25 MPH	2.367E-07	3.347E-06	7.191E-07	1.275E-08	1.200E-08	1.303E-07	8.487E-08	2.272E-07	3.000E-09	5.586E-08	8.120E-08	1.401E-07	1.336E-03	1.100E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	2.333E-07	5.229E-06	7.307E-07	1.295E-08	1.200E-08	1.303E-07	7.177E-08	2.141E-07	3.000E-09	5.586E-08	6.867E-08	1.275E-07	1.358E-03	1.084E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	3.297E-07	4.471E-06	9.769E-07	1.282E-08	1.200E-08	1.303E-07	1.249E-07	2.672E-07	3.000E-09	5.586E-08	1.195E-07	1.784E-07	1.344E-03	1.532E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	25 MPH	1.616E-07	3.663E-06	5.465E-07	1.308E-08	1.200E-08	1.303E-07	2.880E-08	1.711E-07	3.000E-09	5.586E-08	2.756E-08	8.642E-08	1.372E-03	7.505E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Small	25 MPH	3.860E-07	4.996E-06	1.156E-06	1.282E-08	1.200E-08	1.303E-07	1.540E-07	2.963E-07	3.000E-09	5.586E-08	1.473E-07	2.062E-07	1.344E-03	1.793E-08
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	25 MPH	1.088E-07	2.913E-06	4.186E-07	1.295E-08	1.200E-08	1.303E-07	1.266E-08	1.550E-07	3.000E-09	5.586E-08	1.211E-08	7.097E-08	1.357E-03	5.052E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Small	25 MPH	2.367E-07	3.347E-06	7.191E-07	1.275E-08	1.200E-08	1.303E-07	8.487E-08	2.272E-07	3.000E-09	5.586E-08	8.120E-08	1.401E-07	1.336E-03	1.100E-08
2017	Annual	San Joaquin (SJV)	T6 Public	25 MPH	8.160E-08	4.978E-06	2.977E-07	1.282E-08	1.200E-08	1.303E-07	2.855E-08	1.709E-07	3.000E-09	5.586E-08	2.731E-08	8.617E-08	1.344E-03	3.790E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	25 MPH	5.371E-08	1.085E-06	2.827E-07	1.309E-08	1.200E-08	1.303E-07	2.377E-09	1.447E-07	3.000E-09	5.586E-08	2.274E-09	6.113E-08	1.372E-03	2.495E-09
2017	Annual	San Joaquin (SJV)	T6TS	25 MPH	3.034E-07	1.245E-06	7.015E-06	1.417E-08	1.200E-08	1.303E-07	2.403E-09	1.447E-07	3.000E-09	5.586E-08	2.220E-09	6.108E-08	1.408E-03	1.079E-07
2017	Annual	San Joaquin (SJV)	T7 Ag	25 MPH	1.986E-06	1.639E-05	9.290E-06	1.938E-08	3.600E-08	6.174E-08	1.054E-06	1.152E-06	9.000E-09	2.646E-08	1.009E-06	1.044E-06	2.031E-03	9.222E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP	25 MPH	3.587E-07	6.930E-06	1.451E-06	1.854E-08	3.600E-08	6.174E-08	3.673E-08	1.345E-07	9.000E-09	2.646E-08	3.515E-08	7.061E-08	1.943E-03	1.666E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	4.107E-07	7.973E-06	1.442E-06	1.875E-08	3.600E-08	6.174E-08	5.550E-08	1.532E-07	9.000E-09	2.646E-08	5.310E-08	8.856E-08	1.965E-03	1.908E-08
2017	Annual	San Joaquin (SJV)	T7 NNOOS	25 MPH	2.125E-07	4.223E-06	1.048E-06	1.733E-08	3.600E-08	6.174E-08	1.437E-08	1.121E-07	9.000E-09	2.646E-08	1.375E-08	4.921E-08	1.817E-03	9.868E-09
2017	Annual	San Joaquin (SJV)	T7 NOOS	25 MPH	3.302E-07	6.846E-06	1.380E-06	1.853E-08	3.600E-08	6.174E-08	2.858E-08	1.263E-07	9.000E-09	2.646E-08	2.735E-08	6.281E-08	1.942E-03	1.534E-08
2017	Annual	San Joaquin (SJV)	T7 Other Port	25 MPH	4.098E-07	7.035E-06	1.398E-06	1.898E-08	3.600E-08	6.174E-08	3.305E-08	1.308E-07	9.000E-09	2.646E-08	3.162E-08	6.708E-08	1.990E-03	1.904E-08
2017	Annual	San Joaquin (SJV)	T7 POAK	25 MPH	4.507E-07	7.726E-06	1.480E-06	1.928E-08	3.600E-08	6.174E-08	3.750E-08	1.352E-07	9.000E-09	2.646E-08	3.588E-08	7.134E-08	2.020E-03	2.093E-08
2017	Annual	San Joaquin (SJV)	T7 POLA	25 MPH	4.507E-07	7.726E-06	1.480E-06	1.928E-08	3.600E-08	6.174E-08	3.750E-08	1.352E-07	9.000E-09	2.646E-08	3.588E-08	7.134E-08	2.020E-03	2.093E-08
2017	Annual	San Joaquin (SJV)	T7 Public	25 MPH	1.624E-07	1.037E-05	7.416E-07	1.888E-08	3.600E-08	6.174E-08	6.507E-08	1.628E-07	9.000E-09	2.646E-08	6.226E-08	9.772E-08	1.979E-03	7.541E-09
2017	Annual	San Joaquin (SJV)	T7 Single	25 MPH	3.796E-07	7.740E-06	1.496E-06	1.884E-08	3.600E-08	6.174E-08	1.057E-07	2.035E-07	9.000E-09	2.646E-08	1.012E-07	1.366E-07	1.974E-03	1.763E-08
2017	Annual	San Joaquin (SJV)	T7 Single Construction	25 MPH	3.506E-07	7.432E-06	1.312E-06	1.866E-08	3.600E-08	6.174E-08	8.085E-08	1.786E-07	9.000E-09	2.646E-08	7.735E-08	1.128E-07	1.956E-03	1.629E-08
2017	Annual	San Joaquin (SJV)	T7 SWCV	25 MPH	1.343E-07	1.064E-05	9.803E-07	3.705E-08	3.600E-08	6.174E-08	1.323E-08	1.110E-07	9.000E-09	2.646E-08	1.266E-08	4.812E-08	4.260E-03	7.993E-07
2017	Annual	San Joaquin (SJV)	T7 Tractor	25 MPH	4.082E-07	7.669E-06	1.492E-06	1.877E-08	3.600E-08	6.174E-08	4.985E-08	1.476E-07	9.000E-09	2.646E-08	4.769E-08	8.315E-08	1.968E-03	1.896E-08
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	25 MPH	4.970E-07	9.141E-06	1.709E-06	1.884E-08	3.600E-08	6.174E-08	1.017E-07	1.995E-07	9.000E-09	2.646E-08	9.731E-08	1.328E-07	1.975E-03	2.308E-08
2017	Annual	San Joaquin (SJV)	T7 Utility	25 MPH	1.094E-07	1.797E-06	6.461E-07	1.811E-08	3.600E-08	6.174E-08	3.649E-09	1.014E-07	9.000E-09	2.646E-08	3.491E-09	3.895E-08	1.898E-03	5.083E-09
2017	Annual	San Joaquin (SJV)	T7IS	25 MPH	8.564E-07	3.990E-06	4.238E-05	2.064E-08	2.000E-08	6.174E-08	1.081E-09	8.282E-08	5.000E-09	2.646E-08	9.991E-10	3.246E-08	1.998E-03	3.279E-07
2017	Annual	San Joaquin (SJV)	UBUS	25 MPH	6.873E-07	1.190E-05	1.047E-05	1.250E-08	1.200E-08	6.430E-07	1.756E-07	8.306E-07	3.000E-09	2.756E-07	1.680E-07	4.466E-07	1.814E-03	1.026E-06

2017 Annual	San Joaquin (SJV)	All Other Buses	30 MPH	1.576E-07	4.646E-06	5.029E-07	1.239E-08	1.200E-08	1.303E-07	3.981E-08	1.822E-07	3.000E-09	5.586E-08	3.809E-08	9.695E-08	1.299E-03	7.318E-09
2017 Annual	San Joaquin (SJV)	LDA	30 MPH	2.474E-08	8.744E-08	1.053E-06	3.154E-09	8.000E-09	3.675E-08	2.180E-09	4.693E-08	2.000E-09	1.575E-08	2.013E-09	1.976E-08	3.144E-04	8.587E-09
2017 Annual	San Joaquin (SJV)	LDT1	30 MPH	8.276E-08	2.517E-07	2.858E-06	3.762E-09	8.000E-09	3.675E-08	4.518E-09	4.927E-08	2.000E-09	1.575E-08	4.170E-09	2.192E-08	3.722E-04	2.579E-08
2017 Annual	San Joaquin (SJV)	LDT2	30 MPH	3.534E-08	1.580E-07	1.483E-06	4.293E-09	8.000E-09	3.675E-08	2.091E-09	4.684E-08	2.000E-09	1.575E-08	1.925E-09	1.968E-08	4.277E-04	1.238E-08
2017 Annual	San Joaquin (SJV)	LHD1	30 MPH	1.251E-07	2.527E-06	1.360E-06	5.754E-09	1.010E-08	7.644E-08	1.979E-08	1.063E-07	2.525E-09	3.276E-08	1.890E-08	5.418E-08	5.861E-04	1.892E-08
2017 Annual	San Joaquin (SJV)	LHD2	30 MPH	1.053E-07	2.274E-06	8.497E-07	6.045E-09	1.078E-08	8.918E-08	2.013E-08	1.201E-07	2.694E-09	3.822E-08	1.924E-08	6.016E-08	6.218E-04	1.073E-08
2017 Annual	San Joaquin (SJV)	MCY	30 MPH	2.757E-06	1.091E-06	2.184E-05	2.196E-09	4.000E-09	1.176E-08	1.880E-09	1.764E-08	1.000E-09	5.040E-09	1.771E-09	7.811E-09	1.760E-04	4.499E-07
2017 Annual	San Joaquin (SJV)	MDV	30 MPH	6.425E-08	2.714E-07	2.307E-06	5.717E-09	8.000E-09	3.675E-08	2.267E-09	4.702E-08	2.000E-09	1.575E-08	2.094E-09	1.984E-08	5.693E-04	2.201E-08
2017 Annual	San Joaquin (SJV)	MH	30 MPH	2.437E-07	2.121E-06	5.938E-06	1.255E-08	1.288E-08	1.303E-07	3.527E-08	1.785E-07	3.220E-09	5.586E-08	3.367E-08	9.275E-08	1.258E-03	5.977E-08
2017 Annual	San Joaquin (SJV)	Motor Coach	30 MPH	3.002E-07	7.045E-06	1.033E-06	1.821E-08	1.200E-08	1.303E-07	4.817E-08	1.905E-07	3.000E-09	5.586E-08	4.608E-08	1.049E-07	1.909E-03	1.394E-08
2017 Annual	San Joaquin (SJV)	OBUS	30 MPH	1.044E-07	6.842E-07	2.943E-06	1.294E-08	1.200E-08	1.303E-07	9.017E-10	1.432E-07	3.000E-09	5.586E-08	8.304E-10	5.969E-08	1.292E-03	4.030E-08
2017 Annual	San Joaquin (SJV)	SBUS	30 MPH	1.480E-07	6.076E-06	1.572E-06	1.058E-08	1.102E-08	7.448E-07	5.078E-08	8.066E-07	2.756E-09	3.192E-07	4.856E-08	3.705E-07	1.100E-03	2.170E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	30 MPH	9.187E-07	9.421E-06	3.048E-06	1.210E-08	1.200E-08	1.303E-07	5.230E-07	6.653E-07	3.000E-09	5.586E-08	5.004E-07	5.592E-07	1.269E-03	4.267E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	9.598E-08	2.486E-06	3.550E-07	1.212E-08	1.200E-08	1.303E-07	1.906E-08	1.614E-07	3.000E-09	5.586E-08	1.824E-08	7.710E-08	1.270E-03	4.458E-09
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	30 MPH	1.921E-07	2.884E-06	6.025E-07	1.203E-08	1.200E-08	1.303E-07	7.969E-08	2.220E-07	3.000E-09	5.586E-08	7.624E-08	1.351E-07	1.261E-03	8.924E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	1.814E-07	4.798E-06	5.860E-07	1.217E-08	1.200E-08	1.303E-07	6.238E-08	2.047E-07	3.000E-09	5.586E-08	5.968E-08	1.185E-07	1.275E-03	8.424E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	2.671E-07	3.990E-06	8.255E-07	1.208E-08	1.200E-08	1.303E-07	1.143E-07	2.567E-07	3.000E-09	5.586E-08	1.094E-07	1.683E-07	1.266E-03	1.240E-08
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	30 MPH	1.220E-07	3.210E-06	4.160E-07	1.224E-08	1.200E-08	1.303E-07	2.578E-08	1.681E-07	3.000E-09	5.586E-08	2.467E-08	8.353E-08	1.283E-03	5.665E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Small	30 MPH	3.127E-07	4.507E-06	9.809E-07	1.208E-08	1.200E-08	1.303E-07	1.388E-07	2.811E-07	3.000E-09	5.586E-08	1.328E-07	1.916E-07	1.266E-03	1.452E-08
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	30 MPH	8.119E-08	2.457E-06	3.127E-07	1.214E-08	1.200E-08	1.303E-07	1.172E-08	1.541E-07	3.000E-09	5.586E-08	1.121E-08	7.007E-08	1.272E-03	3.771E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Small	30 MPH	1.921E-07	2.884E-06	6.025E-07	1.203E-08	1.200E-08	1.303E-07	7.969E-08	2.220E-07	3.000E-09	5.586E-08	7.624E-08	1.351E-07	1.261E-03	8.924E-09
2017 Annual	San Joaquin (SJV)	T6 Public	30 MPH	6.394E-08	4.585E-06	2.343E-07	1.207E-08	1.200E-08	1.303E-07	2.528E-08	1.676E-07	3.000E-09	5.586E-08	2.419E-08	8.305E-08	1.265E-03	2.970E-09
2017 Annual	San Joaquin (SJV)	T6 Utility	30 MPH	3.958E-08	7.778E-07	2.083E-07	1.239E-08	1.200E-08	1.303E-07	2.188E-09	1.445E-07	3.000E-09	5.586E-08	2.094E-09	6.095E-08	1.299E-03	1.838E-09
2017 Annual	San Joaquin (SJV)	T6TS	30 MPH	2.425E-07	1.169E-06	6.356E-06	1.302E-08	1.200E-08	1.303E-07	1.909E-09	1.442E-07	3.000E-09	5.586E-08	1.764E-09	6.062E-08	1.294E-03	8.572E-08
2017 Annual	San Joaquin (SJV)	T7 Ag	30 MPH	1.630E-06	1.547E-05	7.868E-06	1.820E-08	3.600E-08	6.174E-08	9.193E-07	1.017E-06	9.000E-09	2.646E-08	8.796E-07	9.150E-07	1.908E-03	7.571E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP	30 MPH	2.689E-07	5.871E-06	1.091E-06	1.735E-08	3.600E-08	6.174E-08	3.390E-08	1.316E-07	9.000E-09	2.646E-08	3.243E-08	6.789E-08	1.819E-03	1.249E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	3.132E-07	6.992E-06	1.110E-06	1.762E-08	3.600E-08	6.174E-08	5.211E-08	1.498E-07	9.000E-09	2.646E-08	4.985E-08	8.531E-08	1.847E-03	1.455E-08
2017 Annual	San Joaquin (SJV)	T7 NNOOS	30 MPH	1.578E-07	3.302E-06	7.775E-07	1.628E-08	3.600E-08	6.174E-08	1.337E-08	1.111E-07	9.000E-09	2.646E-08	1.279E-08	4.825E-08	1.706E-03	7.330E-09
2017 Annual	San Joaquin (SJV)	T7 NOOS	30 MPH	2.458E-07	5.777E-06	1.028E-06	1.735E-08	3.600E-08	6.174E-08	2.638E-08	1.241E-07	9.000E-09	2.646E-08	2.524E-08	6.070E-08	1.818E-03	1.142E-08
2017 Annual	San Joaquin (SJV)	T7 Other Port	30 MPH	3.025E-07	6.221E-06	1.032E-06	1.780E-08	3.600E-08	6.174E-08	3.045E-08	1.282E-07	9.000E-09	2.646E-08	2.914E-08	6.460E-08	1.866E-03	1.405E-08
2017 Annual	San Joaquin (SJV)	T7 POAK	30 MPH	3.327E-07	6.912E-06	1.093E-06	1.805E-08	3.600E-08	6.174E-08	3.456E-08	1.323E-07	9.000E-09	2.646E-08	3.307E-08	6.853E-08	1.892E-03	1.546E-08
2017 Annual	San Joaquin (SJV)	T7 POLA	30 MPH	3.327E-07	6.912E-06	1.093E-06	1.805E-08	3.600E-08	6.174E-08	3.456E-08	1.323E-07	9.000E-09	2.646E-08	3.307E-08	6.853E-08	1.892E-03	1.546E-08
2017 Annual	San Joaquin (SJV)	T7 Public	30 MPH	1.285E-07	9.649E-06	5.954E-07	1.775E-08	3.600E-08	6.174E-08	5.777E-08	1.555E-07	9.000E-09	2.646E-08	5.528E-08	9.074E-08	1.861E-03	5.968E-09
2017 Annual	San Joaquin (SJV)	T7 Single	30 MPH	2.950E-07	7.071E-06	1.196E-06	1.770E-08	3.600E-08	6.174E-08	9.225E-08	1.900E-07	9.000E-09	2.646E-08	8.826E-08	1.237E-07	1.855E-03	1.370E-08
2017 Annual	San Joaquin (SJV)	T7 Single Construction	30 MPH	2.695E-07	6.767E-06	1.041E-06	1.754E-08	3.600E-08	6.174E-08	7.002E-08	1.678E-07	9.000E-09	2.646E-08	6.699E-08	1.024E-07	1.838E-03	1.252E-08
2017 Annual	San Joaquin (SJV)	T7 SWCV	30 MPH	1.082E-07	9.991E-06	7.326E-07	3.479E-08	3.600E-08	6.174E-08	1.222E-08	1.100E-07	9.000E-09	2.646E-08	1.169E-08	4.715E-08	4.000E-03	6.410E-07
2017 Annual	San Joaquin (SJV)	T7 Tractor	30 MPH	3.060E-07	6.771E-06	1.129E-06	1.753E-08	3.600E-08	6.174E-08	4.483E-08	1.426E-07	9.000E-09	2.646E-08	4.289E-08	7.835E-08	1.838E-03	1.421E-08
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	30 MPH	3.865E-07	8.246E-06	1.367E-06	1.769E-08	3.600E-08	6.174E-08	9.192E-08	1.897E-07	9.000E-09	2.646E-08	8.794E-08	1.234E-07	1.854E-03	1.795E-08
2017 Annual	San Joaquin (SJV)	T7 Utility	30 MPH	8.064E-08	1.305E-06	4.762E-07	1.714E-08	3.600E-08	6.174E-08	3.360E-09	1.011E-07	9.000E-09	2.646E-08	3.214E-09	3.867E-08	1.797E-03	3.746E-09
2017 Annual	San Joaquin (SJV)	T7IS	30 MPH	6.721E-07	3.710E-06	3.889E-05	1.962E-08	2.000E-08	6.174E-08	8.553E-10	8.260E-08	5.000E-09	2.646E-08	7.911E-10	3.225E-08	1.902E-03	2.564E-07
2017 Annual	San Joaquin (SJV)	UBUS	30 MPH	5.549E-07	1.148E-05	9.157E-06	1.165E-08	1.200E-08	6.430E-07	1.456E-07	8.006E-07	3.000E-09	2.756E-07	1.393E-07	4.179E-07	1.695E-03	8.285E-07

2017	Annual	San Joaquin (SJV)	All Other Buses	35 MPH	1.203E-07	4.350E-06	3.924E-07	1.175E-08	1.200E-08	1.303E-07	3.562E-08	1.780E-07	3.000E-09	5.586E-08	3.408E-08	9.294E-08	1.232E-03	5.590E-09
2017	Annual	San Joaquin (SJV)	LDA	35 MPH	2.065E-08	8.293E-08	9.704E-07	2.818E-09	8.000E-09	3.675E-08	1.810E-09	4.656E-08	2.000E-09	1.575E-08	1.672E-09	1.942E-08	2.809E-04	7.115E-09
2017	Annual	San Joaquin (SJV)	LDT1	35 MPH	7.005E-08	2.396E-07	2.623E-06	3.361E-09	8.000E-09	3.675E-08	3.776E-09	4.853E-08	2.000E-09	1.575E-08	3.485E-09	2.124E-08	3.325E-04	2.162E-08
2017	Annual	San Joaquin (SJV)	LDT2	35 MPH	2.955E-08	1.493E-07	1.366E-06	3.836E-09	8.000E-09	3.675E-08	1.730E-09	4.648E-08	2.000E-09	1.575E-08	1.593E-09	1.934E-08	3.821E-04	1.028E-08
2017	Annual	San Joaquin (SJV)	LHD1	35 MPH	1.077E-07	2.618E-06	1.249E-06	5.752E-09	1.010E-08	7.644E-08	1.731E-08	1.038E-07	2.525E-09	3.276E-08	1.653E-08	5.182E-08	5.861E-04	1.612E-08
2017	Annual	San Joaquin (SJV)	LHD2	35 MPH	9.026E-08	2.358E-06	7.749E-07	6.045E-09	1.078E-08	8.918E-08	1.768E-08	1.176E-07	2.694E-09	3.822E-08	1.691E-08	5.782E-08	6.218E-04	9.126E-09
2017	Annual	San Joaquin (SJV)	MCY	35 MPH	2.349E-06	1.082E-06	2.011E-05	1.967E-09	4.000E-09	1.176E-08	1.609E-09	1.737E-08	1.000E-09	5.040E-09	1.516E-09	7.556E-09	1.572E-04	3.812E-07
2017	Annual	San Joaquin (SJV)	MDV	35 MPH	5.370E-08	2.568E-07	2.125E-06	5.109E-09	8.000E-09	3.675E-08	1.887E-09	4.664E-08	2.000E-09	1.575E-08	1.743E-09	1.949E-08	5.087E-04	1.825E-08
2017	Annual	San Joaquin (SJV)	MH	35 MPH	2.088E-07	2.037E-06	5.460E-06	1.164E-08	1.288E-08	1.303E-07	3.258E-08	1.758E-07	3.220E-09	5.586E-08	3.111E-08	9.019E-08	1.167E-03	5.102E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	35 MPH	2.273E-07	6.517E-06	7.963E-07	1.726E-08	1.200E-08	1.303E-07	4.470E-08	1.870E-07	3.000E-09	5.586E-08	4.276E-08	1.016E-07	1.809E-03	1.056E-08
2017	Annual	San Joaquin (SJV)	OBUS	35 MPH	8.630E-08	6.452E-07	2.716E-06	1.195E-08	1.200E-08	1.303E-07	7.444E-10	1.431E-07	3.000E-09	5.586E-08	6.856E-10	5.955E-08	1.193E-03	3.323E-08
2017	Annual	San Joaquin (SJV)	SBUS	35 MPH	1.198E-07	5.869E-06	1.414E-06	9.987E-09	1.102E-08	7.448E-07	4.425E-08	8.001E-07	2.756E-09	3.192E-07	4.232E-08	3.643E-07	1.038E-03	1.776E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	35 MPH	7.688E-07	9.042E-06	2.576E-06	1.148E-08	1.200E-08	1.303E-07	4.622E-07	6.045E-07	3.000E-09	5.586E-08	4.422E-07	5.011E-07	1.203E-03	3.571E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	7.293E-08	2.191E-06	2.717E-07	1.147E-08	1.200E-08	1.303E-07	1.787E-08	1.602E-07	3.000E-09	5.586E-08	1.710E-08	7.596E-08	1.202E-03	3.387E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	35 MPH	1.571E-07	2.577E-06	5.160E-07	1.145E-08	1.200E-08	1.303E-07	7.806E-08	2.204E-07	3.000E-09	5.586E-08	7.468E-08	1.335E-07	1.200E-03	7.299E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	1.421E-07	4.500E-06	4.748E-07	1.154E-08	1.200E-08	1.303E-07	5.610E-08	1.984E-07	3.000E-09	5.586E-08	5.367E-08	1.125E-07	1.210E-03	6.600E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	2.180E-07	3.657E-06	7.106E-07	1.148E-08	1.200E-08	1.303E-07	1.094E-07	2.517E-07	3.000E-09	5.586E-08	1.047E-07	1.635E-07	1.203E-03	1.013E-08
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	35 MPH	9.247E-08	2.901E-06	3.188E-07	1.156E-08	1.200E-08	1.303E-07	2.366E-08	1.660E-07	3.000E-09	5.586E-08	2.263E-08	8.149E-08	1.212E-03	4.295E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Small	35 MPH	2.554E-07	4.165E-06	8.457E-07	1.149E-08	1.200E-08	1.303E-07	1.308E-07	2.731E-07	3.000E-09	5.586E-08	1.251E-07	1.840E-07	1.204E-03	1.186E-08
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	35 MPH	6.075E-08	2.158E-06	2.347E-07	1.149E-08	1.200E-08	1.303E-07	1.108E-08	1.534E-07	3.000E-09	5.586E-08	1.060E-08	6.946E-08	1.204E-03	2.822E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Small	35 MPH	1.571E-07	2.577E-06	5.160E-07	1.145E-08	1.200E-08	1.303E-07	7.806E-08	2.204E-07	3.000E-09	5.586E-08	7.468E-08	1.335E-07	1.200E-03	7.299E-09
2017	Annual	San Joaquin (SJV)	T6 Public	35 MPH	5.056E-08	4.311E-06	1.859E-07	1.147E-08	1.200E-08	1.303E-07	2.300E-08	1.653E-07	3.000E-09	5.586E-08	2.200E-08	8.086E-08	1.202E-03	2.349E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	35 MPH	2.917E-08	5.936E-07	1.535E-07	1.184E-08	1.200E-08	1.303E-07	2.031E-09	1.444E-07	3.000E-09	5.586E-08	1.944E-09	6.080E-08	1.241E-03	1.355E-09
2017	Annual	San Joaquin (SJV)	T6TS	35 MPH	2.040E-07	1.114E-06	5.861E-06	1.202E-08	1.200E-08	1.303E-07	1.597E-09	1.439E-07	3.000E-09	5.586E-08	1.476E-09	6.034E-08	1.195E-03	7.172E-08
2017	Annual	San Joaquin (SJV)	T7 Ag	35 MPH	1.353E-06	1.480E-05	6.666E-06	1.725E-08	3.600E-08	6.174E-08	8.154E-07	9.131E-07	9.000E-09	2.646E-08	7.801E-07	8.156E-07	1.808E-03	6.284E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP	35 MPH	2.021E-07	5.166E-06	8.250E-07	1.640E-08	3.600E-08	6.174E-08	3.200E-08	1.297E-07	9.000E-09	2.646E-08	3.062E-08	6.608E-08	1.719E-03	9.388E-09
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	2.400E-07	6.321E-06	8.655E-07	1.672E-08	3.600E-08	6.174E-08	5.033E-08	1.481E-07	9.000E-09	2.646E-08	4.815E-08	8.361E-08	1.753E-03	1.115E-08
2017	Annual	San Joaquin (SJV)	T7 NNOOS	35 MPH	1.174E-07	2.739E-06	5.785E-07	1.543E-08	3.600E-08	6.174E-08	1.266E-08	1.104E-07	9.000E-09	2.646E-08	1.211E-08	4.757E-08	1.618E-03	5.453E-09
2017	Annual	San Joaquin (SJV)	T7 NOOS	35 MPH	1.833E-07	5.067E-06	7.691E-07	1.640E-08	3.600E-08	6.174E-08	2.478E-08	1.225E-07	9.000E-09	2.646E-08	2.371E-08	5.917E-08	1.719E-03	8.514E-09
2017	Annual	San Joaquin (SJV)	T7 Other Port	35 MPH	2.234E-07	5.675E-06	7.632E-07	1.687E-08	3.600E-08	6.174E-08	2.831E-08	1.260E-07	9.000E-09	2.646E-08	2.708E-08	6.254E-08	1.768E-03	1.038E-08
2017	Annual	San Joaquin (SJV)	T7 POAK	35 MPH	2.457E-07	6.355E-06	8.086E-07	1.709E-08	3.600E-08	6.174E-08	3.213E-08	1.299E-07	9.000E-09	2.646E-08	3.074E-08	6.620E-08	1.791E-03	1.141E-08
2017	Annual	San Joaquin (SJV)	T7 POLA	35 MPH	2.457E-07	6.355E-06	8.086E-07	1.709E-08	3.600E-08	6.174E-08	3.213E-08	1.299E-07	9.000E-09	2.646E-08	3.074E-08	6.620E-08	1.791E-03	1.141E-08
2017	Annual	San Joaquin (SJV)	T7 Public	35 MPH	1.027E-07	9.137E-06	4.812E-07	1.684E-08	3.600E-08	6.174E-08	5.224E-08	1.500E-07	9.000E-09	2.646E-08	4.998E-08	8.544E-08	1.765E-03	4.770E-09
2017	Annual	San Joaquin (SJV)	T7 Single	35 MPH	2.310E-07	6.612E-06	9.641E-07	1.680E-08	3.600E-08	6.174E-08	8.254E-08	1.803E-07	9.000E-09	2.646E-08	7.897E-08	1.144E-07	1.761E-03	1.073E-08
2017	Annual	San Joaquin (SJV)	T7 Single Construction	35 MPH	2.085E-07	6.316E-06	8.342E-07	1.664E-08	3.600E-08	6.174E-08	6.265E-08	1.604E-07	9.000E-09	2.646E-08	5.994E-08	9.540E-08	1.744E-03	9.686E-09
2017	Annual	San Joaquin (SJV)	T7 SWCV	35 MPH	8.787E-08	9.490E-06	5.502E-07	3.296E-08	3.600E-08	6.174E-08	1.163E-08	1.094E-07	9.000E-09	2.646E-08	1.113E-08	4.659E-08	3.790E-03	5.178E-07
2017	Annual	San Joaquin (SJV)	T7 Tractor	35 MPH	2.301E-07	6.161E-06	8.602E-07	1.654E-08	3.600E-08	6.174E-08	4.122E-08	1.390E-07	9.000E-09	2.646E-08	3.944E-08	7.490E-08	1.734E-03	1.069E-08
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	35 MPH	3.027E-07	7.618E-06	1.110E-06	1.678E-08	3.600E-08	6.174E-08	8.600E-08	1.837E-07	9.000E-09	2.646E-08	8.228E-08	1.177E-07	1.759E-03	1.406E-08
2017	Annual	San Joaquin (SJV)	T7 Utility	35 MPH	5.943E-08	1.006E-06	3.509E-07	1.638E-08	3.600E-08	6.174E-08	3.119E-09	1.009E-07	9.000E-09	2.646E-08	2.984E-09	3.844E-08	1.717E-03	2.760E-09
2017	Annual	San Joaquin (SJV)	T7IS	35 MPH	5.562E-07	3.505E-06	3.589E-05	1.879E-08	2.000E-08	6.174E-08	7.134E-10	8.245E-08	5.000E-09	2.646E-08	6.600E-10	3.212E-08	1.824E-03	2.115E-07
2017	Annual	San Joaquin (SJV)	UBUS	35 MPH	4.598E-07	1.118E-05	8.148E-06	1.093E-08	1.200E-08	6.430E-07	1.231E-07	7.781E-07	3.000E-09	2.756E-07	1.178E-07	3.964E-07	1.595E-03	6.805E-07

2017 Annual	San Joaquin (SJV)	All Other Buses	40 MPH	9.328E-08	4.136E-06	3.097E-07	1.123E-08	1.200E-08	1.303E-07	3.312E-08	1.755E-07	3.000E-09	5.586E-08	3.169E-08	9.055E-08	1.177E-03	4.333E-09
2017 Annual	San Joaquin (SJV)	LDA	40 MPH	1.813E-08	7.996E-08	9.004E-07	2.613E-09	8.000E-09	3.675E-08	1.583E-09	4.633E-08	2.000E-09	1.575E-08	1.462E-09	1.921E-08	2.605E-04	6.203E-09
2017 Annual	San Joaquin (SJV)	LDT1	40 MPH	6.208E-08	2.327E-07	2.443E-06	3.117E-09	8.000E-09	3.675E-08	3.310E-09	4.806E-08	2.000E-09	1.575E-08	3.056E-09	2.081E-08	3.083E-04	1.897E-08
2017 Annual	San Joaquin (SJV)	LDT2	40 MPH	2.595E-08	1.437E-07	1.268E-06	3.556E-09	8.000E-09	3.675E-08	1.507E-09	4.626E-08	2.000E-09	1.575E-08	1.388E-09	1.914E-08	3.543E-04	8.967E-09
2017 Annual	San Joaquin (SJV)	LHD1	40 MPH	9.725E-08	2.715E-06	1.187E-06	5.672E-09	1.010E-08	7.644E-08	1.580E-08	1.023E-07	2.525E-09	3.276E-08	1.509E-08	5.038E-08	5.779E-04	1.443E-08
2017 Annual	San Joaquin (SJV)	LHD2	40 MPH	8.102E-08	2.447E-06	7.342E-07	5.856E-09	1.078E-08	8.918E-08	1.616E-08	1.161E-07	2.694E-09	3.822E-08	1.545E-08	5.636E-08	6.023E-04	8.151E-09
2017 Annual	San Joaquin (SJV)	MCY	40 MPH	2.102E-06	1.083E-06	1.922E-05	1.830E-09	4.000E-09	1.176E-08	1.446E-09	1.721E-08	1.000E-09	5.040E-09	1.363E-09	7.403E-09	1.458E-04	3.396E-07
2017 Annual	San Joaquin (SJV)	MDV	40 MPH	4.717E-08	2.476E-07	1.976E-06	4.738E-09	8.000E-09	3.675E-08	1.651E-09	4.640E-08	2.000E-09	1.575E-08	1.526E-09	1.928E-08	4.717E-04	1.591E-08
2017 Annual	San Joaquin (SJV)	MH	40 MPH	1.873E-07	1.980E-06	5.217E-06	1.088E-08	1.288E-08	1.303E-07	3.170E-08	1.749E-07	3.220E-09	5.586E-08	3.027E-08	8.935E-08	1.091E-03	4.572E-08
2017 Annual	San Joaquin (SJV)	Motor Coach	40 MPH	1.736E-07	6.131E-06	6.216E-07	1.649E-08	1.200E-08	1.303E-07	4.278E-08	1.851E-07	3.000E-09	5.586E-08	4.093E-08	9.979E-08	1.729E-03	8.064E-09
2017 Annual	San Joaquin (SJV)	OBUS	40 MPH	7.522E-08	6.182E-07	2.522E-06	1.112E-08	1.200E-08	1.303E-07	6.481E-10	1.430E-07	3.000E-09	5.586E-08	5.970E-10	5.946E-08	1.110E-03	2.889E-08
2017 Annual	San Joaquin (SJV)	SBUS	40 MPH	1.004E-07	5.730E-06	1.281E-06	9.507E-09	1.102E-08	7.448E-07	4.011E-08	7.959E-07	2.756E-09	3.192E-07	3.836E-08	3.603E-07	9.887E-04	1.524E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	40 MPH	6.603E-07	8.782E-06	2.192E-06	1.097E-08	1.200E-08	1.303E-07	4.216E-07	5.640E-07	3.000E-09	5.586E-08	4.034E-07	4.622E-07	1.150E-03	3.067E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	5.588E-08	1.984E-06	2.102E-07	1.093E-08	1.200E-08	1.303E-07	1.729E-08	1.596E-07	3.000E-09	5.586E-08	1.654E-08	7.540E-08	1.145E-03	2.595E-09
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	40 MPH	1.304E-07	2.361E-06	4.540E-07	1.098E-08	1.200E-08	1.303E-07	7.994E-08	2.223E-07	3.000E-09	5.586E-08	7.648E-08	1.353E-07	1.151E-03	6.056E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	1.136E-07	4.287E-06	3.910E-07	1.104E-08	1.200E-08	1.303E-07	5.289E-08	1.952E-07	3.000E-09	5.586E-08	5.061E-08	1.095E-07	1.157E-03	5.277E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	1.812E-07	3.418E-06	6.268E-07	1.100E-08	1.200E-08	1.303E-07	1.100E-07	2.524E-07	3.000E-09	5.586E-08	1.053E-07	1.641E-07	1.153E-03	8.419E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	40 MPH	7.077E-08	2.677E-06	2.468E-07	1.100E-08	1.200E-08	1.303E-07	2.238E-08	1.647E-07	3.000E-09	5.586E-08	2.141E-08	8.027E-08	1.153E-03	3.287E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Small	40 MPH	2.130E-07	3.920E-06	7.458E-07	1.100E-08	1.200E-08	1.303E-07	1.300E-07	2.724E-07	3.000E-09	5.586E-08	1.244E-07	1.833E-07	1.153E-03	9.894E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	40 MPH	4.562E-08	1.947E-06	1.773E-07	1.095E-08	1.200E-08	1.303E-07	1.070E-08	1.530E-07	3.000E-09	5.586E-08	1.024E-08	6.910E-08	1.147E-03	2.119E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Small	40 MPH	1.304E-07	2.361E-06	4.540E-07	1.098E-08	1.200E-08	1.303E-07	7.994E-08	2.223E-07	3.000E-09	5.586E-08	7.648E-08	1.353E-07	1.151E-03	6.056E-09
2017 Annual	San Joaquin (SJV)	T6 Public	40 MPH	4.069E-08	4.121E-06	1.494E-07	1.098E-08	1.200E-08	1.303E-07	2.167E-08	1.640E-07	3.000E-09	5.586E-08	2.074E-08	7.960E-08	1.151E-03	1.890E-09
2017 Annual	San Joaquin (SJV)	T6 Utility	40 MPH	2.150E-08	4.729E-07	1.131E-07	1.139E-08	1.200E-08	1.303E-07	1.897E-09	1.442E-07	3.000E-09	5.586E-08	1.815E-09	6.068E-08	1.194E-03	9.984E-10
2017 Annual	San Joaquin (SJV)	T6TS	40 MPH	1.806E-07	1.077E-06	5.501E-06	1.118E-08	1.200E-08	1.303E-07	1.408E-09	1.437E-07	3.000E-09	5.586E-08	1.301E-09	6.016E-08	1.111E-03	6.319E-08
2017 Annual	San Joaquin (SJV)	T7 Ag	40 MPH	1.153E-06	1.435E-05	5.680E-06	1.650E-08	3.600E-08	6.174E-08	7.425E-07	8.403E-07	9.000E-09	2.646E-08	7.104E-07	7.459E-07	1.729E-03	5.356E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP	40 MPH	1.527E-07	4.665E-06	6.296E-07	1.562E-08	3.600E-08	6.174E-08	3.095E-08	1.287E-07	9.000E-09	2.646E-08	2.961E-08	6.507E-08	1.637E-03	7.093E-09
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	1.854E-07	5.835E-06	6.869E-07	1.599E-08	3.600E-08	6.174E-08	5.006E-08	1.478E-07	9.000E-09	2.646E-08	4.790E-08	8.336E-08	1.676E-03	8.610E-09
2017 Annual	San Joaquin (SJV)	T7 NNOOS	40 MPH	8.752E-08	2.364E-06	4.321E-07	1.473E-08	3.600E-08	6.174E-08	1.219E-08	1.099E-07	9.000E-09	2.646E-08	1.166E-08	4.712E-08	1.544E-03	4.065E-09
2017 Annual	San Joaquin (SJV)	T7 NOOS	40 MPH	1.371E-07	4.563E-06	5.784E-07	1.562E-08	3.600E-08	6.174E-08	2.370E-08	1.214E-07	9.000E-09	2.646E-08	2.268E-08	5.814E-08	1.637E-03	6.368E-09
2017 Annual	San Joaquin (SJV)	T7 Other Port	40 MPH	1.650E-07	5.280E-06	5.649E-07	1.611E-08	3.600E-08	6.174E-08	2.649E-08	1.242E-07	9.000E-09	2.646E-08	2.534E-08	6.080E-08	1.689E-03	7.664E-09
2017 Annual	San Joaquin (SJV)	T7 POAK	40 MPH	1.816E-07	5.944E-06	5.990E-07	1.631E-08	3.600E-08	6.174E-08	3.007E-08	1.278E-07	9.000E-09	2.646E-08	2.877E-08	6.423E-08	1.709E-03	8.434E-09
2017 Annual	San Joaquin (SJV)	T7 POLA	40 MPH	1.816E-07	5.944E-06	5.990E-07	1.631E-08	3.600E-08	6.174E-08	3.007E-08	1.278E-07	9.000E-09	2.646E-08	2.877E-08	6.423E-08	1.709E-03	8.434E-09
2017 Annual	San Joaquin (SJV)	T7 Public	40 MPH	8.365E-08	8.782E-06	3.928E-07	1.611E-08	3.600E-08	6.174E-08	4.846E-08	1.462E-07	9.000E-09	2.646E-08	4.636E-08	8.182E-08	1.688E-03	3.885E-09
2017 Annual	San Joaquin (SJV)	T7 Single	40 MPH	1.846E-07	6.290E-06	7.868E-07	1.607E-08	3.600E-08	6.174E-08	7.660E-08	1.743E-07	9.000E-09	2.646E-08	7.328E-08	1.087E-07	1.684E-03	8.572E-09
2017 Annual	San Joaquin (SJV)	T7 Single Construction	40 MPH	1.643E-07	6.000E-06	6.783E-07	1.592E-08	3.600E-08	6.174E-08	5.873E-08	1.565E-07	9.000E-09	2.646E-08	5.619E-08	9.165E-08	1.669E-03	7.631E-09
2017 Annual	San Joaquin (SJV)	T7 SWCV	40 MPH	7.203E-08	9.122E-06	4.162E-07	3.150E-08	3.600E-08	6.174E-08	1.146E-08	1.092E-07	9.000E-09	2.646E-08	1.096E-08	4.642E-08	3.622E-03	4.224E-07
2017 Annual	San Joaquin (SJV)	T7 Tractor	40 MPH	1.742E-07	5.720E-06	6.611E-07	1.573E-08	3.600E-08	6.174E-08	3.893E-08	1.367E-07	9.000E-09	2.646E-08	3.725E-08	7.271E-08	1.649E-03	8.093E-09
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	40 MPH	2.406E-07	7.162E-06	9.195E-07	1.604E-08	3.600E-08	6.174E-08	8.389E-08	1.816E-07	9.000E-09	2.646E-08	8.026E-08	1.157E-07	1.681E-03	1.118E-08
2017 Annual	San Joaquin (SJV)	T7 Utility	40 MPH	4.379E-08	8.068E-07	2.586E-07	1.576E-08	3.600E-08	6.174E-08	2.913E-09	1.007E-07	9.000E-09	2.646E-08	2.787E-09	3.825E-08	1.652E-03	2.034E-09
2017 Annual	San Joaquin (SJV)	T7IS	40 MPH	4.853E-07	3.364E-06	3.331E-05	1.809E-08	2.000E-08	6.174E-08	6.269E-10	8.237E-08	5.000E-09	2.646E-08	5.801E-10	3.204E-08	1.758E-03	1.840E-07
2017 Annual	San Joaquin (SJV)	UBUS	40 MPH	3.960E-07	1.098E-05	7.393E-06	1.035E-08	1.200E-08	6.430E-07	1.081E-07	7.631E-07	3.000E-09	2.756E-07	1.034E-07	3.820E-07	1.514E-03	5.753E-07

2017 Annual	San Joaquin (SJV)	All Other Buses	45 MPH	7.451E-08	3.981E-06	2.491E-07	1.081E-08	1.200E-08	1.303E-07	3.230E-08	1.746E-07	3.000E-09	5.586E-08	3.090E-08	8.976E-08	1.133E-03	3.461E-09
2017 Annual	San Joaquin (SJV)	LDA	45 MPH	1.673E-08	7.836E-08	8.414E-07	2.515E-09	8.000E-09	3.675E-08	1.456E-09	4.621E-08	2.000E-09	1.575E-08	1.345E-09	1.910E-08	2.507E-04	5.690E-09
2017 Annual	San Joaquin (SJV)	LDT1	45 MPH	5.760E-08	2.306E-07	2.309E-06	2.999E-09	8.000E-09	3.675E-08	3.044E-09	4.779E-08	2.000E-09	1.575E-08	2.811E-09	2.056E-08	2.967E-04	1.743E-08
2017 Annual	San Joaquin (SJV)	LDT2	45 MPH	2.393E-08	1.408E-07	1.186E-06	3.422E-09	8.000E-09	3.675E-08	1.382E-09	4.613E-08	2.000E-09	1.575E-08	1.273E-09	1.902E-08	3.410E-04	8.220E-09
2017 Annual	San Joaquin (SJV)	LHD1	45 MPH	9.195E-08	2.816E-06	1.168E-06	5.598E-09	1.010E-08	7.644E-08	1.504E-08	1.016E-07	2.525E-09	3.276E-08	1.437E-08	4.966E-08	5.702E-04	1.356E-08
2017 Annual	San Joaquin (SJV)	LHD2	45 MPH	7.608E-08	2.540E-06	7.232E-07	5.665E-09	1.078E-08	8.918E-08	1.535E-08	1.153E-07	2.694E-09	3.822E-08	1.468E-08	5.559E-08	5.825E-04	7.636E-09
2017 Annual	San Joaquin (SJV)	MCY	45 MPH	1.976E-06	1.093E-06	1.907E-05	1.768E-09	4.000E-09	1.176E-08	1.364E-09	1.712E-08	1.000E-09	5.040E-09	1.286E-09	7.326E-09	1.403E-04	3.180E-07
2017 Annual	San Joaquin (SJV)	MDV	45 MPH	4.352E-08	2.431E-07	1.854E-06	4.559E-09	8.000E-09	3.675E-08	1.519E-09	4.627E-08	2.000E-09	1.575E-08	1.404E-09	1.915E-08	4.539E-04	1.457E-08
2017 Annual	San Joaquin (SJV)	MH	45 MPH	1.762E-07	1.947E-06	5.188E-06	1.019E-08	1.288E-08	1.303E-07	3.259E-08	1.758E-07	3.220E-09	5.586E-08	3.113E-08	9.021E-08	1.022E-03	4.302E-08
2017 Annual	San Joaquin (SJV)	Motor Coach	45 MPH	1.348E-07	5.843E-06	4.942E-07	1.586E-08	1.200E-08	1.303E-07	4.237E-08	1.847E-07	3.000E-09	5.586E-08	4.053E-08	9.939E-08	1.662E-03	6.262E-09
2017 Annual	San Joaquin (SJV)	OBUS	45 MPH	6.913E-08	6.016E-07	2.357E-06	1.033E-08	1.200E-08	1.303E-07	5.950E-10	1.429E-07	3.000E-09	5.586E-08	5.481E-10	5.941E-08	1.031E-03	2.649E-08
2017 Annual	San Joaquin (SJV)	SBUS	45 MPH	8.836E-08	5.653E-06	1.169E-06	9.118E-09	1.102E-08	7.448E-07	3.836E-08	7.942E-07	2.756E-09	3.192E-07	3.668E-08	3.586E-07	9.485E-04	1.378E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	45 MPH	5.925E-07	8.631E-06	1.896E-06	1.059E-08	1.200E-08	1.303E-07	4.013E-07	5.437E-07	3.000E-09	5.586E-08	3.840E-07	4.428E-07	1.110E-03	2.752E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	4.346E-08	1.833E-06	1.653E-07	1.047E-08	1.200E-08	1.303E-07	1.729E-08	1.596E-07	3.000E-09	5.586E-08	1.654E-08	7.540E-08	1.098E-03	2.019E-09
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	45 MPH	1.109E-07	2.209E-06	4.125E-07	1.060E-08	1.200E-08	1.303E-07	8.534E-08	2.277E-07	3.000E-09	5.586E-08	8.164E-08	1.405E-07	1.111E-03	5.150E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	9.451E-08	4.138E-06	3.301E-07	1.063E-08	1.200E-08	1.303E-07	5.276E-08	1.951E-07	3.000E-09	5.586E-08	5.048E-08	1.093E-07	1.114E-03	4.390E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	1.556E-07	3.249E-06	5.702E-07	1.061E-08	1.200E-08	1.303E-07	1.162E-07	2.586E-07	3.000E-09	5.586E-08	1.112E-07	1.701E-07	1.112E-03	7.228E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	45 MPH	5.516E-08	2.510E-06	1.940E-07	1.053E-08	1.200E-08	1.303E-07	2.192E-08	1.643E-07	3.000E-09	5.586E-08	2.097E-08	7.983E-08	1.103E-03	2.562E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Small	45 MPH	1.845E-07	3.750E-06	6.778E-07	1.062E-08	1.200E-08	1.303E-07	1.364E-07	2.787E-07	3.000E-09	5.586E-08	1.305E-07	1.894E-07	1.113E-03	8.567E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	45 MPH	3.449E-08	1.793E-06	1.352E-07	1.049E-08	1.200E-08	1.303E-07	1.057E-08	1.529E-07	3.000E-09	5.586E-08	1.011E-08	6.897E-08	1.100E-03	1.602E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Small	45 MPH	1.109E-07	2.209E-06	4.125E-07	1.060E-08	1.200E-08	1.303E-07	8.534E-08	2.277E-07	3.000E-09	5.586E-08	8.164E-08	1.405E-07	1.111E-03	5.150E-09
2017 Annual	San Joaquin (SJV)	T6 Public	45 MPH	3.373E-08	3.997E-06	1.225E-07	1.059E-08	1.200E-08	1.303E-07	2.131E-08	1.637E-07	3.000E-09	5.586E-08	2.039E-08	7.925E-08	1.110E-03	1.567E-09
2017 Annual	San Joaquin (SJV)	T6 Utility	45 MPH	1.584E-08	3.887E-07	8.338E-08	1.101E-08	1.200E-08	1.303E-07	1.780E-09	1.441E-07	3.000E-09	5.586E-08	1.703E-09	6.056E-08	1.154E-03	7.357E-10
2017 Annual	San Joaquin (SJV)	T6TS	45 MPH	1.683E-07	1.057E-06	5.262E-06	1.039E-08	1.200E-08	1.303E-07	1.306E-09	1.436E-07	3.000E-09	5.586E-08	1.207E-09	6.007E-08	1.033E-03	5.862E-08
2017 Annual	San Joaquin (SJV)	T7 Ag	45 MPH	1.029E-06	1.410E-05	4.908E-06	1.593E-08	3.600E-08	6.174E-08	7.014E-07	7.992E-07	9.000E-09	2.646E-08	6.711E-07	7.065E-07	1.670E-03	4.777E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP	45 MPH	1.164E-07	4.294E-06	4.867E-07	1.496E-08	3.600E-08	6.174E-08	3.069E-08	1.284E-07	9.000E-09	2.646E-08	2.936E-08	6.482E-08	1.568E-03	5.407E-09
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	1.449E-07	5.474E-06	5.583E-07	1.540E-08	3.600E-08	6.174E-08	5.126E-08	1.490E-07	9.000E-09	2.646E-08	4.904E-08	8.450E-08	1.614E-03	6.730E-09
2017 Annual	San Joaquin (SJV)	T7 NNOOS	45 MPH	6.547E-08	2.100E-06	3.245E-07	1.413E-08	3.600E-08	6.174E-08	1.195E-08	1.097E-07	9.000E-09	2.646E-08	1.143E-08	4.689E-08	1.482E-03	3.041E-09
2017 Annual	San Joaquin (SJV)	T7 NOOS	45 MPH	1.031E-07	4.190E-06	4.386E-07	1.496E-08	3.600E-08	6.174E-08	2.309E-08	1.208E-07	9.000E-09	2.646E-08	2.209E-08	5.755E-08	1.568E-03	4.789E-09
2017 Annual	San Joaquin (SJV)	T7 Other Port	45 MPH	1.219E-07	4.976E-06	4.190E-07	1.548E-08	3.600E-08	6.174E-08	2.491E-08	1.227E-07	9.000E-09	2.646E-08	2.383E-08	5.929E-08	1.623E-03	5.664E-09
2017 Annual	San Joaquin (SJV)	T7 POAK	45 MPH	1.343E-07	5.625E-06	4.447E-07	1.565E-08	3.600E-08	6.174E-08	2.829E-08	1.260E-07	9.000E-09	2.646E-08	2.706E-08	6.252E-08	1.641E-03	6.236E-09
2017 Annual	San Joaquin (SJV)	T7 POLA	45 MPH	1.343E-07	5.625E-06	4.447E-07	1.565E-08	3.600E-08	6.174E-08	2.829E-08	1.260E-07	9.000E-09	2.646E-08	2.706E-08	6.252E-08	1.641E-03	6.236E-09
2017 Annual	San Joaquin (SJV)	T7 Public	45 MPH	7.030E-08	8.564E-06	3.258E-07	1.554E-08	3.600E-08	6.174E-08	4.644E-08	1.442E-07	9.000E-09	2.646E-08	4.443E-08	7.989E-08	1.629E-03	3.265E-09
2017 Annual	San Joaquin (SJV)	T7 Single	45 MPH	1.529E-07	6.069E-06	6.550E-07	1.548E-08	3.600E-08	6.174E-08	7.444E-08	1.722E-07	9.000E-09	2.646E-08	7.122E-08	1.067E-07	1.622E-03	7.103E-09
2017 Annual	San Joaquin (SJV)	T7 Single Construction	45 MPH	1.343E-07	5.785E-06	5.643E-07	1.533E-08	3.600E-08	6.174E-08	5.828E-08	1.560E-07	9.000E-09	2.646E-08	5.576E-08	9.122E-08	1.607E-03	6.236E-09
2017 Annual	San Joaquin (SJV)	T7 SWCV	45 MPH	5.988E-08	8.879E-06	3.181E-07	3.037E-08	3.600E-08	6.174E-08	1.169E-08	1.094E-07	9.000E-09	2.646E-08	1.119E-08	4.665E-08	3.492E-03	3.494E-07
2017 Annual	San Joaquin (SJV)	T7 Tractor	45 MPH	1.338E-07	5.391E-06	5.152E-07	1.505E-08	3.600E-08	6.174E-08	3.790E-08	1.356E-07	9.000E-09	2.646E-08	3.626E-08	7.172E-08	1.577E-03	6.215E-09
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	45 MPH	1.965E-07	6.833E-06	7.831E-07	1.544E-08	3.600E-08	6.174E-08	8.557E-08	1.833E-07	9.000E-09	2.646E-08	8.187E-08	1.173E-07	1.618E-03	9.127E-09
2017 Annual	San Joaquin (SJV)	T7 Utility	45 MPH	3.227E-08	6.671E-07	1.906E-07	1.523E-08	3.600E-08	6.174E-08	2.732E-09	1.005E-07	9.000E-09	2.646E-08	2.614E-09	3.807E-08	1.596E-03	1.499E-09
2017 Annual	San Joaquin (SJV)	T7IS	45 MPH	4.464E-07	3.279E-06	3.111E-05	1.767E-08	2.000E-08	6.174E-08	5.802E-10	8.232E-08	5.000E-09	2.646E-08	5.370E-10	3.200E-08	1.719E-03	1.688E-07
2017 Annual	San Joaquin (SJV)	UBUS	45 MPH	3.603E-07	1.089E-05	6.869E-06	9.877E-09	1.200E-08	6.430E-07	1.006E-07	7.555E-07	3.000E-09	2.756E-07	9.619E-08	3.748E-07	1.449E-03	5.093E-07

2017	Annual	San Joaquin (SJV)	All Other Buses	50 MPH	6.265E-08	3.871E-06	2.063E-07	1.045E-08	1.200E-08	1.303E-07	3.312E-08	1.755E-07	3.000E-09	5.586E-08	3.169E-08	9.055E-08	1.096E-03	2.910E-09
2017	Annual	San Joaquin (SJV)	LDA	50 MPH	1.624E-08	7.803E-08	7.926E-07	2.511E-09	8.000E-09	3.675E-08	1.409E-09	4.616E-08	2.000E-09	1.575E-08	1.302E-09	1.905E-08	2.504E-04	5.492E-09
2017	Annual	San Joaquin (SJV)	LDT1	50 MPH	5.597E-08	2.329E-07	2.219E-06	2.994E-09	8.000E-09	3.675E-08	2.935E-09	4.769E-08	2.000E-09	1.575E-08	2.711E-09	2.046E-08	2.963E-04	1.676E-08
2017	Annual	San Joaquin (SJV)	LDT2	50 MPH	2.319E-08	1.404E-07	1.120E-06	3.417E-09	8.000E-09	3.675E-08	1.333E-09	4.608E-08	2.000E-09	1.575E-08	1.228E-09	1.898E-08	3.406E-04	7.917E-09
2017	Annual	San Joaquin (SJV)	LHD1	50 MPH	9.105E-08	2.921E-06	1.194E-06	5.888E-09	1.010E-08	7.644E-08	1.494E-08	1.015E-07	2.525E-09	3.276E-08	1.428E-08	4.956E-08	5.998E-04	1.338E-08
2017	Annual	San Joaquin (SJV)	LHD2	50 MPH	7.473E-08	2.635E-06	7.425E-07	5.886E-09	1.078E-08	8.918E-08	1.516E-08	1.151E-07	2.694E-09	3.822E-08	1.450E-08	5.541E-08	6.053E-04	7.503E-09
2017	Annual	San Joaquin (SJV)	MCY	50 MPH	1.951E-06	1.112E-06	1.973E-05	1.776E-09	4.000E-09	1.176E-08	1.351E-09	1.711E-08	1.000E-09	5.040E-09	1.274E-09	7.314E-09	1.401E-04	3.129E-07
2017	Annual	San Joaquin (SJV)	MDV	50 MPH	4.218E-08	2.431E-07	1.759E-06	4.552E-09	8.000E-09	3.675E-08	1.469E-09	4.622E-08	2.000E-09	1.575E-08	1.357E-09	1.911E-08	4.534E-04	1.403E-08
2017	Annual	San Joaquin (SJV)	MH	50 MPH	1.741E-07	1.938E-06	5.384E-06	9.621E-09	1.288E-08	1.303E-07	3.523E-08	1.785E-07	3.220E-09	5.586E-08	3.366E-08	9.274E-08	9.640E-04	4.251E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	50 MPH	1.078E-07	5.629E-06	4.036E-07	1.533E-08	1.200E-08	1.303E-07	4.342E-08	1.858E-07	3.000E-09	5.586E-08	4.154E-08	1.004E-07	1.607E-03	5.005E-09
2017	Annual	San Joaquin (SJV)	OBUS	50 MPH	6.697E-08	5.948E-07	2.220E-06	9.662E-09	1.200E-08	1.303E-07	5.760E-10	1.429E-07	3.000E-09	5.586E-08	5.306E-10	5.939E-08	9.645E-04	2.562E-08
2017	Annual	San Joaquin (SJV)	SBUS	50 MPH	8.296E-08	5.633E-06	1.075E-06	8.823E-09	1.102E-08	7.448E-07	3.898E-08	7.948E-07	2.756E-09	3.192E-07	3.728E-08	3.592E-07	9.181E-04	1.319E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	50 MPH	5.649E-07	8.582E-06	1.687E-06	1.031E-08	1.200E-08	1.303E-07	4.014E-07	5.438E-07	3.000E-09	5.586E-08	3.841E-07	4.429E-07	1.081E-03	2.624E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	3.467E-08	1.721E-06	1.331E-07	1.008E-08	1.200E-08	1.303E-07	1.786E-08	1.602E-07	3.000E-09	5.586E-08	1.709E-08	7.595E-08	1.057E-03	1.610E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	50 MPH	9.785E-08	2.107E-06	3.886E-07	1.029E-08	1.200E-08	1.303E-07	9.423E-08	2.366E-07	3.000E-09	5.586E-08	9.015E-08	1.490E-07	1.078E-03	4.545E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	8.367E-08	4.042E-06	2.888E-07	1.030E-08	1.200E-08	1.303E-07	5.571E-08	1.980E-07	3.000E-09	5.586E-08	5.330E-08	1.122E-07	1.079E-03	3.886E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	1.403E-07	3.139E-06	5.379E-07	1.029E-08	1.200E-08	1.303E-07	1.280E-07	2.704E-07	3.000E-09	5.586E-08	1.225E-07	1.813E-07	1.079E-03	6.517E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	50 MPH	4.435E-08	2.384E-06	1.561E-07	1.012E-08	1.200E-08	1.303E-07	2.226E-08	1.646E-07	3.000E-09	5.586E-08	2.130E-08	8.016E-08	1.061E-03	2.060E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Small	50 MPH	1.691E-07	3.642E-06	6.390E-07	1.031E-08	1.200E-08	1.303E-07	1.500E-07	2.923E-07	3.000E-09	5.586E-08	1.435E-07	2.023E-07	1.081E-03	7.852E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	50 MPH	2.635E-08	1.679E-06	1.046E-07	1.010E-08	1.200E-08	1.303E-07	1.066E-08	1.530E-07	3.000E-09	5.586E-08	1.020E-08	6.906E-08	1.059E-03	1.224E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Small	50 MPH	9.785E-08	2.107E-06	3.886E-07	1.029E-08	1.200E-08	1.303E-07	9.423E-08	2.366E-07	3.000E-09	5.586E-08	9.015E-08	1.490E-07	1.078E-03	4.545E-09
2017	Annual	San Joaquin (SJV)	T6 Public	50 MPH	2.927E-08	3.931E-06	1.032E-07	1.029E-08	1.200E-08	1.303E-07	2.191E-08	1.643E-07	3.000E-09	5.586E-08	2.096E-08	7.982E-08	1.079E-03	1.359E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	50 MPH	1.167E-08	3.273E-07	6.144E-08	1.068E-08	1.200E-08	1.303E-07	1.675E-09	1.440E-07	3.000E-09	5.586E-08	1.603E-09	6.046E-08	1.120E-03	5.422E-10
2017	Annual	San Joaquin (SJV)	T6TS	50 MPH	1.649E-07	1.052E-06	5.146E-06	9.727E-09	1.200E-08	1.303E-07	1.275E-09	1.436E-07	3.000E-09	5.586E-08	1.179E-09	6.004E-08	9.660E-04	5.725E-08
2017	Annual	San Joaquin (SJV)	T7 Ag	50 MPH	9.759E-07	1.404E-05	4.353E-06	1.555E-08	3.600E-08	6.174E-08	6.930E-07	7.907E-07	9.000E-09	2.646E-08	6.630E-07	6.984E-07	1.630E-03	4.533E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP	50 MPH	9.008E-08	4.013E-06	3.834E-07	1.439E-08	3.600E-08	6.174E-08	3.120E-08	1.289E-07	9.000E-09	2.646E-08	2.985E-08	6.531E-08	1.508E-03	4.184E-09
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	1.154E-07	5.208E-06	4.679E-07	1.490E-08	3.600E-08	6.174E-08	5.387E-08	1.516E-07	9.000E-09	2.646E-08	5.154E-08	8.700E-08	1.562E-03	5.361E-09
2017	Annual	San Joaquin (SJV)	T7 NNOOS	50 MPH	4.925E-08	1.908E-06	2.458E-07	1.362E-08	3.600E-08	6.174E-08	1.190E-08	1.096E-07	9.000E-09	2.646E-08	1.139E-08	4.685E-08	1.428E-03	2.287E-09
2017	Annual	San Joaquin (SJV)	T7 NOOS	50 MPH	7.823E-08	3.907E-06	3.366E-07	1.439E-08	3.600E-08	6.174E-08	2.292E-08	1.207E-07	9.000E-09	2.646E-08	2.193E-08	5.739E-08	1.509E-03	3.634E-09
2017	Annual	San Joaquin (SJV)	T7 Other Port	50 MPH	9.021E-08	4.734E-06	3.117E-07	1.494E-08	3.600E-08	6.174E-08	2.353E-08	1.213E-07	9.000E-09	2.646E-08	2.251E-08	5.797E-08	1.566E-03	4.190E-09
2017	Annual	San Joaquin (SJV)	T7 POAK	50 MPH	9.936E-08	5.368E-06	3.313E-07	1.510E-08	3.600E-08	6.174E-08	2.673E-08	1.245E-07	9.000E-09	2.646E-08	2.557E-08	6.103E-08	1.582E-03	4.615E-09
2017	Annual	San Joaquin (SJV)	T7 POLA	50 MPH	9.936E-08	5.368E-06	3.313E-07	1.510E-08	3.600E-08	6.174E-08	2.673E-08	1.245E-07	9.000E-09	2.646E-08	2.557E-08	6.103E-08	1.582E-03	4.615E-09
2017	Annual	San Joaquin (SJV)	T7 Public	50 MPH	6.184E-08	8.472E-06	2.770E-07	1.512E-08	3.600E-08	6.174E-08	4.621E-08	1.440E-07	9.000E-09	2.646E-08	4.421E-08	7.967E-08	1.585E-03	2.872E-09
2017	Annual	San Joaquin (SJV)	T7 Single	50 MPH	1.341E-07	5.931E-06	5.623E-07	1.500E-08	3.600E-08	6.174E-08	7.614E-08	1.739E-07	9.000E-09	2.646E-08	7.284E-08	1.083E-07	1.573E-03	6.230E-09
2017	Annual	San Joaquin (SJV)	T7 Single Construction	50 MPH	1.163E-07	5.652E-06	4.859E-07	1.487E-08	3.600E-08	6.174E-08	6.140E-08	1.591E-07	9.000E-09	2.646E-08	5.874E-08	9.420E-08	1.558E-03	5.404E-09
2017	Annual	San Joaquin (SJV)	T7 SWCV	50 MPH	5.080E-08	8.759E-06	2.468E-07	2.955E-08	3.600E-08	6.174E-08	1.233E-08	1.101E-07	9.000E-09	2.646E-08	1.180E-08	4.726E-08	3.397E-03	2.949E-07
2017	Annual	San Joaquin (SJV)	T7 Tractor	50 MPH	1.054E-07	5.142E-06	4.101E-07	1.446E-08	3.600E-08	6.174E-08	3.812E-08	1.359E-07	9.000E-09	2.646E-08	3.647E-08	7.193E-08	1.516E-03	4.894E-09
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	50 MPH	1.675E-07	6.607E-06	6.913E-07	1.496E-08	3.600E-08	6.174E-08	9.108E-08	1.888E-07	9.000E-09	2.646E-08	8.714E-08	1.226E-07	1.568E-03	7.778E-09
2017	Annual	San Joaquin (SJV)	T7 Utility	50 MPH	2.378E-08	5.642E-07	1.404E-07	1.477E-08	3.600E-08	6.174E-08	2.572E-09	1.003E-07	9.000E-09	2.646E-08	2.461E-09	3.792E-08	1.549E-03	1.105E-09
2017	Annual	San Joaquin (SJV)	T7IS	50 MPH	4.329E-07	3.246E-06	2.925E-05	1.742E-08	2.000E-08	6.174E-08	5.655E-10	8.231E-08	5.000E-09	2.646E-08	5.235E-10	3.198E-08	1.698E-03	1.633E-07
2017	Annual	San Joaquin (SJV)	UBUS	50 MPH	3.512E-07	1.090E-05	6.570E-06	9.524E-09	1.200E-08	6.430E-07	1.004E-07	7.554E-07	3.000E-09	2.756E-07	9.608E-08	3.746E-07	1.403E-03	4.807E-07

2017 Annual	San Joaquin (SJV)	All Other Buses	55 MPH	5.669E-08	3.797E-06	1.781E-07	1.016E-08	1.200E-08	1.303E-07	3.559E-08	1.779E-07	3.000E-09	5.586E-08	3.405E-08	9.291E-08	1.065E-03	2.633E-09
2017 Annual	San Joaquin (SJV)	LDA	55 MPH	1.657E-08	7.895E-08	7.540E-07	2.602E-09	8.000E-09	3.675E-08	1.436E-09	4.619E-08	2.000E-09	1.575E-08	1.327E-09	1.908E-08	2.596E-04	5.577E-09
2017 Annual	San Joaquin (SJV)	LDT1	55 MPH	5.696E-08	2.400E-07	2.177E-06	3.102E-09	8.000E-09	3.675E-08	2.970E-09	4.772E-08	2.000E-09	1.575E-08	2.744E-09	2.049E-08	3.072E-04	1.688E-08
2017 Annual	San Joaquin (SJV)	LDT2	55 MPH	2.360E-08	1.427E-07	1.068E-06	3.541E-09	8.000E-09	3.675E-08	1.355E-09	4.610E-08	2.000E-09	1.575E-08	1.248E-09	1.900E-08	3.531E-04	8.014E-09
2017 Annual	San Joaquin (SJV)	LHD1	55 MPH	9.443E-08	3.029E-06	1.273E-06	6.183E-09	1.010E-08	7.644E-08	1.549E-08	1.020E-07	2.525E-09	3.276E-08	1.480E-08	5.009E-08	6.298E-04	1.385E-08
2017 Annual	San Joaquin (SJV)	LHD2	55 MPH	7.681E-08	2.733E-06	7.974E-07	6.117E-09	1.078E-08	8.918E-08	1.558E-08	1.155E-07	2.694E-09	3.822E-08	1.489E-08	5.581E-08	6.290E-04	7.733E-09
2017 Annual	San Joaquin (SJV)	MCY	55 MPH	2.023E-06	1.138E-06	2.133E-05	1.855E-09	4.000E-09	1.176E-08	1.403E-09	1.716E-08	1.000E-09	5.040E-09	1.323E-09	7.363E-09	1.453E-04	3.235E-07
2017 Annual	San Joaquin (SJV)	MDV	55 MPH	4.296E-08	2.477E-07	1.692E-06	4.718E-09	8.000E-09	3.675E-08	1.493E-09	4.624E-08	2.000E-09	1.575E-08	1.380E-09	1.913E-08	4.701E-04	1.421E-08
2017 Annual	San Joaquin (SJV)	MH	55 MPH	1.809E-07	1.950E-06	5.851E-06	9.397E-09	1.288E-08	1.303E-07	3.961E-08	1.828E-07	3.220E-09	5.586E-08	3.785E-08	9.693E-08	9.407E-04	4.410E-08
2017 Annual	San Joaquin (SJV)	Motor Coach	55 MPH	9.005E-08	5.474E-06	3.417E-07	1.489E-08	1.200E-08	1.303E-07	4.593E-08	1.883E-07	3.000E-09	5.586E-08	4.395E-08	1.028E-07	1.561E-03	4.183E-09
2017 Annual	San Joaquin (SJV)	OBUS	55 MPH	6.840E-08	5.974E-07	2.111E-06	9.395E-09	1.200E-08	1.303E-07	5.879E-10	1.429E-07	3.000E-09	5.586E-08	5.416E-10	5.940E-08	9.379E-04	2.613E-08
2017 Annual	San Joaquin (SJV)	SBUS	55 MPH	8.374E-08	5.668E-06	9.996E-07	8.650E-09	1.102E-08	7.448E-07	4.200E-08	7.978E-07	2.756E-09	3.192E-07	4.017E-08	3.621E-07	9.002E-04	1.340E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	55 MPH	5.770E-07	8.633E-06	1.564E-06	1.015E-08	1.200E-08	1.303E-07	4.221E-07	5.644E-07	3.000E-09	5.586E-08	4.038E-07	4.627E-07	1.063E-03	2.680E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	2.875E-08	1.638E-06	1.106E-07	9.803E-09	1.200E-08	1.303E-07	1.901E-08	1.613E-07	3.000E-09	5.586E-08	1.818E-08	7.704E-08	1.028E-03	1.335E-09
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	55 MPH	9.075E-08	2.046E-06	3.800E-07	1.003E-08	1.200E-08	1.303E-07	1.066E-07	2.490E-07	3.000E-09	5.586E-08	1.020E-07	1.609E-07	1.051E-03	4.215E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	8.025E-08	3.992E-06	2.647E-07	1.004E-08	1.200E-08	1.303E-07	6.176E-08	2.041E-07	3.000E-09	5.586E-08	5.909E-08	1.179E-07	1.052E-03	3.727E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	1.347E-07	3.078E-06	5.279E-07	1.005E-08	1.200E-08	1.303E-07	1.454E-07	2.877E-07	3.000E-09	5.586E-08	1.391E-07	1.979E-07	1.053E-03	6.256E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	55 MPH	3.742E-08	2.288E-06	1.298E-07	9.836E-09	1.200E-08	1.303E-07	2.339E-08	1.657E-07	3.000E-09	5.586E-08	2.238E-08	8.124E-08	1.031E-03	1.738E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Small	55 MPH	1.662E-07	3.591E-06	6.275E-07	1.008E-08	1.200E-08	1.303E-07	1.708E-07	3.131E-07	3.000E-09	5.586E-08	1.634E-07	2.222E-07	1.056E-03	7.721E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	55 MPH	2.050E-08	1.595E-06	8.256E-08	9.822E-09	1.200E-08	1.303E-07	1.098E-08	1.533E-07	3.000E-09	5.586E-08	1.050E-08	6.936E-08	1.030E-03	9.523E-10
2017 Annual	San Joaquin (SJV)	T6 OOS Small	55 MPH	9.075E-08	2.046E-06	3.800E-07	1.003E-08	1.200E-08	1.303E-07	1.066E-07	2.490E-07	3.000E-09	5.586E-08	1.020E-07	1.609E-07	1.051E-03	4.215E-09
2017 Annual	San Joaquin (SJV)	T6 Public	55 MPH	2.696E-08	3.921E-06	9.036E-08	1.007E-08	1.200E-08	1.303E-07	2.348E-08	1.658E-07	3.000E-09	5.586E-08	2.246E-08	8.132E-08	1.056E-03	1.252E-09
2017 Annual	San Joaquin (SJV)	T6 Utility	55 MPH	8.602E-09	2.807E-07	4.528E-08	1.039E-08	1.200E-08	1.303E-07	1.581E-09	1.439E-07	3.000E-09	5.586E-08	1.513E-09	6.037E-08	1.089E-03	3.996E-10
2017 Annual	San Joaquin (SJV)	T6TS	55 MPH	1.699E-07	1.061E-06	5.171E-06	9.462E-09	1.200E-08	1.303E-07	1.311E-09	1.437E-07	3.000E-09	5.586E-08	1.212E-09	6.007E-08	9.394E-04	5.884E-08
2017 Annual	San Joaquin (SJV)	T7 Ag	55 MPH	9.909E-07	1.418E-05	4.017E-06	1.535E-08	3.600E-08	6.174E-08	7.185E-07	8.162E-07	9.000E-09	2.646E-08	6.874E-07	7.228E-07	1.609E-03	4.603E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP	55 MPH	7.141E-08	3.797E-06	3.099E-07	1.398E-08	3.600E-08	6.174E-08	3.245E-08	1.302E-07	9.000E-09	2.646E-08	3.105E-08	6.651E-08	1.465E-03	3.317E-09
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	9.456E-08	5.018E-06	4.069E-07	1.449E-08	3.600E-08	6.174E-08	5.787E-08	1.556E-07	9.000E-09	2.646E-08	5.537E-08	9.083E-08	1.519E-03	4.392E-09
2017 Annual	San Joaquin (SJV)	T7 NNOOS	55 MPH	3.738E-08	1.765E-06	1.884E-07	1.325E-08	3.600E-08	6.174E-08	1.205E-08	1.098E-07	9.000E-09	2.646E-08	1.153E-08	4.699E-08	1.389E-03	1.736E-09
2017 Annual	San Joaquin (SJV)	T7 NOOS	55 MPH	6.027E-08	3.691E-06	2.628E-07	1.399E-08	3.600E-08	6.174E-08	2.316E-08	1.209E-07	9.000E-09	2.646E-08	2.216E-08	5.762E-08	1.466E-03	2.799E-09
2017 Annual	San Joaquin (SJV)	T7 Other Port	55 MPH	6.682E-08	4.535E-06	2.328E-07	1.447E-08	3.600E-08	6.174E-08	2.230E-08	1.200E-07	9.000E-09	2.646E-08	2.134E-08	5.680E-08	1.517E-03	3.103E-09
2017 Annual	San Joaquin (SJV)	T7 POAK	55 MPH	7.364E-08	5.155E-06	2.481E-07	1.461E-08	3.600E-08	6.174E-08	2.535E-08	1.231E-07	9.000E-09	2.646E-08	2.425E-08	5.971E-08	1.532E-03	3.420E-09
2017 Annual	San Joaquin (SJV)	T7 POLA	55 MPH	7.364E-08	5.155E-06	2.481E-07	1.461E-08	3.600E-08	6.174E-08	2.535E-08	1.231E-07	9.000E-09	2.646E-08	2.425E-08	5.971E-08	1.532E-03	3.420E-09
2017 Annual	San Joaquin (SJV)	T7 Public	55 MPH	5.762E-08	8.503E-06	2.442E-07	1.484E-08	3.600E-08	6.174E-08	4.782E-08	1.456E-07	9.000E-09	2.646E-08	4.575E-08	8.121E-08	1.556E-03	2.676E-09
2017 Annual	San Joaquin (SJV)	T7 Single	55 MPH	1.265E-07	5.865E-06	5.041E-07	1.464E-08	3.600E-08	6.174E-08	8.180E-08	1.795E-07	9.000E-09	2.646E-08	7.826E-08	1.137E-07	1.534E-03	5.876E-09
2017 Annual	San Joaquin (SJV)	T7 Single Construction	55 MPH	1.088E-07	5.590E-06	4.385E-07	1.450E-08	3.600E-08	6.174E-08	6.822E-08	1.660E-07	9.000E-09	2.646E-08	6.527E-08	1.007E-07	1.520E-03	5.054E-09
2017 Annual	San Joaquin (SJV)	T7 SWCV	55 MPH	4.431E-08	8.759E-06	1.954E-07	2.902E-08	3.600E-08	6.174E-08	1.338E-08	1.111E-07	9.000E-09	2.646E-08	1.280E-08	4.826E-08	3.334E-03	2.558E-07
2017 Annual	San Joaquin (SJV)	T7 Tractor	55 MPH	8.629E-08	4.954E-06	3.366E-07	1.405E-08	3.600E-08	6.174E-08	3.957E-08	1.373E-07	9.000E-09	2.646E-08	3.786E-08	7.332E-08	1.473E-03	4.008E-09
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	55 MPH	1.512E-07	6.471E-06	6.374E-07	1.458E-08	3.600E-08	6.174E-08	1.005E-07	1.982E-07	9.000E-09	2.646E-08	9.614E-08	1.316E-07	1.529E-03	7.023E-09
2017 Annual	San Joaquin (SJV)	T7 Utility	55 MPH	1.753E-08	4.859E-07	1.035E-07	1.438E-08	3.600E-08	6.174E-08	2.428E-09	1.002E-07	9.000E-09	2.646E-08	2.323E-09	3.778E-08	1.507E-03	8.140E-10
2017 Annual	San Joaquin (SJV)	T7IS	55 MPH	4.424E-07	3.262E-06	2.775E-05	1.708E-08	2.000E-08	6.174E-08	5.803E-10	8.232E-08	5.000E-09	2.646E-08	5.373E-10	3.200E-08	1.666E-03	1.666E-07
2017 Annual	San Joaquin (SJV)	UBUS	55 MPH	3.681E-07	1.102E-05	6.507E-06	9.372E-09	1.200E-08	6.430E-07	1.078E-07	7.627E-07	3.000E-09	2.756E-07	1.031E-07	3.817E-07	1.382E-03	4.885E-07

2017 Annual	San Joaquin (SJV)	All Other Buses	60 MPH	5.570E-08	3.772E-06	1.686E-07	1.004E-08	1.200E-08	1.303E-07	3.742E-08	1.798E-07	3.000E-09	5.586E-08	3.580E-08	9.466E-08	1.052E-03	2.587E-09
2017 Annual	San Joaquin (SJV)	LDA	60 MPH	1.778E-08	8.117E-08	7.263E-07	2.799E-09	8.000E-09	3.675E-08	1.539E-09	4.629E-08	2.000E-09	1.575E-08	1.423E-09	1.917E-08	2.794E-04	5.961E-09
2017 Annual	San Joaquin (SJV)	LDT1	60 MPH	6.074E-08	2.522E-07	2.189E-06	3.335E-09	8.000E-09	3.675E-08	3.155E-09	4.790E-08	2.000E-09	1.575E-08	2.915E-09	2.066E-08	3.305E-04	1.782E-08
2017 Annual	San Joaquin (SJV)	LDT2	60 MPH	2.523E-08	1.477E-07	1.034E-06	3.808E-09	8.000E-09	3.675E-08	1.449E-09	4.620E-08	2.000E-09	1.575E-08	1.335E-09	1.908E-08	3.799E-04	8.530E-09
2017 Annual	San Joaquin (SJV)	LHD1	60 MPH	1.028E-07	3.141E-06	1.426E-06	6.262E-09	1.010E-08	7.644E-08	1.681E-08	1.033E-07	2.525E-09	3.276E-08	1.606E-08	5.134E-08	6.377E-04	1.505E-08
2017 Annual	San Joaquin (SJV)	LHD2	60 MPH	8.303E-08	2.833E-06	9.013E-07	6.156E-09	1.078E-08	8.918E-08	1.674E-08	1.167E-07	2.694E-09	3.822E-08	1.601E-08	5.692E-08	6.329E-04	8.378E-09
2017 Annual	San Joaquin (SJV)	MCY	60 MPH	2.201E-06	1.172E-06	2.424E-05	2.017E-09	4.000E-09	1.176E-08	1.529E-09	1.729E-08	1.000E-09	5.040E-09	1.442E-09	7.482E-09	1.563E-04	3.514E-07
2017 Annual	San Joaquin (SJV)	MDV	60 MPH	4.599E-08	2.572E-07	1.656E-06	5.074E-09	8.000E-09	3.675E-08	1.596E-09	4.635E-08	2.000E-09	1.575E-08	1.475E-09	1.923E-08	5.059E-04	1.513E-08
2017 Annual	San Joaquin (SJV)	MH	60 MPH	1.975E-07	1.985E-06	6.684E-06	9.459E-09	1.288E-08	1.303E-07	4.576E-08	1.890E-07	3.220E-09	5.586E-08	4.372E-08	1.028E-07	9.457E-04	4.803E-08
2017 Annual	San Joaquin (SJV)	Motor Coach	60 MPH	8.426E-08	5.414E-06	3.195E-07	1.470E-08	1.200E-08	1.303E-07	4.770E-08	1.900E-07	3.000E-09	5.586E-08	4.563E-08	1.045E-07	1.541E-03	3.914E-09
2017 Annual	San Joaquin (SJV)	OBUS	60 MPH	7.365E-08	6.094E-07	2.032E-06	9.452E-09	1.200E-08	1.303E-07	6.326E-10	1.430E-07	3.000E-09	5.586E-08	5.829E-10	5.944E-08	9.437E-04	2.811E-08
2017 Annual	San Joaquin (SJV)	SBUS	60 MPH	8.766E-08	5.705E-06	9.414E-07	8.611E-09	1.102E-08	7.448E-07	4.439E-08	8.002E-07	2.756E-09	3.192E-07	4.246E-08	3.644E-07	8.961E-04	1.429E-08
2017 Annual	San Joaquin (SJV)	T6 Ag	60 MPH	5.985E-07	8.692E-06	1.533E-06	1.010E-08	1.200E-08	1.303E-07	4.399E-07	5.822E-07	3.000E-09	5.586E-08	4.208E-07	4.797E-07	1.059E-03	2.780E-08
2017 Annual	San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	2.671E-08	1.606E-06	1.023E-07	9.679E-09	1.200E-08	1.303E-07	1.978E-08	1.621E-07	3.000E-09	5.586E-08	1.893E-08	7.779E-08	1.015E-03	1.241E-09
2017 Annual	San Joaquin (SJV)	T6 CAIRP Small	60 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	8.129E-08	3.980E-06	2.583E-07	9.929E-09	1.200E-08	1.303E-07	6.588E-08	2.082E-07	3.000E-09	5.586E-08	6.303E-08	1.219E-07	1.041E-03	3.776E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	1.355E-07	3.065E-06	5.305E-07	9.946E-09	1.200E-08	1.303E-07	1.561E-07	2.984E-07	3.000E-09	5.586E-08	1.494E-07	2.082E-07	1.042E-03	6.294E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Heavy	60 MPH	3.521E-08	2.249E-06	1.202E-07	9.708E-09	1.200E-08	1.303E-07	2.424E-08	1.666E-07	3.000E-09	5.586E-08	2.319E-08	8.205E-08	1.018E-03	1.636E-09
2017 Annual	San Joaquin (SJV)	T6 Instate Small	60 MPH	1.695E-07	3.584E-06	6.313E-07	9.986E-09	1.200E-08	1.303E-07	1.838E-07	3.261E-07	3.000E-09	5.586E-08	1.758E-07	2.347E-07	1.047E-03	7.875E-09
2017 Annual	San Joaquin (SJV)	T6 OOS Heavy	60 MPH	1.826E-08	1.562E-06	7.407E-08	9.699E-09	1.200E-08	1.303E-07	1.122E-08	1.536E-07	3.000E-09	5.586E-08	1.073E-08	6.959E-08	1.017E-03	8.482E-10
2017 Annual	San Joaquin (SJV)	T6 OOS Small	60 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017 Annual	San Joaquin (SJV)	T6 Public	60 MPH	2.656E-08	3.933E-06	8.599E-08	9.987E-09	1.200E-08	1.303E-07	2.461E-08	1.669E-07	3.000E-09	5.586E-08	2.354E-08	8.240E-08	1.047E-03	1.234E-09
2017 Annual	San Joaquin (SJV)	T6 Utility	60 MPH	7.385E-09	2.616E-07	3.887E-08	1.026E-08	1.200E-08	1.303E-07	1.538E-09	1.439E-07	3.000E-09	5.586E-08	1.471E-09	6.033E-08	1.076E-03	3.430E-10
2017 Annual	San Joaquin (SJV)	T6TS	60 MPH	1.841E-07	1.085E-06	5.378E-06	9.524E-09	1.200E-08	1.303E-07	1.418E-09	1.438E-07	3.000E-09	5.586E-08	1.311E-09	6.017E-08	9.452E-04	6.363E-08
2017 Annual	San Joaquin (SJV)	T7 Ag	60 MPH	1.030E-06	1.429E-05	3.916E-06	1.529E-08	3.600E-08	6.174E-08	7.417E-07	8.394E-07	9.000E-09	2.646E-08	7.096E-07	7.451E-07	1.603E-03	4.785E-08
2017 Annual	San Joaquin (SJV)	T7 CAIRP	60 MPH	6.443E-08	3.709E-06	2.820E-07	1.380E-08	3.600E-08	6.174E-08	3.334E-08	1.311E-07	9.000E-09	2.646E-08	3.190E-08	6.736E-08	1.447E-03	2.993E-09
2017 Annual	San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	8.686E-08	4.947E-06	3.854E-07	1.432E-08	3.600E-08	6.174E-08	6.038E-08	1.581E-07	9.000E-09	2.646E-08	5.777E-08	9.323E-08	1.501E-03	4.034E-09
2017 Annual	San Joaquin (SJV)	T7 NNOOS	60 MPH	3.273E-08	1.709E-06	1.660E-07	1.309E-08	3.600E-08	6.174E-08	1.219E-08	1.099E-07	9.000E-09	2.646E-08	1.167E-08	4.713E-08	1.372E-03	1.520E-09
2017 Annual	San Joaquin (SJV)	T7 NOOS	60 MPH	5.335E-08	3.603E-06	2.343E-07	1.381E-08	3.600E-08	6.174E-08	2.342E-08	1.212E-07	9.000E-09	2.646E-08	2.241E-08	5.787E-08	1.447E-03	2.478E-09
2017 Annual	San Joaquin (SJV)	T7 Other Port	60 MPH	5.755E-08	4.448E-06	2.017E-07	1.426E-08	3.600E-08	6.174E-08	2.174E-08	1.195E-07	9.000E-09	2.646E-08	2.080E-08	5.626E-08	1.495E-03	2.673E-09
2017 Annual	San Joaquin (SJV)	T7 POAK	60 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017 Annual	San Joaquin (SJV)	T7 POLA	60 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017 Annual	San Joaquin (SJV)	T7 Public	60 MPH	5.715E-08	8.548E-06	2.327E-07	1.474E-08	3.600E-08	6.174E-08	4.923E-08	1.470E-07	9.000E-09	2.646E-08	4.710E-08	8.256E-08	1.545E-03	2.654E-09
2017 Annual	San Joaquin (SJV)	T7 Single	60 MPH	1.271E-07	5.850E-06	4.852E-07	1.448E-08	3.600E-08	6.174E-08	8.590E-08	1.836E-07	9.000E-09	2.646E-08	8.218E-08	1.176E-07	1.518E-03	5.905E-09
2017 Annual	San Joaquin (SJV)	T7 Single Construction	60 MPH	1.093E-07	5.574E-06	4.235E-07	1.435E-08	3.600E-08	6.174E-08	7.275E-08	1.705E-07	9.000E-09	2.646E-08	6.960E-08	1.051E-07	1.504E-03	5.078E-09
2017 Annual	San Joaquin (SJV)	T7 SWCV	60 MPH	4.193E-08	8.792E-06	1.755E-07	2.884E-08	3.600E-08	6.174E-08	1.405E-08	1.118E-07	9.000E-09	2.646E-08	1.344E-08	4.890E-08	3.312E-03	2.414E-07
2017 Annual	San Joaquin (SJV)	T7 Tractor	60 MPH	7.984E-08	4.877E-06	3.091E-07	1.387E-08	3.600E-08	6.174E-08	4.070E-08	1.384E-07	9.000E-09	2.646E-08	3.894E-08	7.440E-08	1.453E-03	3.708E-09
2017 Annual	San Joaquin (SJV)	T7 Tractor Construction	60 MPH	1.479E-07	6.429E-06	6.217E-07	1.443E-08	3.600E-08	6.174E-08	1.065E-07	2.042E-07	9.000E-09	2.646E-08	1.019E-07	1.373E-07	1.512E-03	6.869E-09
2017 Annual	San Joaquin (SJV)	T7 Utility	60 MPH	1.504E-08	4.534E-07	8.884E-08	1.420E-08	3.600E-08	6.174E-08	2.361E-09	1.001E-07	9.000E-09	2.646E-08	2.259E-09	3.772E-08	1.488E-03	6.988E-10
2017 Annual	San Joaquin (SJV)	T7IS	60 MPH	4.765E-07	3.329E-06	2.663E-05	1.683E-08	2.000E-08	6.174E-08	6.269E-10	8.237E-08	5.000E-09	2.646E-08	5.805E-10	3.204E-08	1.643E-03	1.792E-07
2017 Annual	San Joaquin (SJV)	UBUS	60 MPH	4.119E-07	1.125E-05	6.722E-06	9.403E-09	1.200E-08	6.430E-07	1.225E-07	7.775E-07	3.000E-09	2.756E-07	1.172E-07	3.958E-07	1.386E-03	5.346E-07

2017	Annual	San Joaquin (SJV)	All Other Buses	65 MPH	5.570E-08	3.772E-06	1.686E-07	1.004E-08	1.200E-08	1.303E-07	3.742E-08	1.798E-07	3.000E-09	5.586E-08	3.580E-08	9.466E-08	1.052E-03	2.587E-09
2017	Annual	San Joaquin (SJV)	LDA	65 MPH	2.007E-08	8.482E-08	7.116E-07	3.124E-09	8.000E-09	3.675E-08	1.738E-09	4.649E-08	2.000E-09	1.575E-08	1.606E-09	1.936E-08	3.120E-04	6.707E-09
2017	Annual	San Joaquin (SJV)	LDT1	65 MPH	6.790E-08	2.708E-07	2.272E-06	3.722E-09	8.000E-09	3.675E-08	3.519E-09	4.827E-08	2.000E-09	1.575E-08	3.252E-09	2.100E-08	3.691E-04	1.973E-08
2017	Annual	San Joaquin (SJV)	LDT2	65 MPH	2.836E-08	1.558E-07	1.019E-06	4.251E-09	8.000E-09	3.675E-08	1.632E-09	4.638E-08	2.000E-09	1.575E-08	1.503E-09	1.925E-08	4.243E-04	9.549E-09
2017	Annual	San Joaquin (SJV)	LHD1	65 MPH	1.173E-07	3.256E-06	1.683E-06	6.348E-09	1.010E-08	7.644E-08	1.909E-08	1.056E-07	2.525E-09	3.276E-08	1.824E-08	5.352E-08	6.463E-04	1.718E-08
2017	Annual	San Joaquin (SJV)	LHD2	65 MPH	9.422E-08	2.936E-06	1.076E-06	6.191E-09	1.078E-08	8.918E-08	1.882E-08	1.188E-07	2.694E-09	3.822E-08	1.800E-08	5.891E-08	6.364E-04	9.532E-09
2017	Annual	San Joaquin (SJV)	MCY	65 MPH	2.513E-06	1.215E-06	2.904E-05	2.285E-09	4.000E-09	1.176E-08	1.748E-09	1.751E-08	1.000E-09	5.040E-09	1.648E-09	7.688E-09	1.745E-04	4.009E-07
2017	Annual	San Joaquin (SJV)	MDV	65 MPH	5.175E-08	2.723E-07	1.660E-06	5.664E-09	8.000E-09	3.675E-08	1.795E-09	4.655E-08	2.000E-09	1.575E-08	1.660E-09	1.941E-08	5.650E-04	1.695E-08
2017	Annual	San Joaquin (SJV)	MH	65 MPH	2.262E-07	2.045E-06	8.054E-06	9.648E-09	1.288E-08	1.303E-07	5.368E-08	1.969E-07	3.220E-09	5.586E-08	5.130E-08	1.104E-07	9.624E-04	5.489E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	65 MPH	8.426E-08	5.414E-06	3.195E-07	1.470E-08	1.200E-08	1.303E-07	4.770E-08	1.900E-07	3.000E-09	5.586E-08	4.563E-08	1.045E-07	1.541E-03	3.914E-09
2017	Annual	San Joaquin (SJV)	OBUS	65 MPH	8.358E-08	6.315E-07	1.991E-06	9.627E-09	1.200E-08	1.303E-07	7.177E-10	1.431E-07	3.000E-09	5.586E-08	6.613E-10	5.952E-08	9.612E-04	3.188E-08
2017	Annual	San Joaquin (SJV)	SBUS	65 MPH	9.148E-08	5.712E-06	8.930E-07	8.631E-09	1.102E-08	7.448E-07	4.444E-08	8.003E-07	2.756E-09	3.192E-07	4.250E-08	3.645E-07	8.982E-04	1.583E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	65 MPH	5.985E-07	8.692E-06	1.533E-06	1.010E-08	1.200E-08	1.303E-07	4.399E-07	5.822E-07	3.000E-09	5.586E-08	4.208E-07	4.797E-07	1.059E-03	2.780E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	2.671E-08	1.606E-06	1.023E-07	9.679E-09	1.200E-08	1.303E-07	1.978E-08	1.621E-07	3.000E-09	5.586E-08	1.893E-08	7.779E-08	1.015E-03	1.241E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	65 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	8.129E-08	3.980E-06	2.583E-07	9.929E-09	1.200E-08	1.303E-07	6.588E-08	2.082E-07	3.000E-09	5.586E-08	6.303E-08	1.219E-07	1.041E-03	3.776E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	1.355E-07	3.065E-06	5.305E-07	9.946E-09	1.200E-08	1.303E-07	1.561E-07	2.984E-07	3.000E-09	5.586E-08	1.494E-07	2.082E-07	1.042E-03	6.294E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	65 MPH	3.521E-08	2.249E-06	1.202E-07	9.708E-09	1.200E-08	1.303E-07	2.424E-08	1.666E-07	3.000E-09	5.586E-08	2.319E-08	8.205E-08	1.018E-03	1.636E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Small	65 MPH	1.695E-07	3.584E-06	6.313E-07	9.986E-09	1.200E-08	1.303E-07	1.838E-07	3.261E-07	3.000E-09	5.586E-08	1.758E-07	2.347E-07	1.047E-03	7.875E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	65 MPH	1.826E-08	1.562E-06	7.407E-08	9.699E-09	1.200E-08	1.303E-07	1.122E-08	1.536E-07	3.000E-09	5.586E-08	1.073E-08	6.959E-08	1.017E-03	8.482E-10
2017	Annual	San Joaquin (SJV)	T6 OOS Small	65 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017	Annual	San Joaquin (SJV)	T6 Public	65 MPH	2.656E-08	3.933E-06	8.599E-08	9.987E-09	1.200E-08	1.303E-07	2.461E-08	1.669E-07	3.000E-09	5.586E-08	2.354E-08	8.240E-08	1.047E-03	1.234E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	65 MPH	7.385E-09	2.616E-07	3.887E-08	1.026E-08	1.200E-08	1.303E-07	1.538E-09	1.439E-07	3.000E-09	5.586E-08	1.471E-09	6.033E-08	1.076E-03	3.430E-10
2017	Annual	San Joaquin (SJV)	T6TS	65 MPH	2.097E-07	1.125E-06	5.841E-06	9.707E-09	1.200E-08	1.303E-07	1.613E-09	1.440E-07	3.000E-09	5.586E-08	1.492E-09	6.035E-08	9.627E-04	7.241E-08
2017	Annual	San Joaquin (SJV)	T7 Ag	65 MPH	1.030E-06	1.429E-05	3.916E-06	1.529E-08	3.600E-08	6.174E-08	7.417E-07	8.394E-07	9.000E-09	2.646E-08	7.096E-07	7.451E-07	1.603E-03	4.785E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP	65 MPH	6.443E-08	3.709E-06	2.820E-07	1.380E-08	3.600E-08	6.174E-08	3.334E-08	1.311E-07	9.000E-09	2.646E-08	3.190E-08	6.736E-08	1.447E-03	2.993E-09
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	8.686E-08	4.947E-06	3.854E-07	1.432E-08	3.600E-08	6.174E-08	6.038E-08	1.581E-07	9.000E-09	2.646E-08	5.777E-08	9.323E-08	1.501E-03	4.034E-09
2017	Annual	San Joaquin (SJV)	T7 NNOOS	65 MPH	3.273E-08	1.709E-06	1.660E-07	1.309E-08	3.600E-08	6.174E-08	1.219E-08	1.099E-07	9.000E-09	2.646E-08	1.167E-08	4.713E-08	1.372E-03	1.520E-09
2017	Annual	San Joaquin (SJV)	T7 NOOS	65 MPH	5.335E-08	3.603E-06	2.343E-07	1.381E-08	3.600E-08	6.174E-08	2.342E-08	1.212E-07	9.000E-09	2.646E-08	2.241E-08	5.787E-08	1.447E-03	2.478E-09
2017	Annual	San Joaquin (SJV)	T7 Other Port	65 MPH	5.755E-08	4.448E-06	2.017E-07	1.426E-08	3.600E-08	6.174E-08	2.174E-08	1.195E-07	9.000E-09	2.646E-08	2.080E-08	5.626E-08	1.495E-03	2.673E-09
2017	Annual	San Joaquin (SJV)	T7 POAK	65 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017	Annual	San Joaquin (SJV)	T7 POLA	65 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017	Annual	San Joaquin (SJV)	T7 Public	65 MPH	5.715E-08	8.548E-06	2.327E-07	1.474E-08	3.600E-08	6.174E-08	4.923E-08	1.470E-07	9.000E-09	2.646E-08	4.710E-08	8.256E-08	1.545E-03	2.654E-09
2017	Annual	San Joaquin (SJV)	T7 Single	65 MPH	1.271E-07	5.850E-06	4.852E-07	1.448E-08	3.600E-08	6.174E-08	8.590E-08	1.836E-07	9.000E-09	2.646E-08	8.218E-08	1.176E-07	1.518E-03	5.905E-09
2017	Annual	San Joaquin (SJV)	T7 Single Construction	65 MPH	1.093E-07	5.574E-06	4.235E-07	1.435E-08	3.600E-08	6.174E-08	7.275E-08	1.705E-07	9.000E-09	2.646E-08	6.960E-08	1.051E-07	1.504E-03	5.078E-09
2017	Annual	San Joaquin (SJV)	T7 SWCV	65 MPH	4.193E-08	8.792E-06	1.755E-07	2.884E-08	3.600E-08	6.174E-08	1.405E-08	1.118E-07	9.000E-09	2.646E-08	1.344E-08	4.890E-08	3.312E-03	2.414E-07
2017	Annual	San Joaquin (SJV)	T7 Tractor	65 MPH	7.984E-08	4.877E-06	3.091E-07	1.387E-08	3.600E-08	6.174E-08	4.070E-08	1.384E-07	9.000E-09	2.646E-08	3.894E-08	7.440E-08	1.453E-03	3.708E-09
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	65 MPH	1.479E-07	6.429E-06	6.217E-07	1.443E-08	3.600E-08	6.174E-08	1.065E-07	2.042E-07	9.000E-09	2.646E-08	1.019E-07	1.373E-07	1.512E-03	6.869E-09
2017	Annual	San Joaquin (SJV)	T7 Utility	65 MPH	1.504E-08	4.534E-07	8.884E-08	1.420E-08	3.600E-08	6.174E-08	2.361E-09	1.001E-07	9.000E-09	2.646E-08	2.259E-09	3.772E-08	1.488E-03	6.988E-10
2017	Annual	San Joaquin (SJV)	T7IS	65 MPH	5.409E-07	3.450E-06	2.596E-05	1.678E-08	2.000E-08	6.174E-08	7.128E-10	8.245E-08	5.000E-09	2.646E-08	6.601E-10	3.212E-08	1.638E-03	2.033E-07
2017	Annual	San Joaquin (SJV)	UBUS	65 MPH	4.843E-07	1.157E-05	7.272E-06	9.558E-09	1.200E-08	6.430E-07	1.448E-07	7.998E-07	3.000E-09	2.756E-07	1.385E-07	4.171E-07	1.407E-03	6.185E-07

2017	Annual	San Joaquin (SJV)	All Other Buses	70 MPH	5.570E-08	3.772E-06	1.686E-07	1.004E-08	1.200E-08	1.303E-07	3.742E-08	1.798E-07	3.000E-09	5.586E-08	3.580E-08	9.466E-08	1.052E-03	2.587E-09
2017	Annual	San Joaquin (SJV)	LDA	70 MPH	2.173E-08	8.725E-08	7.104E-07	3.347E-09	8.000E-09	3.675E-08	1.883E-09	4.663E-08	2.000E-09	1.575E-08	1.740E-09	1.949E-08	3.344E-04	7.255E-09
2017	Annual	San Joaquin (SJV)	LDT1	70 MPH	7.310E-08	2.829E-07	2.349E-06	3.987E-09	8.000E-09	3.675E-08	3.787E-09	4.854E-08	2.000E-09	1.575E-08	3.499E-09	2.125E-08	3.956E-04	2.114E-08
2017	Annual	San Joaquin (SJV)	LDT2	70 MPH	3.064E-08	1.613E-07	1.021E-06	4.554E-09	8.000E-09	3.675E-08	1.766E-09	4.652E-08	2.000E-09	1.575E-08	1.627E-09	1.938E-08	4.546E-04	1.030E-08
2017	Annual	San Joaquin (SJV)	LHD1	70 MPH	1.274E-07	3.314E-06	1.868E-06	6.285E-09	1.010E-08	7.644E-08	2.068E-08	1.072E-07	2.525E-09	3.276E-08	1.975E-08	5.504E-08	6.397E-04	1.868E-08
2017	Annual	San Joaquin (SJV)	LHD2	70 MPH	1.020E-07	2.988E-06	1.200E-06	6.097E-09	1.078E-08	8.918E-08	2.028E-08	1.202E-07	2.694E-09	3.822E-08	1.938E-08	6.030E-08	6.267E-04	1.035E-08
2017	Annual	San Joaquin (SJV)	MCY	70 MPH	2.735E-06	1.240E-06	3.246E-05	2.472E-09	4.000E-09	1.176E-08	1.903E-09	1.766E-08	1.000E-09	5.040E-09	1.794E-09	7.834E-09	1.870E-04	4.362E-07
2017	Annual	San Joaquin (SJV)	MDV	70 MPH	5.594E-08	2.823E-07	1.681E-06	6.068E-09	8.000E-09	3.675E-08	1.941E-09	4.669E-08	2.000E-09	1.575E-08	1.794E-09	1.954E-08	6.055E-04	1.830E-08
2017	Annual	San Joaquin (SJV)	MH	70 MPH	2.484E-07	2.107E-06	9.034E-06	9.955E-09	1.288E-08	1.303E-07	6.317E-08	2.064E-07	3.220E-09	5.586E-08	6.037E-08	1.195E-07	9.919E-04	5.984E-08
2017	Annual	San Joaquin (SJV)	Motor Coach	70 MPH	8.426E-08	5.414E-06	3.195E-07	1.470E-08	1.200E-08	1.303E-07	4.770E-08	1.900E-07	3.000E-09	5.586E-08	4.563E-08	1.045E-07	1.541E-03	3.914E-09
2017	Annual	San Joaquin (SJV)	OBUS	70 MPH	9.081E-08	6.465E-07	1.988E-06	9.928E-09	1.200E-08	1.303E-07	7.797E-10	1.431E-07	3.000E-09	5.586E-08	7.184E-10	5.958E-08	9.914E-04	3.463E-08
2017	Annual	San Joaquin (SJV)	SBUS	70 MPH	9.427E-08	5.717E-06	8.706E-07	8.665E-09	1.102E-08	7.448E-07	4.447E-08	8.003E-07	2.756E-09	3.192E-07	4.253E-08	3.645E-07	9.017E-04	1.696E-08
2017	Annual	San Joaquin (SJV)	T6 Ag	70 MPH	5.985E-07	8.692E-06	1.533E-06	1.010E-08	1.200E-08	1.303E-07	4.399E-07	5.822E-07	3.000E-09	5.586E-08	4.208E-07	4.797E-07	1.059E-03	2.780E-08
2017	Annual	San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	2.671E-08	1.606E-06	1.023E-07	9.679E-09	1.200E-08	1.303E-07	1.978E-08	1.621E-07	3.000E-09	5.586E-08	1.893E-08	7.779E-08	1.015E-03	1.241E-09
2017	Annual	San Joaquin (SJV)	T6 CAIRP Small	70 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	8.129E-08	3.980E-06	2.583E-07	9.929E-09	1.200E-08	1.303E-07	6.588E-08	2.082E-07	3.000E-09	5.586E-08	6.303E-08	1.219E-07	1.041E-03	3.776E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	1.355E-07	3.065E-06	5.305E-07	9.946E-09	1.200E-08	1.303E-07	1.561E-07	2.984E-07	3.000E-09	5.586E-08	1.494E-07	2.082E-07	1.042E-03	6.294E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Heavy	70 MPH	3.521E-08	2.249E-06	1.202E-07	9.708E-09	1.200E-08	1.303E-07	2.424E-08	1.666E-07	3.000E-09	5.586E-08	2.319E-08	8.205E-08	1.018E-03	1.636E-09
2017	Annual	San Joaquin (SJV)	T6 Instate Small	70 MPH	1.695E-07	3.584E-06	6.313E-07	9.986E-09	1.200E-08	1.303E-07	1.838E-07	3.261E-07	3.000E-09	5.586E-08	1.758E-07	2.347E-07	1.047E-03	7.875E-09
2017	Annual	San Joaquin (SJV)	T6 OOS Heavy	70 MPH	1.826E-08	1.562E-06	7.407E-08	9.699E-09	1.200E-08	1.303E-07	1.122E-08	1.536E-07	3.000E-09	5.586E-08	1.073E-08	6.959E-08	1.017E-03	8.482E-10
2017	Annual	San Joaquin (SJV)	T6 OOS Small	70 MPH	8.935E-08	2.029E-06	3.808E-07	9.924E-09	1.200E-08	1.303E-07	1.141E-07	2.564E-07	3.000E-09	5.586E-08	1.092E-07	1.680E-07	1.040E-03	4.150E-09
2017	Annual	San Joaquin (SJV)	T6 Public	70 MPH	2.656E-08	3.933E-06	8.599E-08	9.987E-09	1.200E-08	1.303E-07	2.461E-08	1.669E-07	3.000E-09	5.586E-08	2.354E-08	8.240E-08	1.047E-03	1.234E-09
2017	Annual	San Joaquin (SJV)	T6 Utility	70 MPH	7.385E-09	2.616E-07	3.887E-08	1.026E-08	1.200E-08	1.303E-07	1.538E-09	1.439E-07	3.000E-09	5.586E-08	1.471E-09	6.033E-08	1.076E-03	3.430E-10
2017	Annual	San Joaquin (SJV)	T6TS	70 MPH	2.281E-07	1.151E-06	6.207E-06	1.002E-08	1.200E-08	1.303E-07	1.754E-09	1.441E-07	3.000E-09	5.586E-08	1.622E-09	6.048E-08	9.930E-04	7.873E-08
2017	Annual	San Joaquin (SJV)	T7 Ag	70 MPH	1.030E-06	1.429E-05	3.916E-06	1.529E-08	3.600E-08	6.174E-08	7.417E-07	8.394E-07	9.000E-09	2.646E-08	7.096E-07	7.451E-07	1.603E-03	4.785E-08
2017	Annual	San Joaquin (SJV)	T7 CAIRP	70 MPH	6.443E-08	3.709E-06	2.820E-07	1.380E-08	3.600E-08	6.174E-08	3.334E-08	1.311E-07	9.000E-09	2.646E-08	3.190E-08	6.736E-08	1.447E-03	2.993E-09
2017	Annual	San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	8.686E-08	4.947E-06	3.854E-07	1.432E-08	3.600E-08	6.174E-08	6.038E-08	1.581E-07	9.000E-09	2.646E-08	5.777E-08	9.323E-08	1.501E-03	4.034E-09
2017	Annual	San Joaquin (SJV)	T7 NNOOS	70 MPH	3.273E-08	1.709E-06	1.660E-07	1.309E-08	3.600E-08	6.174E-08	1.219E-08	1.099E-07	9.000E-09	2.646E-08	1.167E-08	4.713E-08	1.372E-03	1.520E-09
2017	Annual	San Joaquin (SJV)	T7 NOOS	70 MPH	5.335E-08	3.603E-06	2.343E-07	1.381E-08	3.600E-08	6.174E-08	2.342E-08	1.212E-07	9.000E-09	2.646E-08	2.241E-08	5.787E-08	1.447E-03	2.478E-09
2017	Annual	San Joaquin (SJV)	T7 Other Port	70 MPH	5.755E-08	4.448E-06	2.017E-07	1.426E-08	3.600E-08	6.174E-08	2.174E-08	1.195E-07	9.000E-09	2.646E-08	2.080E-08	5.626E-08	1.495E-03	2.673E-09
2017	Annual	San Joaquin (SJV)	T7 POAK	70 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017	Annual	San Joaquin (SJV)	T7 POLA	70 MPH	6.345E-08	5.062E-06	2.152E-07	1.439E-08	3.600E-08	6.174E-08	2.471E-08	1.225E-07	9.000E-09	2.646E-08	2.364E-08	5.910E-08	1.509E-03	2.947E-09
2017	Annual	San Joaquin (SJV)	T7 Public	70 MPH	5.715E-08	8.548E-06	2.327E-07	1.474E-08	3.600E-08	6.174E-08	4.923E-08	1.470E-07	9.000E-09	2.646E-08	4.710E-08	8.256E-08	1.545E-03	2.654E-09
2017	Annual	San Joaquin (SJV)	T7 Single	70 MPH	1.271E-07	5.850E-06	4.852E-07	1.448E-08	3.600E-08	6.174E-08	8.590E-08	1.836E-07	9.000E-09	2.646E-08	8.218E-08	1.176E-07	1.518E-03	5.905E-09
2017	Annual	San Joaquin (SJV)	T7 Single Construction	70 MPH	1.093E-07	5.574E-06	4.235E-07	1.435E-08	3.600E-08	6.174E-08	7.275E-08	1.705E-07	9.000E-09	2.646E-08	6.960E-08	1.051E-07	1.504E-03	5.078E-09
2017	Annual	San Joaquin (SJV)	T7 SWCV	70 MPH	4.193E-08	8.792E-06	1.755E-07	2.884E-08	3.600E-08	6.174E-08	1.405E-08	1.118E-07	9.000E-09	2.646E-08	1.344E-08	4.890E-08	3.312E-03	2.414E-07
2017	Annual	San Joaquin (SJV)	T7 Tractor	70 MPH	7.984E-08	4.877E-06	3.091E-07	1.387E-08	3.600E-08	6.174E-08	4.070E-08	1.384E-07	9.000E-09	2.646E-08	3.894E-08	7.440E-08	1.453E-03	3.708E-09
2017	Annual	San Joaquin (SJV)	T7 Tractor Construction	70 MPH	1.479E-07	6.429E-06	6.217E-07	1.443E-08	3.600E-08	6.174E-08	1.065E-07	2.042E-07	9.000E-09	2.646E-08	1.019E-07	1.373E-07	1.512E-03	6.869E-09
2017	Annual	San Joaquin (SJV)	T7 Utility	70 MPH	1.504E-08	4.534E-07	8.884E-08	1.420E-08	3.600E-08	6.174E-08	2.361E-09	1.001E-07	9.000E-09	2.646E-08	2.259E-09	3.772E-08	1.488E-03	6.988E-10
2017	Annual	San Joaquin (SJV)	T7IS	70 MPH	5.877E-07	3.532E-06	2.584E-05	1.673E-08	2.000E-08	6.174E-08	7.749E-10	8.251E-08	5.000E-09	2.646E-08	7.176E-10	3.218E-08	1.634E-03	2.209E-07
2017	Annual	San Joaquin (SJV)	UBUS	70 MPH	5.687E-07	1.198E-05	7.872E-06	9.836E-09	1.200E-08	6.430E-07	1.745E-07	8.295E-07	3.000E-09	2.756E-07	1.670E-07	4.455E-07	1.447E-03	7.282E-07

Source: EMFAC2014, Version 1.0.7.

Stockton 2040 - all Model Years

g/mile

sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	VMT	%VMT Total	%VMT SpdBin
San Joaquin (SJV)	All Other Buses	05 MPH	0.24803456	10.3725082	1.30557248	0.02021718	0.012	0.13034	0.00613492	1.48E-01	0.003	0.05586	0.00586953	6.47E-02	2119.1	0.01152056	64	0.0002%	0.2931%
San Joaquin (SJV)	LDA	05 MPH	0.02195128	0.03148654	0.47155898	0.00516084	0.008	0.03675	0.00447444	4.92E-02	0.002	0.01575	0.00411487	2.19E-02	516.629682	0.00853628	1,211	0.0038%	5.5286%
San Joaquin (SJV)	LDT1	05 MPH	0.0308998	0.04402831	0.60105098	0.00662894	0.008	0.03675	0.00574207	5.05E-02	0.002	0.01575	0.00527988	2.30E-02	663.231499	0.01243315	65	0.0002%	0.2973%
San Joaquin (SJV)	LDT2	05 MPH	0.03388401	0.04631666	0.70607398	0.00761332	0.008	0.03675	0.0054655	5.02E-02	0.002	0.01575	0.00502608	2.28E-02	761.750759	0.01348563	398	0.0013%	1.8163%
San Joaquin (SJV)	LHD1	05 MPH	0.48972646	0.40454311	2.2987401	0.01166852	0.01051026	0.07644	0.01837827	1.05E-01	0.00262756	0.03276	0.01747914	5.29E-02	1200.3825	0.0264155	5,930	0.0188%	27.0771%
San Joaquin (SJV)	LHD2	05 MPH	0.53548024	0.20373838	2.40781726	0.01200673	0.01084817	0.08918	0.01377398	1.14E-01	0.00271204	0.03822	0.01309517	5.40E-02	1239.94492	0.02706798	2,409	0.0076%	10.9998%
San Joaquin (SJV)	MCY	05 MPH	12.5011152	1.572653	42.2194023	0.00678236	0.004	0.01176	0.01372214	2.95E-02	0.001	0.00504	0.01279326	1.88E-02	567.142641	2.70348708	9	0.0000%	0.0425%
San Joaquin (SJV)	MDV	05 MPH	0.04837128	0.06542607	0.91832133	0.01001146	0.008	0.03675	0.0057296	5.05E-02	0.002	0.01575	0.00527047	2.30E-02	1002.59891	0.0186343	199	0.0006%	0.9083%
San Joaquin (SJV)	MH	05 MPH	0.22897339	2.53146173	0.76510626	0.03279356	0.01288809	0.13034	0.02077889	1.64E-01	0.00322202	0.05586	0.0196598	7.87E-02	3304.95536	0.02985356	126	0.0004%	0.5763%
San Joaquin (SJV)	Motor Coach	05 MPH	0.51898466	17.6765307	3.06448385	0.02875443	0.012	0.13034	0.00982361	1.52E-01	0.003	0.05586	0.00939864	6.83E-02	3013.94362	0.02410549	31	0.0001%	0.1404%
San Joaquin (SJV)	OBUS	05 MPH	0.06951299	0.17076577	0.39391229	0.03652814	0.012	0.13034	0.00775571	1.50E-01	0.003	0.05586	0.00713109	6.60E-02	3659.60536	0.02808885	208	0.0007%	0.9486%
San Joaquin (SJV)	SBUS	05 MPH	0.16049954	5.48012508	0.84286988	0.01905877	0.01039912	0.7448	0.00642707	7.62E-01	2.600E-03	3.192E-01	0.00603608	3.28E-01	1965.44376	0.01570105	168	0.0005%	0.7651%
San Joaquin (SJV)	T6 Ag	05 MPH	0.28528775	11.7121599	1.50166107	0.02050317	0.012	0.13034	0.00728729	1.50E-01	0.003	0.05586	0.00697205	6.58E-02	2149.07376	0.01325088	105	0.0003%	0.4812%
San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	0.22749967	9.23087441	1.1974836	0.01995016	0.012	0.13034	0.0054659	1.48E-01	0.003	0.05586	0.00522945	6.41E-02	2091.10926	0.01056677	27	0.0001%	0.1254%
San Joaquin (SJV)	T6 CAIRP Small	05 MPH	0.21570404	8.54439198	1.13539526	0.02011905	0.012	0.13034	0.00507879	1.47E-01	0.003	0.05586	0.00485908	6.37E-02	2108.81186	0.01001889	84	0.0003%	0.3849%
San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	0.25512303	10.7860471	1.34255626	0.02018206	0.012	0.13034	0.00637595	1.49E-01	0.003	0.05586	0.00610013	6.50E-02	2115.4161	0.0118498	180	0.0006%	0.8198%
San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	0.23600881	9.70810146	1.24197143	0.02016384	0.012	0.13034	0.00574863	1.48E-01	0.003	0.05586	0.00549995	6.44E-02	2113.50681	0.010962	735	0.0023%	3.3556%
San Joaquin (SJV)	T6 Instate Heavy	05 MPH	0.24762812	10.2681028	1.30343311	0.02001526	0.012	0.13034	0.00611497	1.48E-01	0.003	0.05586	0.00585044	6.47E-02	2097.93323	0.01150168	604	0.0019%	2.7575%
San Joaquin (SJV)	T6 Instate Small	05 MPH	0.23679668	9.72587757	1.24641998	0.02018292	0.012	0.13034	0.00576681	1.48E-01	0.003	0.05586	0.00551734	6.44E-02	2115.50661	0.01099859	1,524	0.0048%	6.9596%
San Joaquin (SJV)	T6 OOS Heavy	05 MPH	0.22757909	9.23344525	1.19790164	0.01995064	0.012	0.13034	0.00546834	1.48E-01	0.003	0.05586	0.00523178	6.41E-02	2091.15959	0.01057046	16	0.0000%	0.0718%
San Joaquin (SJV)	T6 OOS Small	05 MPH	0.21570404	8.54439198	1.13539526	0.02011905	0.012	0.13034	0.00507879	1.47E-01	0.003	0.05586	0.00485908	6.37E-02	2108.81186	0.01001889	48	0.0002%	0.2205%
San Joaquin (SJV)	T6 Public	05 MPH	0.19530571	6.99694359	0.99498636	0.02020218	0.012	0.13034	0.00531439	1.48E-01	0.003	0.05586	0.00508449	6.39E-02	2117.5254	0.00907144	89	0.0003%	0.4050%
San Joaquin (SJV)	T6 Utility	05 MPH	0.17774344	6.25796238	0.93558314	0.02011575	0.012	0.13034	0.00382628	1.46E-01	0.003	0.05586	0.00366076	6.25E-02	2108.46581	0.00825572	12	0.0000%	0.0538%
San Joaquin (SJV)	T6TS	05 MPH	0.06390051	0.1612745	0.36063906	0.03648848	0.012	0.13034	0.0077448	1.50E-01	0.003	0.05586	0.00712106	6.60E-02	3655.70815	0.02582095	390	0.0012%	1.7829%
San Joaquin (SJV)	T7 Ag	05 MPH	0.6536463	21.0803266	3.85962954	0.02784755	0.036	0.06174	0.01297221	1.11E-01	0.009	0.02646	0.01241103	4.79E-02	2918.88765	0.03036018	23	0.0001%	0.1059%
San Joaquin (SJV)	T7 CAIRP	05 MPH	0.5676463	19.9751348	3.35181955	0.02637266	0.036	0.06174	0.01104795	1.09E-01	0.009	0.02646	0.01057002	4.60E-02	2764.29465	0.0263657	1,243	0.0039%	5.6755%
San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	0.58301393	20.7713592	3.4420857	0.02659435	0.036	0.06174	0.01144521	1.09E-01	0.009	0.02646	0.0109501	4.64E-02	2787.53164	0.02707949	57	0.0002%	0.2622%
San Joaquin (SJV)	T7 NNOOS	05 MPH	0.49951874	16.7473545	2.94954213	0.02633645	0.036	0.06174	0.00933309	1.07E-01	0.009	0.02646	0.00892935	4.44E-02	2760.49927	0.02320135	1,541	0.0049%	7.0376%
San Joaquin (SJV)	T7 NOOS	05 MPH	0.56780095	19.9774644	3.35273271	0.0263743	0.036	0.06174	0.01105144	1.09E-01	0.009	0.02646	0.01057336	4.60E-02	2764.46604	0.02637288	491	0.0016%	2.2418%
San Joaquin (SJV)	T7 Other Port	05 MPH	0.61756776	22.5051505	3.64659418	0.02656987	0.036	0.06174	0.01231808	1.10E-01	0.009	0.02646	0.0117852	4.72E-02	2784.96561	0.02868442	26	0.0001%	0.1180%
San Joaquin (SJV)	T7 POAK	05 MPH	0.62339614	22.7894272	3.68100937	0.02656987	0.036	0.06174	0.01246546	1.10E-01	0.009	0.02646	0.01192621	4.74E-02	2784.96561	0.02895514	110	0.0003%	0.5000%
San Joaquin (SJV)	T7 POLA	05 MPH	0.61516033	22.2460784	3.63237887	0.02664163	0.036	0.06174	0.01224495	1.10E-01	0.009	0.02646	0.01171523	4.72E-02	2792.48652	0.0285726	198	0.0006%	0.9040%
San Joaquin (SJV)	T7 Public	05 MPH	0.43252962	12.0555152	2.27461319	0.0271728	0.036	0.06174	0.01470916	1.12E-01	0.009	0.02646	0.01407285	4.95E-02	2848.16189	0.02008988	56	0.0002%	0.2535%
San Joaquin (SJV)	T7 Single	05 MPH	0.48179436	15.3941894	2.84488376	0.02684143	0.036	0.06174	0.00884596	1.07E-01	0.009	0.02646	0.00846329	4.39E-02	2813.42897	0.0223781	315	0.0010%	1.4382%
San Joaquin (SJV)	T7 Single Construction	05 MPH	0.48074675	15.4222251	2.8349407	0.02679755	0.036	0.06174	0.00889692	1.07E-01	0.009	0.02646	0.00851205	4.40E-02	2808.83027	0.02232944	149	0.0005%	0.6783%
San Joaquin (SJV)	T7 SWCV	05 MPH	0.16242624	3.57493837	6.59944671	0.05269991	0.036	0.06174	0.01219356	1.10E-01	0.009	0.02646	0.01166607	4.71E-02	6255.87199	2.1374051	598	0.0019%	2.7285%
San Joaquin (SJV)	T7 Tractor	05 MPH	0.57736584	20.3611876	3.40921113	0.0264137	0.036	0.06174	0.01128641	1.09E-01	0.009	0.02646	0.01079817	4.63E-02	2768.59578	0.02681715	1,816	0.0058%	8.2934%
San Joaquin (SJV)	T7 Tractor Construction	05 MPH	0.60029329	21.4825116	3.54369128	0.02666086	0.036	0.06174	0.01187909	1.10E-01	0.009	0.02646	0.01136521	4.68E-02	2794.5021	0.02788207	111	0.0004%	0.5057%
San Joaquin (SJV)	T7 Utility	05 MPH	0.3655619	10.2133528	2.1585581	0.02657205	0.036	0.06174	0.00594583	1.04E-01	0.009	0.02646	0.00568862	4.11E-02	2785.1932	0.0169794	2	0.0000%	0.0082%
San Joaquin (SJV)	T7IS	05 MPH	2.09061461	5.34432399	54.0397203	0.03875284	0.02	0.06174	0.00776887	8.95E-02	0.005	0.02646	0.00714319	3.86E-02	3789.60369	0.84477679	22	0.0001%	0.1005%
San Joaquin (SJV)	UBUS	05 MPH	0.44372823	3.19262815	18.3265007	0.02181184	0.012	0.49694694	0.05208402	5.61E-01	0.003	0.21297726	0.04969237	2.66E-01	3345.37847	3.97196045	512	0.0016%	2.3374%
																	21,902	0.07%	100%

San Joaquin (SJV)	All Other Buses	10 MPH	0.20088184	7.86779115	1.05737605	0.01792623	0.012	0.13034	0.00551862	1.48E-01	0.003	0.05586	0.00527989	6.41E-02	1878.96739	0.00933044	319	0.0010%	0.3651%
San Joaquin (SJV)	LDA	10 MPH	0.01392428	0.02733991	0.42453626	0.00383383	0.008	0.03675	0.00282166	4.76E-02	0.002	0.01575	0.00259515	2.03E-02	383.703597	0.00537668	9,073	0.0288%	10.3698%
San Joaquin (SJV)	LDT1	10 MPH	0.01950317	0.0381749	0.54663204	0.00491859	0.008	0.03675	0.00361541	4.84E-02	0.002	0.01575	0.00332447	2.11E-02	491.96746	0.00784134	488	0.0015%	0.5577%
San Joaquin (SJV)	LDT2	10 MPH	0.02140225	0.04019871	0.64191174	0.00564993	0.008	0.03675	0.00344534	4.82E-02	0.002	0.01575	0.00316858	2.09E-02	565.140832	0.00849385	2,981	0.0094%	3.4067%
San Joaquin (SJV)	LHD1	10 MPH	0.36339832	0.38325757	1.72944333	0.01049862	0.01051026	0.07644	0.0145476	1.01E-01	0.00262756	0.03276	0.01385278	4.92E-02	1078.19444	0.01918746	17,638	0.0559%	20.1585%
San Joaquin (SJV)	LHD2	10 MPH	0.39995375	0.17383073	1.81185661	0.011258	0.01084817	0.08918	0.01208918	1.12E-01	0.00271204	0.03822	0.01151401	5.24E-02	1160.83055	0.01995877	7,328	0.0232%	8.3756%
San Joaquin (SJV)	MCY	10 MPH	8.09125552	1.41102695	32.6436421	0.00500794	0.004	0.01176	0.00882761	2.46E-02	0.001	0.00504	0.00823016	1.43E-02	420.666997	1.74868762	70	0.0002%	0.0797%
San Joaquin (SJV)	MDV	10 MPH	0.03084789	0.05640333	0.82215785	0.00744787	0.008	0.03675	0.00362523	4.84E-02	0.002	0.01575	0.00333543	2.11E-02	745.761486	0.01178266	1,491	0.0047%	1.7037%
San Joaquin (SJV)	MH	10 MPH	0.16510073	2.11098556	0.62349396	0.02822479	0.01288809	0.13034	0.017008	1.60E-01	0.00322202	0.05586	0.01613369	7.52E-02	2845.45895	0.01976065	633	0.0020%	0.7236%
San Joaquin (SJV)	Motor Coach	10 MPH	0.42032285	13.3913297	2.48190882	0.02549606	0.012	0.13034	0.00883675	1.51E-01	0.003	0.05586	0.00845448	6.73E-02	2672.41166	0.01952291	152	0.0005%	0.1737%
San Joaquin (SJV)	OBUS	10 MPH	0.04373741	0.14838302	0.35873738	0.03118242	0.012	0.13034	0.00487988	1.47E-01	0.003	0.05586	0.00448687	6.33E-02	3124.07107	0.01767344	1,044	0.0033%	1.1936%
San Joaquin (SJV)	SBUS	10 MPH	0.12581511	4.16608579	0.69556481	0.01667034	0.01039912	0.7448	0.00496238	7.60E-01	2.600E-03	3.192E-01	0.00467663	3.26E-01	1719.82536	0.01103232	587	0.0019%	0.6713%
San Joaquin (SJV)	T6 Ag	10 MPH	0.231053	8.96043226	1.21618714	0.0181798	0.012	0.13034	0.00655523	1.49E-01	0.003	0.05586	0.00627165	6.51E-02	1905.54652	0.01073181	525	0.0017%	0.5996%
San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	0.18425075	6.9946488	0.96983546	0.01768946	0.012	0.13034	0.00491681	1.47E-01	0.003	0.05586	0.00470411	6.36E-02	1854.1504	0.00855797	137	0.0004%	0.1562%
San Joaquin (SJV)	T6 CAIRP Small	10 MPH	0.17469753	6.47250474	0.91955045	0.01783921	0.012	0.13034	0.00456859	1.47E-01	0.003	0.05586	0.00437095	6.32E-02	1869.84699	0.00811425	420	0.0013%	0.4796%
San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	0.20661976	8.18210026	1.08732976	0.0178951	0.012	0.13034	0.00573496	1.48E-01	0.003	0.05586	0.00548687	6.43E-02	1875.70525	0.00959695	894	0.0028%	1.0215%
San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	0.19113976	7.35912022	1.00586501	0.01787895	0.012	0.13034	0.00517114	1.48E-01	0.003	0.05586	0.00494744	6.38E-02	1874.0124	0.00887795	3,658	0.0116%	4.1809%
San Joaquin (SJV)	T6 Instate Heavy	10 MPH	0.20055266	7.79543784	1.05564339	0.01774719	0.012	0.13034	0.00550067	1.48E-01	0.003	0.05586	0.00526271	6.41E-02	1860.20109	0.00931515	3,006	0.0095%	3.4356%
San Joaquin (SJV)	T6 Instate Small	10 MPH	0.19178034	7.37528876	1.00946877	0.01789585	0.012	0.13034	0.00518749	1.48E-01	0.003	0.05586	0.00496308	6.38E-02	1875.78311	0.0089077	7,587	0.0241%	8.6713%
San Joaquin (SJV)	T6 OOS Heavy	10 MPH	0.18431507	6.99678542	0.97017403	0.01768989	0.012	0.13034	0.004919	1.47E-01	0.003	0.05586	0.00470621	6.36E-02	1854.19503	0.00856096	78	0.0002%	0.0895%
San Joaquin (SJV)	T6 OOS Small	10 MPH	0.17469753	6.47250474	0.91955045	0.01783921	0.012	0.13034	0.00456859	1.47E-01	0.003	0.05586	0.00437095	6.32E-02	1869.84699	0.00811425	240	0.0008%	0.2748%
San Joaquin (SJV)	T6 Public	10 MPH	0.15785229	5.32398491	0.80585065	0.01791733	0.012	0.13034	0.00474014	1.47E-01	0.003	0.05586	0.00453509	6.34E-02	1878.0352	0.00733183	441	0.0014%	0.5046%
San Joaquin (SJV)	T6 Utility	10 MPH	0.14395345	4.74027051	0.7577237	0.01783629	0.012	0.13034	0.0034419	1.46E-01	0.003	0.05586	0.00329301	6.22E-02	1869.54015	0.00668626	59	0.0002%	0.0670%
San Joaquin (SJV)	T6TS	10 MPH	0.04020604	0.1401358	0.32843532	0.03114859	0.012	0.13034	0.00487301	1.47E-01	0.003	0.05586	0.00448056	6.33E-02	3120.74416	0.01624648	1,963	0.0062%	2.2434%
San Joaquin (SJV)	T7 Ag	10 MPH	0.52938458	16.2406238	3.12589299	0.02469194	0.036	0.06174	0.01166905	1.09E-01	0.009	0.02646	0.01116425	4.66E-02	2588.12718	0.02458854	89	0.0003%	0.1013%
San Joaquin (SJV)	T7 CAIRP	10 MPH	0.45973366	15.1388622	2.71462044	0.02338418	0.036	0.06174	0.0099381	1.08E-01	0.009	0.02646	0.00950818	4.50E-02	2451.05224	0.02135344	4,748	0.0151%	5.4269%
San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	0.47217639	15.7378773	2.78772461	0.02358078	0.036	0.06174	0.01029554	1.08E-01	0.009	0.02646	0.00985015	4.53E-02	2471.65902	0.02193137	219	0.0007%	0.2507%
San Joaquin (SJV)	T7 NNOOS	10 MPH	0.40455751	12.6857571	2.38881814	0.02335208	0.036	0.06174	0.00839551	1.06E-01	0.009	0.02646	0.00803233	4.35E-02	2447.68694	0.01879065	5,888	0.0187%	6.7293%
San Joaquin (SJV)	T7 NOOS	10 MPH	0.4598589	15.1410712	2.71536	0.02338563	0.036	0.06174	0.00994123	1.08E-01	0.009	0.02646	0.00951118	4.50E-02	2451.20421	0.02135926	1,876	0.0059%	2.1436%
San Joaquin (SJV)	T7 Other Port	10 MPH	0.50016478	17.0471625	2.95335681	0.02355905	0.036	0.06174	0.01108063	1.09E-01	0.009	0.02646	0.01060129	4.61E-02	2469.38082	0.02323136	99	0.0003%	0.1128%
San Joaquin (SJV)	T7 POAK	10 MPH	0.50488514	17.2624959	2.98122949	0.02355905	0.036	0.06174	0.01121321	1.09E-01	0.009	0.02646	0.01072813	4.62E-02	2469.38082	0.02345061	418	0.0013%	0.4781%
San Joaquin (SJV)	T7 POLA	10 MPH	0.49821501	16.8631957	2.9418439	0.02362267	0.036	0.06174	0.01101485	1.09E-01	0.009	0.02646	0.01053835	4.60E-02	2476.04948	0.0231408	756	0.0024%	0.8644%
San Joaquin (SJV)	T7 Public	10 MPH	0.34783447	9.25796945	1.8434938	0.0241199	0.036	0.06174	0.01271294	1.10E-01	0.009	0.02646	0.01216298	4.76E-02	2528.16764	0.01615601	212	0.0007%	0.2424%
San Joaquin (SJV)	T7 Single	10 MPH	0.39020263	11.703557	2.30405589	0.02379983	0.036	0.06174	0.00795732	1.06E-01	0.009	0.02646	0.00761309	4.31E-02	2494.61879	0.0181239	1,203	0.0038%	1.3752%
San Joaquin (SJV)	T7 Single Construction	10 MPH	0.38932048	11.7167677	2.29601318	0.02376114	0.036	0.06174	0.00799879	1.06E-01	0.009	0.02646	0.00765277	4.31E-02	2490.56363	0.01808293	567	0.0018%	0.6486%
San Joaquin (SJV)	T7 SWCV	10 MPH	0.12807586	2.94922656	5.34430888	0.04680364	0.036	0.06174	0.01094621	1.09E-01	0.009	0.02646	0.01047269	4.59E-02	5555.55482	1.71159134	1,436	0.0046%	1.6414%
San Joaquin (SJV)	T7 Tractor	10 MPH	0.46760545	15.438832	2.76110157	0.02342057	0.036	0.06174	0.01015261	1.08E-01	0.009	0.02646	0.00971341	4.52E-02	2454.86598	0.02171906	6,939	0.0220%	7.9301%
San Joaquin (SJV)	T7 Tractor Construction	10 MPH	0.48616647	16.2878147	2.87001518	0.02363977	0.036	0.06174	0.01068537	1.08E-01	0.009	0.02646	0.01022312	4.57E-02	2477.84231	0.02258117	423	0.0013%	0.4835%
San Joaquin (SJV)	T7 Utility	10 MPH	0.2960666	7.73642776	1.74820447	0.02356097	0.036	0.06174	0.00534853	1.03E-01	0.009	0.02646	0.00511716	4.06E-02	2469.58263	0.01375153	7	0.0000%	0.0078%
San Joaquin (SJV)	T7IS	10 MPH	1.31540969	4.64382837	49.2141729	0.03290589	0.02	0.06174	0.00488815	8.66E-02	0.005	0.02646	0.00449448	3.60E-02	3214.5725	0.53153152	108	0.0003%	0.1229%
San Joaquin (SJV)	UBUS	10 MPH	0.32095193	2.63189433	13.9426176	0.01883897	0.012	0.49694694	0.04174968	5.51E-01	0.003	0.21297726	0.03985645	2.56E-01	2940.91048	2.97149363	1,696	0.0054%	1.9380%
																	87,498	0.28%	100%

San Joaquin (SJV)	All Other Buses	15 MPH	0.14147644	4.71222084	0.74468554	0.01503996	0.012	0.13034	0.00474217	1.47E-01	0.003	0.05586	0.00453703	6.34E-02	1576.4388	0.00657121	431	0.0014%	0.2151%
San Joaquin (SJV)	LDA	15 MPH	0.00912111	0.02405285	0.37805353	0.00295459	0.008	0.03675	0.00187696	4.66E-02	0.002	0.01575	0.00172643	1.95E-02	295.63269	0.00356355	53,757	0.1704%	26.8139%
San Joaquin (SJV)	LDT1	15 MPH	0.01295444	0.03364002	0.49833255	0.00378781	0.008	0.03675	0.00240142	4.72E-02	0.002	0.01575	0.00220821	2.00E-02	378.751078	0.00521515	2,891	0.0092%	1.4421%
San Joaquin (SJV)	LDT2	15 MPH	0.0141392	0.03541292	0.58418847	0.0043515	0.008	0.03675	0.00229101	4.70E-02	0.002	0.01575	0.00210712	1.99E-02	435.132201	0.00563799	17,660	0.0560%	8.8090%
San Joaquin (SJV)	LHD1	15 MPH	0.18489419	0.34634796	0.91069139	0.0070542	0.01051026	0.07644	0.01155889	9.85E-02	0.00262756	0.03276	0.01101538	4.64E-02	723.930605	0.01012017	39,043	0.1238%	19.4744%
San Joaquin (SJV)	LHD2	15 MPH	0.19650997	0.12650411	0.9111489	0.00764869	0.01084817	0.08918	0.01018371	1.10E-01	0.00271204	0.03822	0.00970852	5.06E-02	788.199179	0.01004464	16,148	0.0512%	8.0545%
San Joaquin (SJV)	MCY	15 MPH	5.52256228	1.28874524	26.4108798	0.00384934	0.004	0.01176	0.00598987	2.17E-02	0.001	0.00504	0.00558454	1.16E-02	323.846845	1.1928043	413	0.0013%	0.2061%
San Joaquin (SJV)	MDV	15 MPH	0.02021027	0.0493041	0.72439843	0.00574765	0.008	0.03675	0.00241907	4.72E-02	0.002	0.01575	0.00222613	2.00E-02	575.417655	0.00783324	8,832	0.0280%	4.4053%
San Joaquin (SJV)	MH	15 MPH	0.08689968	1.44989165	0.42375507	0.01996361	0.01288809	0.13034	0.01302044	1.56E-01	0.00322202	0.05586	0.01236522	7.14E-02	2014.53657	0.01206273	811	0.0026%	0.4046%
San Joaquin (SJV)	Motor Coach	15 MPH	0.29602368	7.99261487	1.74795107	0.02139099	0.012	0.13034	0.00759346	1.50E-01	0.003	0.05586	0.00726497	6.61E-02	2242.13228	0.01374953	180	0.0006%	0.0900%
San Joaquin (SJV)	OBUS	15 MPH	0.02903185	0.1310142	0.32758732	0.02149531	0.012	0.13034	0.00323915	1.46E-01	0.003	0.05586	0.00297827	6.18E-02	2153.42789	0.01173121	1,319	0.0042%	0.6580%
San Joaquin (SJV)	SBUS	15 MPH	0.08800576	2.51433165	0.51426165	0.01310112	0.01039912	0.7448	0.00389153	7.59E-01	2.600E-03	3.192E-01	0.00367601	3.25E-01	1354.21554	0.00753166	1,175	0.0037%	0.5859%
San Joaquin (SJV)	T6 Ag	15 MPH	0.16272529	5.49366541	0.85653252	0.01525271	0.012	0.13034	0.00563294	1.48E-01	0.003	0.05586	0.00538926	6.42E-02	1598.73849	0.00755817	708	0.0022%	0.3532%
San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	0.12976355	4.17733772	0.68303272	0.01484132	0.012	0.13034	0.00422504	1.47E-01	0.003	0.05586	0.00404227	6.29E-02	1555.61755	0.00602718	184	0.0006%	0.0920%
San Joaquin (SJV)	T6 CAIRP Small	15 MPH	0.12303544	3.86223552	0.64761815	0.01496696	0.012	0.13034	0.00392581	1.46E-01	0.003	0.05586	0.00375598	6.26E-02	1568.78686	0.00571468	566	0.0018%	0.2825%
San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	0.14550958	4.90147797	0.76577866	0.01501384	0.012	0.13034	0.00492693	1.47E-01	0.003	0.05586	0.00471379	6.36E-02	1573.70085	0.00675854	1,206	0.0038%	0.6017%
San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	0.13460897	4.39971598	0.70840297	0.01500029	0.012	0.13034	0.00444338	1.47E-01	0.003	0.05586	0.00425116	6.31E-02	1572.28078	0.00625224	4,937	0.0157%	2.4627%
San Joaquin (SJV)	T6 Instate Heavy	15 MPH	0.14124461	4.68024843	0.74346526	0.01488975	0.012	0.13034	0.00472675	1.47E-01	0.003	0.05586	0.00452227	6.34E-02	1560.69403	0.00656045	4,057	0.0129%	2.0237%
San Joaquin (SJV)	T6 Instate Small	15 MPH	0.13506647	4.41389708	0.71094555	0.01501447	0.012	0.13034	0.00445763	1.47E-01	0.003	0.05586	0.0042648	6.31E-02	1573.76721	0.00627349	10,240	0.0325%	5.1078%
San Joaquin (SJV)	T6 OOS Heavy	15 MPH	0.12980885	4.17892729	0.68327117	0.01484168	0.012	0.13034	0.00422692	1.47E-01	0.003	0.05586	0.00404406	6.29E-02	1555.65499	0.00602928	106	0.0003%	0.0527%
San Joaquin (SJV)	T6 OOS Small	15 MPH	0.12303544	3.86223552	0.64761815	0.01496696	0.012	0.13034	0.00392581	1.46E-01	0.003	0.05586	0.00375598	6.26E-02	1568.78686	0.00571468	324	0.0010%	0.1619%
San Joaquin (SJV)	T6 Public	15 MPH	0.11032168	3.20983197	0.56716368	0.01503023	0.012	0.13034	0.00396445	1.46E-01	0.003	0.05586	0.00379295	6.27E-02	1575.41873	0.00512416	596	0.0019%	0.2972%
San Joaquin (SJV)	T6 Utility	15 MPH	0.10138309	2.82820488	0.53364731	0.0149645	0.012	0.13034	0.00295764	1.45E-01	0.003	0.05586	0.00282969	6.17E-02	1568.52943	0.00470898	79	0.0003%	0.0395%
San Joaquin (SJV)	T6TS	15 MPH	0.02668781	0.12373234	0.29991646	0.02147189	0.012	0.13034	0.00323459	1.46E-01	0.003	0.05586	0.00297409	6.18E-02	2151.13464	0.01078403	2,480	0.0079%	1.2368%
San Joaquin (SJV)	T7 Ag	15 MPH	0.37283334	10.1433194	2.20149426	0.02071635	0.036	0.06174	0.01002726	1.08E-01	0.009	0.02646	0.00959349	4.51E-02	2171.41827	0.01731714	108	0.0003%	0.0541%
San Joaquin (SJV)	T7 CAIRP	15 MPH	0.3237798	9.04587916	1.9118445	0.01961915	0.036	0.06174	0.00853985	1.06E-01	0.009	0.02646	0.00817042	4.36E-02	2056.41347	0.01503873	5,807	0.0184%	2.8967%
San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	0.33253426	9.39639179	1.96332231	0.01978408	0.036	0.06174	0.00884694	1.07E-01	0.009	0.02646	0.00846423	4.39E-02	2073.7013	0.01544536	268	0.0009%	0.1338%
San Joaquin (SJV)	T7 NNOOS	15 MPH	0.28492052	7.56874954	1.68238946	0.01959221	0.036	0.06174	0.0072143	1.05E-01	0.009	0.02646	0.00690221	4.24E-02	2053.59002	0.01323382	7,201	0.0228%	3.5919%
San Joaquin (SJV)	T7 NOOS	15 MPH	0.32386801	9.04793629	1.91236535	0.01962036	0.036	0.06174	0.00854255	1.06E-01	0.009	0.02646	0.008173	4.36E-02	2056.54098	0.01504283	2,294	0.0073%	1.1442%
San Joaquin (SJV)	T7 Other Port	15 MPH	0.3522545	10.1709107	2.07998101	0.01976585	0.036	0.06174	0.00952164	1.07E-01	0.009	0.02646	0.00910974	4.46E-02	2071.79101	0.01636131	121	0.0004%	0.0602%
San Joaquin (SJV)	T7 POAK	15 MPH	0.35557895	10.2993859	2.09961109	0.01976585	0.036	0.06174	0.00963556	1.07E-01	0.009	0.02646	0.00921873	4.47E-02	2071.79101	0.01651572	512	0.0016%	0.2552%
San Joaquin (SJV)	T7 POLA	15 MPH	0.35088133	10.0815656	2.07187274	0.01981923	0.036	0.06174	0.00946511	1.07E-01	0.009	0.02646	0.00905565	4.45E-02	2077.38596	0.01629753	925	0.0029%	0.4614%
San Joaquin (SJV)	T7 Public	15 MPH	0.23820575	5.6961126	1.29689581	0.0202188	0.036	0.06174	0.00974907	1.07E-01	0.009	0.02646	0.00932733	4.48E-02	2119.2676	0.01106404	259	0.0008%	0.1294%
San Joaquin (SJV)	T7 Single	15 MPH	0.2748107	7.05390999	1.62269337	0.01996787	0.036	0.06174	0.00683776	1.05E-01	0.009	0.02646	0.00654196	4.20E-02	2092.96547	0.01276425	1,472	0.0047%	0.7340%
San Joaquin (SJV)	T7 Single Construction	15 MPH	0.2740982	7.04809284	1.61699739	0.01993528	0.036	0.06174	0.00686298	1.05E-01	0.009	0.02646	0.0065661	4.20E-02	2089.54919	0.01273115	694	0.0022%	0.3462%
San Joaquin (SJV)	T7 SWCV	15 MPH	0.08144312	2.09795685	3.761789	0.03921842	0.036	0.06174	0.00929958	1.07E-01	0.009	0.02646	0.00889728	4.44E-02	4655.62893	1.15630051	656	0.0021%	0.3274%
San Joaquin (SJV)	T7 Tractor	15 MPH	0.32932372	9.2373974	1.94458008	0.01964967	0.036	0.06174	0.00872418	1.06E-01	0.009	0.02646	0.00834678	4.38E-02	2059.61317	0.01529623	8,486	0.0269%	4.2329%
San Joaquin (SJV)	T7 Tractor Construction	15 MPH	0.34237544	9.74317547	2.02127272	0.01983355	0.036	0.06174	0.00918076	1.07E-01	0.009	0.02646	0.00878361	4.42E-02	2078.88709	0.01590245	517	0.0016%	0.2581%
San Joaquin (SJV)	T7 Utility	15 MPH	0.20851287	4.61587128	1.23122004	0.01976747	0.036	0.06174	0.00459602	1.02E-01	0.009	0.02646	0.00439719	3.99E-02	2071.96032	0.00968488	8	0.0000%	0.0042%
San Joaquin (SJV)	T7IS	15 MPH	0.87313757	4.10024973	44.9407836	0.02388213	0.02	0.06174	0.00324464	8.50E-02	0.005	0.02646	0.00298333	3.44E-02	2318.89867	0.35281794	117	0.0004%	0.0585%
San Joaquin (SJV)	UBUS	15 MPH	0.17248317	1.82807995	7.29224102	0.01347112	0.012	0.49694694	0.02649404	5.35E-01	0.003	0.21297726	0.02529007	2.41E-01	2214.53255	1.46544783	2,889	0.0092%	1.4411%
																	200,482	0.64%	100%

San Joaquin (SJV)	All Other Buses	20 MPH	0.10234711	2.63369981	0.53872156	0.01313883	0.012	0.13034	0.00423074	1.47E-01	0.003	0.05586	0.00404772	6.29E-02	1377.16831	0.00475376	457	0.0014%	0.1325%
San Joaquin (SJV)	LDA	20 MPH	0.00628163	0.02151491	0.34033542	0.00236217	0.008	0.03675	0.00131692	4.61E-02	0.002	0.01575	0.00121141	1.90E-02	236.296187	0.00249068	104,776	0.3321%	30.3667%
San Joaquin (SJV)	LDT1	20 MPH	0.00907246	0.03013722	0.45575254	0.00302742	0.008	0.03675	0.00168263	4.64E-02	0.002	0.01575	0.00154728	1.93E-02	302.633237	0.00365821	5,635	0.0179%	1.6332%
San Joaquin (SJV)	LDT2	20 MPH	0.00984088	0.03171375	0.53369301	0.00347812	0.008	0.03675	0.00160691	4.64E-02	0.002	0.01575	0.00147802	1.92E-02	347.698268	0.00394719	34,422	0.1091%	9.9762%
San Joaquin (SJV)	LHD1	20 MPH	0.08037824	0.32408634	0.42956864	0.006065	0.01051026	0.07644	0.00933348	9.63E-02	0.00262756	0.03276	0.00889927	4.43E-02	622.283376	0.00480634	43,823	0.1389%	12.7008%
San Joaquin (SJV)	LHD2	20 MPH	0.07781195	0.09388682	0.38423551	0.00658772	0.01084817	0.08918	0.00851699	1.09E-01	0.00271204	0.03822	0.00812428	4.91E-02	678.681225	0.00425644	18,037	0.0572%	5.2277%
San Joaquin (SJV)	MCY	20 MPH	3.97325164	1.19709383	22.2143179	0.00307691	0.004	0.01176	0.00428548	2.00E-02	0.001	0.00504	0.00399554	1.00E-02	258.759316	0.8576728	805	0.0026%	0.2334%
San Joaquin (SJV)	MDV	20 MPH	0.01390581	0.0438891	0.64724218	0.00459789	0.008	0.03675	0.00170213	4.65E-02	0.002	0.01575	0.00156664	1.93E-02	460.212333	0.0054893	17,214	0.0546%	4.9890%
San Joaquin (SJV)	MH	20 MPH	0.0414205	0.9990849	0.29939213	0.01440841	0.01288809	0.13034	0.01010717	1.53E-01	0.00322202	0.05586	0.00960554	6.87E-02	1455.31466	0.00754445	846	0.0027%	0.2451%
San Joaquin (SJV)	Motor Coach	20 MPH	0.21414991	4.43657234	1.26450547	0.01868705	0.012	0.13034	0.00677452	1.49E-01	0.003	0.05586	0.00648146	6.53E-02	1958.7145	0.00994671	194	0.0006%	0.0562%
San Joaquin (SJV)	OBUS	20 MPH	0.02032975	0.117543	0.2999517	0.01511409	0.012	0.13034	0.00226823	1.45E-01	0.003	0.05586	0.00208556	6.09E-02	1514.04015	0.00821486	1,368	0.0043%	0.3966%
San Joaquin (SJV)	SBUS	20 MPH	0.06343247	1.4256419	0.39252743	0.01075001	0.01039912	0.7448	0.00322902	7.58E-01	2.600E-03	3.192E-01	0.0030563	3.25E-01	1113.38425	0.00535797	1,594	0.0051%	0.4621%
San Joaquin (SJV)	T6 Ag	20 MPH	0.11771898	3.21016446	0.61963408	0.01332469	0.012	0.13034	0.00502544	1.47E-01	0.003	0.05586	0.00480804	6.37E-02	1396.6492	0.00546774	751	0.0024%	0.2176%
San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	0.09387375	2.32162235	0.49412059	0.01295199	0.012	0.13034	0.00376938	1.46E-01	0.003	0.05586	0.00360632	6.25E-02	1357.58397	0.00436019	196	0.0006%	0.0567%
San Joaquin (SJV)	T6 CAIRP Small	20 MPH	0.08900649	2.14289514	0.46850092	0.01307505	0.012	0.13034	0.00350242	1.46E-01	0.003	0.05586	0.0033509	6.22E-02	1370.48362	0.00413412	601	0.0019%	0.1741%
San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	0.10525933	2.74061479	0.55397872	0.01311598	0.012	0.13034	0.0043946	1.47E-01	0.003	0.05586	0.00420449	6.31E-02	1374.77305	0.00488902	1,279	0.0041%	0.3708%
San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	0.09737489	2.45041281	0.51247111	0.01310414	0.012	0.13034	0.00396393	1.46E-01	0.003	0.05586	0.00379245	6.27E-02	1373.53275	0.00452281	5,236	0.0166%	1.5176%
San Joaquin (SJV)	T6 Instate Heavy	20 MPH	0.10217939	2.62832563	0.53783879	0.01299416	0.012	0.13034	0.00421698	1.47E-01	0.003	0.05586	0.00403456	6.29E-02	1362.00434	0.00474597	4,303	0.0136%	1.2471%
San Joaquin (SJV)	T6 Instate Small	20 MPH	0.09770999	2.46327825	0.51431333	0.01311656	0.012	0.13034	0.00397689	1.46E-01	0.003	0.05586	0.00380485	6.27E-02	1374.83443	0.00453838	10,860	0.0344%	3.1475%
San Joaquin (SJV)	T6 OOS Heavy	20 MPH	0.09390652	2.32285158	0.49429308	0.0129523	0.012	0.13034	0.00377105	1.46E-01	0.003	0.05586	0.00360792	6.25E-02	1357.61652	0.00436171	112	0.0004%	0.0325%
San Joaquin (SJV)	T6 OOS Small	20 MPH	0.08900649	2.14289514	0.46850092	0.01307505	0.012	0.13034	0.00350242	1.46E-01	0.003	0.05586	0.0033509	6.22E-02	1370.48362	0.00413412	344	0.0011%	0.0997%
San Joaquin (SJV)	T6 Public	20 MPH	0.07923641	1.82085467	0.4100276	0.01312362	0.012	0.13034	0.00344166	1.46E-01	0.003	0.05586	0.00329277	6.22E-02	1375.57385	0.00368033	632	0.0020%	0.1831%
San Joaquin (SJV)	T6 Utility	20 MPH	0.07334271	1.56875945	0.38605196	0.01307291	0.012	0.13034	0.00263867	1.45E-01	0.003	0.05586	0.00252452	6.14E-02	1370.25873	0.00340658	84	0.0003%	0.0243%
San Joaquin (SJV)	T6TS	20 MPH	0.01868832	0.11100988	0.27461519	0.01509753	0.012	0.13034	0.00226504	1.45E-01	0.003	0.05586	0.00208262	6.09E-02	1512.42781	0.00755159	2,572	0.0082%	0.7454%
San Joaquin (SJV)	T7 Ag	20 MPH	0.26971567	6.12712765	1.59260838	0.01809769	0.036	0.06174	0.00894585	1.07E-01	0.009	0.02646	0.00855886	4.40E-02	1896.93912	0.01252759	237	0.0008%	0.0688%
San Joaquin (SJV)	T7 CAIRP	20 MPH	0.23422928	5.03253386	1.3830695	0.01712156	0.036	0.06174	0.00761885	1.05E-01	0.009	0.02646	0.00728926	4.27E-02	1794.62526	0.01087934	12,715	0.0403%	3.6852%
San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	0.24055687	5.21936653	1.4203049	0.01728323	0.036	0.06174	0.00789269	1.06E-01	0.009	0.02646	0.00755125	4.30E-02	1811.57024	0.01117324	587	0.0019%	0.1702%
San Joaquin (SJV)	T7 NNOOS	20 MPH	0.20611764	4.19826282	1.21707678	0.0170981	0.036	0.06174	0.00643626	1.04E-01	0.009	0.02646	0.00615783	4.16E-02	1792.16556	0.00957363	15,767	0.0500%	4.5697%
San Joaquin (SJV)	T7 NOOS	20 MPH	0.23429309	5.03449093	1.3834463	0.01712262	0.036	0.06174	0.00762125	1.05E-01	0.009	0.02646	0.00729156	4.28E-02	1794.73629	0.01088231	5,023	0.0159%	1.4557%
San Joaquin (SJV)	T7 Other Port	20 MPH	0.2548285	5.64163949	1.50470308	0.01726734	0.036	0.06174	0.00849475	1.06E-01	0.009	0.02646	0.00812727	4.36E-02	1809.9053	0.01183612	264	0.0008%	0.0766%
San Joaquin (SJV)	T7 POAK	20 MPH	0.25723347	5.71290258	1.5189039	0.01726734	0.036	0.06174	0.00859639	1.06E-01	0.009	0.02646	0.00822451	4.37E-02	1809.9053	0.01194783	1,120	0.0036%	0.3246%
San Joaquin (SJV)	T7 POLA	20 MPH	0.25383511	5.61462007	1.49883738	0.01731397	0.036	0.06174	0.00844432	1.06E-01	0.009	0.02646	0.00807902	4.35E-02	1814.79302	0.01178998	2,025	0.0064%	0.5870%
San Joaquin (SJV)	T7 Public	20 MPH	0.16760205	3.39700852	0.93676049	0.01761699	0.036	0.06174	0.00773225	1.05E-01	0.009	0.02646	0.00739776	4.29E-02	1846.55378	0.00778468	568	0.0018%	0.1646%
San Joaquin (SJV)	T7 Single	20 MPH	0.19880398	3.99126584	1.17389134	0.01744382	0.036	0.06174	0.00610032	1.04E-01	0.009	0.02646	0.00583643	4.13E-02	1828.40319	0.00923393	3,222	0.0102%	0.9339%
San Joaquin (SJV)	T7 Single Construction	20 MPH	0.19822584	3.97322879	1.16974526	0.01741499	0.036	0.06174	0.00611408	1.04E-01	0.009	0.02646	0.00584959	4.13E-02	1825.38088	0.00920708	1,520	0.0048%	0.4404%
San Joaquin (SJV)	T7 SWCV	20 MPH	0.05332879	1.58198411	2.72009296	0.03413098	0.036	0.06174	0.00818943	1.06E-01	0.009	0.02646	0.00783516	4.33E-02	4052.6194	0.80513888	603	0.0019%	0.1748%
San Joaquin (SJV)	T7 Tractor	20 MPH	0.23823988	5.15261684	1.40675113	0.01714817	0.036	0.06174	0.0077833	1.06E-01	0.009	0.02646	0.0074466	4.29E-02	1797.41363	0.01106563	18,581	0.0589%	5.3851%
San Joaquin (SJV)	T7 Tractor Construction	20 MPH	0.24766821	5.43237113	1.46222376	0.0173264	0.036	0.06174	0.00818952	1.06E-01	0.009	0.02646	0.00783524	4.33E-02	1816.0956	0.01150355	1,133	0.0036%	0.3284%
San Joaquin (SJV)	T7 Utility	20 MPH	0.1508427	2.56041327	0.89069111	0.01726875	0.036	0.06174	0.00410035	1.02E-01	0.009	0.02646	0.00392297	3.94E-02	1810.05321	0.00700625	18	0.0001%	0.0053%
San Joaquin (SJV)	T7IS	20 MPH	0.61142047	3.67865198	41.1495309	0.01936711	0.02	0.06174	0.00227208	8.40E-02	0.005	0.02646	0.00208909	3.35E-02	1873.52011	0.24706315	200	0.0006%	0.0581%
San Joaquin (SJV)	UBUS	20 MPH	0.08714225	1.37713286	3.36775809	0.00982717	0.012	0.49694694	0.01615062	5.25E-01	0.003	0.21297726	0.01541144	2.31E-01	1694.20455	0.59245498	25,311	0.0802%	7.3358%
																	345,037	1.0937%	100%

San Joaquin (SJV)	All Other Buses	25 MPH	0.07500448	1.41941745	0.39479896	0.01212629	0.012	0.13034	0.00384875	1.46E-01	0.003	0.05586	0.00368225	6.25E-02	1271.03707	0.00348376	476	0.0015%	0.0207%
San Joaquin (SJV)	LDA	25 MPH	0.00462251	0.01958746	0.31109547	0.00195966	0.008	0.03675	0.00097457	4.57E-02	0.002	0.01575	0.00089654	1.86E-02	195.988228	0.00183924	1,379,618	4.3732%	59.9128%
San Joaquin (SJV)	LDT1	25 MPH	0.00671017	0.02745083	0.41819182	0.00251125	0.008	0.03675	0.00124369	4.60E-02	0.002	0.01575	0.00114366	1.89E-02	250.975361	0.00270669	74,198	0.2352%	3.2222%
San Joaquin (SJV)	LDT2	25 MPH	0.00726188	0.02888506	0.48966902	0.00288517	0.008	0.03675	0.00118881	4.59E-02	0.002	0.01575	0.00109352	1.88E-02	288.352991	0.00291678	453,239	1.4367%	19.6828%
San Joaquin (SJV)	LHD1	25 MPH	0.05154871	0.31913065	0.29606937	0.00546425	0.01051026	0.07644	0.00772909	9.47E-02	0.00262756	0.03276	0.00737225	4.28E-02	560.44031	0.00318695	40,931	0.1297%	1.7775%
San Joaquin (SJV)	LHD2	25 MPH	0.04720336	0.07891322	0.24690113	0.00590364	0.01084817	0.08918	0.00720873	1.07E-01	0.00271204	0.03822	0.00687896	4.78E-02	608.112318	0.00266694	17,347	0.0550%	0.7533%
San Joaquin (SJV)	MCY	25 MPH	3.01203082	1.12974102	19.3217018	0.00255535	0.004	0.01176	0.00323182	1.90E-02	0.001	0.00504	0.0030132	9.05E-03	214.589207	0.6498296	10,602	0.0336%	0.4604%
San Joaquin (SJV)	MDV	25 MPH	0.0102495	0.03983545	0.59022334	0.00381568	0.008	0.03675	0.0012628	4.60E-02	0.002	0.01575	0.00116247	1.89E-02	381.845039	0.00406366	226,658	0.7185%	9.8431%
San Joaquin (SJV)	MH	25 MPH	0.02761433	0.79210852	0.25380758	0.01264326	0.01288809	0.13034	0.00843143	1.52E-01	0.00322202	0.05586	0.00801912	6.71E-02	1277.25272	0.00543476	928	0.0029%	0.0403%
San Joaquin (SJV)	Motor Coach	25 MPH	0.15693851	2.36609699	0.92668546	0.01724694	0.012	0.13034	0.00616285	1.49E-01	0.003	0.05586	0.00589625	6.48E-02	1807.76649	0.00728939	195	0.0006%	0.0085%
San Joaquin (SJV)	OBUS	25 MPH	0.01501841	0.10715928	0.27538868	0.01319791	0.012	0.13034	0.00167564	1.44E-01	0.003	0.05586	0.00154069	6.04E-02	1322.07852	0.00606865	1,525	0.0048%	0.0662%
San Joaquin (SJV)	SBUS	25 MPH	0.04652686	0.78955608	0.30576663	0.0097784	0.01039912	0.7448	0.00278603	7.58E-01	2.600E-03	3.192E-01	0.0026411	3.24E-01	1013.239	0.00394267	2,517	0.0080%	0.1093%
San Joaquin (SJV)	T6 Ag	25 MPH	0.08626967	1.84421827	0.45409522	0.01229782	0.012	0.13034	0.00457169	1.47E-01	0.003	0.05586	0.00437392	6.32E-02	1289.01666	0.004007	782	0.0025%	0.0340%
San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	0.06879483	1.24050271	0.36211339	0.01194222	0.012	0.13034	0.00342904	1.46E-01	0.003	0.05586	0.0032807	6.21E-02	1251.74408	0.00319534	204	0.0006%	0.0088%
San Joaquin (SJV)	T6 CAIRP Small	25 MPH	0.06522788	1.14204355	0.34333817	0.01206743	0.012	0.13034	0.00318618	1.46E-01	0.003	0.05586	0.00304835	6.19E-02	1264.86753	0.00302967	626	0.0020%	0.0272%
San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	0.07713871	1.47806478	0.40598215	0.01210517	0.012	0.13034	0.00399752	1.46E-01	0.003	0.05586	0.00382459	6.27E-02	1268.82409	0.00358289	1,332	0.0042%	0.0579%
San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	0.07136089	1.31367146	0.37556338	0.01209425	0.012	0.13034	0.00360601	1.46E-01	0.003	0.05586	0.00345002	6.23E-02	1267.67929	0.00331453	5,453	0.0173%	0.2368%
San Joaquin (SJV)	T6 Instate Heavy	25 MPH	0.07488157	1.42672775	0.39415202	0.01198103	0.012	0.13034	0.00383623	1.46E-01	0.003	0.05586	0.00367028	6.25E-02	1255.81121	0.00347806	4,481	0.0142%	0.1946%
San Joaquin (SJV)	T6 Instate Small	25 MPH	0.0716062	1.32455896	0.37691152	0.01210574	0.012	0.13034	0.00361781	1.46E-01	0.003	0.05586	0.00346131	6.23E-02	1268.88304	0.00332592	11,310	0.0359%	0.4912%
San Joaquin (SJV)	T6 OOS Heavy	25 MPH	0.06881884	1.24144358	0.36223981	0.01194251	0.012	0.13034	0.00343057	1.46E-01	0.003	0.05586	0.00328216	6.21E-02	1251.77399	0.00319646	117	0.0004%	0.0051%
San Joaquin (SJV)	T6 OOS Small	25 MPH	0.06522788	1.14204355	0.34333817	0.01206743	0.012	0.13034	0.00318618	1.46E-01	0.003	0.05586	0.00304835	6.19E-02	1264.86753	0.00302967	358	0.0011%	0.0156%
San Joaquin (SJV)	T6 Public	25 MPH	0.05808145	1.01715286	0.30071868	0.01210827	0.012	0.13034	0.0031053	1.45E-01	0.003	0.05586	0.00297097	6.18E-02	1269.14821	0.00269773	658	0.0021%	0.0286%
San Joaquin (SJV)	T6 Utility	25 MPH	0.05374878	0.83571442	0.28291593	0.01206545	0.012	0.13034	0.00240042	1.45E-01	0.003	0.05586	0.00229658	6.12E-02	1264.65997	0.00249649	87	0.0003%	0.0038%
San Joaquin (SJV)	T6TS	25 MPH	0.01380582	0.10120329	0.25212698	0.01318344	0.012	0.13034	0.00167328	1.44E-01	0.003	0.05586	0.00153852	6.04E-02	1320.6706	0.00557866	2,866	0.0091%	0.1244%
San Joaquin (SJV)	T7 Ag	25 MPH	0.19765956	3.67624127	1.16713377	0.01670299	0.036	0.06174	0.00813813	1.06E-01	0.009	0.02646	0.00778608	4.32E-02	1750.75182	0.00918077	245	0.0008%	0.0106%
San Joaquin (SJV)	T7 CAIRP	25 MPH	0.17165356	2.69323624	1.01357442	0.01578672	0.036	0.06174	0.00693094	1.05E-01	0.009	0.02646	0.00663111	4.21E-02	1654.71085	0.00797286	13,117	0.0416%	0.5696%
San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	0.17629114	2.78661472	1.04086517	0.01595127	0.036	0.06174	0.00718008	1.05E-01	0.009	0.02646	0.00686948	4.23E-02	1671.95912	0.00818827	606	0.0019%	0.0263%
San Joaquin (SJV)	T7 NNOOS	25 MPH	0.15105211	2.23651164	0.89192763	0.01576511	0.036	0.06174	0.00585513	1.04E-01	0.009	0.02646	0.00560184	4.11E-02	1652.44669	0.00701598	16,265	0.0516%	0.7063%
San Joaquin (SJV)	T7 NOOS	25 MPH	0.17170033	2.69495045	1.01385056	0.01578769	0.036	0.06174	0.00693313	1.05E-01	0.009	0.02646	0.00663321	4.21E-02	1654.81302	0.00797504	5,181	0.0164%	0.2250%
San Joaquin (SJV)	T7 Other Port	25 MPH	0.18674958	3.00543176	1.10271288	0.01593664	0.036	0.06174	0.00772776	1.05E-01	0.009	0.02646	0.00739346	4.29E-02	1670.42525	0.00867403	273	0.0009%	0.0118%
San Joaquin (SJV)	T7 POAK	25 MPH	0.18851205	3.04339525	1.11311987	0.01593664	0.036	0.06174	0.00782022	1.06E-01	0.009	0.02646	0.00748192	4.29E-02	1670.42525	0.0087559	1,156	0.0037%	0.0502%
San Joaquin (SJV)	T7 POLA	25 MPH	0.18602158	3.00958856	1.09841424	0.01597968	0.036	0.06174	0.00768188	1.05E-01	0.009	0.02646	0.00734957	4.28E-02	1674.93629	0.00864022	2,089	0.0066%	0.0907%
San Joaquin (SJV)	T7 Public	25 MPH	0.12275384	2.1153281	0.68840009	0.0162344	0.036	0.06174	0.00672937	1.04E-01	0.009	0.02646	0.00643826	4.19E-02	1701.63585	0.0057016	586	0.0019%	0.0254%
San Joaquin (SJV)	T7 Single	25 MPH	0.14569234	2.19091191	0.86027943	0.01609952	0.036	0.06174	0.00554953	1.03E-01	0.009	0.02646	0.00530946	4.08E-02	1687.4976	0.00676703	3,324	0.0105%	0.1443%
San Joaquin (SJV)	T7 Single Construction	25 MPH	0.14526878	2.17004212	0.85726798	0.0160727	0.036	0.06174	0.00555945	1.03E-01	0.009	0.02646	0.00531895	4.08E-02	1684.68709	0.00674736	1,568	0.0050%	0.0681%
San Joaquin (SJV)	T7 SWCV	25 MPH	0.03958525	1.32492881	1.99418503	0.0314336	0.036	0.06174	0.00743197	1.05E-01	0.009	0.02646	0.00711047	4.26E-02	3732.65604	0.59286842	871	0.0028%	0.0378%
San Joaquin (SJV)	T7 Tractor	25 MPH	0.17459271	2.76860726	1.03092937	0.01581121	0.036	0.06174	0.00708055	1.05E-01	0.009	0.02646	0.00677424	4.22E-02	1657.27835	0.00810938	19,167	0.0608%	0.8324%
San Joaquin (SJV)	T7 Tractor Construction	25 MPH	0.18150274	2.91718745	1.07158871	0.0159911	0.036	0.06174	0.00744983	1.05E-01	0.009	0.02646	0.00712756	4.26E-02	1676.13338	0.00843033	1,169	0.0037%	0.0508%
San Joaquin (SJV)	T7 Utility	25 MPH	0.11054419	1.36404418	0.65273779	0.01593794	0.036	0.06174	0.00373013	1.01E-01	0.009	0.02646	0.00356876	3.90E-02	1670.56176	0.00513449	19	0.0001%	0.0008%
San Joaquin (SJV)	T7IS	25 MPH	0.45168104	3.35368074	37.7797995	0.01820012	0.02	0.06174	0.00167848	8.34E-02	0.005	0.02646	0.0015433	3.30E-02	1762.5533	0.18251554	262	0.0008%	0.0114%
San Joaquin (SJV)	UBUS	25 MPH	0.06167508	1.23869412	2.30361485	0.00864008	0.012	0.49694694	0.01194575	5.21E-01	0.003	0.21297726	0.01139906	2.27E-01	1502.14842	0.37224494	306	0.0010%	0.0133%
																	2,302,711	7.2993%	100%

San Joaquin (SJV)	All Other Buses	30 MPH	0.05527291	0.87572592	0.29093843	0.01148176	0.012	0.13034	0.00354373	1.46E-01	0.003	0.05586	0.00339043	6.23E-02	1203.48031	0.00256728	573	0.0018%	0.0190%
San Joaquin (SJV)	LDA	30 MPH	0.0036008	0.01813273	0.28596294	0.00168716	0.008	0.03675	0.00076083	4.55E-02	0.002	0.01575	0.00069996	1.84E-02	168.708233	0.00143338	1,810,009	5.7375%	60.0371%
San Joaquin (SJV)	LDT1	30 MPH	0.00523553	0.02541772	0.38485562	0.0021619	0.008	0.03675	0.00096973	4.57E-02	0.002	0.01575	0.00089175	1.86E-02	216.024022	0.00211195	97,346	0.3086%	3.2289%
San Joaquin (SJV)	LDT2	30 MPH	0.00566024	0.02674467	0.45066861	0.00248383	0.008	0.03675	0.0009278	4.57E-02	0.002	0.01575	0.00085348	1.86E-02	248.198173	0.0022739	594,633	1.8849%	19.7237%
San Joaquin (SJV)	LHD1	30 MPH	0.0399168	0.32158057	0.2410939	0.0049607	0.01051026	0.07644	0.00666355	9.36E-02	0.00262756	0.03276	0.00635776	4.17E-02	508.797112	0.00247177	35,167	0.1115%	1.1665%
San Joaquin (SJV)	LHD2	30 MPH	0.03576687	0.07123112	0.19419096	0.00532871	0.01084817	0.08918	0.00632544	1.06E-01	0.00271204	0.03822	0.00603784	4.70E-02	548.87738	0.00203105	14,845	0.0471%	0.4924%
San Joaquin (SJV)	MCY	30 MPH	2.40498981	1.08202437	17.3148648	0.00220328	0.004	0.01176	0.00256813	1.83E-02	0.001	0.00504	0.00239443	8.43E-03	184.704613	0.51860622	13,909	0.0441%	0.4614%
San Joaquin (SJV)	MDV	30 MPH	0.00799831	0.03681486	0.54198052	0.00328508	0.008	0.03675	0.00098823	4.57E-02	0.002	0.01575	0.00090985	1.87E-02	328.696912	0.00317305	297,367	0.9426%	9.8635%
San Joaquin (SJV)	MH	30 MPH	0.0213544	0.67978607	0.22697913	0.01166439	0.01288809	0.13034	0.00742764	1.51E-01	0.00322202	0.05586	0.00706924	6.62E-02	1178.54365	0.00422777	1,064	0.0034%	0.0353%
San Joaquin (SJV)	Motor Coach	30 MPH	0.11565239	1.44532479	0.68290052	0.01633025	0.012	0.13034	0.00567444	1.48E-01	0.003	0.05586	0.00542897	6.43E-02	1711.68208	0.00537175	255	0.0008%	0.0084%
San Joaquin (SJV)	OBUS	30 MPH	0.01170439	0.09926741	0.25352066	0.01212825	0.012	0.13034	0.00130588	1.44E-01	0.003	0.05586	0.00120071	6.01E-02	1214.93626	0.00472952	1,724	0.0055%	0.0572%
San Joaquin (SJV)	SBUS	30 MPH	0.03450023	0.5037117	0.24181016	0.00918815	0.01039912	0.7448	0.0024728	7.58E-01	2.600E-03	3.192E-01	0.0023468	3.24E-01	952.321944	0.00299093	3,020	0.0096%	0.1002%
San Joaquin (SJV)	T6 Ag	30 MPH	0.06357454	1.20392891	0.33463551	0.01164418	0.012	0.13034	0.00420938	1.47E-01	0.003	0.05586	0.00402729	6.29E-02	1220.50427	0.00295287	940	0.0030%	0.0312%
San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	0.05069684	0.75913015	0.26685152	0.01129082	0.012	0.13034	0.00315729	1.45E-01	0.003	0.05586	0.00302071	6.19E-02	1183.46652	0.00235474	245	0.0008%	0.0081%
San Joaquin (SJV)	T6 CAIRP Small	30 MPH	0.04806826	0.69714759	0.25301553	0.01142603	0.012	0.13034	0.00293368	1.45E-01	0.003	0.05586	0.00280677	6.17E-02	1197.63869	0.00223265	752	0.0024%	0.0249%
San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	0.05684629	0.91256418	0.29918247	0.01146176	0.012	0.13034	0.00368064	1.46E-01	0.003	0.05586	0.00352142	6.24E-02	1201.38363	0.00264036	1,602	0.0051%	0.0531%
San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	0.05258856	0.80650402	0.276766	0.01145142	0.012	0.13034	0.00332034	1.46E-01	0.003	0.05586	0.0031767	6.20E-02	1200.29952	0.0024426	6,557	0.0208%	0.2175%
San Joaquin (SJV)	T6 Instate Heavy	30 MPH	0.05518233	0.88614958	0.29046169	0.01132739	0.012	0.13034	0.00353221	1.46E-01	0.003	0.05586	0.00337941	6.22E-02	1187.29943	0.00256308	5,388	0.0171%	0.1787%
San Joaquin (SJV)	T6 Instate Small	30 MPH	0.05276862	0.81545753	0.27775668	0.01146231	0.012	0.13034	0.0033311	1.46E-01	0.003	0.05586	0.003187	6.20E-02	1201.44077	0.00245097	13,600	0.0431%	0.4511%
San Joaquin (SJV)	T6 OOS Heavy	30 MPH	0.05071454	0.75987192	0.26694468	0.01129109	0.012	0.13034	0.00315869	1.45E-01	0.003	0.05586	0.00302205	6.19E-02	1183.49464	0.00235556	140	0.0004%	0.0047%
San Joaquin (SJV)	T6 OOS Small	30 MPH	0.04806826	0.69714759	0.25301553	0.01142603	0.012	0.13034	0.00293368	1.45E-01	0.003	0.05586	0.00280677	6.17E-02	1197.63869	0.00223265	431	0.0014%	0.0143%
San Joaquin (SJV)	T6 Public	30 MPH	0.04287637	0.65679528	0.22193225	0.01146265	0.012	0.13034	0.00285808	1.45E-01	0.003	0.05586	0.00273444	6.16E-02	1201.47664	0.0019915	791	0.0025%	0.0262%
San Joaquin (SJV)	T6 Utility	30 MPH	0.03960898	0.50994922	0.20848869	0.01142416	0.012	0.13034	0.00221019	1.45E-01	0.003	0.05586	0.00211457	6.10E-02	1197.44216	0.00183973	105	0.0003%	0.0035%
San Joaquin (SJV)	T6TS	30 MPH	0.01075938	0.09375006	0.23210612	0.01211497	0.012	0.13034	0.00130405	1.44E-01	0.003	0.05586	0.00119902	6.01E-02	1213.64244	0.00434766	3,240	0.0103%	0.1075%
San Joaquin (SJV)	T7 Ag	30 MPH	0.14566087	2.48482031	0.86009363	0.01581521	0.036	0.06174	0.00749318	1.05E-01	0.009	0.02646	0.00716903	4.26E-02	1657.6978	0.00676557	413	0.0013%	0.0137%
San Joaquin (SJV)	T7 CAIRP	30 MPH	0.12649633	1.65060391	0.74693144	0.01492559	0.036	0.06174	0.00638166	1.04E-01	0.009	0.02646	0.00610559	4.16E-02	1564.45032	0.00587543	22,145	0.0702%	0.7345%
San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	0.12991493	1.70404213	0.76704721	0.01510343	0.036	0.06174	0.0066112	1.04E-01	0.009	0.02646	0.0063252	4.18E-02	1583.09136	0.00603421	1,023	0.0032%	0.0339%
San Joaquin (SJV)	T7 NNOOS	30 MPH	0.11131454	1.36470945	0.6572865	0.01490522	0.036	0.06174	0.0053911	1.03E-01	0.009	0.02646	0.00515789	4.06E-02	1562.31509	0.00517027	27,460	0.0870%	0.9108%
San Joaquin (SJV)	T7 NOOS	30 MPH	0.12653079	1.65204358	0.74713493	0.01492651	0.036	0.06174	0.00638368	1.04E-01	0.009	0.02646	0.00610752	4.16E-02	1564.54662	0.00587703	8,747	0.0277%	0.2901%
San Joaquin (SJV)	T7 Other Port	30 MPH	0.13762101	1.83390108	0.81262007	0.01508959	0.036	0.06174	0.00711533	1.05E-01	0.009	0.02646	0.00680753	4.23E-02	1581.64065	0.00639214	460	0.0015%	0.0153%
San Joaquin (SJV)	T7 POAK	30 MPH	0.13891982	1.85706624	0.82028927	0.01508959	0.036	0.06174	0.00720046	1.05E-01	0.009	0.02646	0.00688897	4.23E-02	1581.64065	0.00645247	1,951	0.0062%	0.0647%
San Joaquin (SJV)	T7 POLA	30 MPH	0.13708453	1.84731083	0.80945228	0.01513034	0.036	0.06174	0.00707309	1.05E-01	0.009	0.02646	0.00676711	4.22E-02	1585.91193	0.00636722	3,527	0.0112%	0.1170%
San Joaquin (SJV)	T7 Public	30 MPH	0.09088689	1.5332278	0.50980106	0.01535985	0.036	0.06174	0.00608129	1.04E-01	0.009	0.02646	0.00581822	4.13E-02	1609.96838	0.00422146	989	0.0031%	0.0328%
San Joaquin (SJV)	T7 Single	30 MPH	0.10736477	1.37479171	0.63396405	0.01524381	0.036	0.06174	0.00510972	1.03E-01	0.009	0.02646	0.00488868	4.03E-02	1597.80559	0.00498682	5,612	0.0178%	0.1861%
San Joaquin (SJV)	T7 Single Construction	30 MPH	0.1070594	1.35600794	0.63178134	0.01521833	0.036	0.06174	0.00511818	1.03E-01	0.009	0.02646	0.00489677	4.04E-02	1595.13424	0.00497263	2,646	0.0084%	0.0878%
San Joaquin (SJV)	T7 SWCV	30 MPH	0.03027425	1.17224774	1.47073398	0.02973323	0.036	0.06174	0.00686598	1.05E-01	0.009	0.02646	0.00656896	4.20E-02	3530.79019	0.44309013	979	0.0031%	0.0325%
San Joaquin (SJV)	T7 Tractor	30 MPH	0.12866226	1.70327699	0.75972078	0.0149487	0.036	0.06174	0.00651941	1.04E-01	0.009	0.02646	0.00623738	4.17E-02	1566.87277	0.00597603	32,360	0.1026%	1.0734%
San Joaquin (SJV)	T7 Tractor Construction	30 MPH	0.13375644	1.79380075	0.78969311	0.01514113	0.036	0.06174	0.00685952	1.05E-01	0.009	0.02646	0.00656278	4.20E-02	1587.04279	0.00621264	1,973	0.0063%	0.0654%
San Joaquin (SJV)	T7 Utility	30 MPH	0.08146312	0.83236467	0.48102079	0.01509082	0.036	0.06174	0.00343451	1.01E-01	0.009	0.02646	0.00328594	3.87E-02	1581.7699	0.00378375	32	0.0001%	0.0011%
San Joaquin (SJV)	T7IS	30 MPH	0.35201158	3.10669514	34.7797876	0.01730645	0.02	0.06174	0.0013081	8.30E-02	0.005	0.02646	0.00120275	3.27E-02	1678.13844	0.14224105	478	0.0015%	0.0158%
San Joaquin (SJV)	UBUS	30 MPH	0.04838533	1.166602	1.86865075	0.00798337	0.012	0.49694694	0.00948718	5.18E-01	0.003	0.21297726	0.00905344	2.25E-01	1397.33308	0.28645629	320	0.0010%	0.0106%
																	3,014,818	9.5566%	100%

San Joaquin (SJV)	All Other Buses	35 MPH	0.04073216	0.58692239	0.21440069	0.01097142	0.012	0.13034	0.00328981	1.46E-01	0.003	0.05586	0.0031475	6.20E-02	1149.98781	0.0018919	675	0.0021%	0.0230%
San Joaquin (SJV)	LDA	35 MPH	0.00295896	0.01706041	0.26371683	0.00150758	0.008	0.03675	0.00062642	4.54E-02	0.002	0.01575	0.00057634	1.83E-02	150.740148	0.00117844	1,714,733	5.4355%	58.3883%
San Joaquin (SJV)	LDT1	35 MPH	0.00430743	0.02392309	0.35518545	0.00193151	0.008	0.03675	0.00079759	4.55E-02	0.002	0.01575	0.00073346	1.85E-02	192.987099	0.00173764	92,222	0.2923%	3.1402%
San Joaquin (SJV)	LDT2	35 MPH	0.00465366	0.02516794	0.41593826	0.00221918	0.008	0.03675	0.00076371	4.55E-02	0.002	0.01575	0.00070256	1.85E-02	221.733784	0.00186988	563,332	1.7857%	19.1820%
San Joaquin (SJV)	LHD1	35 MPH	0.03254889	0.32713123	0.20556859	0.00496062	0.01051026	0.07644	0.0059265	9.29E-02	0.00262756	0.03276	0.00565572	4.10E-02	508.797112	0.0020197	16,470	0.0522%	0.5608%
San Joaquin (SJV)	LHD2	35 MPH	0.02853284	0.0663777	0.16001741	0.00532866	0.01084817	0.08918	0.00568346	1.06E-01	0.00271204	0.03822	0.00542612	4.64E-02	548.87738	0.00162929	7,149	0.0227%	0.2434%
San Joaquin (SJV)	MCY	35 MPH	2.02186989	1.05058798	15.9559128	0.00197129	0.004	0.01176	0.0021497	1.79E-02	0.001	0.00504	0.00200431	8.04E-03	165.006681	0.43579671	13,177	0.0418%	0.4487%
San Joaquin (SJV)	MDV	35 MPH	0.0065794	0.03461901	0.49950435	0.00293611	0.008	0.03675	0.00081524	4.56E-02	0.002	0.01575	0.00075068	1.85E-02	293.762544	0.00261175	281,714	0.8930%	9.5926%
San Joaquin (SJV)	MH	35 MPH	0.01731834	0.60323984	0.20552886	0.0108182	0.01288809	0.13034	0.00679621	1.50E-01	0.00322202	0.05586	0.00647173	6.56E-02	1093.23421	0.00346486	1,307	0.0041%	0.0445%
San Joaquin (SJV)	Motor Coach	35 MPH	0.08522749	0.959054	0.50324856	0.0156044	0.012	0.13034	0.00526785	1.48E-01	0.003	0.05586	0.00503997	6.39E-02	1635.60094	0.0039586	318	0.0010%	0.0108%
San Joaquin (SJV)	OBUS	35 MPH	0.00962298	0.09344026	0.23402058	0.01119727	0.012	0.13034	0.00107366	1.43E-01	0.003	0.05586	0.00098719	5.98E-02	1121.68077	0.00388846	2,143	0.0068%	0.0730%
San Joaquin (SJV)	SBUS	35 MPH	0.02575689	0.35118193	0.19357661	0.00870487	0.01039912	0.7448	0.00224164	7.57E-01	2.600E-03	3.192E-01	0.00212903	3.24E-01	902.492715	0.00233791	3,099	0.0098%	0.1055%
San Joaquin (SJV)	T6 Ag	35 MPH	0.04684986	0.85085949	0.2466023	0.01112662	0.012	0.13034	0.00390777	1.46E-01	0.003	0.05586	0.00373872	6.26E-02	1166.25508	0.00217605	1,109	0.0035%	0.0378%
San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	0.03735992	0.50464698	0.19665037	0.01076704	0.012	0.13034	0.00293106	1.45E-01	0.003	0.05586	0.00280426	6.17E-02	1128.56531	0.00173527	289	0.0009%	0.0098%
San Joaquin (SJV)	T6 CAIRP Small	35 MPH	0.03542285	0.4622828	0.18645425	0.01091817	0.012	0.13034	0.00272347	1.45E-01	0.003	0.05586	0.00260565	6.15E-02	1144.40584	0.0016453	887	0.0028%	0.0302%
San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	0.04189216	0.61208047	0.22047865	0.0109523	0.012	0.13034	0.00341694	1.46E-01	0.003	0.05586	0.00326913	6.21E-02	1147.98315	0.00194578	1,889	0.0060%	0.0643%
San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	0.03875461	0.53790906	0.20395946	0.01094241	0.012	0.13034	0.00308262	1.45E-01	0.003	0.05586	0.00294927	6.18E-02	1146.9471	0.00180005	7,732	0.0245%	0.2633%
San Joaquin (SJV)	T6 Instate Heavy	35 MPH	0.04066541	0.59784123	0.21404937	0.01080176	0.012	0.13034	0.00327911	1.46E-01	0.003	0.05586	0.00313726	6.20E-02	1132.2041	0.0018888	6,354	0.0201%	0.2163%
San Joaquin (SJV)	T6 Instate Small	35 MPH	0.03888668	0.54536968	0.20468669	0.01095283	0.012	0.13034	0.00309242	1.45E-01	0.003	0.05586	0.00295864	6.18E-02	1148.03893	0.00180619	16,036	0.0508%	0.5460%
San Joaquin (SJV)	T6 OOS Heavy	35 MPH	0.03737297	0.50525139	0.19671902	0.01076729	0.012	0.13034	0.00293236	1.45E-01	0.003	0.05586	0.00280551	6.17E-02	1128.59192	0.00173588	166	0.0005%	0.0056%
San Joaquin (SJV)	T6 OOS Small	35 MPH	0.03542285	0.4622828	0.18645425	0.01091817	0.012	0.13034	0.00272347	1.45E-01	0.003	0.05586	0.00260565	6.15E-02	1144.40584	0.0016453	508	0.0016%	0.0173%
San Joaquin (SJV)	T6 Public	35 MPH	0.03166244	0.46414595	0.16386375	0.01095128	0.012	0.13034	0.00266513	1.45E-01	0.003	0.05586	0.00254984	6.14E-02	1147.87644	0.00147064	933	0.0030%	0.0318%
San Joaquin (SJV)	T6 Utility	35 MPH	0.02918897	0.33801383	0.15364116	0.01091638	0.012	0.13034	0.00205182	1.44E-01	0.003	0.05586	0.00196306	6.08E-02	1144.21804	0.00135575	124	0.0004%	0.0042%
San Joaquin (SJV)	T6TS	35 MPH	0.00884602	0.08824679	0.21425318	0.01118501	0.012	0.13034	0.00107215	1.43E-01	0.003	0.05586	0.0009858	5.98E-02	1120.48626	0.00357451	4,027	0.0128%	0.1371%
San Joaquin (SJV)	T7 Ag	35 MPH	0.10734159	1.80948811	0.63382713	0.01511225	0.036	0.06174	0.00695627	1.05E-01	0.009	0.02646	0.00665534	4.21E-02	1584.01616	0.00498574	743	0.0024%	0.0253%
San Joaquin (SJV)	T7 CAIRP	35 MPH	0.09321869	1.09892693	0.55043474	0.01423315	0.036	0.06174	0.0059244	1.04E-01	0.009	0.02646	0.00566811	4.11E-02	1491.87156	0.00432977	39,839	0.1263%	1.3566%
San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	0.09573886	1.13199888	0.56526316	0.0144321	0.036	0.06174	0.00613772	1.04E-01	0.009	0.02646	0.00587221	4.13E-02	1512.72438	0.00444682	1,840	0.0058%	0.0627%
San Joaquin (SJV)	T7 NNOOS	35 MPH	0.08203081	0.90458157	0.48437287	0.01421379	0.036	0.06174	0.00500481	1.03E-01	0.009	0.02646	0.00478831	4.02E-02	1489.84253	0.00381012	49,401	0.1566%	1.6821%
San Joaquin (SJV)	T7 NOOS	35 MPH	0.09324409	1.10014591	0.55058469	0.01423402	0.036	0.06174	0.00592627	1.04E-01	0.009	0.02646	0.0056699	4.11E-02	1491.963	0.00433095	15,736	0.0499%	0.5358%
San Joaquin (SJV)	T7 Other Port	35 MPH	0.10141678	1.21557971	0.59884253	0.01441889	0.036	0.06174	0.0066055	1.04E-01	0.009	0.02646	0.00631975	4.18E-02	1511.33961	0.00471055	828	0.0026%	0.0282%
San Joaquin (SJV)	T7 POAK	35 MPH	0.10237391	1.23093446	0.60449418	0.01441889	0.036	0.06174	0.00668453	1.04E-01	0.009	0.02646	0.00639536	4.19E-02	1511.33961	0.004755	3,510	0.0111%	0.1195%
San Joaquin (SJV)	T7 POLA	35 MPH	0.10102143	1.23177968	0.5965081	0.01445783	0.036	0.06174	0.00656628	1.04E-01	0.009	0.02646	0.00628223	4.17E-02	1515.42104	0.00469218	6,346	0.0201%	0.2161%
San Joaquin (SJV)	T7 Public	35 MPH	0.06735375	1.21494515	0.37801313	0.01466638	0.036	0.06174	0.0056107	1.03E-01	0.009	0.02646	0.00536798	4.08E-02	1537.28157	0.00312841	1,780	0.0056%	0.0606%
San Joaquin (SJV)	T7 Single	35 MPH	0.07912012	0.93675414	0.4671859	0.01456625	0.036	0.06174	0.0047436	1.02E-01	0.009	0.02646	0.00453839	4.00E-02	1526.78605	0.00367492	10,095	0.0320%	0.3438%
San Joaquin (SJV)	T7 Single Construction	35 MPH	0.07890103	0.92053498	0.46561221	0.01454181	0.036	0.06174	0.00475167	1.02E-01	0.009	0.02646	0.00454611	4.00E-02	1524.22407	0.00366475	4,761	0.0151%	0.1621%
San Joaquin (SJV)	T7 SWCV	35 MPH	0.02327405	1.06530141	1.08501547	0.02838362	0.036	0.06174	0.00642335	1.04E-01	0.009	0.02646	0.00614548	4.16E-02	3370.59202	0.33193605	2,419	0.0077%	0.0824%
San Joaquin (SJV)	T7 Tractor	35 MPH	0.09481483	1.13833381	0.55985956	0.01425513	0.036	0.06174	0.00605227	1.04E-01	0.009	0.02646	0.00579045	4.13E-02	1494.17504	0.0044039	58,216	0.1845%	1.9823%
San Joaquin (SJV)	T7 Tractor Construction	35 MPH	0.09857061	1.19830721	0.58195624	0.01446811	0.036	0.06174	0.00636831	1.04E-01	0.009	0.02646	0.00609282	4.16E-02	1516.49927	0.00457835	3,550	0.0113%	0.1209%
San Joaquin (SJV)	T7 Utility	35 MPH	0.06003246	0.55174394	0.35447772	0.01442006	0.036	0.06174	0.00318842	1.01E-01	0.009	0.02646	0.00305049	3.85E-02	1511.46312	0.00278835	57	0.0002%	0.0020%
San Joaquin (SJV)	T7IS	35 MPH	0.28941276	2.92432735	32.1046256	0.01657658	0.02	0.06174	0.00107548	8.28E-02	0.005	0.02646	0.00098886	3.24E-02	1609.46859	0.11694608	850	0.0027%	0.0289%
San Joaquin (SJV)	UBUS	35 MPH	0.0391081	1.11779585	1.57350229	0.00741733	0.012	0.49694694	0.00771776	5.17E-01	0.003	0.21297726	0.00736472	2.23E-01	1308.23849	0.2298225	413	0.0013%	0.0141%
																	2,936,776	9.3092%	100%

San Joaquin (SJV)	All Other Buses	40 MPH	0.03001667	0.41725922	0.15799789	0.01055233	0.012	0.13034	0.0030723	1.45E-01	0.003	0.05586	0.0029394	6.18E-02	1106.06016	0.0013942	838	0.0027%	0.0273%
San Joaquin (SJV)	LDA	40 MPH	0.00256445	0.0163121	0.24393384	0.001398	0.008	0.03675	0.00054383	4.53E-02	0.002	0.01575	0.00050037	1.83E-02	139.785891	0.00102204	1,811,852	5.7433%	58.9511%
San Joaquin (SJV)	LDT1	40 MPH	0.0037366	0.02288693	0.32873098	0.00179091	0.008	0.03675	0.00069195	4.54E-02	0.002	0.01575	0.00063632	1.84E-02	178.941125	0.00150747	97,445	0.3089%	3.1705%
San Joaquin (SJV)	LDT2	40 MPH	0.00403535	0.02407031	0.38494883	0.00205766	0.008	0.03675	0.00066289	4.54E-02	0.002	0.01575	0.00060984	1.84E-02	205.597732	0.00162189	595,238	1.8868%	19.3669%
San Joaquin (SJV)	LHD1	40 MPH	0.02765508	0.33464269	0.18167935	0.00488099	0.01051026	0.07644	0.00541186	9.24E-02	0.00262756	0.03276	0.00516525	4.06E-02	500.502375	0.00172502	7,756	0.0246%	0.2523%
San Joaquin (SJV)	LHD2	40 MPH	0.02362219	0.06321417	0.13618994	0.00516213	0.01084817	0.08918	0.00519791	1.05E-01	0.00271204	0.03822	0.00496309	4.59E-02	531.648027	0.00136088	3,503	0.0111%	0.1140%
San Joaquin (SJV)	MCY	40 MPH	1.78910781	1.03303518	15.118142	0.00182972	0.004	0.01176	0.00189497	1.77E-02	0.001	0.00504	0.00176683	7.81E-03	152.996619	0.38547564	13,924	0.0441%	0.4530%
San Joaquin (SJV)	MDV	40 MPH	0.00570312	0.03311894	0.46188294	0.00272298	0.008	0.03675	0.0007086	4.55E-02	0.002	0.01575	0.00065253	1.84E-02	272.444127	0.00226587	297,670	0.9436%	9.6851%
San Joaquin (SJV)	MH	40 MPH	0.01465149	0.54835889	0.18776821	0.01011439	0.01288809	0.13034	0.00645989	1.50E-01	0.00322202	0.05586	0.006154	6.52E-02	1022.2988	0.00298809	1,626	0.0052%	0.0529%
San Joaquin (SJV)	Motor Coach	40 MPH	0.06280653	0.67504633	0.37085799	0.01500834	0.012	0.13034	0.00491956	1.47E-01	0.003	0.05586	0.00470674	6.36E-02	1573.12367	0.0029172	478	0.0015%	0.0155%
San Joaquin (SJV)	OBUS	40 MPH	0.00834652	0.08937375	0.21660453	0.01041736	0.012	0.13034	0.00093124	1.43E-01	0.003	0.05586	0.00085624	5.97E-02	1043.55853	0.00337267	2,667	0.0085%	0.0868%
San Joaquin (SJV)	SBUS	40 MPH	0.01939886	0.26124774	0.15704034	0.0083051	0.01039912	0.7448	0.0020658	7.57E-01	2.600E-03	3.192E-01	0.00196287	3.24E-01	861.283285	0.00189117	2,092	0.0066%	0.0681%
San Joaquin (SJV)	T6 Ag	40 MPH	0.03452498	0.63584858	0.18172816	0.0107016	0.012	0.13034	0.0036494	1.46E-01	0.003	0.05586	0.00349153	6.24E-02	1121.70606	0.0016036	1,376	0.0044%	0.0448%
San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	0.02753158	0.35585944	0.14491718	0.01029856	0.012	0.13034	0.00273727	1.45E-01	0.003	0.05586	0.00261885	6.15E-02	1079.46037	0.00127877	359	0.0011%	0.0117%
San Joaquin (SJV)	T6 CAIRP Small	40 MPH	0.02610409	0.32516252	0.13740337	0.01050111	0.012	0.13034	0.0025434	1.45E-01	0.003	0.05586	0.00243338	6.13E-02	1100.69141	0.00121247	1,101	0.0035%	0.0358%
San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	0.03087204	0.43549998	0.16247959	0.01053393	0.012	0.13034	0.00319118	1.46E-01	0.003	0.05586	0.00305313	6.19E-02	1104.13118	0.00143393	2,345	0.0074%	0.0763%
San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	0.02855993	0.38059088	0.15030637	0.01052442	0.012	0.13034	0.0028791	1.45E-01	0.003	0.05586	0.00275455	6.16E-02	1103.1346	0.00132653	9,598	0.0304%	0.3123%
San Joaquin (SJV)	T6 Instate Heavy	40 MPH	0.02996748	0.42778981	0.15773899	0.01033136	0.012	0.13034	0.00306231	1.45E-01	0.003	0.05586	0.00292984	6.18E-02	1082.89821	0.00139191	7,887	0.0250%	0.2566%
San Joaquin (SJV)	T6 Instate Small	40 MPH	0.02865668	0.38690174	0.15083937	0.01053445	0.012	0.13034	0.00288796	1.45E-01	0.003	0.05586	0.00276303	6.16E-02	1104.18573	0.00133103	19,906	0.0631%	0.6477%
San Joaquin (SJV)	T6 OOS Heavy	40 MPH	0.02754119	0.35636463	0.14496777	0.01029879	0.012	0.13034	0.00273848	1.45E-01	0.003	0.05586	0.00262002	6.15E-02	1079.48529	0.00127922	205	0.0007%	0.0067%
San Joaquin (SJV)	T6 OOS Small	40 MPH	0.02610409	0.32516252	0.13740337	0.01050111	0.012	0.13034	0.0025434	1.45E-01	0.003	0.05586	0.00243338	6.13E-02	1100.69141	0.00121247	631	0.0020%	0.0205%
San Joaquin (SJV)	T6 Public	40 MPH	0.02339605	0.35031279	0.12107531	0.01053153	0.012	0.13034	0.00251609	1.45E-01	0.003	0.05586	0.00240724	6.13E-02	1103.88036	0.00108669	1,158	0.0037%	0.0377%
San Joaquin (SJV)	T6 Utility	40 MPH	0.02151017	0.2376565	0.11322249	0.01049939	0.012	0.13034	0.00191616	1.44E-01	0.003	0.05586	0.00183327	6.07E-02	1100.51079	0.00099909	154	0.0005%	0.0050%
San Joaquin (SJV)	T6TS	40 MPH	0.00767262	0.0844063	0.19830824	0.01040596	0.012	0.13034	0.00092993	1.43E-01	0.003	0.05586	0.00085504	5.97E-02	1042.44722	0.00310036	5,013	0.0159%	0.1631%
San Joaquin (SJV)	T7 Ag	40 MPH	0.07910303	1.38786099	0.467085	0.01453499	0.036	0.06174	0.00649635	1.04E-01	0.009	0.02646	0.00621532	4.17E-02	1523.50935	0.00367413	702	0.0022%	0.0228%
San Joaquin (SJV)	T7 CAIRP	40 MPH	0.06869547	0.77609926	0.4056308	0.01361376	0.036	0.06174	0.0055327	1.03E-01	0.009	0.02646	0.00529336	4.08E-02	1426.94929	0.00319073	37,597	0.1192%	1.2233%
San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	0.07055348	0.79770443	0.41656302	0.0138808	0.036	0.06174	0.00573225	1.03E-01	0.009	0.02646	0.00548428	4.09E-02	1454.93967	0.00327703	1,737	0.0055%	0.0565%
San Joaquin (SJV)	T7 NNOOS	40 MPH	0.0604508	0.63600855	0.35694796	0.01359543	0.036	0.06174	0.00467391	1.02E-01	0.009	0.02646	0.00447172	3.99E-02	1425.02723	0.00280778	46,620	0.1478%	1.5168%
San Joaquin (SJV)	T7 NOOS	40 MPH	0.06871419	0.77714471	0.40574131	0.01361459	0.036	0.06174	0.00553444	1.03E-01	0.009	0.02646	0.00529503	4.08E-02	1427.03573	0.0031916	14,851	0.0471%	0.4832%
San Joaquin (SJV)	T7 Other Port	40 MPH	0.07473687	0.8546704	0.44130387	0.01386811	0.036	0.06174	0.00616877	1.04E-01	0.009	0.02646	0.00590191	4.14E-02	1453.60892	0.00347133	781	0.0025%	0.0254%
San Joaquin (SJV)	T7 POAK	40 MPH	0.07544221	0.86546628	0.44546873	0.01386811	0.036	0.06174	0.00624257	1.04E-01	0.009	0.02646	0.00597252	4.14E-02	1453.60892	0.0035041	3,312	0.0105%	0.1078%
San Joaquin (SJV)	T7 POLA	40 MPH	0.07444553	0.87126398	0.43958356	0.01390556	0.036	0.06174	0.00613214	1.04E-01	0.009	0.02646	0.00586687	4.13E-02	1457.53445	0.0034578	5,989	0.0190%	0.1948%
San Joaquin (SJV)	T7 Public	40 MPH	0.05002415	1.0237157	0.28084737	0.01409829	0.036	0.06174	0.00530137	1.03E-01	0.009	0.02646	0.00507203	4.05E-02	1477.73566	0.00232349	1,680	0.0053%	0.0546%
San Joaquin (SJV)	T7 Single	40 MPH	0.05830583	0.67676947	0.3442824	0.01400985	0.036	0.06174	0.00442997	1.02E-01	0.009	0.02646	0.00423833	3.97E-02	1468.46533	0.00270815	9,527	0.0302%	0.3100%
San Joaquin (SJV)	T7 Single Construction	40 MPH	0.05815029	0.66291742	0.34315741	0.01398627	0.036	0.06174	0.0044388	1.02E-01	0.009	0.02646	0.00424678	3.97E-02	1465.99429	0.00270093	4,493	0.0142%	0.1462%
San Joaquin (SJV)	T7 SWCV	40 MPH	0.01801745	0.9883439	0.80082322	0.02727878	0.036	0.06174	0.00607879	1.04E-01	0.009	0.02646	0.00581583	4.13E-02	3239.4282	0.24947361	1,741	0.0055%	0.0566%
San Joaquin (SJV)	T7 Tractor	40 MPH	0.06987171	0.80700382	0.41257622	0.01363462	0.036	0.06174	0.00565212	1.03E-01	0.009	0.02646	0.00540761	4.09E-02	1429.1353	0.00324536	54,939	0.1741%	1.7875%
San Joaquin (SJV)	T7 Tractor Construction	40 MPH	0.07264108	0.84919964	0.42886933	0.01391544	0.036	0.06174	0.0059478	1.04E-01	0.009	0.02646	0.0056905	4.12E-02	1458.5697	0.00337399	3,350	0.0106%	0.1090%
San Joaquin (SJV)	T7 Utility	40 MPH	0.0442396	0.38794431	0.26122458	0.01386924	0.036	0.06174	0.00297761	1.01E-01	0.009	0.02646	0.0028488	3.83E-02	1453.72771	0.00205481	54	0.0002%	0.0018%
San Joaquin (SJV)	T7IS	40 MPH	0.2510229	2.79706095	29.7153666	0.01595637	0.02	0.06174	0.00093282	8.27E-02	0.005	0.02646	0.00085769	3.23E-02	1551.23551	0.10143348	741	0.0023%	0.0241%
San Joaquin (SJV)	UBUS	40 MPH	0.03298332	1.0854663	1.36070797	0.00694795	0.012	0.49694694	0.00660166	5.16E-01	0.003	0.21297726	0.00629945	2.22E-01	1235.47081	0.19081696	550	0.0017%	0.0179%
																	3,073,485	9.7425%	100%

San Joaquin (SJV)	All Other Buses	45 MPH	0.02212013	0.31003101	0.11643308	0.01019892	0.012	0.13034	0.00288206	1.45E-01	0.003	0.05586	0.00275738	6.16E-02	1069.01672	0.00102742	686	0.0022%	0.0319%
San Joaquin (SJV)	LDA	45 MPH	0.00234381	0.01584901	0.22628762	0.0013453	0.008	0.03675	0.00049773	4.52E-02	0.002	0.01575	0.00045796	1.82E-02	134.530523	0.00093505	1,179,272	3.7381%	54.7225%
San Joaquin (SJV)	LDT1	45 MPH	0.00341762	0.02225606	0.30510669	0.00172331	0.008	0.03675	0.00063317	4.54E-02	0.002	0.01575	0.00058227	1.83E-02	172.205173	0.00137892	63,423	0.2010%	2.9431%
San Joaquin (SJV)	LDT2	45 MPH	0.00369043	0.02339546	0.35725069	0.00197999	0.008	0.03675	0.00060666	4.54E-02	0.002	0.01575	0.00055811	1.83E-02	197.858935	0.00148385	387,420	1.2281%	17.9777%
San Joaquin (SJV)	LHD1	45 MPH	0.02435117	0.34351392	0.1657128	0.00480838	0.01051026	0.07644	0.00506031	9.20E-02	0.00262756	0.03276	0.00482997	4.02E-02	492.95065	0.00153413	8,598	0.0273%	0.3990%
San Joaquin (SJV)	LHD2	45 MPH	0.02012176	0.06115654	0.1187366	0.00499255	0.01084817	0.08918	0.00482101	1.05E-01	0.00271204	0.03822	0.00460334	4.55E-02	514.101021	0.00117588	3,855	0.0122%	0.1789%
San Joaquin (SJV)	MCY	45 MPH	1.66584976	1.02774279	14.752913	0.00176198	0.004	0.01176	0.00175864	1.75E-02	0.001	0.00504	0.00163973	7.68E-03	147.237153	0.35879845	9,062	0.0287%	0.4205%
San Joaquin (SJV)	MDV	45 MPH	0.00520852	0.03223249	0.42843847	0.00262022	0.008	0.03675	0.00064869	4.54E-02	0.002	0.01575	0.00059738	1.83E-02	262.18813	0.00207192	193,743	0.6141%	8.9904%
San Joaquin (SJV)	MH	45 MPH	0.01291644	0.50793381	0.17280017	0.00946756	0.01288809	0.13034	0.00637534	1.50E-01	0.00322202	0.05586	0.00607535	6.52E-02	957.180583	0.0027114	1,451	0.0046%	0.0673%
San Joaquin (SJV)	Motor Coach	45 MPH	0.0462839	0.49659831	0.27329566	0.01450569	0.012	0.13034	0.00461493	1.47E-01	0.003	0.05586	0.00441529	6.33E-02	1520.43764	0.00214977	306	0.0010%	0.0142%
San Joaquin (SJV)	OBUS	45 MPH	0.00763722	0.08686301	0.2010267	0.00967929	0.012	0.13034	0.0008521	1.43E-01	0.003	0.05586	0.00078348	5.96E-02	969.623193	0.00308605	2,432	0.0077%	0.1129%
San Joaquin (SJV)	SBUS	45 MPH	0.01479007	0.20434448	0.1292228	0.00795275	0.01039912	0.7448	0.00192984	7.57E-01	2.600E-03	3.192E-01	0.00183395	3.24E-01	825.005177	0.00159296	1,004	0.0032%	0.0466%
San Joaquin (SJV)	T6 Ag	45 MPH	0.02544243	0.4951765	0.13392058	0.01034319	0.012	0.13034	0.00342342	1.46E-01	0.003	0.05586	0.00327532	6.21E-02	1084.13861	0.00118173	1,127	0.0036%	0.0523%
San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	0.02028879	0.26227424	0.10679354	0.00994638	0.012	0.13034	0.00256777	1.45E-01	0.003	0.05586	0.00245669	6.13E-02	1042.54686	0.00094236	294	0.0009%	0.0136%
San Joaquin (SJV)	T6 CAIRP Small	45 MPH	0.01923684	0.23904061	0.1012564	0.01014941	0.012	0.13034	0.00238591	1.45E-01	0.003	0.05586	0.0022827	6.11E-02	1063.82778	0.0008935	902	0.0029%	0.0418%
San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	0.02275106	0.32386636	0.11973858	0.01018113	0.012	0.13034	0.00299386	1.45E-01	0.003	0.05586	0.00286434	6.17E-02	1067.1518	0.00105673	1,920	0.0061%	0.0891%
San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	0.02104717	0.2814639	0.1107681	0.01017194	0.012	0.13034	0.00270121	1.45E-01	0.003	0.05586	0.00258436	6.14E-02	1066.18849	0.00097759	7,859	0.0249%	0.3647%
San Joaquin (SJV)	T6 Instate Heavy	45 MPH	0.02208388	0.31988836	0.11624229	0.00997801	0.012	0.13034	0.00287268	1.45E-01	0.003	0.05586	0.00274841	6.16E-02	1045.86169	0.00102574	6,458	0.0205%	0.2997%
San Joaquin (SJV)	T6 Instate Small	45 MPH	0.02111791	0.28687519	0.11115776	0.01018164	0.012	0.13034	0.00270913	1.45E-01	0.003	0.05586	0.00259193	6.15E-02	1067.20506	0.00098087	16,300	0.0517%	0.7564%
San Joaquin (SJV)	T6 OOS Heavy	45 MPH	0.02029587	0.26270505	0.10683082	0.00994661	0.012	0.13034	0.00256891	1.45E-01	0.003	0.05586	0.00245778	6.13E-02	1042.57086	0.00094269	168	0.0005%	0.0078%
San Joaquin (SJV)	T6 OOS Small	45 MPH	0.01923684	0.23904061	0.1012564	0.01014941	0.012	0.13034	0.00238591	1.45E-01	0.003	0.05586	0.0022827	6.11E-02	1063.82778	0.0008935	517	0.0016%	0.0240%
San Joaquin (SJV)	T6 Public	45 MPH	0.01730798	0.27819633	0.08955971	0.01017803	0.012	0.13034	0.00240456	1.45E-01	0.003	0.05586	0.00230054	6.12E-02	1066.82725	0.00080391	948	0.0030%	0.0440%
San Joaquin (SJV)	T6 Utility	45 MPH	0.01585145	0.17463913	0.08343683	0.01014775	0.012	0.13034	0.00179751	1.44E-01	0.003	0.05586	0.00171975	6.06E-02	1063.65321	0.00073626	126	0.0004%	0.0058%
San Joaquin (SJV)	T6TS	45 MPH	0.00702059	0.08203511	0.18404625	0.0096687	0.012	0.13034	0.0008509	1.43E-01	0.003	0.05586	0.00078237	5.96E-02	968.590615	0.00283689	4,572	0.0145%	0.2121%
San Joaquin (SJV)	T7 Ag	45 MPH	0.05829324	1.10570949	0.34420804	0.01404819	0.036	0.06174	0.00609407	1.04E-01	0.009	0.02646	0.00583045	4.13E-02	1472.48497	0.00270757	982	0.0031%	0.0456%
San Joaquin (SJV)	T7 CAIRP	45 MPH	0.05062362	0.57286738	0.29892072	0.01314821	0.036	0.06174	0.0051901	1.03E-01	0.009	0.02646	0.00496558	4.04E-02	1378.15174	0.00235134	52,638	0.1669%	2.4426%
San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	0.05199362	0.58754043	0.30698202	0.01341591	0.036	0.06174	0.00537774	1.03E-01	0.009	0.02646	0.0051451	4.06E-02	1406.21108	0.00241497	2,432	0.0077%	0.1128%
San Joaquin (SJV)	T7 NNOOS	45 MPH	0.04454789	0.46736354	0.26304497	0.01313052	0.036	0.06174	0.00438449	1.02E-01	0.009	0.02646	0.00419482	3.97E-02	1376.29779	0.00206913	65,271	0.2069%	3.0288%
San Joaquin (SJV)	T7 NOOS	45 MPH	0.05063741	0.57377552	0.29900216	0.01314901	0.036	0.06174	0.00519174	1.03E-01	0.009	0.02646	0.00496714	4.04E-02	1378.23509	0.00235198	20,792	0.0659%	0.9648%
San Joaquin (SJV)	T7 Other Port	45 MPH	0.0550757	0.62804468	0.3252092	0.01340365	0.036	0.06174	0.00578678	1.04E-01	0.009	0.02646	0.00553644	4.10E-02	1404.9256	0.00255812	1,094	0.0035%	0.0508%
San Joaquin (SJV)	T7 POAK	45 MPH	0.05559548	0.6359779	0.32827841	0.01340365	0.036	0.06174	0.00585601	1.04E-01	0.009	0.02646	0.00560268	4.11E-02	1404.9256	0.00258227	4,637	0.0147%	0.2152%
San Joaquin (SJV)	T7 POLA	45 MPH	0.054861	0.64410234	0.32394146	0.01343984	0.036	0.06174	0.00575242	1.03E-01	0.009	0.02646	0.00550357	4.10E-02	1408.71966	0.00254815	8,384	0.0266%	0.3891%
San Joaquin (SJV)	T7 Public	45 MPH	0.03732513	0.90225692	0.20932563	0.01362239	0.036	0.06174	0.0051444	1.03E-01	0.009	0.02646	0.00492186	4.04E-02	1427.85311	0.00173366	2,351	0.0075%	0.1091%
San Joaquin (SJV)	T7 Single	45 MPH	0.0429672	0.51078732	0.25371136	0.01354064	0.036	0.06174	0.00415565	1.02E-01	0.009	0.02646	0.00397588	3.94E-02	1419.28445	0.00199572	13,339	0.0423%	0.6190%
San Joaquin (SJV)	T7 Single Construction	45 MPH	0.04285916	0.49899066	0.25291857	0.01351782	0.036	0.06174	0.00416645	1.02E-01	0.009	0.02646	0.00398621	3.94E-02	1416.8927	0.0019907	6,291	0.0199%	0.2919%
San Joaquin (SJV)	T7 SWCV	45 MPH	0.0140865	0.93348067	0.59147582	0.0263556	0.036	0.06174	0.00581663	1.04E-01	0.009	0.02646	0.005565	4.10E-02	3129.77667	0.18838318	1,420	0.0045%	0.0659%
San Joaquin (SJV)	T7 Tractor	45 MPH	0.05149042	0.59795183	0.304039	0.01316833	0.036	0.06174	0.00530212	1.03E-01	0.009	0.02646	0.00507276	4.05E-02	1380.26079	0.0023916	76,918	0.2438%	3.5693%
San Joaquin (SJV)	T7 Tractor Construction	45 MPH	0.05353291	0.62902271	0.31605582	0.01344938	0.036	0.06174	0.0055803	1.03E-01	0.009	0.02646	0.0053389	4.08E-02	1409.71926	0.00248647	4,690	0.0149%	0.2176%
San Joaquin (SJV)	T7 Utility	45 MPH	0.03260141	0.2850874	0.19250372	0.01340474	0.036	0.06174	0.00279323	1.01E-01	0.009	0.02646	0.0026724	3.81E-02	1405.04042	0.00151425	76	0.0002%	0.0035%
San Joaquin (SJV)	T7IS	45 MPH	0.22969071	2.71848424	27.5782887	0.0155815	0.02	0.06174	0.00085355	8.26E-02	0.005	0.02646	0.0007848	3.22E-02	1517.1189	0.09281356	784	0.0025%	0.0364%
San Joaquin (SJV)	UBUS	45 MPH	0.02954733	1.06604702	1.20224588	0.0065221	0.012	0.49694694	0.00611885	5.15E-01	0.003	0.21297726	0.00583893	2.22E-01	1173.70688	0.16384274	461	0.0015%	0.0214%
																	2,155,004	6.8311%	100%

San Joaquin (SJV)	All Other Buses	50 MPH	0.01630094	0.2383943	0.0858028	0.00989481	0.012	0.13034	0.002713	1.45E-01	0.003	0.05586	0.00259563	6.15E-02	1037.14065	0.00075714	768	0.0024%	0.0336%
San Joaquin (SJV)	LDA	50 MPH	0.00225906	0.01564779	0.21051149	0.00134355	0.008	0.03675	0.00048022	4.52E-02	0.002	0.01575	0.00044184	1.82E-02	134.37982	0.00090242	1,224,507	3.8815%	53.6365%
San Joaquin (SJV)	LDT1	50 MPH	0.00329587	0.02199929	0.2839804	0.00172097	0.008	0.03675	0.0006111	4.54E-02	0.002	0.01575	0.00056197	1.83E-02	172.003794	0.00132997	65,856	0.2088%	2.8847%
San Joaquin (SJV)	LDT2	50 MPH	0.00355947	0.0231098	0.3324571	0.0019773	0.008	0.03675	0.00058536	4.53E-02	0.002	0.01575	0.0005385	1.83E-02	197.628458	0.00143193	402,281	1.2752%	17.6209%
San Joaquin (SJV)	LHD1	50 MPH	0.02217304	0.35338831	0.15592379	0.00505551	0.01051026	0.07644	0.00484016	9.18E-02	0.00262756	0.03276	0.00461974	4.00E-02	518.261428	0.00141898	39,685	0.1258%	1.7383%
San Joaquin (SJV)	LHD2	50 MPH	0.01754221	0.05987558	0.10553454	0.00518757	0.01084817	0.08918	0.00452459	1.05E-01	0.00271204	0.03822	0.00432006	4.53E-02	534.156902	0.00104769	17,013	0.0539%	0.7452%
San Joaquin (SJV)	MCY	50 MPH	1.63170549	1.0337108	14.8784596	0.00176097	0.004	0.01176	0.00171793	1.75E-02	0.001	0.00504	0.00160178	7.64E-03	147.064739	0.35134709	9,410	0.0298%	0.4122%
San Joaquin (SJV)	MDV	50 MPH	0.00501194	0.03191454	0.39863109	0.0026171	0.008	0.03675	0.00062537	4.54E-02	0.002	0.01575	0.00057588	1.83E-02	261.92426	0.00199691	201,175	0.6377%	8.8120%
San Joaquin (SJV)	MH	50 MPH	0.01188198	0.47792244	0.1600827	0.00893358	0.01288809	0.13034	0.00651798	1.50E-01	0.00322202	0.05586	0.00621266	6.53E-02	903.478517	0.0025901	1,453	0.0046%	0.0637%
San Joaquin (SJV)	Motor Coach	50 MPH	0.0341079	0.37807764	0.20139924	0.01407315	0.012	0.13034	0.00434422	1.47E-01	0.003	0.05586	0.00415629	6.30E-02	1475.10104	0.00158422	491	0.0016%	0.0215%
San Joaquin (SJV)	OBUS	50 MPH	0.00737226	0.08578438	0.18707355	0.00905452	0.012	0.13034	0.00082254	1.43E-01	0.003	0.05586	0.00075629	5.96E-02	907.037234	0.00297899	2,367	0.0075%	0.1037%
San Joaquin (SJV)	SBUS	50 MPH	0.01147916	0.16646813	0.10791846	0.00765153	0.01039912	0.7448	0.00182505	7.57E-01	2.600E-03	3.192E-01	0.00173412	3.24E-01	793.985858	0.00140774	503	0.0016%	0.0220%
San Joaquin (SJV)	T6 Ag	50 MPH	0.01874924	0.398014	0.09868983	0.01003477	0.012	0.13034	0.0032226	1.46E-01	0.003	0.05586	0.00308319	6.19E-02	1051.81163	0.00087085	1,261	0.0040%	0.0553%
San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	0.01495138	0.20005116	0.07869915	0.00960727	0.012	0.13034	0.00241714	1.45E-01	0.003	0.05586	0.00231258	6.12E-02	1007.00221	0.00069445	329	0.0010%	0.0144%
San Joaquin (SJV)	T6 CAIRP Small	50 MPH	0.01417617	0.18186313	0.07461868	0.00984678	0.012	0.13034	0.00224595	1.45E-01	0.003	0.05586	0.00214879	6.10E-02	1032.10643	0.00065845	1,009	0.0032%	0.0442%
San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	0.01676661	0.2492661	0.08824178	0.00987754	0.012	0.13034	0.00281867	1.45E-01	0.003	0.05586	0.00269674	6.16E-02	1035.33122	0.00077877	2,149	0.0068%	0.0941%
San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	0.01551083	0.21544027	0.08163149	0.00986863	0.012	0.13034	0.00254328	1.45E-01	0.003	0.05586	0.00243326	6.13E-02	1034.39652	0.00072044	8,796	0.0279%	0.3853%
San Joaquin (SJV)	T6 Instate Heavy	50 MPH	0.01627423	0.24751721	0.0856622	0.00963751	0.012	0.13034	0.00270417	1.45E-01	0.003	0.05586	0.00258719	6.14E-02	1010.17213	0.0007559	7,228	0.0229%	0.3166%
San Joaquin (SJV)	T6 Instate Small	50 MPH	0.01556238	0.22013371	0.08191527	0.00987804	0.012	0.13034	0.00255021	1.45E-01	0.003	0.05586	0.00243989	6.13E-02	1035.38301	0.00072283	18,243	0.0578%	0.7991%
San Joaquin (SJV)	T6 OOS Heavy	50 MPH	0.0149566	0.20042451	0.07872663	0.00960749	0.012	0.13034	0.00241822	1.45E-01	0.003	0.05586	0.00231361	6.12E-02	1007.02499	0.0006947	188	0.0006%	0.0082%
San Joaquin (SJV)	T6 OOS Small	50 MPH	0.01417617	0.18186313	0.07461868	0.00984678	0.012	0.13034	0.00224595	1.45E-01	0.003	0.05586	0.00214879	6.10E-02	1032.10643	0.00065845	578	0.0018%	0.0253%
San Joaquin (SJV)	T6 Public	50 MPH	0.01283125	0.23024885	0.06636411	0.00987451	0.012	0.13034	0.00232635	1.45E-01	0.003	0.05586	0.00222571	6.11E-02	1035.01297	0.00059598	1,062	0.0034%	0.0465%
San Joaquin (SJV)	T6 Utility	50 MPH	0.01168138	0.13281087	0.06148694	0.00984516	0.012	0.13034	0.00169207	1.44E-01	0.003	0.05586	0.00161887	6.05E-02	1031.93706	0.00054257	141	0.0004%	0.0062%
San Joaquin (SJV)	T6TS	50 MPH	0.00677702	0.08101643	0.1712717	0.00904461	0.012	0.13034	0.00082138	1.43E-01	0.003	0.05586	0.00075523	5.96E-02	906.071305	0.00273846	4,449	0.0141%	0.1949%
San Joaquin (SJV)	T7 Ag	50 MPH	0.04295792	0.90677812	0.25365657	0.0136293	0.036	0.06174	0.0057366	1.03E-01	0.009	0.02646	0.00548843	4.09E-02	1428.57823	0.00199528	1,022	0.0032%	0.0447%
San Joaquin (SJV)	T7 CAIRP	50 MPH	0.03730597	0.43762325	0.22028307	0.01269987	0.036	0.06174	0.00488565	1.03E-01	0.009	0.02646	0.0046743	4.01E-02	1331.15783	0.00173277	54,742	0.1735%	2.3978%
San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	0.03831634	0.44787702	0.22622913	0.01301587	0.036	0.06174	0.00506285	1.03E-01	0.009	0.02646	0.00484384	4.03E-02	1364.28029	0.00177969	2,529	0.0080%	0.1108%
San Joaquin (SJV)	T7 NNOOS	50 MPH	0.03282859	0.3554241	0.19384522	0.01268292	0.036	0.06174	0.0041273	1.02E-01	0.009	0.02646	0.00394875	3.94E-02	1329.38107	0.0015248	67,880	0.2152%	2.9733%
San Joaquin (SJV)	T7 NOOS	50 MPH	0.03731613	0.43842126	0.22034308	0.01270063	0.036	0.06174	0.00488719	1.03E-01	0.009	0.02646	0.00467577	4.01E-02	1331.23757	0.00173324	21,623	0.0685%	0.9471%
San Joaquin (SJV)	T7 Other Port	50 MPH	0.04058683	0.47762008	0.23965579	0.01300398	0.036	0.06174	0.00544733	1.03E-01	0.009	0.02646	0.00521168	4.07E-02	1363.03336	0.00188515	1,138	0.0036%	0.0498%
San Joaquin (SJV)	T7 POAK	50 MPH	0.04096987	0.4836532	0.24191757	0.01300398	0.036	0.06174	0.0055125	1.03E-01	0.009	0.02646	0.00527403	4.07E-02	1363.03336	0.00190294	4,822	0.0153%	0.2112%
San Joaquin (SJV)	T7 POLA	50 MPH	0.04042861	0.49279765	0.23872155	0.01303909	0.036	0.06174	0.00541499	1.03E-01	0.009	0.02646	0.00518074	4.06E-02	1366.71428	0.0018778	8,720	0.0276%	0.3819%
San Joaquin (SJV)	T7 Public	50 MPH	0.02809368	0.82338807	0.15683698	0.01321745	0.036	0.06174	0.00513538	1.03E-01	0.009	0.02646	0.00491323	4.04E-02	1385.40865	0.00130488	2,445	0.0078%	0.1071%
San Joaquin (SJV)	T7 Single	50 MPH	0.03166374	0.39878728	0.18696702	0.01313688	0.036	0.06174	0.00391188	1.02E-01	0.009	0.02646	0.00374265	3.92E-02	1376.96405	0.0014707	13,872	0.0440%	0.6076%
San Joaquin (SJV)	T7 Single Construction	50 MPH	0.03159207	0.38875952	0.18642228	0.01311475	0.036	0.06174	0.00392589	1.02E-01	0.009	0.02646	0.00375606	3.92E-02	1374.64431	0.00146737	6,542	0.0207%	0.2866%
San Joaquin (SJV)	T7 SWCV	50 MPH	0.01117317	0.89635283	0.43731106	0.0255737	0.036	0.06174	0.00562654	1.03E-01	0.009	0.02646	0.00538314	4.08E-02	3036.82392	0.14327075	494	0.0016%	0.0216%
San Joaquin (SJV)	T7 Tractor	50 MPH	0.03794474	0.45852233	0.22405487	0.01271918	0.036	0.06174	0.0049911	1.03E-01	0.009	0.02646	0.00477519	4.02E-02	1333.18207	0.00176243	79,993	0.2536%	3.5039%
San Joaquin (SJV)	T7 Tractor Construction	50 MPH	0.03945172	0.48223987	0.23292124	0.01304835	0.036	0.06174	0.00525406	1.03E-01	0.009	0.02646	0.00502677	4.05E-02	1367.68408	0.00183243	4,878	0.0155%	0.2137%
San Joaquin (SJV)	T7 Utility	50 MPH	0.02402489	0.21681384	0.1418614	0.01300504	0.036	0.06174	0.00262938	1.00E-01	0.009	0.02646	0.00251563	3.80E-02	1363.14475	0.00111589	79	0.0003%	0.0035%
San Joaquin (SJV)	T7IS	50 MPH	0.22172195	2.68472718	25.6640945	0.01536314	0.02	0.06174	0.00082393	8.26E-02	0.005	0.02646	0.00075758	3.22E-02	1498.27837	0.08959354	820	0.0026%	0.0359%
San Joaquin (SJV)	UBUS	50 MPH	0.02855861	1.05752292	1.08289712	0.00617452	0.012	0.49694694	0.00625827	5.15E-01	0.003	0.21297726	0.00597285	2.22E-01	1126.42977	0.14589567	434	0.0014%	0.0190%
																	2,282,973	7.2367%	100%

San Joaquin (SJV)	All Other Buses	55 MPH	0.01201262	0.18840187	0.06323049	0.00962892	0.012	0.13034	0.00256087	1.45E-01	0.003	0.05586	0.00245009	6.13E-02	1009.27105	0.00055796	1,126	0.0036%	0.0472%
San Joaquin (SJV)	LDA	55 MPH	0.00229639	0.01569848	0.19638162	0.00139267	0.008	0.03675	0.00048845	4.52E-02	0.002	0.01575	0.00044939	1.82E-02	139.327765	0.00091875	1,256,554	3.9831%	52.6523%
San Joaquin (SJV)	LDT1	55 MPH	0.00335149	0.02210485	0.26506541	0.00178365	0.008	0.03675	0.0006221	4.54E-02	0.002	0.01575	0.00057208	1.83E-02	178.31497	0.00135263	67,580	0.2142%	2.8317%
San Joaquin (SJV)	LDT2	55 MPH	0.00362097	0.02319966	0.31023392	0.00204933	0.008	0.03675	0.00059549	4.53E-02	0.002	0.01575	0.0005478	1.83E-02	204.882695	0.00145756	412,809	1.3085%	17.2976%
San Joaquin (SJV)	LHD1	55 MPH	0.02088389	0.36404625	0.15175968	0.00530428	0.01051026	0.07644	0.00473873	9.17E-02	0.00262756	0.03276	0.00452249	3.99E-02	543.721976	0.00136624	19,451	0.0617%	0.8150%
San Joaquin (SJV)	LHD2	55 MPH	0.01560418	0.05917449	0.09538337	0.00539076	0.01084817	0.08918	0.00429206	1.04E-01	0.00271204	0.03822	0.00409743	4.50E-02	555.025598	0.00096195	8,787	0.0279%	0.3682%
San Joaquin (SJV)	MCY	55 MPH	1.68098285	1.05049806	15.5865483	0.00182772	0.004	0.01176	0.00176606	1.75E-02	0.001	0.00504	0.00164666	7.69E-03	152.460119	0.36187946	9,656	0.0306%	0.4046%
San Joaquin (SJV)	MDV	55 MPH	0.00508228	0.03215268	0.37201605	0.00271372	0.008	0.03675	0.00063496	4.54E-02	0.002	0.01575	0.00058464	1.83E-02	271.664419	0.00202876	206,440	0.6544%	8.6503%
San Joaquin (SJV)	MH	55 MPH	0.0114349	0.45591247	0.14925554	0.0087171	0.01288809	0.13034	0.00687488	1.50E-01	0.00322202	0.05586	0.0065537	6.56E-02	881.701465	0.00260675	1,951	0.0062%	0.0817%
San Joaquin (SJV)	Motor Coach	55 MPH	0.02513507	0.29585029	0.14841675	0.01369499	0.012	0.13034	0.00410062	1.46E-01	0.003	0.05586	0.00392323	6.28E-02	1435.46276	0.00116746	908	0.0029%	0.0380%
San Joaquin (SJV)	OBUS	55 MPH	0.00750759	0.08608557	0.17455944	0.00880485	0.012	0.13034	0.00083764	1.43E-01	0.003	0.05586	0.00077018	5.96E-02	882.036739	0.00303367	3,096	0.0098%	0.1297%
San Joaquin (SJV)	SBUS	55 MPH	0.00914892	0.1403465	0.09149281	0.00744447	0.01039912	0.7448	0.00174716	7.57E-01	2.600E-03	3.192E-01	0.00165938	3.23E-01	772.506592	0.00131556	748	0.0024%	0.0314%
San Joaquin (SJV)	T6 Ag	55 MPH	0.01381684	0.327998	0.07272731	0.00976512	0.012	0.13034	0.0030419	1.45E-01	0.003	0.05586	0.00291031	6.18E-02	1023.5478	0.00064176	1,848	0.0059%	0.0775%
San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	0.01101809	0.15683577	0.05799561	0.00929876	0.012	0.13034	0.00228161	1.45E-01	0.003	0.05586	0.00218291	6.10E-02	974.664961	0.00051176	482	0.0015%	0.0202%
San Joaquin (SJV)	T6 CAIRP Small	55 MPH	0.01044681	0.14221022	0.0549886	0.00958218	0.012	0.13034	0.00212002	1.44E-01	0.003	0.05586	0.00202831	6.09E-02	1004.3721	0.00048523	1,479	0.0047%	0.0620%
San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	0.01235668	0.19719372	0.06503129	0.00961212	0.012	0.13034	0.00266122	1.45E-01	0.003	0.05586	0.00254609	6.14E-02	1007.51058	0.00057394	3,149	0.0100%	0.1320%
San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	0.011431	0.16950676	0.06016024	0.00960344	0.012	0.13034	0.00240131	1.45E-01	0.003	0.05586	0.00229743	6.12E-02	1006.60087	0.00053094	12,890	0.0409%	0.5401%
San Joaquin (SJV)	T6 Instate Heavy	55 MPH	0.01199294	0.19681457	0.06312688	0.00932767	0.012	0.13034	0.00255254	1.45E-01	0.003	0.05586	0.00244212	6.13E-02	977.69516	0.00055704	10,592	0.0336%	0.4438%
San Joaquin (SJV)	T6 Instate Small	55 MPH	0.01146836	0.17361578	0.06036566	0.0096126	0.012	0.13034	0.00240721	1.45E-01	0.003	0.05586	0.00230308	6.12E-02	1007.56064	0.00053268	26,733	0.0847%	1.1202%
San Joaquin (SJV)	T6 OOS Heavy	55 MPH	0.01102194	0.15716364	0.05801586	0.00929897	0.012	0.13034	0.00228262	1.45E-01	0.003	0.05586	0.00218388	6.10E-02	974.686533	0.00051194	276	0.0009%	0.0116%
San Joaquin (SJV)	T6 OOS Small	55 MPH	0.01044681	0.14221022	0.0549886	0.00958218	0.012	0.13034	0.00212002	1.44E-01	0.003	0.05586	0.00202831	6.09E-02	1004.3721	0.00048523	847	0.0027%	0.0355%
San Joaquin (SJV)	T6 Public	55 MPH	0.00954787	0.19736042	0.0493127	0.00960997	0.012	0.13034	0.00227861	1.45E-01	0.003	0.05586	0.00218004	6.10E-02	1007.28542	0.00044347	1,556	0.0049%	0.0652%
San Joaquin (SJV)	T6 Utility	55 MPH	0.00860834	0.10380957	0.04531145	0.00958061	0.012	0.13034	0.00159719	1.44E-01	0.003	0.05586	0.00152809	6.04E-02	1004.20729	0.00039983	207	0.0007%	0.0087%
San Joaquin (SJV)	T6TS	55 MPH	0.00690143	0.08130088	0.15981464	0.00879522	0.012	0.13034	0.00083646	1.43E-01	0.003	0.05586	0.00076909	5.96E-02	881.097433	0.00278873	5,819	0.0184%	0.2438%
San Joaquin (SJV)	T7 Ag	55 MPH	0.0316569	0.76070741	0.18692664	0.01326306	0.036	0.06174	0.00541493	1.03E-01	0.009	0.02646	0.00518068	4.06E-02	1390.19008	0.00147038	1,246	0.0039%	0.0522%
San Joaquin (SJV)	T7 CAIRP	55 MPH	0.02749181	0.34361004	0.16233277	0.01229196	0.036	0.06174	0.0046117	1.02E-01	0.009	0.02646	0.0044122	3.99E-02	1288.40268	0.00127692	66,754	0.2116%	2.7972%
San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	0.02823722	0.35092987	0.16672058	0.01266612	0.036	0.06174	0.00477966	1.03E-01	0.009	0.02646	0.0045729	4.00E-02	1327.62026	0.00131155	3,084	0.0098%	0.1292%
San Joaquin (SJV)	T7 NNOOS	55 MPH	0.02419231	0.27781179	0.14284998	0.01227572	0.036	0.06174	0.00389587	1.02E-01	0.009	0.02646	0.00372734	3.92E-02	1286.69961	0.00112367	82,776	0.2624%	3.4685%
San Joaquin (SJV)	T7 NOOS	55 MPH	0.0274993	0.34431842	0.162377	0.01229269	0.036	0.06174	0.00461315	1.02E-01	0.009	0.02646	0.00441359	3.99E-02	1288.47896	0.00127727	26,368	0.0836%	1.1049%
San Joaquin (SJV)	T7 Other Port	55 MPH	0.02990957	0.37332441	0.17660908	0.01265454	0.036	0.06174	0.00514188	1.03E-01	0.009	0.02646	0.00491944	4.04E-02	1326.40651	0.00138922	1,388	0.0044%	0.0581%
San Joaquin (SJV)	T7 POAK	55 MPH	0.03019185	0.3780401	0.17827585	0.01265454	0.036	0.06174	0.0052034	1.03E-01	0.009	0.02646	0.0049783	4.04E-02	1326.40651	0.00140233	5,881	0.0186%	0.2464%
San Joaquin (SJV)	T7 POLA	55 MPH	0.02979298	0.38752527	0.17592061	0.01268871	0.036	0.06174	0.00511135	1.03E-01	0.009	0.02646	0.00489024	4.04E-02	1329.98852	0.00138381	10,633	0.0337%	0.4455%
San Joaquin (SJV)	T7 Public	55 MPH	0.02146805	0.77296931	0.11851594	0.01286913	0.036	0.06174	0.00527296	1.03E-01	0.009	0.02646	0.00504486	4.05E-02	1348.89981	0.00099714	2,982	0.0095%	0.1250%
San Joaquin (SJV)	T7 Single	55 MPH	0.0233339	0.31985525	0.13778125	0.01278387	0.036	0.06174	0.00369253	1.01E-01	0.009	0.02646	0.00353279	3.90E-02	1339.96286	0.0010838	16,916	0.0536%	0.7088%
San Joaquin (SJV)	T7 Single Construction	55 MPH	0.02329101	0.31136428	0.13742433	0.01276239	0.036	0.06174	0.00371107	1.01E-01	0.009	0.02646	0.00355053	3.90E-02	1337.71081	0.00108181	7,978	0.0253%	0.3343%
San Joaquin (SJV)	T7 SWCV	55 MPH	0.00905047	0.87438043	0.32383941	0.0249058	0.036	0.06174	0.00550143	1.03E-01	0.009	0.02646	0.00526344	4.07E-02	2957.31943	0.1101613	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Tractor	55 MPH	0.02796254	0.36138199	0.16511232	0.01231051	0.036	0.06174	0.00471124	1.02E-01	0.009	0.02646	0.00450743	4.00E-02	1290.34658	0.00129879	97,546	0.3092%	4.0874%
San Joaquin (SJV)	T7 Tractor Construction	55 MPH	0.02907517	0.38002927	0.17165821	0.01269773	0.036	0.06174	0.00496086	1.03E-01	0.009	0.02646	0.00474625	4.02E-02	1330.93337	0.00135047	5,948	0.0189%	0.2492%
San Joaquin (SJV)	T7 Utility	55 MPH	0.01770462	0.16947587	0.10454164	0.01265557	0.036	0.06174	0.00248194	1.00E-01	0.009	0.02646	0.00237458	3.78E-02	1326.5149	0.00082233	96	0.0003%	0.0040%
San Joaquin (SJV)	T7IS	55 MPH	0.22579208	2.6941534	23.9473186	0.01505487	0.02	0.06174	0.00083906	8.26E-02	0.005	0.02646	0.00077148	3.22E-02	1470.06725	0.0912382	1,204	0.0038%	0.0504%
San Joaquin (SJV)	UBUS	55 MPH	0.02991883	1.05872935	0.99369779	0.00603252	0.012	0.49694694	0.00701466	5.16E-01	0.003	0.21297726	0.00669625	2.23E-01	1106.39795	0.13524751	732	0.0023%	0.0307%
																	2,386,513	7.5649%	100%

San Joaquin (SJV)	All Other Buses	60 MPH	0.01031218	0.16894243	0.05427991	0.00950777	0.012	0.13034	0.00249016	1.45E-01	0.003	0.05586	0.00238244	6.12E-02	996.573099	0.00047897	1,353	0.0043%	0.0232%
San Joaquin (SJV)	LDA	60 MPH	0.00246355	0.01600545	0.18375006	0.0014982	0.008	0.03675	0.00052401	4.53E-02	0.002	0.01575	0.00048208	1.82E-02	149.9291	0.00098681	3,629,951	11.5064%	62.2501%
San Joaquin (SJV)	LDT1	60 MPH	0.00359408	0.02257982	0.24811609	0.00191859	0.008	0.03675	0.00066805	4.54E-02	0.002	0.01575	0.00061433	1.84E-02	191.863436	0.00145072	195,225	0.6188%	3.3479%
San Joaquin (SJV)	LDT2	60 MPH	0.00388614	0.02367139	0.29029997	0.00220438	0.008	0.03675	0.00063898	4.54E-02	0.002	0.01575	0.00058778	1.83E-02	220.452204	0.00156504	1,192,529	3.7802%	20.4507%
San Joaquin (SJV)	LHD1	60 MPH	0.02101899	0.37600697	0.15654225	0.00536928	0.01051026	0.07644	0.00483307	9.18E-02	0.00262756	0.03276	0.00461191	4.00E-02	550.360796	0.00140196		0.0000%	0.0000%
San Joaquin (SJV)	LHD2	60 MPH	0.01488798	0.05963005	0.09090321	0.00542445	0.01084817	0.08918	0.00421524	1.04E-01	0.00271204	0.03822	0.00402327	4.50E-02	558.455081	0.00094631		0.0000%	0.0000%
San Joaquin (SJV)	MCY	60 MPH	1.82107683	1.07818134	17.0699884	0.00197173	0.004	0.01176	0.00191033	1.77E-02	0.001	0.00504	0.00178119	7.82E-03	164.043499	0.39197797	27,895	0.0884%	0.4784%
San Joaquin (SJV)	MDV	60 MPH	0.00543597	0.03297183	0.34833394	0.00291957	0.008	0.03675	0.00067976	4.54E-02	0.002	0.01575	0.00062581	1.84E-02	292.355027	0.0021731	596,366	1.8904%	10.2271%
San Joaquin (SJV)	MH	60 MPH	0.01175738	0.44914102	0.14066506	0.0087627	0.01288809	0.13034	0.00750251	1.51E-01	0.00322202	0.05586	0.0071524	6.62E-02	886.295393	0.00277599	2,273	0.0072%	0.0390%
San Joaquin (SJV)	Motor Coach	60 MPH	0.02157708	0.26398767	0.12740764	0.01352268	0.012	0.13034	0.0039874	1.46E-01	0.003	0.05586	0.00381491	6.27E-02	1417.40276	0.0010022	956	0.0030%	0.0164%
San Joaquin (SJV)	OBUS	60 MPH	0.00806557	0.0877812	0.16332286	0.00885938	0.012	0.13034	0.00089989	1.43E-01	0.003	0.05586	0.00082742	5.97E-02	887.516678	0.00325914	3,573	0.0113%	0.0613%
San Joaquin (SJV)	SBUS	60 MPH	0.00839221	0.13070912	0.08293641	0.00738206	0.01039912	0.7448	0.00173258	7.57E-01	2.600E-03	3.192E-01	0.00164452	3.23E-01	765.922284	0.00134661	416	0.0013%	0.0071%
San Joaquin (SJV)	T6 Ag	60 MPH	0.011861	0.30008544	0.0624324	0.00964227	0.012	0.13034	0.00295791	1.45E-01	0.003	0.05586	0.00282995	6.17E-02	1010.67023	0.00055091	2,221	0.0070%	0.0381%
San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	0.00945843	0.14007621	0.04978605	0.0091219	0.012	0.13034	0.00221861	1.45E-01	0.003	0.05586	0.00212263	6.10E-02	956.127233	0.00043932	579	0.0018%	0.0099%
San Joaquin (SJV)	T6 CAIRP Small	60 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	1,777	0.0056%	0.0305%
San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	0.01060811	0.17692172	0.05582782	0.00949119	0.012	0.13034	0.0025881	1.45E-01	0.003	0.05586	0.00247614	6.13E-02	994.835116	0.00049272	3,784	0.0120%	0.0649%
San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	0.00981326	0.15167036	0.05164642	0.00948262	0.012	0.13034	0.00233538	1.45E-01	0.003	0.05586	0.00223436	6.11E-02	993.936809	0.0004558	15,489	0.0491%	0.2656%
San Joaquin (SJV)	T6 Instate Heavy	60 MPH	0.01029528	0.17701974	0.05419096	0.00914983	0.012	0.13034	0.00248206	1.45E-01	0.003	0.05586	0.00237469	6.12E-02	959.054457	0.00047819	12,728	0.0403%	0.2183%
San Joaquin (SJV)	T6 Instate Small	60 MPH	0.00984496	0.15552616	0.05182061	0.00949166	0.012	0.13034	0.00234075	1.45E-01	0.003	0.05586	0.00223949	6.11E-02	994.88421	0.00045727	32,124	0.1018%	0.5509%
San Joaquin (SJV)	T6 OOS Heavy	60 MPH	0.00946173	0.14038476	0.04980343	0.0091221	0.012	0.13034	0.0022196	1.45E-01	0.003	0.05586	0.00212358	6.10E-02	956.147826	0.00043947	332	0.0011%	0.0057%
San Joaquin (SJV)	T6 OOS Small	60 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	1,018	0.0032%	0.0175%
San Joaquin (SJV)	T6 Public	60 MPH	0.0082546	0.18484762	0.04257076	0.00948979	0.012	0.13034	0.0022652	1.45E-01	0.003	0.05586	0.00216721	6.10E-02	994.688279	0.0003834	1,869	0.0059%	0.0321%
San Joaquin (SJV)	T6 Utility	60 MPH	0.00738978	0.09257725	0.0388974	0.00946007	0.012	0.13034	0.00155309	1.44E-01	0.003	0.05586	0.0014859	6.03E-02	991.573051	0.00034324	248	0.0008%	0.0043%
San Joaquin (SJV)	T6TS	60 MPH	0.00741435	0.08290227	0.14952721	0.00884971	0.012	0.13034	0.00089863	1.43E-01	0.003	0.05586	0.00082625	5.97E-02	886.571537	0.002996	6,715	0.0213%	0.1152%
San Joaquin (SJV)	T7 Ag	60 MPH	0.02717571	0.70168964	0.16046627	0.0130962	0.036	0.06174	0.00526542	1.03E-01	0.009	0.02646	0.00503764	4.05E-02	1372.69968	0.00126224	380	0.0012%	0.0065%
San Joaquin (SJV)	T7 CAIRP	60 MPH	0.02360021	0.30712545	0.13935378	0.01205808	0.036	0.06174	0.00448436	1.02E-01	0.009	0.02646	0.00429037	3.98E-02	1263.88765	0.00109617	20,336	0.0645%	0.3487%
San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	0.02424059	0.31334912	0.14312394	0.01250677	0.036	0.06174	0.00464809	1.02E-01	0.009	0.02646	0.00444702	3.99E-02	1310.91743	0.00112591	939	0.0030%	0.0161%
San Joaquin (SJV)	T7 NNOOS	60 MPH	0.02076777	0.24775221	0.12262887	0.01204233	0.036	0.06174	0.0037883	1.02E-01	0.009	0.02646	0.00362442	3.91E-02	1262.23684	0.00096461	25,216	0.0799%	0.4324%
San Joaquin (SJV)	T7 NOOS	60 MPH	0.02360664	0.30779514	0.13939175	0.01205878	0.036	0.06174	0.00448577	1.02E-01	0.009	0.02646	0.00429172	3.98E-02	1263.96139	0.00109647	8,033	0.0255%	0.1378%
San Joaquin (SJV)	T7 Other Port	60 MPH	0.02567573	0.33293024	0.1516092	0.01249533	0.036	0.06174	0.00499991	1.03E-01	0.009	0.02646	0.00478361	4.02E-02	1309.71858	0.00119257	423	0.0013%	0.0072%
San Joaquin (SJV)	T7 POAK	60 MPH	0.02591804	0.33713569	0.15304003	0.01249533	0.036	0.06174	0.00505973	1.03E-01	0.009	0.02646	0.00484084	4.03E-02	1309.71858	0.00120383	1,791	0.0057%	0.0307%
San Joaquin (SJV)	T7 POLA	60 MPH	0.02557564	0.34664283	0.15101819	0.01252907	0.036	0.06174	0.00497022	1.03E-01	0.009	0.02646	0.00475521	4.02E-02	1313.25553	0.00118792	3,239	0.0103%	0.0555%
San Joaquin (SJV)	T7 Public	60 MPH	0.0189442	0.75492699	0.103468	0.01271236	0.036	0.06174	0.00538954	1.03E-01	0.009	0.02646	0.00515639	4.06E-02	1332.46766	0.00087991	908	0.0029%	0.0156%
San Joaquin (SJV)	T7 Single	60 MPH	0.02003087	0.28890107	0.11827764	0.01262303	0.036	0.06174	0.00359057	1.01E-01	0.009	0.02646	0.00343525	3.89E-02	1323.10438	0.00093038	5,153	0.0163%	0.0884%
San Joaquin (SJV)	T7 Single Construction	60 MPH	0.02000059	0.28110199	0.11799727	0.01260186	0.036	0.06174	0.00361181	1.01E-01	0.009	0.02646	0.00345556	3.89E-02	1320.88484	0.00092898	2,430	0.0077%	0.0417%
San Joaquin (SJV)	T7 SWCV	60 MPH	0.00823148	0.86799057	0.27890675	0.02460744	0.036	0.06174	0.00546111	1.03E-01	0.009	0.02646	0.00522487	4.07E-02	2921.76948	0.09715951	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Tractor	60 MPH	0.02400431	0.32361865	0.14173987	0.0120761	0.036	0.06174	0.00458115	1.02E-01	0.009	0.02646	0.00438297	3.98E-02	1265.77624	0.00111494	29,716	0.0942%	0.5096%
San Joaquin (SJV)	T7 Tractor Construction	60 MPH	0.02496074	0.34031237	0.14736614	0.01253798	0.036	0.06174	0.00482471	1.03E-01	0.009	0.02646	0.004616	4.01E-02	1314.18944	0.00115936	1,812	0.0057%	0.0311%
San Joaquin (SJV)	T7 Utility	60 MPH	0.01519844	0.15114135	0.08974327	0.01249635	0.036	0.06174	0.00241341	1.00E-01	0.009	0.02646	0.00230901	3.78E-02	1309.82561	0.00070593	29	0.0001%	0.0005%
San Joaquin (SJV)	T7IS	60 MPH	0.24257326	2.74722021	22.405805	0.01482612	0.02	0.06174	0.00090142	8.26E-02	0.005	0.02646	0.00082882	3.23E-02	1449.49403	0.09801915	297	0.0009%	0.0051%
San Joaquin (SJV)	UBUS	60 MPH	0.03372615	1.07291015	0.95222786	0.00606162	0.012	0.49694694	0.00840651	5.17E-01	0.003	0.21297726	0.00802678	2.24E-01	1110.15628	0.13545563	1,108	0.0035%	0.0190%
																	5,831,233	18.4842%	100%

San Joaquin (SJV)	All Other Buses	65 MPH	0.01031218	0.16894243	0.05427991	0.00950777	0.012	0.13034	0.00249016	1.45E-01	0.003	0.05586	0.00238244	6.12E-02	996.573099	0.00047897	213	0.0007%	0.0048%
San Joaquin (SJV)	LDA	65 MPH	0.0027887	0.01658312	0.17244072	0.00167276	0.008	0.03675	0.00059296	4.53E-02	0.002	0.01575	0.00054548	1.83E-02	167.449987	0.00111817	2,805,075	8.8917%	63.3366%
San Joaquin (SJV)	LDT1	65 MPH	0.00406494	0.02345021	0.23291729	0.00214192	0.008	0.03675	0.00075677	4.55E-02	0.002	0.01575	0.0006959	1.84E-02	214.265604	0.00164094	150,862	0.4782%	3.4064%
San Joaquin (SJV)	LDT2	65 MPH	0.00439994	0.02454883	0.27240116	0.00246098	0.008	0.03675	0.00072322	4.55E-02	0.002	0.01575	0.00066524	1.84E-02	246.194763	0.00177265	921,537	2.9211%	20.8077%
San Joaquin (SJV)	LHD1	65 MPH	0.02243425	0.38901894	0.17103369	0.00544077	0.01051026	0.07644	0.00512969	9.21E-02	0.00262756	0.03276	0.00489409	4.03E-02	557.688825	0.00152447		0.0000%	0.0000%
San Joaquin (SJV)	LHD2	65 MPH	0.01509093	0.06099611	0.09083271	0.0054543	0.01084817	0.08918	0.00427227	1.04E-01	0.00271204	0.03822	0.00407654	4.50E-02	561.488209	0.00098972		0.0000%	0.0000%
San Joaquin (SJV)	MCY	65 MPH	2.07437374	1.11736684	19.6809604	0.00221313	0.004	0.01176	0.00217406	1.79E-02	0.001	0.00504	0.00202709	8.07E-03	183.196781	0.44645749	21,556	0.0683%	0.4867%
San Joaquin (SJV)	MDV	65 MPH	0.00613238	0.03442492	0.3272361	0.00325995	0.008	0.03675	0.00076736	4.55E-02	0.002	0.01575	0.00070636	1.85E-02	326.538541	0.00245447	460,847	1.4608%	10.4056%
San Joaquin (SJV)	MH	65 MPH	0.01283078	0.45454049	0.13394741	0.0089182	0.01288809	0.13034	0.00839264	1.52E-01	0.00322202	0.05586	0.00800062	6.71E-02	902.010915	0.00312323	356	0.0011%	0.0080%
San Joaquin (SJV)	Motor Coach	65 MPH	0.02157708	0.26398767	0.12740764	0.01352268	0.012	0.13034	0.0039874	1.46E-01	0.003	0.05586	0.00381491	6.27E-02	1417.40276	0.0010022	103	0.0003%	0.0023%
San Joaquin (SJV)	OBUS	65 MPH	0.00914123	0.09095387	0.1532229	0.00902345	0.012	0.13034	0.00101991	1.43E-01	0.003	0.05586	0.00093777	5.98E-02	903.969187	0.00369379	558	0.0018%	0.0126%
San Joaquin (SJV)	SBUS	65 MPH	0.00874902	0.13181232	0.07964682	0.00741318	0.01039912	0.7448	0.00177947	7.57E-01	2.600E-03	3.192E-01	0.00168764	3.23E-01	769.044515	0.00149079	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Ag	65 MPH	0.011861	0.30008544	0.0624324	0.00964227	0.012	0.13034	0.00295791	1.45E-01	0.003	0.05586	0.00282995	6.17E-02	1010.67023	0.00055091	350	0.0011%	0.0079%
San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	0.00945843	0.14007621	0.04978605	0.0091219	0.012	0.13034	0.00221861	1.45E-01	0.003	0.05586	0.00212263	6.10E-02	956.127233	0.00043932	91	0.0003%	0.0021%
San Joaquin (SJV)	T6 CAIRP Small	65 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	280	0.0009%	0.0063%
San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	0.01060811	0.17692172	0.05582782	0.00949119	0.012	0.13034	0.0025881	1.45E-01	0.003	0.05586	0.00247614	6.13E-02	994.835116	0.00049272	596	0.0019%	0.0134%
San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	0.00981326	0.15167036	0.05164642	0.00948262	0.012	0.13034	0.00233538	1.45E-01	0.003	0.05586	0.00223436	6.11E-02	993.936809	0.0004558	2,438	0.0077%	0.0550%
San Joaquin (SJV)	T6 Instate Heavy	65 MPH	0.01029528	0.17701974	0.05419096	0.00914983	0.012	0.13034	0.00248206	1.45E-01	0.003	0.05586	0.00237469	6.12E-02	959.054457	0.00047819	2,003	0.0063%	0.0452%
San Joaquin (SJV)	T6 Instate Small	65 MPH	0.00984496	0.15552616	0.05182061	0.00949166	0.012	0.13034	0.00234075	1.45E-01	0.003	0.05586	0.00223949	6.11E-02	994.88421	0.00045727	5,055	0.0160%	0.1141%
San Joaquin (SJV)	T6 OOS Heavy	65 MPH	0.00946173	0.14038476	0.04980343	0.0091221	0.012	0.13034	0.0022196	1.45E-01	0.003	0.05586	0.00212358	6.10E-02	956.147826	0.00043947	52	0.0002%	0.0012%
San Joaquin (SJV)	T6 OOS Small	65 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	160	0.0005%	0.0036%
San Joaquin (SJV)	T6 Public	65 MPH	0.0082546	0.18484762	0.04257076	0.00948979	0.012	0.13034	0.0022652	1.45E-01	0.003	0.05586	0.00216721	6.10E-02	994.688279	0.0003834	294	0.0009%	0.0066%
San Joaquin (SJV)	T6 Utility	65 MPH	0.00738978	0.09257725	0.0388974	0.00946007	0.012	0.13034	0.00155309	1.44E-01	0.003	0.05586	0.0014859	6.03E-02	991.573051	0.00034324	39	0.0001%	0.0009%
San Joaquin (SJV)	T6TS	65 MPH	0.00840316	0.0858986	0.14028037	0.00901361	0.012	0.13034	0.00101847	1.43E-01	0.003	0.05586	0.00093645	5.98E-02	903.006526	0.00339555	1,049	0.0033%	0.0237%
San Joaquin (SJV)	T7 Ag	65 MPH	0.02717571	0.70168964	0.16046627	0.0130962	0.036	0.06174	0.00526542	1.03E-01	0.009	0.02646	0.00503764	4.05E-02	1372.69968	0.00126224	208	0.0007%	0.0047%
San Joaquin (SJV)	T7 CAIRP	65 MPH	0.02360021	0.30712545	0.13935378	0.01205808	0.036	0.06174	0.00448436	1.02E-01	0.009	0.02646	0.00429037	3.98E-02	1263.88765	0.00109617	11,138	0.0353%	0.2515%
San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	0.02424059	0.31334912	0.14312394	0.01250677	0.036	0.06174	0.00464809	1.02E-01	0.009	0.02646	0.00444702	3.99E-02	1310.91743	0.00112591	515	0.0016%	0.0116%
San Joaquin (SJV)	T7 NNOOS	65 MPH	0.02076777	0.24775221	0.12262887	0.01204233	0.036	0.06174	0.0037883	1.02E-01	0.009	0.02646	0.00362442	3.91E-02	1262.23684	0.00096461	13,811	0.0438%	0.3119%
San Joaquin (SJV)	T7 NOOS	65 MPH	0.02360664	0.30779514	0.13939175	0.01205878	0.036	0.06174	0.00448577	1.02E-01	0.009	0.02646	0.00429172	3.98E-02	1263.96139	0.00109647	4,400	0.0139%	0.0993%
San Joaquin (SJV)	T7 Other Port	65 MPH	0.02567573	0.33293024	0.1516092	0.01249533	0.036	0.06174	0.00499991	1.03E-01	0.009	0.02646	0.00478361	4.02E-02	1309.71858	0.00119257	232	0.0007%	0.0052%
San Joaquin (SJV)	T7 POAK	65 MPH	0.02591804	0.33713569	0.15304003	0.01249533	0.036	0.06174	0.00505973	1.03E-01	0.009	0.02646	0.00484084	4.03E-02	1309.71858	0.00120383	981	0.0031%	0.0222%
San Joaquin (SJV)	T7 POLA	65 MPH	0.02557564	0.34664283	0.15101819	0.01252907	0.036	0.06174	0.00497022	1.03E-01	0.009	0.02646	0.00475521	4.02E-02	1313.25553	0.00118792	1,774	0.0056%	0.0401%
San Joaquin (SJV)	T7 Public	65 MPH	0.0189442	0.75492699	0.103468	0.01271236	0.036	0.06174	0.00538954	1.03E-01	0.009	0.02646	0.00515639	4.06E-02	1332.46766	0.00087991	498	0.0016%	0.0112%
San Joaquin (SJV)	T7 Single	65 MPH	0.02003087	0.28890107	0.11827764	0.01262303	0.036	0.06174	0.00359057	1.01E-01	0.009	0.02646	0.00343525	3.89E-02	1323.10438	0.00093038	2,823	0.0089%	0.0637%
San Joaquin (SJV)	T7 Single Construction	65 MPH	0.02000059	0.28110199	0.11799727	0.01260186	0.036	0.06174	0.00361181	1.01E-01	0.009	0.02646	0.00345556	3.89E-02	1320.88484	0.00092898	1,331	0.0042%	0.0301%
San Joaquin (SJV)	T7 SWCV	65 MPH	0.00823148	0.86799057	0.27890675	0.02460744	0.036	0.06174	0.00546111	1.03E-01	0.009	0.02646	0.00522487	4.07E-02	2921.76948	0.09715951	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Tractor	65 MPH	0.02400431	0.32361865	0.14173987	0.0120761	0.036	0.06174	0.00458115	1.02E-01	0.009	0.02646	0.00438297	3.98E-02	1265.77624	0.00111494	16,276	0.0516%	0.3675%
San Joaquin (SJV)	T7 Tractor Construction	65 MPH	0.02496074	0.34031237	0.14736614	0.01253798	0.036	0.06174	0.00482471	1.03E-01	0.009	0.02646	0.004616	4.01E-02	1314.18944	0.00115936	992	0.0031%	0.0224%
San Joaquin (SJV)	T7 Utility	65 MPH	0.01519844	0.15114135	0.08974327	0.01249635	0.036	0.06174	0.00241341	1.00E-01	0.009	0.02646	0.00230901	3.78E-02	1309.82561	0.00070593	16	0.0001%	0.0004%
San Joaquin (SJV)	T7IS	65 MPH	0.27492388	2.84651283	21.0202194	0.01476632	0.02	0.06174	0.00102164	8.28E-02	0.005	0.02646	0.00093936	3.24E-02	1445.54087	0.1110914	159	0.0005%	0.0036%
San Joaquin (SJV)	UBUS	65 MPH	0.04009113	1.09884716	0.94820724	0.00616714	0.012	0.49694694	0.01043374	5.19E-01	0.003	0.21297726	0.00996416	2.26E-01	1128.21819	0.14460003	167	0.0005%	0.0038%
																	4,428,834	14.0388%	100%

San Joaquin (SJV)	All Other Buses	70 MPH	0.01031218	0.16894243	0.05427991	0.00950777	0.012	0.13034	0.00249016	1.45E-01	0.003	0.05586	0.00238244	6.12E-02	996.573099	0.00047897	0	0.0000%	0.0000%
San Joaquin (SJV)	LDA	70 MPH	0.00302682	0.01698104	0.16722016	0.00179247	0.008	0.03675	0.00064345	4.54E-02	0.002	0.01575	0.0005919	1.83E-02	179.461171	0.00121437	1,595,507	5.0575%	64.3384%
San Joaquin (SJV)	LDT1	70 MPH	0.00441021	0.02404761	0.2259143	0.00229495	0.008	0.03675	0.00082174	4.56E-02	0.002	0.01575	0.00075565	1.85E-02	229.611021	0.00178044	85,809	0.2720%	3.4602%
San Joaquin (SJV)	LDT2	70 MPH	0.00477635	0.02515249	0.26414184	0.00263683	0.008	0.03675	0.00078491	4.55E-02	0.002	0.01575	0.00072196	1.85E-02	263.829862	0.00192475	524,164	1.6615%	21.1368%
San Joaquin (SJV)	LHD1	70 MPH	0.02342657	0.39564366	0.18174088	0.00538415	0.01051026	0.07644	0.00533802	9.23E-02	0.00262756	0.03276	0.00509223	4.05E-02	551.873166	0.00161213		0.0000%	0.0000%
San Joaquin (SJV)	LHD2	70 MPH	0.01523577	0.06173625	0.09115814	0.005371	0.01084817	0.08918	0.00431323	1.04E-01	0.00271204	0.03822	0.00411479	4.50E-02	552.960085	0.00102133		0.0000%	0.0000%
San Joaquin (SJV)	MCY	70 MPH	2.25593361	1.14161541	21.5894864	0.00238067	0.004	0.01176	0.00236381	1.81E-02	0.001	0.00504	0.00220401	8.24E-03	196.316327	0.48552264	12,261	0.0389%	0.4944%
San Joaquin (SJV)	MDV	70 MPH	0.00664353	0.03541516	0.31752629	0.00349332	0.008	0.03675	0.00083152	4.56E-02	0.002	0.01575	0.00076536	1.85E-02	349.967562	0.002661	262,127	0.8309%	10.5702%
San Joaquin (SJV)	MH	70 MPH	0.01379394	0.46029591	0.13159987	0.00919095	0.01288809	0.13034	0.00941142	1.53E-01	0.00322202	0.05586	0.00897284	6.81E-02	929.581743	0.00338574	0	0.0000%	0.0000%
San Joaquin (SJV)	Motor Coach	70 MPH	0.02157708	0.26398767	0.12740764	0.01352268	0.012	0.13034	0.0039874	1.46E-01	0.003	0.05586	0.00381491	6.27E-02	1417.40276	0.0010022	0	0.0000%	0.0000%
San Joaquin (SJV)	OBUS	70 MPH	0.00992893	0.09314006	0.14855991	0.00930645	0.012	0.13034	0.00110779	1.43E-01	0.003	0.05586	0.00101857	5.99E-02	932.332874	0.00401209	0	0.0000%	0.0000%
San Joaquin (SJV)	SBUS	70 MPH	0.0090103	0.13257249	0.07812807	0.00746688	0.01039912	0.7448	0.00181381	7.57E-01	2.600E-03	3.192E-01	0.00171921	3.24E-01	774.427157	0.00159637	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Ag	70 MPH	0.011861	0.30008544	0.0624324	0.00964227	0.012	0.13034	0.00295791	1.45E-01	0.003	0.05586	0.00282995	6.17E-02	1010.67023	0.00055091	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	0.00945843	0.14007621	0.04978605	0.0091219	0.012	0.13034	0.00221861	1.45E-01	0.003	0.05586	0.00212263	6.10E-02	956.127233	0.00043932	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 CAIRP Small	70 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	0.01060811	0.17692172	0.05582782	0.00949119	0.012	0.13034	0.0025881	1.45E-01	0.003	0.05586	0.00247614	6.13E-02	994.835116	0.00049272	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	0.00981326	0.15167036	0.05164642	0.00948262	0.012	0.13034	0.00233538	1.45E-01	0.003	0.05586	0.00223436	6.11E-02	993.936809	0.0004558	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Instate Heavy	70 MPH	0.01029528	0.17701974	0.05419096	0.00914983	0.012	0.13034	0.00248206	1.45E-01	0.003	0.05586	0.00237469	6.12E-02	959.054457	0.00047819	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Instate Small	70 MPH	0.00984496	0.15552616	0.05182061	0.00949166	0.012	0.13034	0.00234075	1.45E-01	0.003	0.05586	0.00223949	6.11E-02	994.88421	0.00045727	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 OOS Heavy	70 MPH	0.00946173	0.14038476	0.04980343	0.0091221	0.012	0.13034	0.0022196	1.45E-01	0.003	0.05586	0.00212358	6.10E-02	956.147826	0.00043947	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 OOS Small	70 MPH	0.00896802	0.12684967	0.0472047	0.00946162	0.012	0.13034	0.00206148	1.44E-01	0.003	0.05586	0.0019723	6.08E-02	991.735793	0.00041654	0	0.0000%	0.0000%
San Joaquin (SJV)	T6 Public	70 MPH	0.0082546	0.18484762	0.04257076	0.00948979	0.012	0.13034	0.0022652	1.45E-01	0.003	0.05586	0.00216721	6.10E-02	994.688279	0.0003834		0.0000%	0.0000%
San Joaquin (SJV)	T6 Utility	70 MPH	0.00738978	0.09257725	0.0388974	0.00946007	0.012	0.13034	0.00155309	1.44E-01	0.003	0.05586	0.0014859	6.03E-02	991.573051	0.00034324		0.0000%	0.0000%
San Joaquin (SJV)	T6TS	70 MPH	0.00912726	0.08796328	0.13601126	0.00929631	0.012	0.13034	0.00110623	1.43E-01	0.003	0.05586	0.00101714	5.99E-02	931.340007	0.00368815		0.0000%	0.0000%
San Joaquin (SJV)	T7 Ag	70 MPH	0.02717571	0.70168964	0.16046627	0.0130962	0.036	0.06174	0.00526542	1.03E-01	0.009	0.02646	0.00503764	4.05E-02	1372.69968	0.00126224	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 CAIRP	70 MPH	0.02360021	0.30712545	0.13935378	0.01205808	0.036	0.06174	0.00448436	1.02E-01	0.009	0.02646	0.00429037	3.98E-02	1263.88765	0.00109617	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	0.02424059	0.31334912	0.14312394	0.01250677	0.036	0.06174	0.00464809	1.02E-01	0.009	0.02646	0.00444702	3.99E-02	1310.91743	0.00112591	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 NNOOS	70 MPH	0.02076777	0.24775221	0.12262887	0.01204233	0.036	0.06174	0.0037883	1.02E-01	0.009	0.02646	0.00362442	3.91E-02	1262.23684	0.00096461	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 NOOS	70 MPH	0.02360664	0.30779514	0.13939175	0.01205878	0.036	0.06174	0.00448577	1.02E-01	0.009	0.02646	0.00429172	3.98E-02	1263.96139	0.00109647	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Other Port	70 MPH	0.02567573	0.33293024	0.1516092	0.01249533	0.036	0.06174	0.00499991	1.03E-01	0.009	0.02646	0.00478361	4.02E-02	1309.71858	0.00119257	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 POAK	70 MPH	0.02591804	0.33713569	0.15304003	0.01249533	0.036	0.06174	0.00505973	1.03E-01	0.009	0.02646	0.00484084	4.03E-02	1309.71858	0.00120383	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 POLA	70 MPH	0.02557564	0.34664283	0.15101819	0.01252907	0.036	0.06174	0.00497022	1.03E-01	0.009	0.02646	0.00475521	4.02E-02	1313.25553	0.00118792	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Public	70 MPH	0.0189442	0.75492699	0.103468	0.01271236	0.036	0.06174	0.00538954	1.03E-01	0.009	0.02646	0.00515639	4.06E-02	1332.46766	0.00087991	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Single	70 MPH	0.02003087	0.28890107	0.11827764	0.01262303	0.036	0.06174	0.00359057	1.01E-01	0.009	0.02646	0.00343525	3.89E-02	1323.10438	0.00093038	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Single Construction	70 MPH	0.02000059	0.28110199	0.11799727	0.01260186	0.036	0.06174	0.00361181	1.01E-01	0.009	0.02646	0.00345556	3.89E-02	1320.88484	0.00092898	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 SWCV	70 MPH	0.00823148	0.86799057	0.27890675	0.02460744	0.036	0.06174	0.00546111	1.03E-01	0.009	0.02646	0.00522487	4.07E-02	2921.76948	0.09715951	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Tractor	70 MPH	0.02400431	0.32361865	0.14173987	0.0120761	0.036	0.06174	0.00458115	1.02E-01	0.009	0.02646	0.00438297	3.98E-02	1265.77624	0.00111494	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Tractor Construction	70 MPH	0.02496074	0.34031237	0.14736614	0.01253798	0.036	0.06174	0.00482471	1.03E-01	0.009	0.02646	0.004616	4.01E-02	1314.18944	0.00115936	0	0.0000%	0.0000%
San Joaquin (SJV)	T7 Utility	70 MPH	0.01519844	0.15114135	0.08974327	0.01249635	0.036	0.06174	0.00241341	1.00E-01	0.009	0.02646	0.00230901	3.78E-02	1309.82561	0.00070593	0	0.0000%	0.0000%
San Joaquin (SJV)	T7IS	70 MPH	0.29861412	2.91493224	20.3805173	0.01471785	0.02	0.06174	0.00110967	8.28E-02	0.005	0.02646	0.0010203	3.25E-02	1441.5877	0.12066417		0.0000%	0.0000%
San Joaquin (SJV)	UBUS	70 MPH	0.0475777	1.12607301	0.96695782	0.00635374	0.012	0.49694694	0.01304286	5.22E-01	0.003	0.21297726	0.01245884	2.28E-01	1161.04014	0.15651084		0.0000%	0.0000%
																	2,479,867	7.8608%	100%
																TOTAL	**31,547,133**	**100%**	**n/a**

Source: EMFAC2014, Version 1.0.7.

Stockton 2040 - all Model Years

2.205E-03 lbs/Mile

sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX
San Joaquin (SJV)	All Other Buses	05 MPH	5.468E-04	2.287E-02	2.878E-03	4.457E-05	2.646E-05	2.873E-04	1.353E-05	3.273E-04	6.614E-06	1.231E-04	1.294E-05	1.427E-04	4.672E+00	2.540E-05
San Joaquin (SJV)	LDA	05 MPH	4.839E-05	6.942E-05	1.040E-03	1.138E-05	1.764E-05	8.102E-05	9.864E-06	1.085E-04	4.409E-06	3.472E-05	9.072E-06	4.820E-05	1.139E+00	1.882E-05
San Joaquin (SJV)	LDT1	05 MPH	6.812E-05	9.706E-05	1.325E-03	1.461E-05	1.764E-05	8.102E-05	1.266E-05	1.113E-04	4.409E-06	3.472E-05	1.164E-05	5.077E-05	1.462E+00	2.741E-05
San Joaquin (SJV)	LDT2	05 MPH	7.470E-05	1.021E-04	1.557E-03	1.678E-05	1.764E-05	8.102E-05	1.205E-05	1.107E-04	4.409E-06	3.472E-05	1.108E-05	5.021E-05	1.679E+00	2.973E-05
San Joaquin (SJV)	LHD1	05 MPH	1.080E-03	8.919E-04	5.068E-03	2.572E-05	2.317E-05	1.685E-04	4.052E-05	2.322E-04	5.793E-06	7.222E-05	3.853E-05	1.165E-04	2.646E+00	5.824E-05
San Joaquin (SJV)	LHD2	05 MPH	1.181E-03	4.492E-04	5.308E-03	2.647E-05	2.392E-05	1.966E-04	3.037E-05	2.509E-04	5.979E-06	8.426E-05	2.887E-05	1.191E-04	2.734E+00	5.967E-05
San Joaquin (SJV)	MCY	05 MPH	2.756E-02	3.467E-03	9.308E-02	1.495E-05	8.818E-06	2.593E-05	3.025E-05	6.500E-05	2.205E-06	1.111E-05	2.820E-05	4.152E-05	1.250E+00	5.960E-03
San Joaquin (SJV)	MDV	05 MPH	1.066E-04	1.442E-04	2.025E-03	2.207E-05	1.764E-05	8.102E-05	1.263E-05	1.113E-04	4.409E-06	3.472E-05	1.162E-05	5.075E-05	2.210E+00	4.108E-05
San Joaquin (SJV)	MH	05 MPH	5.048E-04	5.581E-03	1.687E-03	7.230E-05	2.841E-05	2.873E-04	4.581E-05	3.616E-04	7.103E-06	1.231E-04	4.334E-05	1.736E-04	7.286E+00	6.582E-05
San Joaquin (SJV)	Motor Coach	05 MPH	1.144E-03	3.897E-02	6.756E-03	6.339E-05	2.646E-05	2.873E-04	2.166E-05	3.355E-04	6.614E-06	1.231E-04	2.072E-05	1.505E-04	6.645E+00	5.314E-05
San Joaquin (SJV)	OBUS	05 MPH	1.532E-04	3.765E-04	8.684E-04	8.053E-05	2.646E-05	2.873E-04	1.710E-05	3.309E-04	6.614E-06	1.231E-04	1.572E-05	1.455E-04	8.068E+00	6.192E-05
San Joaquin (SJV)	SBUS	05 MPH	3.538E-04	1.208E-02	1.858E-03	4.202E-05	2.293E-05	1.642E-03	1.417E-05	1.679E-03	5.731E-06	7.037E-04	1.331E-05	7.227E-04	4.333E+00	3.461E-05
San Joaquin (SJV)	T6 Ag	05 MPH	6.289E-04	2.582E-02	3.311E-03	4.520E-05	2.646E-05	2.873E-04	1.607E-05	3.299E-04	6.614E-06	1.231E-04	1.537E-05	1.451E-04	4.738E+00	2.921E-05
San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	5.015E-04	2.035E-02	2.640E-03	4.398E-05	2.646E-05	2.873E-04	1.205E-05	3.259E-04	6.614E-06	1.231E-04	1.153E-05	1.413E-04	4.610E+00	2.330E-05
San Joaquin (SJV)	T6 CAIRP Small	05 MPH	4.755E-04	1.884E-02	2.503E-03	4.435E-05	2.646E-05	2.873E-04	1.120E-05	3.250E-04	6.614E-06	1.231E-04	1.071E-05	1.405E-04	4.649E+00	2.209E-05
San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	5.624E-04	2.378E-02	2.960E-03	4.449E-05	2.646E-05	2.873E-04	1.406E-05	3.279E-04	6.614E-06	1.231E-04	1.345E-05	1.432E-04	4.664E+00	2.612E-05
San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	5.203E-04	2.140E-02	2.738E-03	4.445E-05	2.646E-05	2.873E-04	1.267E-05	3.265E-04	6.614E-06	1.231E-04	1.213E-05	1.419E-04	4.659E+00	2.417E-05
San Joaquin (SJV)	T6 Instate Heavy	05 MPH	5.459E-04	2.264E-02	2.874E-03	4.413E-05	2.646E-05	2.873E-04	1.348E-05	3.273E-04	6.614E-06	1.231E-04	1.290E-05	1.427E-04	4.625E+00	2.536E-05
San Joaquin (SJV)	T6 Instate Small	05 MPH	5.220E-04	2.144E-02	2.748E-03	4.450E-05	2.646E-05	2.873E-04	1.271E-05	3.265E-04	6.614E-06	1.231E-04	1.216E-05	1.419E-04	4.664E+00	2.425E-05
San Joaquin (SJV)	T6 OOS Heavy	05 MPH	5.017E-04	2.036E-02	2.641E-03	4.398E-05	2.646E-05	2.873E-04	1.206E-05	3.259E-04	6.614E-06	1.231E-04	1.153E-05	1.413E-04	4.610E+00	2.330E-05
San Joaquin (SJV)	T6 OOS Small	05 MPH	4.755E-04	1.884E-02	2.503E-03	4.435E-05	2.646E-05	2.873E-04	1.120E-05	3.250E-04	6.614E-06	1.231E-04	1.071E-05	1.405E-04	4.649E+00	2.209E-05
San Joaquin (SJV)	T6 Public	05 MPH	4.306E-04	1.543E-02	2.194E-03	4.454E-05	2.646E-05	2.873E-04	1.172E-05	3.255E-04	6.614E-06	1.231E-04	1.121E-05	1.410E-04	4.668E+00	2.000E-05
San Joaquin (SJV)	T6 Utility	05 MPH	3.919E-04	1.380E-02	2.063E-03	4.435E-05	2.646E-05	2.873E-04	8.435E-06	3.222E-04	6.614E-06	1.231E-04	8.071E-06	1.378E-04	4.648E+00	1.820E-05
San Joaquin (SJV)	T6TS	05 MPH	1.409E-04	3.555E-04	7.951E-04	8.044E-05	2.646E-05	2.873E-04	1.707E-05	3.309E-04	6.614E-06	1.231E-04	1.570E-05	1.455E-04	8.059E+00	5.692E-05
San Joaquin (SJV)	T7 Ag	05 MPH	1.441E-03	4.647E-02	8.509E-03	6.139E-05	7.937E-05	1.361E-04	2.860E-05	2.441E-04	1.984E-05	5.833E-05	2.736E-05	1.055E-04	6.435E+00	6.693E-05
San Joaquin (SJV)	T7 CAIRP	05 MPH	1.251E-03	4.404E-02	7.389E-03	5.814E-05	7.937E-05	1.361E-04	2.436E-05	2.398E-04	1.984E-05	5.833E-05	2.330E-05	1.015E-04	6.094E+00	5.813E-05
San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	1.285E-03	4.579E-02	7.588E-03	5.863E-05	7.937E-05	1.361E-04	2.523E-05	2.407E-04	1.984E-05	5.833E-05	2.414E-05	1.023E-04	6.145E+00	5.970E-05
San Joaquin (SJV)	T7 NNOOS	05 MPH	1.101E-03	3.692E-02	6.503E-03	5.806E-05	7.937E-05	1.361E-04	2.058E-05	2.361E-04	1.984E-05	5.833E-05	1.969E-05	9.786E-05	6.086E+00	5.115E-05
San Joaquin (SJV)	T7 NOOS	05 MPH	1.252E-03	4.404E-02	7.391E-03	5.814E-05	7.937E-05	1.361E-04	2.436E-05	2.398E-04	1.984E-05	5.833E-05	2.331E-05	1.015E-04	6.095E+00	5.814E-05
San Joaquin (SJV)	T7 Other Port	05 MPH	1.361E-03	4.961E-02	8.039E-03	5.858E-05	7.937E-05	1.361E-04	2.716E-05	2.426E-04	1.984E-05	5.833E-05	2.598E-05	1.042E-04	6.140E+00	6.324E-05
San Joaquin (SJV)	T7 POAK	05 MPH	1.374E-03	5.024E-02	8.115E-03	5.858E-05	7.937E-05	1.361E-04	2.748E-05	2.430E-04	1.984E-05	5.833E-05	2.629E-05	1.045E-04	6.140E+00	6.383E-05
San Joaquin (SJV)	T7 POLA	05 MPH	1.356E-03	4.904E-02	8.008E-03	5.873E-05	7.937E-05	1.361E-04	2.700E-05	2.425E-04	1.984E-05	5.833E-05	2.583E-05	1.040E-04	6.156E+00	6.299E-05
San Joaquin (SJV)	T7 Public	05 MPH	9.536E-04	2.658E-02	5.015E-03	5.991E-05	7.937E-05	1.361E-04	3.243E-05	2.479E-04	1.984E-05	5.833E-05	3.103E-05	1.092E-04	6.279E+00	4.429E-05
San Joaquin (SJV)	T7 Single	05 MPH	1.062E-03	3.394E-02	6.272E-03	5.917E-05	7.937E-05	1.361E-04	1.950E-05	2.350E-04	1.984E-05	5.833E-05	1.866E-05	9.683E-05	6.202E+00	4.933E-05
San Joaquin (SJV)	T7 Single Construction	05 MPH	1.060E-03	3.400E-02	6.250E-03	5.908E-05	7.937E-05	1.361E-04	1.961E-05	2.351E-04	1.984E-05	5.833E-05	1.877E-05	9.694E-05	6.192E+00	4.923E-05
San Joaquin (SJV)	T7 SWCV	05 MPH	3.581E-04	7.881E-03	1.455E-02	1.162E-04	7.937E-05	1.361E-04	2.688E-05	2.424E-04	1.984E-05	5.833E-05	2.572E-05	1.039E-04	1.379E+01	4.712E-03
San Joaquin (SJV)	T7 Tractor	05 MPH	1.273E-03	4.489E-02	7.516E-03	5.823E-05	7.937E-05	1.361E-04	2.488E-05	2.404E-04	1.984E-05	5.833E-05	2.381E-05	1.020E-04	6.104E+00	5.912E-05
San Joaquin (SJV)	T7 Tractor Construction	05 MPH	1.323E-03	4.736E-02	7.812E-03	5.878E-05	7.937E-05	1.361E-04	2.619E-05	2.417E-04	1.984E-05	5.833E-05	2.506E-05	1.032E-04	6.161E+00	6.147E-05
San Joaquin (SJV)	T7 Utility	05 MPH	8.059E-04	2.252E-02	4.759E-03	5.858E-05	7.937E-05	1.361E-04	1.311E-05	2.286E-04	1.984E-05	5.833E-05	1.254E-05	9.072E-05	6.140E+00	3.743E-05
San Joaquin (SJV)	T7IS	05 MPH	4.609E-03	1.178E-02	1.191E-01	8.543E-05	4.409E-05	1.361E-04	1.713E-05	1.973E-04	1.102E-05	5.833E-05	1.575E-05	8.510E-05	8.355E+00	1.862E-03
San Joaquin (SJV)	UBUS	05 MPH	9.782E-04	7.038E-03	4.040E-02	4.809E-05	2.646E-05	1.096E-03	1.148E-04	1.237E-03	6.614E-06	4.695E-04	1.096E-04	5.857E-04	7.375E+00	8.757E-03

San Joaquin (SJV)	All Other Buses	10 MPH	4.429E-04	1.735E-02	2.331E-03	3.952E-05	2.646E-05	2.873E-04	1.217E-05	3.260E-04	6.614E-06	1.231E-04	1.164E-05	1.414E-04	4.142E+00	2.057E-05
San Joaquin (SJV)	LDA	10 MPH	3.070E-05	6.027E-05	9.359E-04	8.452E-06	1.764E-05	8.102E-05	6.221E-06	1.049E-04	4.409E-06	3.472E-05	5.721E-06	4.485E-05	8.459E-01	1.185E-05
San Joaquin (SJV)	LDT1	10 MPH	4.300E-05	8.416E-05	1.205E-03	1.084E-05	1.764E-05	8.102E-05	7.971E-06	1.066E-04	4.409E-06	3.472E-05	7.329E-06	4.646E-05	1.085E+00	1.729E-05
San Joaquin (SJV)	LDT2	10 MPH	4.718E-05	8.862E-05	1.415E-03	1.246E-05	1.764E-05	8.102E-05	7.596E-06	1.063E-04	4.409E-06	3.472E-05	6.985E-06	4.612E-05	1.246E+00	1.873E-05
San Joaquin (SJV)	LHD1	10 MPH	8.011E-04	8.449E-04	3.813E-03	2.315E-05	2.317E-05	1.685E-04	3.207E-05	2.238E-04	5.793E-06	7.222E-05	3.054E-05	1.086E-04	2.377E+00	4.230E-05
San Joaquin (SJV)	LHD2	10 MPH	8.817E-04	3.832E-04	3.994E-03	2.482E-05	2.392E-05	1.966E-04	2.665E-05	2.472E-04	5.979E-06	8.426E-05	2.538E-05	1.156E-04	2.559E+00	4.400E-05
San Joaquin (SJV)	MCY	10 MPH	1.784E-02	3.111E-03	7.197E-02	1.104E-05	8.818E-06	2.593E-05	1.946E-05	5.421E-05	2.205E-06	1.111E-05	1.814E-05	3.146E-05	9.274E-01	3.855E-03
San Joaquin (SJV)	MDV	10 MPH	6.801E-05	1.243E-04	1.813E-03	1.642E-05	1.764E-05	8.102E-05	7.992E-06	1.066E-04	4.409E-06	3.472E-05	7.353E-06	4.648E-05	1.644E+00	2.598E-05
San Joaquin (SJV)	MH	10 MPH	3.640E-04	4.654E-03	1.375E-03	6.222E-05	2.841E-05	2.873E-04	3.750E-05	3.533E-04	7.103E-06	1.231E-04	3.557E-05	1.658E-04	6.273E+00	4.356E-05
San Joaquin (SJV)	Motor Coach	10 MPH	9.266E-04	2.952E-02	5.472E-03	5.621E-05	2.646E-05	2.873E-04	1.948E-05	3.333E-04	6.614E-06	1.231E-04	1.864E-05	1.484E-04	5.892E+00	4.304E-05
San Joaquin (SJV)	OBUS	10 MPH	9.642E-05	3.271E-04	7.909E-04	6.874E-05	2.646E-05	2.873E-04	1.076E-05	3.246E-04	6.614E-06	1.231E-04	9.892E-06	1.397E-04	6.887E+00	3.896E-05
San Joaquin (SJV)	SBUS	10 MPH	2.774E-04	9.185E-03	1.533E-03	3.675E-05	2.293E-05	1.642E-03	1.094E-05	1.676E-03	5.731E-06	7.037E-04	1.031E-05	7.197E-04	3.792E+00	2.432E-05
San Joaquin (SJV)	T6 Ag	10 MPH	5.094E-04	1.975E-02	2.681E-03	4.008E-05	2.646E-05	2.873E-04	1.445E-05	3.283E-04	6.614E-06	1.231E-04	1.383E-05	1.436E-04	4.201E+00	2.366E-05
San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	4.062E-04	1.542E-02	2.138E-03	3.900E-05	2.646E-05	2.873E-04	1.084E-05	3.246E-04	6.614E-06	1.231E-04	1.037E-05	1.401E-04	4.088E+00	1.887E-05
San Joaquin (SJV)	T6 CAIRP Small	10 MPH	3.851E-04	1.427E-02	2.027E-03	3.933E-05	2.646E-05	2.873E-04	1.007E-05	3.239E-04	6.614E-06	1.231E-04	9.636E-06	1.394E-04	4.122E+00	1.789E-05
San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	4.555E-04	1.804E-02	2.397E-03	3.945E-05	2.646E-05	2.873E-04	1.264E-05	3.264E-04	6.614E-06	1.231E-04	1.210E-05	1.419E-04	4.135E+00	2.116E-05
San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	4.214E-04	1.622E-02	2.218E-03	3.942E-05	2.646E-05	2.873E-04	1.140E-05	3.252E-04	6.614E-06	1.231E-04	1.091E-05	1.407E-04	4.131E+00	1.957E-05
San Joaquin (SJV)	T6 Instate Heavy	10 MPH	4.421E-04	1.719E-02	2.327E-03	3.913E-05	2.646E-05	2.873E-04	1.213E-05	3.259E-04	6.614E-06	1.231E-04	1.160E-05	1.414E-04	4.101E+00	2.054E-05
San Joaquin (SJV)	T6 Instate Small	10 MPH	4.228E-04	1.626E-02	2.225E-03	3.945E-05	2.646E-05	2.873E-04	1.144E-05	3.252E-04	6.614E-06	1.231E-04	1.094E-05	1.407E-04	4.135E+00	1.964E-05
San Joaquin (SJV)	T6 OOS Heavy	10 MPH	4.063E-04	1.543E-02	2.139E-03	3.900E-05	2.646E-05	2.873E-04	1.084E-05	3.246E-04	6.614E-06	1.231E-04	1.038E-05	1.401E-04	4.088E+00	1.887E-05
San Joaquin (SJV)	T6 OOS Small	10 MPH	3.851E-04	1.427E-02	2.027E-03	3.933E-05	2.646E-05	2.873E-04	1.007E-05	3.239E-04	6.614E-06	1.231E-04	9.636E-06	1.394E-04	4.122E+00	1.789E-05
San Joaquin (SJV)	T6 Public	10 MPH	3.480E-04	1.174E-02	1.777E-03	3.950E-05	2.646E-05	2.873E-04	1.045E-05	3.243E-04	6.614E-06	1.231E-04	9.998E-06	1.398E-04	4.140E+00	1.616E-05
San Joaquin (SJV)	T6 Utility	10 MPH	3.174E-04	1.045E-02	1.670E-03	3.932E-05	2.646E-05	2.873E-04	7.588E-06	3.214E-04	6.614E-06	1.231E-04	7.260E-06	1.370E-04	4.122E+00	1.474E-05
San Joaquin (SJV)	T6TS	10 MPH	8.864E-05	3.089E-04	7.241E-04	6.867E-05	2.646E-05	2.873E-04	1.074E-05	3.245E-04	6.614E-06	1.231E-04	9.878E-06	1.396E-04	6.880E+00	3.582E-05
San Joaquin (SJV)	T7 Ag	10 MPH	1.167E-03	3.580E-02	6.891E-03	5.444E-05	7.937E-05	1.361E-04	2.573E-05	2.412E-04	1.984E-05	5.833E-05	2.461E-05	1.028E-04	5.706E+00	5.421E-05
San Joaquin (SJV)	T7 CAIRP	10 MPH	1.014E-03	3.338E-02	5.985E-03	5.155E-05	7.937E-05	1.361E-04	2.191E-05	2.374E-04	1.984E-05	5.833E-05	2.096E-05	9.914E-05	5.404E+00	4.708E-05
San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	1.041E-03	3.470E-02	6.146E-03	5.199E-05	7.937E-05	1.361E-04	2.270E-05	2.382E-04	1.984E-05	5.833E-05	2.172E-05	9.989E-05	5.449E+00	4.835E-05
San Joaquin (SJV)	T7 NNOOS	10 MPH	8.919E-04	2.797E-02	5.266E-03	5.148E-05	7.937E-05	1.361E-04	1.851E-05	2.340E-04	1.984E-05	5.833E-05	1.771E-05	9.588E-05	5.396E+00	4.143E-05
San Joaquin (SJV)	T7 NOOS	10 MPH	1.014E-03	3.338E-02	5.986E-03	5.156E-05	7.937E-05	1.361E-04	2.192E-05	2.374E-04	1.984E-05	5.833E-05	2.097E-05	9.914E-05	5.404E+00	4.709E-05
San Joaquin (SJV)	T7 Other Port	10 MPH	1.103E-03	3.758E-02	6.511E-03	5.194E-05	7.937E-05	1.361E-04	2.443E-05	2.399E-04	1.984E-05	5.833E-05	2.337E-05	1.015E-04	5.444E+00	5.122E-05
San Joaquin (SJV)	T7 POAK	10 MPH	1.113E-03	3.806E-02	6.572E-03	5.194E-05	7.937E-05	1.361E-04	2.472E-05	2.402E-04	1.984E-05	5.833E-05	2.365E-05	1.018E-04	5.444E+00	5.170E-05
San Joaquin (SJV)	T7 POLA	10 MPH	1.098E-03	3.718E-02	6.486E-03	5.208E-05	7.937E-05	1.361E-04	2.428E-05	2.398E-04	1.984E-05	5.833E-05	2.323E-05	1.014E-04	5.459E+00	5.102E-05
San Joaquin (SJV)	T7 Public	10 MPH	7.668E-04	2.041E-02	4.064E-03	5.317E-05	7.937E-05	1.361E-04	2.803E-05	2.435E-04	1.984E-05	5.833E-05	2.681E-05	1.050E-04	5.574E+00	3.562E-05
San Joaquin (SJV)	T7 Single	10 MPH	8.602E-04	2.580E-02	5.080E-03	5.247E-05	7.937E-05	1.361E-04	1.754E-05	2.330E-04	1.984E-05	5.833E-05	1.678E-05	9.496E-05	5.500E+00	3.996E-05
San Joaquin (SJV)	T7 Single Construction	10 MPH	8.583E-04	2.583E-02	5.062E-03	5.238E-05	7.937E-05	1.361E-04	1.763E-05	2.331E-04	1.984E-05	5.833E-05	1.687E-05	9.505E-05	5.491E+00	3.987E-05
San Joaquin (SJV)	T7 SWCV	10 MPH	2.824E-04	6.502E-03	1.178E-02	1.032E-04	7.937E-05	1.361E-04	2.413E-05	2.396E-04	1.984E-05	5.833E-05	2.309E-05	1.013E-04	1.225E+01	3.773E-03
San Joaquin (SJV)	T7 Tractor	10 MPH	1.031E-03	3.404E-02	6.087E-03	5.163E-05	7.937E-05	1.361E-04	2.238E-05	2.379E-04	1.984E-05	5.833E-05	2.141E-05	9.959E-05	5.412E+00	4.788E-05
San Joaquin (SJV)	T7 Tractor Construction	10 MPH	1.072E-03	3.591E-02	6.327E-03	5.212E-05	7.937E-05	1.361E-04	2.356E-05	2.390E-04	1.984E-05	5.833E-05	2.254E-05	1.007E-04	5.463E+00	4.978E-05
San Joaquin (SJV)	T7 Utility	10 MPH	6.527E-04	1.706E-02	3.854E-03	5.194E-05	7.937E-05	1.361E-04	1.179E-05	2.273E-04	1.984E-05	5.833E-05	1.128E-05	8.946E-05	5.444E+00	3.032E-05
San Joaquin (SJV)	T7IS	10 MPH	2.900E-03	1.024E-02	1.085E-01	7.254E-05	4.409E-05	1.361E-04	1.078E-05	1.910E-04	1.102E-05	5.833E-05	9.909E-06	7.927E-05	7.087E+00	1.172E-03
San Joaquin (SJV)	UBUS	10 MPH	7.076E-04	5.802E-03	3.074E-02	4.153E-05	2.646E-05	1.096E-03	9.204E-05	1.214E-03	6.614E-06	4.695E-04	8.787E-05	5.640E-04	6.484E+00	6.551E-03

San Joaquin (SJV)	All Other Buses	15 MPH	3.119E-04	1.039E-02	1.642E-03	3.316E-05	2.646E-05	2.873E-04	1.045E-05	3.243E-04	6.614E-06	1.231E-04	1.000E-05	1.398E-04	3.475E+00	1.449E-05
San Joaquin (SJV)	LDA	15 MPH	2.011E-05	5.303E-05	8.335E-04	6.514E-06	1.764E-05	8.102E-05	4.138E-06	1.028E-04	4.409E-06	3.472E-05	3.806E-06	4.294E-05	6.518E-01	7.856E-06
San Joaquin (SJV)	LDT1	15 MPH	2.856E-05	7.416E-05	1.099E-03	8.351E-06	1.764E-05	8.102E-05	5.294E-06	1.040E-04	4.409E-06	3.472E-05	4.868E-06	4.400E-05	8.350E-01	1.150E-05
San Joaquin (SJV)	LDT2	15 MPH	3.117E-05	7.807E-05	1.288E-03	9.593E-06	1.764E-05	8.102E-05	5.051E-06	1.037E-04	4.409E-06	3.472E-05	4.645E-06	4.378E-05	9.593E-01	1.243E-05
San Joaquin (SJV)	LHD1	15 MPH	4.076E-04	7.636E-04	2.008E-03	1.555E-05	2.317E-05	1.685E-04	2.548E-05	2.172E-04	5.793E-06	7.222E-05	2.428E-05	1.023E-04	1.596E+00	2.231E-05
San Joaquin (SJV)	LHD2	15 MPH	4.332E-04	2.789E-04	2.009E-03	1.686E-05	2.392E-05	1.966E-04	2.245E-05	2.430E-04	5.979E-06	8.426E-05	2.140E-05	1.116E-04	1.738E+00	2.214E-05
San Joaquin (SJV)	MCY	15 MPH	1.218E-02	2.841E-03	5.823E-02	8.486E-06	8.818E-06	2.593E-05	1.321E-05	4.795E-05	2.205E-06	1.111E-05	1.231E-05	2.563E-05	7.140E-01	2.630E-03
San Joaquin (SJV)	MDV	15 MPH	4.456E-05	1.087E-04	1.597E-03	1.267E-05	1.764E-05	8.102E-05	5.333E-06	1.040E-04	4.409E-06	3.472E-05	4.908E-06	4.404E-05	1.269E+00	1.727E-05
San Joaquin (SJV)	MH	15 MPH	1.916E-04	3.196E-03	9.342E-04	4.401E-05	2.841E-05	2.873E-04	2.870E-05	3.445E-04	7.103E-06	1.231E-04	2.726E-05	1.575E-04	4.441E+00	2.659E-05
San Joaquin (SJV)	Motor Coach	15 MPH	6.526E-04	1.762E-02	3.854E-03	4.716E-05	2.646E-05	2.873E-04	1.674E-05	3.305E-04	6.614E-06	1.231E-04	1.602E-05	1.458E-04	4.943E+00	3.031E-05
San Joaquin (SJV)	OBUS	15 MPH	6.400E-05	2.888E-04	7.222E-04	4.739E-05	2.646E-05	2.873E-04	7.141E-06	3.209E-04	6.614E-06	1.231E-04	6.566E-06	1.363E-04	4.747E+00	2.586E-05
San Joaquin (SJV)	SBUS	15 MPH	1.940E-04	5.543E-03	1.134E-03	2.888E-05	2.293E-05	1.642E-03	8.579E-06	1.673E-03	5.731E-06	7.037E-04	8.104E-06	7.175E-04	2.986E+00	1.660E-05
San Joaquin (SJV)	T6 Ag	15 MPH	3.587E-04	1.211E-02	1.888E-03	3.363E-05	2.646E-05	2.873E-04	1.242E-05	3.262E-04	6.614E-06	1.231E-04	1.188E-05	1.416E-04	3.525E+00	1.666E-05
San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	2.861E-04	9.209E-03	1.506E-03	3.272E-05	2.646E-05	2.873E-04	9.315E-06	3.231E-04	6.614E-06	1.231E-04	8.912E-06	1.387E-04	3.430E+00	1.329E-05
San Joaquin (SJV)	T6 CAIRP Small	15 MPH	2.712E-04	8.515E-03	1.428E-03	3.300E-05	2.646E-05	2.873E-04	8.655E-06	3.225E-04	6.614E-06	1.231E-04	8.280E-06	1.380E-04	3.459E+00	1.260E-05
San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	3.208E-04	1.081E-02	1.688E-03	3.310E-05	2.646E-05	2.873E-04	1.086E-05	3.247E-04	6.614E-06	1.231E-04	1.039E-05	1.402E-04	3.469E+00	1.490E-05
San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	2.968E-04	9.700E-03	1.562E-03	3.307E-05	2.646E-05	2.873E-04	9.796E-06	3.236E-04	6.614E-06	1.231E-04	9.372E-06	1.391E-04	3.466E+00	1.378E-05
San Joaquin (SJV)	T6 Instate Heavy	15 MPH	3.114E-04	1.032E-02	1.639E-03	3.283E-05	2.646E-05	2.873E-04	1.042E-05	3.242E-04	6.614E-06	1.231E-04	9.970E-06	1.397E-04	3.441E+00	1.446E-05
San Joaquin (SJV)	T6 Instate Small	15 MPH	2.978E-04	9.731E-03	1.567E-03	3.310E-05	2.646E-05	2.873E-04	9.827E-06	3.236E-04	6.614E-06	1.231E-04	9.402E-06	1.392E-04	3.470E+00	1.383E-05
San Joaquin (SJV)	T6 OOS Heavy	15 MPH	2.862E-04	9.213E-03	1.506E-03	3.272E-05	2.646E-05	2.873E-04	9.319E-06	3.231E-04	6.614E-06	1.231E-04	8.916E-06	1.387E-04	3.430E+00	1.329E-05
San Joaquin (SJV)	T6 OOS Small	15 MPH	2.712E-04	8.515E-03	1.428E-03	3.300E-05	2.646E-05	2.873E-04	8.655E-06	3.225E-04	6.614E-06	1.231E-04	8.280E-06	1.380E-04	3.459E+00	1.260E-05
San Joaquin (SJV)	T6 Public	15 MPH	2.432E-04	7.076E-03	1.250E-03	3.314E-05	2.646E-05	2.873E-04	8.740E-06	3.225E-04	6.614E-06	1.231E-04	8.362E-06	1.381E-04	3.473E+00	1.130E-05
San Joaquin (SJV)	T6 Utility	15 MPH	2.235E-04	6.235E-03	1.176E-03	3.299E-05	2.646E-05	2.873E-04	6.520E-06	3.203E-04	6.614E-06	1.231E-04	6.238E-06	1.360E-04	3.458E+00	1.038E-05
San Joaquin (SJV)	T6TS	15 MPH	5.884E-05	2.728E-04	6.612E-04	4.734E-05	2.646E-05	2.873E-04	7.131E-06	3.209E-04	6.614E-06	1.231E-04	6.557E-06	1.363E-04	4.742E+00	2.377E-05
San Joaquin (SJV)	T7 Ag	15 MPH	8.219E-04	2.236E-02	4.853E-03	4.567E-05	7.937E-05	1.361E-04	2.211E-05	2.376E-04	1.984E-05	5.833E-05	2.115E-05	9.932E-05	4.787E+00	3.818E-05
San Joaquin (SJV)	T7 CAIRP	15 MPH	7.138E-04	1.994E-02	4.215E-03	4.325E-05	7.937E-05	1.361E-04	1.883E-05	2.343E-04	1.984E-05	5.833E-05	1.801E-05	9.619E-05	4.534E+00	3.315E-05
San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	7.331E-04	2.072E-02	4.328E-03	4.362E-05	7.937E-05	1.361E-04	1.950E-05	2.350E-04	1.984E-05	5.833E-05	1.866E-05	9.684E-05	4.572E+00	3.405E-05
San Joaquin (SJV)	T7 NNOOS	15 MPH	6.281E-04	1.669E-02	3.709E-03	4.319E-05	7.937E-05	1.361E-04	1.590E-05	2.314E-04	1.984E-05	5.833E-05	1.522E-05	9.339E-05	4.527E+00	2.918E-05
San Joaquin (SJV)	T7 NOOS	15 MPH	7.140E-04	1.995E-02	4.216E-03	4.326E-05	7.937E-05	1.361E-04	1.883E-05	2.343E-04	1.984E-05	5.833E-05	1.802E-05	9.619E-05	4.534E+00	3.316E-05
San Joaquin (SJV)	T7 Other Port	15 MPH	7.766E-04	2.242E-02	4.586E-03	4.358E-05	7.937E-05	1.361E-04	2.099E-05	2.365E-04	1.984E-05	5.833E-05	2.008E-05	9.826E-05	4.567E+00	3.607E-05
San Joaquin (SJV)	T7 POAK	15 MPH	7.839E-04	2.271E-02	4.629E-03	4.358E-05	7.937E-05	1.361E-04	2.124E-05	2.367E-04	1.984E-05	5.833E-05	2.032E-05	9.850E-05	4.567E+00	3.641E-05
San Joaquin (SJV)	T7 POLA	15 MPH	7.736E-04	2.223E-02	4.568E-03	4.369E-05	7.937E-05	1.361E-04	2.087E-05	2.363E-04	1.984E-05	5.833E-05	1.996E-05	9.814E-05	4.580E+00	3.593E-05
San Joaquin (SJV)	T7 Public	15 MPH	5.251E-04	1.256E-02	2.859E-03	4.457E-05	7.937E-05	1.361E-04	2.149E-05	2.370E-04	1.984E-05	5.833E-05	2.056E-05	9.874E-05	4.672E+00	2.439E-05
San Joaquin (SJV)	T7 Single	15 MPH	6.058E-04	1.555E-02	3.577E-03	4.402E-05	7.937E-05	1.361E-04	1.507E-05	2.306E-04	1.984E-05	5.833E-05	1.442E-05	9.260E-05	4.614E+00	2.814E-05
San Joaquin (SJV)	T7 Single Construction	15 MPH	6.043E-04	1.554E-02	3.565E-03	4.395E-05	7.937E-05	1.361E-04	1.513E-05	2.306E-04	1.984E-05	5.833E-05	1.448E-05	9.265E-05	4.607E+00	2.807E-05
San Joaquin (SJV)	T7 SWCV	15 MPH	1.795E-04	4.625E-03	8.293E-03	8.646E-05	7.937E-05	1.361E-04	2.050E-05	2.360E-04	1.984E-05	5.833E-05	1.961E-05	9.779E-05	1.026E+01	2.549E-03
San Joaquin (SJV)	T7 Tractor	15 MPH	7.260E-04	2.036E-02	4.287E-03	4.332E-05	7.937E-05	1.361E-04	1.923E-05	2.347E-04	1.984E-05	5.833E-05	1.840E-05	9.658E-05	4.541E+00	3.372E-05
San Joaquin (SJV)	T7 Tractor Construction	15 MPH	7.548E-04	2.148E-02	4.456E-03	4.373E-05	7.937E-05	1.361E-04	2.024E-05	2.357E-04	1.984E-05	5.833E-05	1.936E-05	9.754E-05	4.583E+00	3.506E-05
San Joaquin (SJV)	T7 Utility	15 MPH	4.597E-04	1.018E-02	2.714E-03	4.358E-05	7.937E-05	1.361E-04	1.013E-05	2.256E-04	1.984E-05	5.833E-05	9.694E-06	8.787E-05	4.568E+00	2.135E-05
San Joaquin (SJV)	T7IS	15 MPH	1.925E-03	9.039E-03	9.908E-02	5.265E-05	4.409E-05	1.361E-04	7.153E-06	1.874E-04	1.102E-05	5.833E-05	6.577E-06	7.593E-05	5.112E+00	7.778E-04
San Joaquin (SJV)	UBUS	15 MPH	3.803E-04	4.030E-03	1.608E-02	2.970E-05	2.646E-05	1.096E-03	5.841E-05	1.180E-03	6.614E-06	4.695E-04	5.575E-05	5.319E-04	4.882E+00	3.231E-03

San Joaquin (SJV)	All Other Buses	20 MPH	2.256E-04	5.806E-03	1.188E-03	2.897E-05	2.646E-05	2.873E-04	9.327E-06	3.231E-04	6.614E-06	1.231E-04	8.924E-06	1.387E-04	3.036E+00	1.048E-05
San Joaquin (SJV)	LDA	20 MPH	1.385E-05	4.743E-05	7.503E-04	5.208E-06	1.764E-05	8.102E-05	2.903E-06	1.016E-04	4.409E-06	3.472E-05	2.671E-06	4.180E-05	5.209E-01	5.491E-06
San Joaquin (SJV)	LDT1	20 MPH	2.000E-05	6.644E-05	1.005E-03	6.674E-06	1.764E-05	8.102E-05	3.710E-06	1.024E-04	4.409E-06	3.472E-05	3.411E-06	4.254E-05	6.672E-01	8.065E-06
San Joaquin (SJV)	LDT2	20 MPH	2.170E-05	6.992E-05	1.177E-03	7.668E-06	1.764E-05	8.102E-05	3.543E-06	1.022E-04	4.409E-06	3.472E-05	3.258E-06	4.239E-05	7.665E-01	8.702E-06
San Joaquin (SJV)	LHD1	20 MPH	1.772E-04	7.145E-04	9.470E-04	1.337E-05	2.317E-05	1.685E-04	2.058E-05	2.123E-04	5.793E-06	7.222E-05	1.962E-05	9.763E-05	1.372E+00	1.060E-05
San Joaquin (SJV)	LHD2	20 MPH	1.715E-04	2.070E-04	8.471E-04	1.452E-05	2.392E-05	1.966E-04	1.878E-05	2.393E-04	5.979E-06	8.426E-05	1.791E-05	1.081E-04	1.496E+00	9.384E-06
San Joaquin (SJV)	MCY	20 MPH	8.759E-03	2.639E-03	4.897E-02	6.783E-06	8.818E-06	2.593E-05	9.448E-06	4.419E-05	2.205E-06	1.111E-05	8.809E-06	2.212E-05	5.705E-01	1.891E-03
San Joaquin (SJV)	MDV	20 MPH	3.066E-05	9.676E-05	1.427E-03	1.014E-05	1.764E-05	8.102E-05	3.753E-06	1.024E-04	4.409E-06	3.472E-05	3.454E-06	4.259E-05	1.015E+00	1.210E-05
San Joaquin (SJV)	MH	20 MPH	9.132E-05	2.203E-03	6.600E-04	3.176E-05	2.841E-05	2.873E-04	2.228E-05	3.380E-04	7.103E-06	1.231E-04	2.118E-05	1.514E-04	3.208E+00	1.663E-05
San Joaquin (SJV)	Motor Coach	20 MPH	4.721E-04	9.781E-03	2.788E-03	4.120E-05	2.646E-05	2.873E-04	1.494E-05	3.287E-04	6.614E-06	1.231E-04	1.429E-05	1.441E-04	4.318E+00	2.193E-05
San Joaquin (SJV)	OBUS	20 MPH	4.482E-05	2.591E-04	6.613E-04	3.332E-05	2.646E-05	2.873E-04	5.001E-06	3.188E-04	6.614E-06	1.231E-04	4.598E-06	1.344E-04	3.338E+00	1.811E-05
San Joaquin (SJV)	SBUS	20 MPH	1.398E-04	3.143E-03	8.654E-04	2.370E-05	2.293E-05	1.642E-03	7.119E-06	1.672E-03	5.731E-06	7.037E-04	6.738E-06	7.162E-04	2.455E+00	1.181E-05
San Joaquin (SJV)	T6 Ag	20 MPH	2.595E-04	7.077E-03	1.366E-03	2.938E-05	2.646E-05	2.873E-04	1.108E-05	3.249E-04	6.614E-06	1.231E-04	1.060E-05	1.404E-04	3.079E+00	1.205E-05
San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	2.070E-04	5.118E-03	1.089E-03	2.855E-05	2.646E-05	2.873E-04	8.310E-06	3.221E-04	6.614E-06	1.231E-04	7.950E-06	1.377E-04	2.993E+00	9.612E-06
San Joaquin (SJV)	T6 CAIRP Small	20 MPH	1.962E-04	4.724E-03	1.033E-03	2.883E-05	2.646E-05	2.873E-04	7.721E-06	3.215E-04	6.614E-06	1.231E-04	7.387E-06	1.372E-04	3.021E+00	9.114E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	2.321E-04	6.042E-03	1.221E-03	2.892E-05	2.646E-05	2.873E-04	9.688E-06	3.235E-04	6.614E-06	1.231E-04	9.269E-06	1.390E-04	3.031E+00	1.078E-05
San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	2.147E-04	5.402E-03	1.130E-03	2.889E-05	2.646E-05	2.873E-04	8.739E-06	3.225E-04	6.614E-06	1.231E-04	8.361E-06	1.381E-04	3.028E+00	9.971E-06
San Joaquin (SJV)	T6 Instate Heavy	20 MPH	2.253E-04	5.794E-03	1.186E-03	2.865E-05	2.646E-05	2.873E-04	9.297E-06	3.231E-04	6.614E-06	1.231E-04	8.895E-06	1.387E-04	3.003E+00	1.046E-05
San Joaquin (SJV)	T6 Instate Small	20 MPH	2.154E-04	5.431E-03	1.134E-03	2.892E-05	2.646E-05	2.873E-04	8.767E-06	3.226E-04	6.614E-06	1.231E-04	8.388E-06	1.382E-04	3.031E+00	1.001E-05
San Joaquin (SJV)	T6 OOS Heavy	20 MPH	2.070E-04	5.121E-03	1.090E-03	2.855E-05	2.646E-05	2.873E-04	8.314E-06	3.221E-04	6.614E-06	1.231E-04	7.954E-06	1.377E-04	2.993E+00	9.616E-06
San Joaquin (SJV)	T6 OOS Small	20 MPH	1.962E-04	4.724E-03	1.033E-03	2.883E-05	2.646E-05	2.873E-04	7.721E-06	3.215E-04	6.614E-06	1.231E-04	7.387E-06	1.372E-04	3.021E+00	9.114E-06
San Joaquin (SJV)	T6 Public	20 MPH	1.747E-04	4.014E-03	9.039E-04	2.893E-05	2.646E-05	2.873E-04	7.587E-06	3.214E-04	6.614E-06	1.231E-04	7.259E-06	1.370E-04	3.033E+00	8.114E-06
San Joaquin (SJV)	T6 Utility	20 MPH	1.617E-04	3.458E-03	8.511E-04	2.882E-05	2.646E-05	2.873E-04	5.817E-06	3.196E-04	6.614E-06	1.231E-04	5.566E-06	1.353E-04	3.021E+00	7.510E-06
San Joaquin (SJV)	T6TS	20 MPH	4.120E-05	2.447E-04	6.054E-04	3.328E-05	2.646E-05	2.873E-04	4.994E-06	3.188E-04	6.614E-06	1.231E-04	4.591E-06	1.344E-04	3.334E+00	1.665E-05
San Joaquin (SJV)	T7 Ag	20 MPH	5.946E-04	1.351E-02	3.511E-03	3.990E-05	7.937E-05	1.361E-04	1.972E-05	2.352E-04	1.984E-05	5.833E-05	1.887E-05	9.704E-05	4.182E+00	2.762E-05
San Joaquin (SJV)	T7 CAIRP	20 MPH	5.164E-04	1.109E-02	3.049E-03	3.775E-05	7.937E-05	1.361E-04	1.680E-05	2.323E-04	1.984E-05	5.833E-05	1.607E-05	9.425E-05	3.956E+00	2.398E-05
San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	5.303E-04	1.151E-02	3.131E-03	3.810E-05	7.937E-05	1.361E-04	1.740E-05	2.329E-04	1.984E-05	5.833E-05	1.665E-05	9.482E-05	3.994E+00	2.463E-05
San Joaquin (SJV)	T7 NNOOS	20 MPH	4.544E-04	9.255E-03	2.683E-03	3.769E-05	7.937E-05	1.361E-04	1.419E-05	2.297E-04	1.984E-05	5.833E-05	1.358E-05	9.175E-05	3.951E+00	2.111E-05
San Joaquin (SJV)	T7 NOOS	20 MPH	5.165E-04	1.110E-02	3.050E-03	3.775E-05	7.937E-05	1.361E-04	1.680E-05	2.323E-04	1.984E-05	5.833E-05	1.607E-05	9.425E-05	3.957E+00	2.399E-05
San Joaquin (SJV)	T7 Other Port	20 MPH	5.618E-04	1.244E-02	3.317E-03	3.807E-05	7.937E-05	1.361E-04	1.873E-05	2.342E-04	1.984E-05	5.833E-05	1.792E-05	9.609E-05	3.990E+00	2.609E-05
San Joaquin (SJV)	T7 POAK	20 MPH	5.671E-04	1.259E-02	3.349E-03	3.807E-05	7.937E-05	1.361E-04	1.895E-05	2.344E-04	1.984E-05	5.833E-05	1.813E-05	9.631E-05	3.990E+00	2.634E-05
San Joaquin (SJV)	T7 POLA	20 MPH	5.596E-04	1.238E-02	3.304E-03	3.817E-05	7.937E-05	1.361E-04	1.862E-05	2.341E-04	1.984E-05	5.833E-05	1.781E-05	9.599E-05	4.001E+00	2.599E-05
San Joaquin (SJV)	T7 Public	20 MPH	3.695E-04	7.489E-03	2.065E-03	3.884E-05	7.937E-05	1.361E-04	1.705E-05	2.325E-04	1.984E-05	5.833E-05	1.631E-05	9.448E-05	4.071E+00	1.716E-05
San Joaquin (SJV)	T7 Single	20 MPH	4.383E-04	8.799E-03	2.588E-03	3.846E-05	7.937E-05	1.361E-04	1.345E-05	2.289E-04	1.984E-05	5.833E-05	1.287E-05	9.104E-05	4.031E+00	2.036E-05
San Joaquin (SJV)	T7 Single Construction	20 MPH	4.370E-04	8.759E-03	2.579E-03	3.839E-05	7.937E-05	1.361E-04	1.348E-05	2.290E-04	1.984E-05	5.833E-05	1.290E-05	9.107E-05	4.024E+00	2.030E-05
San Joaquin (SJV)	T7 SWCV	20 MPH	1.176E-04	3.488E-03	5.997E-03	7.525E-05	7.937E-05	1.361E-04	1.805E-05	2.335E-04	1.984E-05	5.833E-05	1.727E-05	9.545E-05	8.934E+00	1.775E-03
San Joaquin (SJV)	T7 Tractor	20 MPH	5.252E-04	1.136E-02	3.101E-03	3.780E-05	7.937E-05	1.361E-04	1.716E-05	2.326E-04	1.984E-05	5.833E-05	1.642E-05	9.459E-05	3.963E+00	2.440E-05
San Joaquin (SJV)	T7 Tractor Construction	20 MPH	5.460E-04	1.198E-02	3.224E-03	3.820E-05	7.937E-05	1.361E-04	1.805E-05	2.335E-04	1.984E-05	5.833E-05	1.727E-05	9.545E-05	4.004E+00	2.536E-05
San Joaquin (SJV)	T7 Utility	20 MPH	3.325E-04	5.645E-03	1.964E-03	3.807E-05	7.937E-05	1.361E-04	9.040E-06	2.245E-04	1.984E-05	5.833E-05	8.649E-06	8.682E-05	3.990E+00	1.545E-05
San Joaquin (SJV)	T7IS	20 MPH	1.348E-03	8.110E-03	9.072E-02	4.270E-05	4.409E-05	1.361E-04	5.009E-06	1.852E-04	1.102E-05	5.833E-05	4.606E-06	7.396E-05	4.130E+00	5.447E-04
San Joaquin (SJV)	UBUS	20 MPH	1.921E-04	3.036E-03	7.425E-03	2.166E-05	2.646E-05	1.096E-03	3.561E-05	1.158E-03	6.614E-06	4.695E-04	3.398E-05	5.101E-04	3.735E+00	1.306E-03

San Joaquin (SJV)	All Other Buses	25 MPH	1.654E-04	3.129E-03	8.704E-04	2.673E-05	2.646E-05	2.873E-04	8.485E-06	3.223E-04	6.614E-06	1.231E-04	8.118E-06	1.379E-04	2.802E+00	7.680E-06
San Joaquin (SJV)	LDA	25 MPH	1.019E-05	4.318E-05	6.858E-04	4.320E-06	1.764E-05	8.102E-05	2.149E-06	1.008E-04	4.409E-06	3.472E-05	1.977E-06	4.111E-05	4.321E-01	4.055E-06
San Joaquin (SJV)	LDT1	25 MPH	1.479E-05	6.052E-05	9.219E-04	5.536E-06	1.764E-05	8.102E-05	2.742E-06	1.014E-04	4.409E-06	3.472E-05	2.521E-06	4.165E-05	5.533E-01	5.967E-06
San Joaquin (SJV)	LDT2	25 MPH	1.601E-05	6.368E-05	1.080E-03	6.361E-06	1.764E-05	8.102E-05	2.621E-06	1.013E-04	4.409E-06	3.472E-05	2.411E-06	4.154E-05	6.357E-01	6.430E-06
San Joaquin (SJV)	LHD1	25 MPH	1.136E-04	7.036E-04	6.527E-04	1.205E-05	2.317E-05	1.685E-04	1.704E-05	2.087E-04	5.793E-06	7.222E-05	1.625E-05	9.427E-05	1.236E+00	7.026E-06
San Joaquin (SJV)	LHD2	25 MPH	1.041E-04	1.740E-04	5.443E-04	1.302E-05	2.392E-05	1.966E-04	1.589E-05	2.364E-04	5.979E-06	8.426E-05	1.517E-05	1.054E-04	1.341E+00	5.880E-06
San Joaquin (SJV)	MCY	25 MPH	6.640E-03	2.491E-03	4.260E-02	5.634E-06	8.818E-06	2.593E-05	7.125E-06	4.187E-05	2.205E-06	1.111E-05	6.643E-06	1.996E-05	4.731E-01	1.433E-03
San Joaquin (SJV)	MDV	25 MPH	2.260E-05	8.782E-05	1.301E-03	8.412E-06	1.764E-05	8.102E-05	2.784E-06	1.014E-04	4.409E-06	3.472E-05	2.563E-06	4.169E-05	8.418E-01	8.959E-06
San Joaquin (SJV)	MH	25 MPH	6.088E-05	1.746E-03	5.595E-04	2.787E-05	2.841E-05	2.873E-04	1.859E-05	3.343E-04	7.103E-06	1.231E-04	1.768E-05	1.479E-04	2.816E+00	1.198E-05
San Joaquin (SJV)	Motor Coach	25 MPH	3.460E-04	5.216E-03	2.043E-03	3.802E-05	2.646E-05	2.873E-04	1.359E-05	3.274E-04	6.614E-06	1.231E-04	1.300E-05	1.428E-04	3.985E+00	1.607E-05
San Joaquin (SJV)	OBUS	25 MPH	3.311E-05	2.362E-04	6.071E-04	2.910E-05	2.646E-05	2.873E-04	3.694E-06	3.175E-04	6.614E-06	1.231E-04	3.397E-06	1.332E-04	2.915E+00	1.338E-05
San Joaquin (SJV)	SBUS	25 MPH	1.026E-04	1.741E-03	6.741E-04	2.156E-05	2.293E-05	1.642E-03	6.142E-06	1.671E-03	5.731E-06	7.037E-04	5.823E-06	7.153E-04	2.234E+00	8.692E-06
San Joaquin (SJV)	T6 Ag	25 MPH	1.902E-04	4.066E-03	1.001E-03	2.711E-05	2.646E-05	2.873E-04	1.008E-05	3.239E-04	6.614E-06	1.231E-04	9.643E-06	1.394E-04	2.842E+00	8.834E-06
San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	1.517E-04	2.735E-03	7.983E-04	2.633E-05	2.646E-05	2.873E-04	7.560E-06	3.214E-04	6.614E-06	1.231E-04	7.233E-06	1.370E-04	2.760E+00	7.044E-06
San Joaquin (SJV)	T6 CAIRP Small	25 MPH	1.438E-04	2.518E-03	7.569E-04	2.660E-05	2.646E-05	2.873E-04	7.024E-06	3.208E-04	6.614E-06	1.231E-04	6.720E-06	1.365E-04	2.789E+00	6.679E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	1.701E-04	3.259E-03	8.950E-04	2.669E-05	2.646E-05	2.873E-04	8.813E-06	3.226E-04	6.614E-06	1.231E-04	8.432E-06	1.382E-04	2.797E+00	7.899E-06
San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	1.573E-04	2.896E-03	8.280E-04	2.666E-05	2.646E-05	2.873E-04	7.950E-06	3.218E-04	6.614E-06	1.231E-04	7.606E-06	1.374E-04	2.795E+00	7.307E-06
San Joaquin (SJV)	T6 Instate Heavy	25 MPH	1.651E-04	3.145E-03	8.689E-04	2.641E-05	2.646E-05	2.873E-04	8.457E-06	3.223E-04	6.614E-06	1.231E-04	8.091E-06	1.379E-04	2.769E+00	7.668E-06
San Joaquin (SJV)	T6 Instate Small	25 MPH	1.579E-04	2.920E-03	8.309E-04	2.669E-05	2.646E-05	2.873E-04	7.976E-06	3.218E-04	6.614E-06	1.231E-04	7.631E-06	1.374E-04	2.797E+00	7.332E-06
San Joaquin (SJV)	T6 OOS Heavy	25 MPH	1.517E-04	2.737E-03	7.986E-04	2.633E-05	2.646E-05	2.873E-04	7.563E-06	3.214E-04	6.614E-06	1.231E-04	7.236E-06	1.370E-04	2.760E+00	7.047E-06
San Joaquin (SJV)	T6 OOS Small	25 MPH	1.438E-04	2.518E-03	7.569E-04	2.660E-05	2.646E-05	2.873E-04	7.024E-06	3.208E-04	6.614E-06	1.231E-04	6.720E-06	1.365E-04	2.789E+00	6.679E-06
San Joaquin (SJV)	T6 Public	25 MPH	1.280E-04	2.242E-03	6.630E-04	2.669E-05	2.646E-05	2.873E-04	6.846E-06	3.206E-04	6.614E-06	1.231E-04	6.550E-06	1.363E-04	2.798E+00	5.947E-06
San Joaquin (SJV)	T6 Utility	25 MPH	1.185E-04	1.842E-03	6.237E-04	2.660E-05	2.646E-05	2.873E-04	5.292E-06	3.191E-04	6.614E-06	1.231E-04	5.063E-06	1.348E-04	2.788E+00	5.504E-06
San Joaquin (SJV)	T6TS	25 MPH	3.044E-05	2.231E-04	5.558E-04	2.906E-05	2.646E-05	2.873E-04	3.689E-06	3.175E-04	6.614E-06	1.231E-04	3.392E-06	1.332E-04	2.912E+00	1.230E-05
San Joaquin (SJV)	T7 Ag	25 MPH	4.358E-04	8.105E-03	2.573E-03	3.682E-05	7.937E-05	1.361E-04	1.794E-05	2.334E-04	1.984E-05	5.833E-05	1.717E-05	9.534E-05	3.860E+00	2.024E-05
San Joaquin (SJV)	T7 CAIRP	25 MPH	3.784E-04	5.938E-03	2.235E-03	3.480E-05	7.937E-05	1.361E-04	1.528E-05	2.308E-04	1.984E-05	5.833E-05	1.462E-05	9.279E-05	3.648E+00	1.758E-05
San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	3.887E-04	6.143E-03	2.295E-03	3.517E-05	7.937E-05	1.361E-04	1.583E-05	2.313E-04	1.984E-05	5.833E-05	1.514E-05	9.332E-05	3.686E+00	1.805E-05
San Joaquin (SJV)	T7 NNOOS	25 MPH	3.330E-04	4.931E-03	1.966E-03	3.476E-05	7.937E-05	1.361E-04	1.291E-05	2.284E-04	1.984E-05	5.833E-05	1.235E-05	9.052E-05	3.643E+00	1.547E-05
San Joaquin (SJV)	T7 NOOS	25 MPH	3.785E-04	5.941E-03	2.235E-03	3.481E-05	7.937E-05	1.361E-04	1.528E-05	2.308E-04	1.984E-05	5.833E-05	1.462E-05	9.280E-05	3.648E+00	1.758E-05
San Joaquin (SJV)	T7 Other Port	25 MPH	4.117E-04	6.626E-03	2.431E-03	3.513E-05	7.937E-05	1.361E-04	1.704E-05	2.325E-04	1.984E-05	5.833E-05	1.630E-05	9.447E-05	3.683E+00	1.912E-05
San Joaquin (SJV)	T7 POAK	25 MPH	4.156E-04	6.709E-03	2.454E-03	3.513E-05	7.937E-05	1.361E-04	1.724E-05	2.327E-04	1.984E-05	5.833E-05	1.649E-05	9.467E-05	3.683E+00	1.930E-05
San Joaquin (SJV)	T7 POLA	25 MPH	4.101E-04	6.635E-03	2.422E-03	3.523E-05	7.937E-05	1.361E-04	1.694E-05	2.324E-04	1.984E-05	5.833E-05	1.620E-05	9.438E-05	3.693E+00	1.905E-05
San Joaquin (SJV)	T7 Public	25 MPH	2.706E-04	4.663E-03	1.518E-03	3.579E-05	7.937E-05	1.361E-04	1.484E-05	2.303E-04	1.984E-05	5.833E-05	1.419E-05	9.237E-05	3.751E+00	1.257E-05
San Joaquin (SJV)	T7 Single	25 MPH	3.212E-04	4.830E-03	1.897E-03	3.549E-05	7.937E-05	1.361E-04	1.223E-05	2.277E-04	1.984E-05	5.833E-05	1.171E-05	8.988E-05	3.720E+00	1.492E-05
San Joaquin (SJV)	T7 Single Construction	25 MPH	3.203E-04	4.784E-03	1.890E-03	3.543E-05	7.937E-05	1.361E-04	1.226E-05	2.277E-04	1.984E-05	5.833E-05	1.173E-05	8.990E-05	3.714E+00	1.488E-05
San Joaquin (SJV)	T7 SWCV	25 MPH	8.727E-05	2.921E-03	4.396E-03	6.930E-05	7.937E-05	1.361E-04	1.638E-05	2.319E-04	1.984E-05	5.833E-05	1.568E-05	9.385E-05	8.229E+00	1.307E-03
San Joaquin (SJV)	T7 Tractor	25 MPH	3.849E-04	6.104E-03	2.273E-03	3.486E-05	7.937E-05	1.361E-04	1.561E-05	2.311E-04	1.984E-05	5.833E-05	1.493E-05	9.311E-05	3.654E+00	1.788E-05
San Joaquin (SJV)	T7 Tractor Construction	25 MPH	4.001E-04	6.431E-03	2.362E-03	3.525E-05	7.937E-05	1.361E-04	1.642E-05	2.319E-04	1.984E-05	5.833E-05	1.571E-05	9.389E-05	3.695E+00	1.859E-05
San Joaquin (SJV)	T7 Utility	25 MPH	2.437E-04	3.007E-03	1.439E-03	3.514E-05	7.937E-05	1.361E-04	8.223E-06	2.237E-04	1.984E-05	5.833E-05	7.868E-06	8.604E-05	3.683E+00	1.132E-05
San Joaquin (SJV)	T7IS	25 MPH	9.958E-04	7.394E-03	8.329E-02	4.012E-05	4.409E-05	1.361E-04	3.700E-06	1.839E-04	1.102E-05	5.833E-05	3.402E-06	7.276E-05	3.886E+00	4.024E-04
San Joaquin (SJV)	UBUS	25 MPH	1.360E-04	2.731E-03	5.079E-03	1.905E-05	2.646E-05	1.096E-03	2.634E-05	1.148E-03	6.614E-06	4.695E-04	2.513E-05	5.013E-04	3.312E+00	8.207E-04

San Joaquin (SJV)	All Other Buses	30 MPH	1.219E-04	1.931E-03	6.414E-04	2.531E-05	2.646E-05	2.873E-04	7.813E-06	3.216E-04	6.614E-06	1.231E-04	7.475E-06	1.372E-04	2.653E+00	5.660E-06
San Joaquin (SJV)	LDA	30 MPH	7.938E-06	3.998E-05	6.304E-04	3.720E-06	1.764E-05	8.102E-05	1.677E-06	1.003E-04	4.409E-06	3.472E-05	1.543E-06	4.067E-05	3.719E-01	3.160E-06
San Joaquin (SJV)	LDT1	30 MPH	1.154E-05	5.604E-05	8.485E-04	4.766E-06	1.764E-05	8.102E-05	2.138E-06	1.008E-04	4.409E-06	3.472E-05	1.966E-06	4.110E-05	4.762E-01	4.656E-06
San Joaquin (SJV)	LDT2	30 MPH	1.248E-05	5.896E-05	9.935E-04	5.476E-06	1.764E-05	8.102E-05	2.045E-06	1.007E-04	4.409E-06	3.472E-05	1.882E-06	4.101E-05	5.472E-01	5.013E-06
San Joaquin (SJV)	LHD1	30 MPH	8.800E-05	7.090E-04	5.315E-04	1.094E-05	2.317E-05	1.685E-04	1.469E-05	2.064E-04	5.793E-06	7.222E-05	1.402E-05	9.203E-05	1.122E+00	5.449E-06
San Joaquin (SJV)	LHD2	30 MPH	7.885E-05	1.570E-04	4.281E-04	1.175E-05	2.392E-05	1.966E-04	1.395E-05	2.345E-04	5.979E-06	8.426E-05	1.331E-05	1.035E-04	1.210E+00	4.478E-06
San Joaquin (SJV)	MCY	30 MPH	5.302E-03	2.385E-03	3.817E-02	4.857E-06	8.818E-06	2.593E-05	5.662E-06	4.041E-05	2.205E-06	1.111E-05	5.279E-06	1.859E-05	4.072E-01	1.143E-03
San Joaquin (SJV)	MDV	30 MPH	1.763E-05	8.116E-05	1.195E-03	7.242E-06	1.764E-05	8.102E-05	2.179E-06	1.008E-04	4.409E-06	3.472E-05	2.006E-06	4.114E-05	7.246E-01	6.995E-06
San Joaquin (SJV)	MH	30 MPH	4.708E-05	1.499E-03	5.004E-04	2.572E-05	2.841E-05	2.873E-04	1.637E-05	3.321E-04	7.103E-06	1.231E-04	1.558E-05	1.458E-04	2.598E+00	9.321E-06
San Joaquin (SJV)	Motor Coach	30 MPH	2.550E-04	3.186E-03	1.506E-03	3.600E-05	2.646E-05	2.873E-04	1.251E-05	3.263E-04	6.614E-06	1.231E-04	1.197E-05	1.417E-04	3.774E+00	1.184E-05
San Joaquin (SJV)	OBUS	30 MPH	2.580E-05	2.188E-04	5.589E-04	2.674E-05	2.646E-05	2.873E-04	2.879E-06	3.167E-04	6.614E-06	1.231E-04	2.647E-06	1.324E-04	2.678E+00	1.043E-05
San Joaquin (SJV)	SBUS	30 MPH	7.606E-05	1.110E-03	5.331E-04	2.026E-05	2.293E-05	1.642E-03	5.452E-06	1.670E-03	5.731E-06	7.037E-04	5.174E-06	7.146E-04	2.099E+00	6.594E-06
San Joaquin (SJV)	T6 Ag	30 MPH	1.402E-04	2.654E-03	7.377E-04	2.567E-05	2.646E-05	2.873E-04	9.280E-06	3.231E-04	6.614E-06	1.231E-04	8.879E-06	1.386E-04	2.691E+00	6.510E-06
San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	1.118E-04	1.674E-03	5.883E-04	2.489E-05	2.646E-05	2.873E-04	6.961E-06	3.208E-04	6.614E-06	1.231E-04	6.659E-06	1.364E-04	2.609E+00	5.191E-06
San Joaquin (SJV)	T6 CAIRP Small	30 MPH	1.060E-04	1.537E-03	5.578E-04	2.519E-05	2.646E-05	2.873E-04	6.468E-06	3.203E-04	6.614E-06	1.231E-04	6.188E-06	1.360E-04	2.640E+00	4.922E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	1.253E-04	2.012E-03	6.596E-04	2.527E-05	2.646E-05	2.873E-04	8.114E-06	3.219E-04	6.614E-06	1.231E-04	7.763E-06	1.375E-04	2.649E+00	5.821E-06
San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	1.159E-04	1.778E-03	6.102E-04	2.525E-05	2.646E-05	2.873E-04	7.320E-06	3.211E-04	6.614E-06	1.231E-04	7.003E-06	1.368E-04	2.646E+00	5.385E-06
San Joaquin (SJV)	T6 Instate Heavy	30 MPH	1.217E-04	1.954E-03	6.404E-04	2.497E-05	2.646E-05	2.873E-04	7.787E-06	3.216E-04	6.614E-06	1.231E-04	7.450E-06	1.372E-04	2.618E+00	5.651E-06
San Joaquin (SJV)	T6 Instate Small	30 MPH	1.163E-04	1.798E-03	6.123E-04	2.527E-05	2.646E-05	2.873E-04	7.344E-06	3.211E-04	6.614E-06	1.231E-04	7.026E-06	1.368E-04	2.649E+00	5.403E-06
San Joaquin (SJV)	T6 OOS Heavy	30 MPH	1.118E-04	1.675E-03	5.885E-04	2.489E-05	2.646E-05	2.873E-04	6.964E-06	3.208E-04	6.614E-06	1.231E-04	6.662E-06	1.364E-04	2.609E+00	5.193E-06
San Joaquin (SJV)	T6 OOS Small	30 MPH	1.060E-04	1.537E-03	5.578E-04	2.519E-05	2.646E-05	2.873E-04	6.468E-06	3.203E-04	6.614E-06	1.231E-04	6.188E-06	1.360E-04	2.640E+00	4.922E-06
San Joaquin (SJV)	T6 Public	30 MPH	9.453E-05	1.448E-03	4.893E-04	2.527E-05	2.646E-05	2.873E-04	6.301E-06	3.201E-04	6.614E-06	1.231E-04	6.028E-06	1.358E-04	2.649E+00	4.390E-06
San Joaquin (SJV)	T6 Utility	30 MPH	8.732E-05	1.124E-03	4.596E-04	2.519E-05	2.646E-05	2.873E-04	4.873E-06	3.187E-04	6.614E-06	1.231E-04	4.662E-06	1.344E-04	2.640E+00	4.056E-06
San Joaquin (SJV)	T6TS	30 MPH	2.372E-05	2.067E-04	5.117E-04	2.671E-05	2.646E-05	2.873E-04	2.875E-06	3.167E-04	6.614E-06	1.231E-04	2.643E-06	1.324E-04	2.676E+00	9.585E-06
San Joaquin (SJV)	T7 Ag	30 MPH	3.211E-04	5.478E-03	1.896E-03	3.487E-05	7.937E-05	1.361E-04	1.652E-05	2.320E-04	1.984E-05	5.833E-05	1.580E-05	9.398E-05	3.655E+00	1.492E-05
San Joaquin (SJV)	T7 CAIRP	30 MPH	2.789E-04	3.639E-03	1.647E-03	3.290E-05	7.937E-05	1.361E-04	1.407E-05	2.295E-04	1.984E-05	5.833E-05	1.346E-05	9.164E-05	3.449E+00	1.295E-05
San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	2.864E-04	3.757E-03	1.691E-03	3.330E-05	7.937E-05	1.361E-04	1.458E-05	2.301E-04	1.984E-05	5.833E-05	1.394E-05	9.212E-05	3.490E+00	1.330E-05
San Joaquin (SJV)	T7 NNOOS	30 MPH	2.454E-04	3.009E-03	1.449E-03	3.286E-05	7.937E-05	1.361E-04	1.189E-05	2.274E-04	1.984E-05	5.833E-05	1.137E-05	8.955E-05	3.444E+00	1.140E-05
San Joaquin (SJV)	T7 NOOS	30 MPH	2.789E-04	3.642E-03	1.647E-03	3.291E-05	7.937E-05	1.361E-04	1.407E-05	2.296E-04	1.984E-05	5.833E-05	1.346E-05	9.164E-05	3.449E+00	1.296E-05
San Joaquin (SJV)	T7 Other Port	30 MPH	3.034E-04	4.043E-03	1.792E-03	3.327E-05	7.937E-05	1.361E-04	1.569E-05	2.312E-04	1.984E-05	5.833E-05	1.501E-05	9.318E-05	3.487E+00	1.409E-05
San Joaquin (SJV)	T7 POAK	30 MPH	3.063E-04	4.094E-03	1.808E-03	3.327E-05	7.937E-05	1.361E-04	1.587E-05	2.314E-04	1.984E-05	5.833E-05	1.519E-05	9.336E-05	3.487E+00	1.423E-05
San Joaquin (SJV)	T7 POLA	30 MPH	3.022E-04	4.073E-03	1.785E-03	3.336E-05	7.937E-05	1.361E-04	1.559E-05	2.311E-04	1.984E-05	5.833E-05	1.492E-05	9.309E-05	3.496E+00	1.404E-05
San Joaquin (SJV)	T7 Public	30 MPH	2.004E-04	3.380E-03	1.124E-03	3.386E-05	7.937E-05	1.361E-04	1.341E-05	2.289E-04	1.984E-05	5.833E-05	1.283E-05	9.100E-05	3.549E+00	9.307E-06
San Joaquin (SJV)	T7 Single	30 MPH	2.367E-04	3.031E-03	1.398E-03	3.361E-05	7.937E-05	1.361E-04	1.126E-05	2.267E-04	1.984E-05	5.833E-05	1.078E-05	8.895E-05	3.523E+00	1.099E-05
San Joaquin (SJV)	T7 Single Construction	30 MPH	2.360E-04	2.989E-03	1.393E-03	3.355E-05	7.937E-05	1.361E-04	1.128E-05	2.268E-04	1.984E-05	5.833E-05	1.080E-05	8.897E-05	3.517E+00	1.096E-05
San Joaquin (SJV)	T7 SWCV	30 MPH	6.674E-05	2.584E-03	3.242E-03	6.555E-05	7.937E-05	1.361E-04	1.514E-05	2.306E-04	1.984E-05	5.833E-05	1.448E-05	9.266E-05	7.784E+00	9.768E-04
San Joaquin (SJV)	T7 Tractor	30 MPH	2.836E-04	3.755E-03	1.675E-03	3.296E-05	7.937E-05	1.361E-04	1.437E-05	2.299E-04	1.984E-05	5.833E-05	1.375E-05	9.193E-05	3.454E+00	1.317E-05
San Joaquin (SJV)	T7 Tractor Construction	30 MPH	2.949E-04	3.955E-03	1.741E-03	3.338E-05	7.937E-05	1.361E-04	1.512E-05	2.306E-04	1.984E-05	5.833E-05	1.447E-05	9.264E-05	3.499E+00	1.370E-05
San Joaquin (SJV)	T7 Utility	30 MPH	1.796E-04	1.835E-03	1.060E-03	3.327E-05	7.937E-05	1.361E-04	7.572E-06	2.230E-04	1.984E-05	5.833E-05	7.244E-06	8.542E-05	3.487E+00	8.342E-06
San Joaquin (SJV)	T7IS	30 MPH	7.760E-04	6.849E-03	7.668E-02	3.815E-05	4.409E-05	1.361E-04	2.884E-06	1.831E-04	1.102E-05	5.833E-05	2.652E-06	7.201E-05	3.700E+00	3.136E-04
San Joaquin (SJV)	UBUS	30 MPH	1.067E-04	2.572E-03	4.120E-03	1.760E-05	2.646E-05	1.096E-03	2.092E-05	1.143E-03	6.614E-06	4.695E-04	1.996E-05	4.961E-04	3.081E+00	6.315E-04

San Joaquin (SJV)	All Other Buses	35 MPH	8.980E-05	1.294E-03	4.727E-04	2.419E-05	2.646E-05	2.873E-04	7.253E-06	3.211E-04	6.614E-06	1.231E-04	6.939E-06	1.367E-04	2.535E+00	4.171E-06
San Joaquin (SJV)	LDA	35 MPH	6.523E-06	3.761E-05	5.814E-04	3.324E-06	1.764E-05	8.102E-05	1.381E-06	1.000E-04	4.409E-06	3.472E-05	1.271E-06	4.040E-05	3.323E-01	2.598E-06
San Joaquin (SJV)	LDT1	35 MPH	9.496E-06	5.274E-05	7.830E-04	4.258E-06	1.764E-05	8.102E-05	1.758E-06	1.004E-04	4.409E-06	3.472E-05	1.617E-06	4.075E-05	4.255E-01	3.831E-06
San Joaquin (SJV)	LDT2	35 MPH	1.026E-05	5.549E-05	9.170E-04	4.892E-06	1.764E-05	8.102E-05	1.684E-06	1.003E-04	4.409E-06	3.472E-05	1.549E-06	4.068E-05	4.888E-01	4.122E-06
San Joaquin (SJV)	LHD1	35 MPH	7.176E-05	7.212E-04	4.532E-04	1.094E-05	2.317E-05	1.685E-04	1.307E-05	2.048E-04	5.793E-06	7.222E-05	1.247E-05	9.048E-05	1.122E+00	4.453E-06
San Joaquin (SJV)	LHD2	35 MPH	6.290E-05	1.463E-04	3.528E-04	1.175E-05	2.392E-05	1.966E-04	1.253E-05	2.331E-04	5.979E-06	8.426E-05	1.196E-05	1.022E-04	1.210E+00	3.592E-06
San Joaquin (SJV)	MCY	35 MPH	4.457E-03	2.316E-03	3.518E-02	4.346E-06	8.818E-06	2.593E-05	4.739E-06	3.948E-05	2.205E-06	1.111E-05	4.419E-06	1.773E-05	3.638E-01	9.608E-04
San Joaquin (SJV)	MDV	35 MPH	1.450E-05	7.632E-05	1.101E-03	6.473E-06	1.764E-05	8.102E-05	1.797E-06	1.005E-04	4.409E-06	3.472E-05	1.655E-06	4.079E-05	6.476E-01	5.758E-06
San Joaquin (SJV)	MH	35 MPH	3.818E-05	1.330E-03	4.531E-04	2.385E-05	2.841E-05	2.873E-04	1.498E-05	3.307E-04	7.103E-06	1.231E-04	1.427E-05	1.445E-04	2.410E+00	7.639E-06
San Joaquin (SJV)	Motor Coach	35 MPH	1.879E-04	2.114E-03	1.109E-03	3.440E-05	2.646E-05	2.873E-04	1.161E-05	3.254E-04	6.614E-06	1.231E-04	1.111E-05	1.409E-04	3.606E+00	8.727E-06
San Joaquin (SJV)	OBUS	35 MPH	2.121E-05	2.060E-04	5.159E-04	2.469E-05	2.646E-05	2.873E-04	2.367E-06	3.162E-04	6.614E-06	1.231E-04	2.176E-06	1.319E-04	2.473E+00	8.572E-06
San Joaquin (SJV)	SBUS	35 MPH	5.678E-05	7.742E-04	4.268E-04	1.919E-05	2.293E-05	1.642E-03	4.942E-06	1.670E-03	5.731E-06	7.037E-04	4.694E-06	7.141E-04	1.990E+00	5.154E-06
San Joaquin (SJV)	T6 Ag	35 MPH	1.033E-04	1.876E-03	5.437E-04	2.453E-05	2.646E-05	2.873E-04	8.615E-06	3.224E-04	6.614E-06	1.231E-04	8.242E-06	1.380E-04	2.571E+00	4.797E-06
San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	8.236E-05	1.113E-03	4.335E-04	2.374E-05	2.646E-05	2.873E-04	6.462E-06	3.203E-04	6.614E-06	1.231E-04	6.182E-06	1.359E-04	2.488E+00	3.826E-06
San Joaquin (SJV)	T6 CAIRP Small	35 MPH	7.809E-05	1.019E-03	4.111E-04	2.407E-05	2.646E-05	2.873E-04	6.004E-06	3.198E-04	6.614E-06	1.231E-04	5.744E-06	1.355E-04	2.523E+00	3.627E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	9.236E-05	1.349E-03	4.861E-04	2.415E-05	2.646E-05	2.873E-04	7.533E-06	3.213E-04	6.614E-06	1.231E-04	7.207E-06	1.370E-04	2.531E+00	4.290E-06
San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	8.544E-05	1.186E-03	4.496E-04	2.412E-05	2.646E-05	2.873E-04	6.796E-06	3.206E-04	6.614E-06	1.231E-04	6.502E-06	1.363E-04	2.529E+00	3.968E-06
San Joaquin (SJV)	T6 Instate Heavy	35 MPH	8.965E-05	1.318E-03	4.719E-04	2.381E-05	2.646E-05	2.873E-04	7.229E-06	3.210E-04	6.614E-06	1.231E-04	6.916E-06	1.367E-04	2.496E+00	4.164E-06
San Joaquin (SJV)	T6 Instate Small	35 MPH	8.573E-05	1.202E-03	4.513E-04	2.415E-05	2.646E-05	2.873E-04	6.818E-06	3.206E-04	6.614E-06	1.231E-04	6.523E-06	1.363E-04	2.531E+00	3.982E-06
San Joaquin (SJV)	T6 OOS Heavy	35 MPH	8.239E-05	1.114E-03	4.337E-04	2.374E-05	2.646E-05	2.873E-04	6.465E-06	3.203E-04	6.614E-06	1.231E-04	6.185E-06	1.359E-04	2.488E+00	3.827E-06
San Joaquin (SJV)	T6 OOS Small	35 MPH	7.809E-05	1.019E-03	4.111E-04	2.407E-05	2.646E-05	2.873E-04	6.004E-06	3.198E-04	6.614E-06	1.231E-04	5.744E-06	1.355E-04	2.523E+00	3.627E-06
San Joaquin (SJV)	T6 Public	35 MPH	6.980E-05	1.023E-03	3.613E-04	2.414E-05	2.646E-05	2.873E-04	5.876E-06	3.197E-04	6.614E-06	1.231E-04	5.621E-06	1.354E-04	2.531E+00	3.242E-06
San Joaquin (SJV)	T6 Utility	35 MPH	6.435E-05	7.452E-04	3.387E-04	2.407E-05	2.646E-05	2.873E-04	4.523E-06	3.183E-04	6.614E-06	1.231E-04	4.328E-06	1.341E-04	2.523E+00	2.989E-06
San Joaquin (SJV)	T6TS	35 MPH	1.950E-05	1.945E-04	4.723E-04	2.466E-05	2.646E-05	2.873E-04	2.364E-06	3.162E-04	6.614E-06	1.231E-04	2.173E-06	1.319E-04	2.470E+00	7.880E-06
San Joaquin (SJV)	T7 Ag	35 MPH	2.366E-04	3.989E-03	1.397E-03	3.332E-05	7.937E-05	1.361E-04	1.534E-05	2.308E-04	1.984E-05	5.833E-05	1.467E-05	9.285E-05	3.492E+00	1.099E-05
San Joaquin (SJV)	T7 CAIRP	35 MPH	2.055E-04	2.423E-03	1.213E-03	3.138E-05	7.937E-05	1.361E-04	1.306E-05	2.285E-04	1.984E-05	5.833E-05	1.250E-05	9.067E-05	3.289E+00	9.545E-06
San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	2.111E-04	2.496E-03	1.246E-03	3.182E-05	7.937E-05	1.361E-04	1.353E-05	2.290E-04	1.984E-05	5.833E-05	1.295E-05	9.112E-05	3.335E+00	9.803E-06
San Joaquin (SJV)	T7 NNOOS	35 MPH	1.808E-04	1.994E-03	1.068E-03	3.134E-05	7.937E-05	1.361E-04	1.103E-05	2.265E-04	1.984E-05	5.833E-05	1.056E-05	8.873E-05	3.285E+00	8.400E-06
San Joaquin (SJV)	T7 NOOS	35 MPH	2.056E-04	2.425E-03	1.214E-03	3.138E-05	7.937E-05	1.361E-04	1.307E-05	2.285E-04	1.984E-05	5.833E-05	1.250E-05	9.067E-05	3.289E+00	9.548E-06
San Joaquin (SJV)	T7 Other Port	35 MPH	2.236E-04	2.680E-03	1.320E-03	3.179E-05	7.937E-05	1.361E-04	1.456E-05	2.300E-04	1.984E-05	5.833E-05	1.393E-05	9.211E-05	3.332E+00	1.038E-05
San Joaquin (SJV)	T7 POAK	35 MPH	2.257E-04	2.714E-03	1.333E-03	3.179E-05	7.937E-05	1.361E-04	1.474E-05	2.302E-04	1.984E-05	5.833E-05	1.410E-05	9.227E-05	3.332E+00	1.048E-05
San Joaquin (SJV)	T7 POLA	35 MPH	2.227E-04	2.716E-03	1.315E-03	3.187E-05	7.937E-05	1.361E-04	1.448E-05	2.300E-04	1.984E-05	5.833E-05	1.385E-05	9.202E-05	3.341E+00	1.034E-05
San Joaquin (SJV)	T7 Public	35 MPH	1.485E-04	2.678E-03	8.334E-04	3.233E-05	7.937E-05	1.361E-04	1.237E-05	2.278E-04	1.984E-05	5.833E-05	1.183E-05	9.001E-05	3.389E+00	6.897E-06
San Joaquin (SJV)	T7 Single	35 MPH	1.744E-04	2.065E-03	1.030E-03	3.211E-05	7.937E-05	1.361E-04	1.046E-05	2.259E-04	1.984E-05	5.833E-05	1.001E-05	8.818E-05	3.366E+00	8.102E-06
San Joaquin (SJV)	T7 Single Construction	35 MPH	1.739E-04	2.029E-03	1.026E-03	3.206E-05	7.937E-05	1.361E-04	1.048E-05	2.260E-04	1.984E-05	5.833E-05	1.002E-05	8.820E-05	3.360E+00	8.079E-06
San Joaquin (SJV)	T7 SWCV	35 MPH	5.131E-05	2.349E-03	2.392E-03	6.257E-05	7.937E-05	1.361E-04	1.416E-05	2.296E-04	1.984E-05	5.833E-05	1.355E-05	9.172E-05	7.431E+00	7.318E-04
San Joaquin (SJV)	T7 Tractor	35 MPH	2.090E-04	2.510E-03	1.234E-03	3.143E-05	7.937E-05	1.361E-04	1.334E-05	2.288E-04	1.984E-05	5.833E-05	1.277E-05	9.094E-05	3.294E+00	9.709E-06
San Joaquin (SJV)	T7 Tractor Construction	35 MPH	2.173E-04	2.642E-03	1.283E-03	3.190E-05	7.937E-05	1.361E-04	1.404E-05	2.295E-04	1.984E-05	5.833E-05	1.343E-05	9.161E-05	3.343E+00	1.009E-05
San Joaquin (SJV)	T7 Utility	35 MPH	1.323E-04	1.216E-03	7.815E-04	3.179E-05	7.937E-05	1.361E-04	7.029E-06	2.225E-04	1.984E-05	5.833E-05	6.725E-06	8.490E-05	3.332E+00	6.147E-06
San Joaquin (SJV)	T7IS	35 MPH	6.380E-04	6.447E-03	7.078E-02	3.654E-05	4.409E-05	1.361E-04	2.371E-06	1.826E-04	1.102E-05	5.833E-05	2.180E-06	7.154E-05	3.548E+00	2.578E-04
San Joaquin (SJV)	UBUS	35 MPH	8.622E-05	2.464E-03	3.469E-03	1.635E-05	2.646E-05	1.096E-03	1.701E-05	1.139E-03	6.614E-06	4.695E-04	1.624E-05	4.924E-04	2.884E+00	5.067E-04

San Joaquin (SJV)	All Other Buses	40 MPH	6.617E-05	9.199E-04	3.483E-04	2.326E-05	2.646E-05	2.873E-04	6.773E-06	3.206E-04	6.614E-06	1.231E-04	6.480E-06	1.362E-04	2.438E+00	3.074E-06
San Joaquin (SJV)	LDA	40 MPH	5.654E-06	3.596E-05	5.378E-04	3.082E-06	1.764E-05	8.102E-05	1.199E-06	9.985E-05	4.409E-06	3.472E-05	1.103E-06	4.023E-05	3.082E-01	2.253E-06
San Joaquin (SJV)	LDT1	40 MPH	8.238E-06	5.046E-05	7.247E-04	3.948E-06	1.764E-05	8.102E-05	1.525E-06	1.002E-04	4.409E-06	3.472E-05	1.403E-06	4.053E-05	3.945E-01	3.323E-06
San Joaquin (SJV)	LDT2	40 MPH	8.896E-06	5.307E-05	8.487E-04	4.536E-06	1.764E-05	8.102E-05	1.461E-06	1.001E-04	4.409E-06	3.472E-05	1.344E-06	4.048E-05	4.533E-01	3.576E-06
San Joaquin (SJV)	LHD1	40 MPH	6.097E-05	7.378E-04	4.005E-04	1.076E-05	2.317E-05	1.685E-04	1.193E-05	2.036E-04	5.793E-06	7.222E-05	1.139E-05	8.940E-05	1.103E+00	3.803E-06
San Joaquin (SJV)	LHD2	40 MPH	5.208E-05	1.394E-04	3.002E-04	1.138E-05	2.392E-05	1.966E-04	1.146E-05	2.320E-04	5.979E-06	8.426E-05	1.094E-05	1.012E-04	1.172E+00	3.000E-06
San Joaquin (SJV)	MCY	40 MPH	3.944E-03	2.277E-03	3.333E-02	4.034E-06	8.818E-06	2.593E-05	4.178E-06	3.892E-05	2.205E-06	1.111E-05	3.895E-06	1.721E-05	3.373E-01	8.498E-04
San Joaquin (SJV)	MDV	40 MPH	1.257E-05	7.301E-05	1.018E-03	6.003E-06	1.764E-05	8.102E-05	1.562E-06	1.002E-04	4.409E-06	3.472E-05	1.439E-06	4.057E-05	6.006E-01	4.995E-06
San Joaquin (SJV)	MH	40 MPH	3.230E-05	1.209E-03	4.140E-04	2.230E-05	2.841E-05	2.873E-04	1.424E-05	3.300E-04	7.103E-06	1.231E-04	1.357E-05	1.438E-04	2.254E+00	6.588E-06
San Joaquin (SJV)	Motor Coach	40 MPH	1.385E-04	1.488E-03	8.176E-04	3.309E-05	2.646E-05	2.873E-04	1.085E-05	3.246E-04	6.614E-06	1.231E-04	1.038E-05	1.401E-04	3.468E+00	6.431E-06
San Joaquin (SJV)	OBUS	40 MPH	1.840E-05	1.970E-04	4.775E-04	2.297E-05	2.646E-05	2.873E-04	2.053E-06	3.159E-04	6.614E-06	1.231E-04	1.888E-06	1.317E-04	2.301E+00	7.435E-06
San Joaquin (SJV)	SBUS	40 MPH	4.277E-05	5.759E-04	3.462E-04	1.831E-05	2.293E-05	1.642E-03	4.554E-06	1.669E-03	5.731E-06	7.037E-04	4.327E-06	7.138E-04	1.899E+00	4.169E-06
San Joaquin (SJV)	T6 Ag	40 MPH	7.611E-05	1.402E-03	4.006E-04	2.359E-05	2.646E-05	2.873E-04	8.045E-06	3.218E-04	6.614E-06	1.231E-04	7.697E-06	1.375E-04	2.473E+00	3.535E-06
San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	6.070E-05	7.845E-04	3.195E-04	2.270E-05	2.646E-05	2.873E-04	6.035E-06	3.198E-04	6.614E-06	1.231E-04	5.774E-06	1.355E-04	2.380E+00	2.819E-06
San Joaquin (SJV)	T6 CAIRP Small	40 MPH	5.755E-05	7.169E-04	3.029E-04	2.315E-05	2.646E-05	2.873E-04	5.607E-06	3.194E-04	6.614E-06	1.231E-04	5.365E-06	1.351E-04	2.427E+00	2.673E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	6.806E-05	9.601E-04	3.582E-04	2.322E-05	2.646E-05	2.873E-04	7.035E-06	3.208E-04	6.614E-06	1.231E-04	6.731E-06	1.365E-04	2.434E+00	3.161E-06
San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	6.296E-05	8.391E-04	3.314E-04	2.320E-05	2.646E-05	2.873E-04	6.347E-06	3.202E-04	6.614E-06	1.231E-04	6.073E-06	1.358E-04	2.432E+00	2.924E-06
San Joaquin (SJV)	T6 Instate Heavy	40 MPH	6.607E-05	9.431E-04	3.478E-04	2.278E-05	2.646E-05	2.873E-04	6.751E-06	3.206E-04	6.614E-06	1.231E-04	6.459E-06	1.362E-04	2.387E+00	3.069E-06
San Joaquin (SJV)	T6 Instate Small	40 MPH	6.318E-05	8.530E-04	3.325E-04	2.322E-05	2.646E-05	2.873E-04	6.367E-06	3.202E-04	6.614E-06	1.231E-04	6.091E-06	1.359E-04	2.434E+00	2.934E-06
San Joaquin (SJV)	T6 OOS Heavy	40 MPH	6.072E-05	7.856E-04	3.196E-04	2.270E-05	2.646E-05	2.873E-04	6.037E-06	3.198E-04	6.614E-06	1.231E-04	5.776E-06	1.355E-04	2.380E+00	2.820E-06
San Joaquin (SJV)	T6 OOS Small	40 MPH	5.755E-05	7.169E-04	3.029E-04	2.315E-05	2.646E-05	2.873E-04	5.607E-06	3.194E-04	6.614E-06	1.231E-04	5.365E-06	1.351E-04	2.427E+00	2.673E-06
San Joaquin (SJV)	T6 Public	40 MPH	5.158E-05	7.723E-04	2.669E-04	2.322E-05	2.646E-05	2.873E-04	5.547E-06	3.193E-04	6.614E-06	1.231E-04	5.307E-06	1.351E-04	2.434E+00	2.396E-06
San Joaquin (SJV)	T6 Utility	40 MPH	4.742E-05	5.239E-04	2.496E-04	2.315E-05	2.646E-05	2.873E-04	4.224E-06	3.180E-04	6.614E-06	1.231E-04	4.042E-06	1.338E-04	2.426E+00	2.203E-06
San Joaquin (SJV)	T6TS	40 MPH	1.692E-05	1.861E-04	4.372E-04	2.294E-05	2.646E-05	2.873E-04	2.050E-06	3.159E-04	6.614E-06	1.231E-04	1.885E-06	1.316E-04	2.298E+00	6.835E-06
San Joaquin (SJV)	T7 Ag	40 MPH	1.744E-04	3.060E-03	1.030E-03	3.204E-05	7.937E-05	1.361E-04	1.432E-05	2.298E-04	1.984E-05	5.833E-05	1.370E-05	9.188E-05	3.359E+00	8.100E-06
San Joaquin (SJV)	T7 CAIRP	40 MPH	1.514E-04	1.711E-03	8.943E-04	3.001E-05	7.937E-05	1.361E-04	1.220E-05	2.277E-04	1.984E-05	5.833E-05	1.167E-05	8.984E-05	3.146E+00	7.034E-06
San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	1.555E-04	1.759E-03	9.184E-04	3.060E-05	7.937E-05	1.361E-04	1.264E-05	2.281E-04	1.984E-05	5.833E-05	1.209E-05	9.027E-05	3.208E+00	7.225E-06
San Joaquin (SJV)	T7 NNOOS	40 MPH	1.333E-04	1.402E-03	7.869E-04	2.997E-05	7.937E-05	1.361E-04	1.030E-05	2.258E-04	1.984E-05	5.833E-05	9.858E-06	8.803E-05	3.142E+00	6.190E-06
San Joaquin (SJV)	T7 NOOS	40 MPH	1.515E-04	1.713E-03	8.945E-04	3.001E-05	7.937E-05	1.361E-04	1.220E-05	2.277E-04	1.984E-05	5.833E-05	1.167E-05	8.985E-05	3.146E+00	7.036E-06
San Joaquin (SJV)	T7 Other Port	40 MPH	1.648E-04	1.884E-03	9.729E-04	3.057E-05	7.937E-05	1.361E-04	1.360E-05	2.291E-04	1.984E-05	5.833E-05	1.301E-05	9.119E-05	3.205E+00	7.653E-06
San Joaquin (SJV)	T7 POAK	40 MPH	1.663E-04	1.908E-03	9.821E-04	3.057E-05	7.937E-05	1.361E-04	1.376E-05	2.292E-04	1.984E-05	5.833E-05	1.317E-05	9.134E-05	3.205E+00	7.725E-06
San Joaquin (SJV)	T7 POLA	40 MPH	1.641E-04	1.921E-03	9.691E-04	3.066E-05	7.937E-05	1.361E-04	1.352E-05	2.290E-04	1.984E-05	5.833E-05	1.293E-05	9.111E-05	3.213E+00	7.623E-06
San Joaquin (SJV)	T7 Public	40 MPH	1.103E-04	2.257E-03	6.192E-04	3.108E-05	7.937E-05	1.361E-04	1.169E-05	2.272E-04	1.984E-05	5.833E-05	1.118E-05	8.936E-05	3.258E+00	5.122E-06
San Joaquin (SJV)	T7 Single	40 MPH	1.285E-04	1.492E-03	7.590E-04	3.089E-05	7.937E-05	1.361E-04	9.766E-06	2.252E-04	1.984E-05	5.833E-05	9.344E-06	8.752E-05	3.237E+00	5.970E-06
San Joaquin (SJV)	T7 Single Construction	40 MPH	1.282E-04	1.461E-03	7.565E-04	3.083E-05	7.937E-05	1.361E-04	9.786E-06	2.253E-04	1.984E-05	5.833E-05	9.362E-06	8.754E-05	3.232E+00	5.954E-06
San Joaquin (SJV)	T7 SWCV	40 MPH	3.972E-05	2.179E-03	1.765E-03	6.014E-05	7.937E-05	1.361E-04	1.340E-05	2.289E-04	1.984E-05	5.833E-05	1.282E-05	9.100E-05	7.142E+00	5.500E-04
San Joaquin (SJV)	T7 Tractor	40 MPH	1.540E-04	1.779E-03	9.096E-04	3.006E-05	7.937E-05	1.361E-04	1.246E-05	2.279E-04	1.984E-05	5.833E-05	1.192E-05	9.010E-05	3.151E+00	7.155E-06
San Joaquin (SJV)	T7 Tractor Construction	40 MPH	1.601E-04	1.872E-03	9.455E-04	3.068E-05	7.937E-05	1.361E-04	1.311E-05	2.286E-04	1.984E-05	5.833E-05	1.255E-05	9.072E-05	3.216E+00	7.438E-06
San Joaquin (SJV)	T7 Utility	40 MPH	9.753E-05	8.553E-04	5.759E-04	3.058E-05	7.937E-05	1.361E-04	6.564E-06	2.220E-04	1.984E-05	5.833E-05	6.280E-06	8.446E-05	3.205E+00	4.530E-06
San Joaquin (SJV)	T7IS	40 MPH	5.534E-04	6.166E-03	6.551E-02	3.518E-05	4.409E-05	1.361E-04	2.056E-06	1.823E-04	1.102E-05	5.833E-05	1.891E-06	7.125E-05	3.420E+00	2.236E-04
San Joaquin (SJV)	UBUS	40 MPH	7.272E-05	2.393E-03	3.000E-03	1.532E-05	2.646E-05	1.096E-03	1.455E-05	1.137E-03	6.614E-06	4.695E-04	1.389E-05	4.900E-04	2.724E+00	4.207E-04

San Joaquin (SJV)	All Other Buses	45 MPH	4.877E-05	6.835E-04	2.567E-04	2.248E-05	2.646E-05	2.873E-04	6.354E-06	3.202E-04	6.614E-06	1.231E-04	6.079E-06	1.358E-04	2.357E+00	2.265E-06
San Joaquin (SJV)	LDA	45 MPH	5.167E-06	3.494E-05	4.989E-04	2.966E-06	1.764E-05	8.102E-05	1.097E-06	9.975E-05	4.409E-06	3.472E-05	1.010E-06	4.014E-05	2.966E-01	2.061E-06
San Joaquin (SJV)	LDT1	45 MPH	7.534E-06	4.907E-05	6.726E-04	3.799E-06	1.764E-05	8.102E-05	1.396E-06	1.001E-04	4.409E-06	3.472E-05	1.284E-06	4.042E-05	3.796E-01	3.040E-06
San Joaquin (SJV)	LDT2	45 MPH	8.136E-06	5.158E-05	7.876E-04	4.365E-06	1.764E-05	8.102E-05	1.337E-06	9.999E-05	4.409E-06	3.472E-05	1.230E-06	4.036E-05	4.362E-01	3.271E-06
San Joaquin (SJV)	LHD1	45 MPH	5.368E-05	7.573E-04	3.653E-04	1.060E-05	2.317E-05	1.685E-04	1.116E-05	2.028E-04	5.793E-06	7.222E-05	1.065E-05	8.866E-05	1.087E+00	3.382E-06
San Joaquin (SJV)	LHD2	45 MPH	4.436E-05	1.348E-04	2.618E-04	1.101E-05	2.392E-05	1.966E-04	1.063E-05	2.312E-04	5.979E-06	8.426E-05	1.015E-05	1.004E-04	1.133E+00	2.592E-06
San Joaquin (SJV)	MCY	45 MPH	3.673E-03	2.266E-03	3.252E-02	3.884E-06	8.818E-06	2.593E-05	3.877E-06	3.862E-05	2.205E-06	1.111E-05	3.615E-06	1.693E-05	3.246E-01	7.910E-04
San Joaquin (SJV)	MDV	45 MPH	1.148E-05	7.106E-05	9.445E-04	5.777E-06	1.764E-05	8.102E-05	1.430E-06	1.001E-04	4.409E-06	3.472E-05	1.317E-06	4.045E-05	5.780E-01	4.568E-06
San Joaquin (SJV)	MH	45 MPH	2.848E-05	1.120E-03	3.810E-04	2.087E-05	2.841E-05	2.873E-04	1.406E-05	3.298E-04	7.103E-06	1.231E-04	1.339E-05	1.436E-04	2.110E+00	5.978E-06
San Joaquin (SJV)	Motor Coach	45 MPH	1.020E-04	1.095E-03	6.025E-04	3.198E-05	2.646E-05	2.873E-04	1.017E-05	3.240E-04	6.614E-06	1.231E-04	9.734E-06	1.395E-04	3.352E+00	4.739E-06
San Joaquin (SJV)	OBUS	45 MPH	1.684E-05	1.915E-04	4.432E-04	2.134E-05	2.646E-05	2.873E-04	1.879E-06	3.157E-04	6.614E-06	1.231E-04	1.727E-06	1.315E-04	2.138E+00	6.804E-06
San Joaquin (SJV)	SBUS	45 MPH	3.261E-05	4.505E-04	2.849E-04	1.753E-05	2.293E-05	1.642E-03	4.255E-06	1.669E-03	5.731E-06	7.037E-04	4.043E-06	7.135E-04	1.819E+00	3.512E-06
San Joaquin (SJV)	T6 Ag	45 MPH	5.609E-05	1.092E-03	2.952E-04	2.280E-05	2.646E-05	2.873E-04	7.547E-06	3.214E-04	6.614E-06	1.231E-04	7.221E-06	1.370E-04	2.390E+00	2.605E-06
San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	4.473E-05	5.782E-04	2.354E-04	2.193E-05	2.646E-05	2.873E-04	5.661E-06	3.195E-04	6.614E-06	1.231E-04	5.416E-06	1.352E-04	2.298E+00	2.078E-06
San Joaquin (SJV)	T6 CAIRP Small	45 MPH	4.241E-05	5.270E-04	2.232E-04	2.238E-05	2.646E-05	2.873E-04	5.260E-06	3.191E-04	6.614E-06	1.231E-04	5.032E-06	1.348E-04	2.345E+00	1.970E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	5.016E-05	7.140E-04	2.640E-04	2.245E-05	2.646E-05	2.873E-04	6.600E-06	3.204E-04	6.614E-06	1.231E-04	6.315E-06	1.361E-04	2.353E+00	2.330E-06
San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	4.640E-05	6.205E-04	2.442E-04	2.243E-05	2.646E-05	2.873E-04	5.955E-06	3.198E-04	6.614E-06	1.231E-04	5.697E-06	1.355E-04	2.351E+00	2.155E-06
San Joaquin (SJV)	T6 Instate Heavy	45 MPH	4.869E-05	7.052E-04	2.563E-04	2.200E-05	2.646E-05	2.873E-04	6.333E-06	3.201E-04	6.614E-06	1.231E-04	6.059E-06	1.358E-04	2.306E+00	2.261E-06
San Joaquin (SJV)	T6 Instate Small	45 MPH	4.656E-05	6.324E-04	2.451E-04	2.245E-05	2.646E-05	2.873E-04	5.973E-06	3.198E-04	6.614E-06	1.231E-04	5.714E-06	1.355E-04	2.353E+00	2.162E-06
San Joaquin (SJV)	T6 OOS Heavy	45 MPH	4.474E-05	5.792E-04	2.355E-04	2.193E-05	2.646E-05	2.873E-04	5.663E-06	3.195E-04	6.614E-06	1.231E-04	5.418E-06	1.352E-04	2.298E+00	2.078E-06
San Joaquin (SJV)	T6 OOS Small	45 MPH	4.241E-05	5.270E-04	2.232E-04	2.238E-05	2.646E-05	2.873E-04	5.260E-06	3.191E-04	6.614E-06	1.231E-04	5.032E-06	1.348E-04	2.345E+00	1.970E-06
San Joaquin (SJV)	T6 Public	45 MPH	3.816E-05	6.133E-04	1.974E-04	2.244E-05	2.646E-05	2.873E-04	5.301E-06	3.191E-04	6.614E-06	1.231E-04	5.072E-06	1.348E-04	2.352E+00	1.772E-06
San Joaquin (SJV)	T6 Utility	45 MPH	3.495E-05	3.850E-04	1.839E-04	2.237E-05	2.646E-05	2.873E-04	3.963E-06	3.178E-04	6.614E-06	1.231E-04	3.791E-06	1.336E-04	2.345E+00	1.623E-06
San Joaquin (SJV)	T6TS	45 MPH	1.548E-05	1.809E-04	4.057E-04	2.132E-05	2.646E-05	2.873E-04	1.876E-06	3.157E-04	6.614E-06	1.231E-04	1.725E-06	1.315E-04	2.135E+00	6.254E-06
San Joaquin (SJV)	T7 Ag	45 MPH	1.285E-04	2.438E-03	7.588E-04	3.097E-05	7.937E-05	1.361E-04	1.343E-05	2.289E-04	1.984E-05	5.833E-05	1.285E-05	9.103E-05	3.246E+00	5.969E-06
San Joaquin (SJV)	T7 CAIRP	45 MPH	1.116E-04	1.263E-03	6.590E-04	2.899E-05	7.937E-05	1.361E-04	1.144E-05	2.269E-04	1.984E-05	5.833E-05	1.095E-05	8.912E-05	3.038E+00	5.184E-06
San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	1.146E-04	1.295E-03	6.768E-04	2.958E-05	7.937E-05	1.361E-04	1.186E-05	2.273E-04	1.984E-05	5.833E-05	1.134E-05	8.952E-05	3.100E+00	5.324E-06
San Joaquin (SJV)	T7 NNOOS	45 MPH	9.821E-05	1.030E-03	5.799E-04	2.895E-05	7.937E-05	1.361E-04	9.666E-06	2.251E-04	1.984E-05	5.833E-05	9.248E-06	8.742E-05	3.034E+00	4.562E-06
San Joaquin (SJV)	T7 NOOS	45 MPH	1.116E-04	1.265E-03	6.592E-04	2.899E-05	7.937E-05	1.361E-04	1.145E-05	2.269E-04	1.984E-05	5.833E-05	1.095E-05	8.913E-05	3.038E+00	5.185E-06
San Joaquin (SJV)	T7 Other Port	45 MPH	1.214E-04	1.385E-03	7.170E-04	2.955E-05	7.937E-05	1.361E-04	1.276E-05	2.282E-04	1.984E-05	5.833E-05	1.221E-05	9.038E-05	3.097E+00	5.640E-06
San Joaquin (SJV)	T7 POAK	45 MPH	1.226E-04	1.402E-03	7.237E-04	2.955E-05	7.937E-05	1.361E-04	1.291E-05	2.284E-04	1.984E-05	5.833E-05	1.235E-05	9.053E-05	3.097E+00	5.693E-06
San Joaquin (SJV)	T7 POLA	45 MPH	1.209E-04	1.420E-03	7.142E-04	2.963E-05	7.937E-05	1.361E-04	1.268E-05	2.282E-04	1.984E-05	5.833E-05	1.213E-05	9.031E-05	3.106E+00	5.618E-06
San Joaquin (SJV)	T7 Public	45 MPH	8.229E-05	1.989E-03	4.615E-04	3.003E-05	7.937E-05	1.361E-04	1.134E-05	2.268E-04	1.984E-05	5.833E-05	1.085E-05	8.903E-05	3.148E+00	3.822E-06
San Joaquin (SJV)	T7 Single	45 MPH	9.473E-05	1.126E-03	5.593E-04	2.985E-05	7.937E-05	1.361E-04	9.162E-06	2.246E-04	1.984E-05	5.833E-05	8.765E-06	8.694E-05	3.129E+00	4.400E-06
San Joaquin (SJV)	T7 Single Construction	45 MPH	9.449E-05	1.100E-03	5.576E-04	2.980E-05	7.937E-05	1.361E-04	9.185E-06	2.247E-04	1.984E-05	5.833E-05	8.788E-06	8.696E-05	3.124E+00	4.389E-06
San Joaquin (SJV)	T7 SWCV	45 MPH	3.106E-05	2.058E-03	1.304E-03	5.810E-05	7.937E-05	1.361E-04	1.282E-05	2.283E-04	1.984E-05	5.833E-05	1.227E-05	9.044E-05	6.900E+00	4.153E-04
San Joaquin (SJV)	T7 Tractor	45 MPH	1.135E-04	1.318E-03	6.703E-04	2.903E-05	7.937E-05	1.361E-04	1.169E-05	2.272E-04	1.984E-05	5.833E-05	1.118E-05	8.936E-05	3.043E+00	5.273E-06
San Joaquin (SJV)	T7 Tractor Construction	45 MPH	1.180E-04	1.387E-03	6.968E-04	2.965E-05	7.937E-05	1.361E-04	1.230E-05	2.278E-04	1.984E-05	5.833E-05	1.177E-05	8.995E-05	3.108E+00	5.482E-06
San Joaquin (SJV)	T7 Utility	45 MPH	7.187E-05	6.285E-04	4.244E-04	2.955E-05	7.937E-05	1.361E-04	6.158E-06	2.216E-04	1.984E-05	5.833E-05	5.892E-06	8.407E-05	3.098E+00	3.338E-06
San Joaquin (SJV)	T7IS	45 MPH	5.064E-04	5.993E-03	6.080E-02	3.435E-05	4.409E-05	1.361E-04	1.882E-06	1.821E-04	1.102E-05	5.833E-05	1.730E-06	7.109E-05	3.345E+00	2.046E-04
San Joaquin (SJV)	UBUS	45 MPH	6.514E-05	2.350E-03	2.650E-03	1.438E-05	2.646E-05	1.096E-03	1.349E-05	1.136E-03	6.614E-06	4.695E-04	1.287E-05	4.890E-04	2.588E+00	3.612E-04

San Joaquin (SJV)	All Other Buses	50 MPH	3.594E-05	5.256E-04	1.892E-04	2.181E-05	2.646E-05	2.873E-04	5.981E-06	3.198E-04	6.614E-06	1.231E-04	5.722E-06	1.355E-04	2.286E+00	1.669E-06
San Joaquin (SJV)	LDA	50 MPH	4.980E-06	3.450E-05	4.641E-04	2.962E-06	1.764E-05	8.102E-05	1.059E-06	9.971E-05	4.409E-06	3.472E-05	9.741E-07	4.011E-05	2.963E-01	1.989E-06
San Joaquin (SJV)	LDT1	50 MPH	7.266E-06	4.850E-05	6.261E-04	3.794E-06	1.764E-05	8.102E-05	1.347E-06	1.000E-04	4.409E-06	3.472E-05	1.239E-06	4.037E-05	3.792E-01	2.932E-06
San Joaquin (SJV)	LDT2	50 MPH	7.847E-06	5.095E-05	7.329E-04	4.359E-06	1.764E-05	8.102E-05	1.290E-06	9.995E-05	4.409E-06	3.472E-05	1.187E-06	4.032E-05	4.357E-01	3.157E-06
San Joaquin (SJV)	LHD1	50 MPH	4.888E-05	7.791E-04	3.437E-04	1.115E-05	2.317E-05	1.685E-04	1.067E-05	2.024E-04	5.793E-06	7.222E-05	1.018E-05	8.820E-05	1.143E+00	3.128E-06
San Joaquin (SJV)	LHD2	50 MPH	3.867E-05	1.320E-04	2.327E-04	1.144E-05	2.392E-05	1.966E-04	9.975E-06	2.305E-04	5.979E-06	8.426E-05	9.524E-06	9.976E-05	1.178E+00	2.310E-06
San Joaquin (SJV)	MCY	50 MPH	3.597E-03	2.279E-03	3.280E-02	3.882E-06	8.818E-06	2.593E-05	3.787E-06	3.853E-05	2.205E-06	1.111E-05	3.531E-06	1.685E-05	3.242E-01	7.746E-04
San Joaquin (SJV)	MDV	50 MPH	1.105E-05	7.036E-05	8.788E-04	5.770E-06	1.764E-05	8.102E-05	1.379E-06	1.000E-04	4.409E-06	3.472E-05	1.270E-06	4.040E-05	5.774E-01	4.402E-06
San Joaquin (SJV)	MH	50 MPH	2.620E-05	1.054E-03	3.529E-04	1.969E-05	2.841E-05	2.873E-04	1.437E-05	3.301E-04	7.103E-06	1.231E-04	1.370E-05	1.439E-04	1.992E+00	5.710E-06
San Joaquin (SJV)	Motor Coach	50 MPH	7.519E-05	8.335E-04	4.440E-04	3.103E-05	2.646E-05	2.873E-04	9.577E-06	3.234E-04	6.614E-06	1.231E-04	9.163E-06	1.389E-04	3.252E+00	3.493E-06
San Joaquin (SJV)	OBUS	50 MPH	1.625E-05	1.891E-04	4.124E-04	1.996E-05	2.646E-05	2.873E-04	1.813E-06	3.156E-04	6.614E-06	1.231E-04	1.667E-06	1.314E-04	2.000E+00	6.567E-06
San Joaquin (SJV)	SBUS	50 MPH	2.531E-05	3.670E-04	2.379E-04	1.687E-05	2.293E-05	1.642E-03	4.024E-06	1.669E-03	5.731E-06	7.037E-04	3.823E-06	7.133E-04	1.750E+00	3.104E-06
San Joaquin (SJV)	T6 Ag	50 MPH	4.133E-05	8.775E-04	2.176E-04	2.212E-05	2.646E-05	2.873E-04	7.105E-06	3.209E-04	6.614E-06	1.231E-04	6.797E-06	1.366E-04	2.319E+00	1.920E-06
San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	3.296E-05	4.410E-04	1.735E-04	2.118E-05	2.646E-05	2.873E-04	5.329E-06	3.191E-04	6.614E-06	1.231E-04	5.098E-06	1.349E-04	2.220E+00	1.531E-06
San Joaquin (SJV)	T6 CAIRP Small	50 MPH	3.125E-05	4.009E-04	1.645E-04	2.171E-05	2.646E-05	2.873E-04	4.951E-06	3.188E-04	6.614E-06	1.231E-04	4.737E-06	1.345E-04	2.275E+00	1.452E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	3.696E-05	5.495E-04	1.945E-04	2.178E-05	2.646E-05	2.873E-04	6.214E-06	3.200E-04	6.614E-06	1.231E-04	5.945E-06	1.357E-04	2.282E+00	1.717E-06
San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	3.420E-05	4.750E-04	1.800E-04	2.176E-05	2.646E-05	2.873E-04	5.607E-06	3.194E-04	6.614E-06	1.231E-04	5.364E-06	1.351E-04	2.280E+00	1.588E-06
San Joaquin (SJV)	T6 Instate Heavy	50 MPH	3.588E-05	5.457E-04	1.889E-04	2.125E-05	2.646E-05	2.873E-04	5.962E-06	3.198E-04	6.614E-06	1.231E-04	5.704E-06	1.355E-04	2.227E+00	1.666E-06
San Joaquin (SJV)	T6 Instate Small	50 MPH	3.431E-05	4.853E-04	1.806E-04	2.178E-05	2.646E-05	2.873E-04	5.622E-06	3.194E-04	6.614E-06	1.231E-04	5.379E-06	1.351E-04	2.283E+00	1.594E-06
San Joaquin (SJV)	T6 OOS Heavy	50 MPH	3.297E-05	4.419E-04	1.736E-04	2.118E-05	2.646E-05	2.873E-04	5.331E-06	3.191E-04	6.614E-06	1.231E-04	5.101E-06	1.349E-04	2.220E+00	1.532E-06
San Joaquin (SJV)	T6 OOS Small	50 MPH	3.125E-05	4.009E-04	1.645E-04	2.171E-05	2.646E-05	2.873E-04	4.951E-06	3.188E-04	6.614E-06	1.231E-04	4.737E-06	1.345E-04	2.275E+00	1.452E-06
San Joaquin (SJV)	T6 Public	50 MPH	2.829E-05	5.076E-04	1.463E-04	2.177E-05	2.646E-05	2.873E-04	5.129E-06	3.189E-04	6.614E-06	1.231E-04	4.907E-06	1.347E-04	2.282E+00	1.314E-06
San Joaquin (SJV)	T6 Utility	50 MPH	2.575E-05	2.928E-04	1.356E-04	2.170E-05	2.646E-05	2.873E-04	3.730E-06	3.175E-04	6.614E-06	1.231E-04	3.569E-06	1.333E-04	2.275E+00	1.196E-06
San Joaquin (SJV)	T6TS	50 MPH	1.494E-05	1.786E-04	3.776E-04	1.994E-05	2.646E-05	2.873E-04	1.811E-06	3.156E-04	6.614E-06	1.231E-04	1.665E-06	1.314E-04	1.998E+00	6.037E-06
San Joaquin (SJV)	T7 Ag	50 MPH	9.471E-05	1.999E-03	5.592E-04	3.005E-05	7.937E-05	1.361E-04	1.265E-05	2.281E-04	1.984E-05	5.833E-05	1.210E-05	9.027E-05	3.149E+00	4.399E-06
San Joaquin (SJV)	T7 CAIRP	50 MPH	8.224E-05	9.648E-04	4.856E-04	2.800E-05	7.937E-05	1.361E-04	1.077E-05	2.262E-04	1.984E-05	5.833E-05	1.030E-05	8.848E-05	2.935E+00	3.820E-06
San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	8.447E-05	9.874E-04	4.987E-04	2.869E-05	7.937E-05	1.361E-04	1.116E-05	2.266E-04	1.984E-05	5.833E-05	1.068E-05	8.885E-05	3.008E+00	3.924E-06
San Joaquin (SJV)	T7 NNOOS	50 MPH	7.237E-05	7.836E-04	4.274E-04	2.796E-05	7.937E-05	1.361E-04	9.099E-06	2.246E-04	1.984E-05	5.833E-05	8.705E-06	8.688E-05	2.931E+00	3.362E-06
San Joaquin (SJV)	T7 NOOS	50 MPH	8.227E-05	9.665E-04	4.858E-04	2.800E-05	7.937E-05	1.361E-04	1.077E-05	2.263E-04	1.984E-05	5.833E-05	1.031E-05	8.848E-05	2.935E+00	3.821E-06
San Joaquin (SJV)	T7 Other Port	50 MPH	8.948E-05	1.053E-03	5.283E-04	2.867E-05	7.937E-05	1.361E-04	1.201E-05	2.275E-04	1.984E-05	5.833E-05	1.149E-05	8.966E-05	3.005E+00	4.156E-06
San Joaquin (SJV)	T7 POAK	50 MPH	9.032E-05	1.066E-03	5.333E-04	2.867E-05	7.937E-05	1.361E-04	1.215E-05	2.276E-04	1.984E-05	5.833E-05	1.163E-05	8.980E-05	3.005E+00	4.195E-06
San Joaquin (SJV)	T7 POLA	50 MPH	8.913E-05	1.086E-03	5.263E-04	2.875E-05	7.937E-05	1.361E-04	1.194E-05	2.274E-04	1.984E-05	5.833E-05	1.142E-05	8.960E-05	3.013E+00	4.140E-06
San Joaquin (SJV)	T7 Public	50 MPH	6.194E-05	1.815E-03	3.458E-04	2.914E-05	7.937E-05	1.361E-04	1.132E-05	2.268E-04	1.984E-05	5.833E-05	1.083E-05	8.901E-05	3.054E+00	2.877E-06
San Joaquin (SJV)	T7 Single	50 MPH	6.981E-05	8.792E-04	4.122E-04	2.896E-05	7.937E-05	1.361E-04	8.624E-06	2.241E-04	1.984E-05	5.833E-05	8.251E-06	8.643E-05	3.036E+00	3.242E-06
San Joaquin (SJV)	T7 Single Construction	50 MPH	6.965E-05	8.571E-04	4.110E-04	2.891E-05	7.937E-05	1.361E-04	8.655E-06	2.241E-04	1.984E-05	5.833E-05	8.281E-06	8.646E-05	3.031E+00	3.235E-06
San Joaquin (SJV)	T7 SWCV	50 MPH	2.463E-05	1.976E-03	9.641E-04	5.638E-05	7.937E-05	1.361E-04	1.240E-05	2.279E-04	1.984E-05	5.833E-05	1.187E-05	9.004E-05	6.695E+00	3.159E-04
San Joaquin (SJV)	T7 Tractor	50 MPH	8.365E-05	1.011E-03	4.940E-04	2.804E-05	7.937E-05	1.361E-04	1.100E-05	2.265E-04	1.984E-05	5.833E-05	1.053E-05	8.870E-05	2.939E+00	3.885E-06
San Joaquin (SJV)	T7 Tractor Construction	50 MPH	8.698E-05	1.063E-03	5.135E-04	2.877E-05	7.937E-05	1.361E-04	1.158E-05	2.271E-04	1.984E-05	5.833E-05	1.108E-05	8.926E-05	3.015E+00	4.040E-06
San Joaquin (SJV)	T7 Utility	50 MPH	5.297E-05	4.780E-04	3.127E-04	2.867E-05	7.937E-05	1.361E-04	5.797E-06	2.213E-04	1.984E-05	5.833E-05	5.546E-06	8.372E-05	3.005E+00	2.460E-06
San Joaquin (SJV)	T7IS	50 MPH	4.888E-04	5.919E-03	5.658E-02	3.387E-05	4.409E-05	1.361E-04	1.816E-06	1.820E-04	1.102E-05	5.833E-05	1.670E-06	7.103E-05	3.303E+00	1.975E-04
San Joaquin (SJV)	UBUS	50 MPH	6.296E-05	2.331E-03	2.387E-03	1.361E-05	2.646E-05	1.096E-03	1.380E-05	1.136E-03	6.614E-06	4.695E-04	1.317E-05	4.893E-04	2.483E+00	3.216E-04

San Joaquin (SJV)	All Other Buses	55 MPH	2.648E-05	4.154E-04	1.394E-04	2.123E-05	2.646E-05	2.873E-04	5.646E-06	3.194E-04	6.614E-06	1.231E-04	5.401E-06	1.352E-04	2.225E+00	1.230E-06
San Joaquin (SJV)	LDA	55 MPH	5.063E-06	3.461E-05	4.329E-04	3.070E-06	1.764E-05	8.102E-05	1.077E-06	9.973E-05	4.409E-06	3.472E-05	9.907E-07	4.012E-05	3.072E-01	2.025E-06
San Joaquin (SJV)	LDT1	55 MPH	7.389E-06	4.873E-05	5.844E-04	3.932E-06	1.764E-05	8.102E-05	1.371E-06	1.000E-04	4.409E-06	3.472E-05	1.261E-06	4.039E-05	3.931E-01	2.982E-06
San Joaquin (SJV)	LDT2	55 MPH	7.983E-06	5.115E-05	6.839E-04	4.518E-06	1.764E-05	8.102E-05	1.313E-06	9.997E-05	4.409E-06	3.472E-05	1.208E-06	4.034E-05	4.517E-01	3.213E-06
San Joaquin (SJV)	LHD1	55 MPH	4.604E-05	8.026E-04	3.346E-04	1.169E-05	2.317E-05	1.685E-04	1.045E-05	2.021E-04	5.793E-06	7.222E-05	9.970E-06	8.799E-05	1.199E+00	3.012E-06
San Joaquin (SJV)	LHD2	55 MPH	3.440E-05	1.305E-04	2.103E-04	1.188E-05	2.392E-05	1.966E-04	9.462E-06	2.300E-04	5.979E-06	8.426E-05	9.033E-06	9.927E-05	1.224E+00	2.121E-06
San Joaquin (SJV)	MCY	55 MPH	3.706E-03	2.316E-03	3.436E-02	4.029E-06	8.818E-06	2.593E-05	3.893E-06	3.864E-05	2.205E-06	1.111E-05	3.630E-06	1.695E-05	3.361E-01	7.978E-04
San Joaquin (SJV)	MDV	55 MPH	1.120E-05	7.088E-05	8.201E-04	5.983E-06	1.764E-05	8.102E-05	1.400E-06	1.001E-04	4.409E-06	3.472E-05	1.289E-06	4.042E-05	5.989E-01	4.473E-06
San Joaquin (SJV)	MH	55 MPH	2.521E-05	1.005E-03	3.290E-04	1.922E-05	2.841E-05	2.873E-04	1.516E-05	3.309E-04	7.103E-06	1.231E-04	1.445E-05	1.447E-04	1.944E+00	5.747E-06
San Joaquin (SJV)	Motor Coach	55 MPH	5.541E-05	6.522E-04	3.272E-04	3.019E-05	2.646E-05	2.873E-04	9.040E-06	3.228E-04	6.614E-06	1.231E-04	8.649E-06	1.384E-04	3.165E+00	2.574E-06
San Joaquin (SJV)	OBUS	55 MPH	1.655E-05	1.898E-04	3.848E-04	1.941E-05	2.646E-05	2.873E-04	1.847E-06	3.156E-04	6.614E-06	1.231E-04	1.698E-06	1.315E-04	1.945E+00	6.688E-06
San Joaquin (SJV)	SBUS	55 MPH	2.017E-05	3.094E-04	2.017E-04	1.641E-05	2.293E-05	1.642E-03	3.852E-06	1.669E-03	5.731E-06	7.037E-04	3.658E-06	7.131E-04	1.703E+00	2.900E-06
San Joaquin (SJV)	T6 Ag	55 MPH	3.046E-05	7.231E-04	1.603E-04	2.153E-05	2.646E-05	2.873E-04	6.706E-06	3.205E-04	6.614E-06	1.231E-04	6.416E-06	1.362E-04	2.257E+00	1.415E-06
San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	2.429E-05	3.458E-04	1.279E-04	2.050E-05	2.646E-05	2.873E-04	5.030E-06	3.188E-04	6.614E-06	1.231E-04	4.812E-06	1.346E-04	2.149E+00	1.128E-06
San Joaquin (SJV)	T6 CAIRP Small	55 MPH	2.303E-05	3.135E-04	1.212E-04	2.112E-05	2.646E-05	2.873E-04	4.674E-06	3.185E-04	6.614E-06	1.231E-04	4.472E-06	1.342E-04	2.214E+00	1.070E-06
San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	2.724E-05	4.347E-04	1.434E-04	2.119E-05	2.646E-05	2.873E-04	5.867E-06	3.197E-04	6.614E-06	1.231E-04	5.613E-06	1.354E-04	2.221E+00	1.265E-06
San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	2.520E-05	3.737E-04	1.326E-04	2.117E-05	2.646E-05	2.873E-04	5.294E-06	3.191E-04	6.614E-06	1.231E-04	5.065E-06	1.348E-04	2.219E+00	1.171E-06
San Joaquin (SJV)	T6 Instate Heavy	55 MPH	2.644E-05	4.339E-04	1.392E-04	2.056E-05	2.646E-05	2.873E-04	5.627E-06	3.194E-04	6.614E-06	1.231E-04	5.384E-06	1.351E-04	2.155E+00	1.228E-06
San Joaquin (SJV)	T6 Instate Small	55 MPH	2.528E-05	3.828E-04	1.331E-04	2.119E-05	2.646E-05	2.873E-04	5.307E-06	3.191E-04	6.614E-06	1.231E-04	5.077E-06	1.348E-04	2.221E+00	1.174E-06
San Joaquin (SJV)	T6 OOS Heavy	55 MPH	2.430E-05	3.465E-04	1.279E-04	2.050E-05	2.646E-05	2.873E-04	5.032E-06	3.188E-04	6.614E-06	1.231E-04	4.815E-06	1.346E-04	2.149E+00	1.129E-06
San Joaquin (SJV)	T6 OOS Small	55 MPH	2.303E-05	3.135E-04	1.212E-04	2.112E-05	2.646E-05	2.873E-04	4.674E-06	3.185E-04	6.614E-06	1.231E-04	4.472E-06	1.342E-04	2.214E+00	1.070E-06
San Joaquin (SJV)	T6 Public	55 MPH	2.105E-05	4.351E-04	1.087E-04	2.119E-05	2.646E-05	2.873E-04	5.023E-06	3.188E-04	6.614E-06	1.231E-04	4.806E-06	1.346E-04	2.221E+00	9.777E-07
San Joaquin (SJV)	T6 Utility	55 MPH	1.898E-05	2.289E-04	9.989E-05	2.112E-05	2.646E-05	2.873E-04	3.521E-06	3.173E-04	6.614E-06	1.231E-04	3.369E-06	1.331E-04	2.214E+00	8.815E-07
San Joaquin (SJV)	T6TS	55 MPH	1.521E-05	1.792E-04	3.523E-04	1.939E-05	2.646E-05	2.873E-04	1.844E-06	3.156E-04	6.614E-06	1.231E-04	1.696E-06	1.315E-04	1.942E+00	6.148E-06
San Joaquin (SJV)	T7 Ag	55 MPH	6.979E-05	1.677E-03	4.121E-04	2.924E-05	7.937E-05	1.361E-04	1.194E-05	2.274E-04	1.984E-05	5.833E-05	1.142E-05	8.960E-05	3.065E+00	3.242E-06
San Joaquin (SJV)	T7 CAIRP	55 MPH	6.061E-05	7.575E-04	3.579E-04	2.710E-05	7.937E-05	1.361E-04	1.017E-05	2.256E-04	1.984E-05	5.833E-05	9.727E-06	8.790E-05	2.840E+00	2.815E-06
San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	6.225E-05	7.737E-04	3.676E-04	2.792E-05	7.937E-05	1.361E-04	1.054E-05	2.260E-04	1.984E-05	5.833E-05	1.008E-05	8.826E-05	2.927E+00	2.891E-06
San Joaquin (SJV)	T7 NNOOS	55 MPH	5.333E-05	6.125E-04	3.149E-04	2.706E-05	7.937E-05	1.361E-04	8.589E-06	2.241E-04	1.984E-05	5.833E-05	8.217E-06	8.639E-05	2.837E+00	2.477E-06
San Joaquin (SJV)	T7 NOOS	55 MPH	6.062E-05	7.591E-04	3.580E-04	2.710E-05	7.937E-05	1.361E-04	1.017E-05	2.256E-04	1.984E-05	5.833E-05	9.730E-06	8.791E-05	2.841E+00	2.816E-06
San Joaquin (SJV)	T7 Other Port	55 MPH	6.594E-05	8.230E-04	3.894E-04	2.790E-05	7.937E-05	1.361E-04	1.134E-05	2.268E-04	1.984E-05	5.833E-05	1.085E-05	8.902E-05	2.924E+00	3.063E-06
San Joaquin (SJV)	T7 POAK	55 MPH	6.656E-05	8.334E-04	3.930E-04	2.790E-05	7.937E-05	1.361E-04	1.147E-05	2.269E-04	1.984E-05	5.833E-05	1.098E-05	8.915E-05	2.924E+00	3.092E-06
San Joaquin (SJV)	T7 POLA	55 MPH	6.568E-05	8.543E-04	3.878E-04	2.797E-05	7.937E-05	1.361E-04	1.127E-05	2.267E-04	1.984E-05	5.833E-05	1.078E-05	8.896E-05	2.932E+00	3.051E-06
San Joaquin (SJV)	T7 Public	55 MPH	4.733E-05	1.704E-03	2.613E-04	2.837E-05	7.937E-05	1.361E-04	1.162E-05	2.271E-04	1.984E-05	5.833E-05	1.112E-05	8.930E-05	2.974E+00	2.198E-06
San Joaquin (SJV)	T7 Single	55 MPH	5.144E-05	7.052E-04	3.038E-04	2.818E-05	7.937E-05	1.361E-04	8.141E-06	2.236E-04	1.984E-05	5.833E-05	7.788E-06	8.596E-05	2.954E+00	2.389E-06
San Joaquin (SJV)	T7 Single Construction	55 MPH	5.135E-05	6.864E-04	3.030E-04	2.814E-05	7.937E-05	1.361E-04	8.181E-06	2.237E-04	1.984E-05	5.833E-05	7.827E-06	8.600E-05	2.949E+00	2.385E-06
San Joaquin (SJV)	T7 SWCV	55 MPH	1.995E-05	1.928E-03	7.139E-04	5.491E-05	7.937E-05	1.361E-04	1.213E-05	2.276E-04	1.984E-05	5.833E-05	1.160E-05	8.978E-05	6.520E+00	2.429E-04
San Joaquin (SJV)	T7 Tractor	55 MPH	6.165E-05	7.967E-04	3.640E-04	2.714E-05	7.937E-05	1.361E-04	1.039E-05	2.259E-04	1.984E-05	5.833E-05	9.937E-06	8.811E-05	2.845E+00	2.863E-06
San Joaquin (SJV)	T7 Tractor Construction	55 MPH	6.410E-05	8.378E-04	3.784E-04	2.799E-05	7.937E-05	1.361E-04	1.094E-05	2.264E-04	1.984E-05	5.833E-05	1.046E-05	8.864E-05	2.934E+00	2.977E-06
San Joaquin (SJV)	T7 Utility	55 MPH	3.903E-05	3.736E-04	2.305E-04	2.790E-05	7.937E-05	1.361E-04	5.472E-06	2.209E-04	1.984E-05	5.833E-05	5.235E-06	8.341E-05	2.924E+00	1.813E-06
San Joaquin (SJV)	T7IS	55 MPH	4.978E-04	5.940E-03	5.279E-02	3.319E-05	4.409E-05	1.361E-04	1.850E-06	1.821E-04	1.102E-05	5.833E-05	1.701E-06	7.106E-05	3.241E+00	2.011E-04
San Joaquin (SJV)	UBUS	55 MPH	6.596E-05	2.334E-03	2.191E-03	1.330E-05	2.646E-05	1.096E-03	1.546E-05	1.137E-03	6.614E-06	4.695E-04	1.476E-05	4.909E-04	2.439E+00	2.982E-04

San Joaquin (SJV)	All Other Buses	60 MPH	2.273E-05	3.725E-04	1.197E-04	2.096E-05	2.646E-05	2.873E-04	5.490E-06	3.193E-04	6.614E-06	1.231E-04	5.252E-06	1.350E-04	2.197E+00	1.056E-06
San Joaquin (SJV)	LDA	60 MPH	5.431E-06	3.529E-05	4.051E-04	3.303E-06	1.764E-05	8.102E-05	1.155E-06	9.981E-05	4.409E-06	3.472E-05	1.063E-06	4.019E-05	3.305E-01	2.176E-06
San Joaquin (SJV)	LDT1	60 MPH	7.924E-06	4.978E-05	5.470E-04	4.230E-06	1.764E-05	8.102E-05	1.473E-06	1.001E-04	4.409E-06	3.472E-05	1.354E-06	4.049E-05	4.230E-01	3.198E-06
San Joaquin (SJV)	LDT2	60 MPH	8.567E-06	5.219E-05	6.400E-04	4.860E-06	1.764E-05	8.102E-05	1.409E-06	1.001E-04	4.409E-06	3.472E-05	1.296E-06	4.043E-05	4.860E-01	3.450E-06
San Joaquin (SJV)	LHD1	60 MPH	4.634E-05	8.289E-04	3.451E-04	1.184E-05	2.317E-05	1.685E-04	1.065E-05	2.023E-04	5.793E-06	7.222E-05	1.017E-05	8.818E-05	1.213E+00	3.091E-06
San Joaquin (SJV)	LHD2	60 MPH	3.282E-05	1.315E-04	2.004E-04	1.196E-05	2.392E-05	1.966E-04	9.293E-06	2.298E-04	5.979E-06	8.426E-05	8.870E-06	9.911E-05	1.231E+00	2.086E-06
San Joaquin (SJV)	MCY	60 MPH	4.015E-03	2.377E-03	3.763E-02	4.347E-06	8.818E-06	2.593E-05	4.212E-06	3.896E-05	2.205E-06	1.111E-05	3.927E-06	1.724E-05	3.617E-01	8.642E-04
San Joaquin (SJV)	MDV	60 MPH	1.198E-05	7.269E-05	7.679E-04	6.436E-06	1.764E-05	8.102E-05	1.499E-06	1.002E-04	4.409E-06	3.472E-05	1.380E-06	4.051E-05	6.445E-01	4.791E-06
San Joaquin (SJV)	MH	60 MPH	2.592E-05	9.902E-04	3.101E-04	1.932E-05	2.841E-05	2.873E-04	1.654E-05	3.323E-04	7.103E-06	1.231E-04	1.577E-05	1.460E-04	1.954E+00	6.120E-06
San Joaquin (SJV)	Motor Coach	60 MPH	4.757E-05	5.820E-04	2.809E-04	2.981E-05	2.646E-05	2.873E-04	8.791E-06	3.226E-04	6.614E-06	1.231E-04	8.410E-06	1.382E-04	3.125E+00	2.209E-06
San Joaquin (SJV)	OBUS	60 MPH	1.778E-05	1.935E-04	3.601E-04	1.953E-05	2.646E-05	2.873E-04	1.984E-06	3.158E-04	6.614E-06	1.231E-04	1.824E-06	1.316E-04	1.957E+00	7.185E-06
San Joaquin (SJV)	SBUS	60 MPH	1.850E-05	2.882E-04	1.828E-04	1.627E-05	2.293E-05	1.642E-03	3.820E-06	1.669E-03	5.731E-06	7.037E-04	3.626E-06	7.131E-04	1.689E+00	2.969E-06
San Joaquin (SJV)	T6 Ag	60 MPH	2.615E-05	6.616E-04	1.376E-04	2.126E-05	2.646E-05	2.873E-04	6.521E-06	3.203E-04	6.614E-06	1.231E-04	6.239E-06	1.360E-04	2.228E+00	1.215E-06
San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	2.085E-05	3.088E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.891E-06	3.187E-04	6.614E-06	1.231E-04	4.680E-06	1.344E-04	2.108E+00	9.685E-07
San Joaquin (SJV)	T6 CAIRP Small	60 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	2.339E-05	3.900E-04	1.231E-04	2.092E-05	2.646E-05	2.873E-04	5.706E-06	3.195E-04	6.614E-06	1.231E-04	5.459E-06	1.352E-04	2.193E+00	1.086E-06
San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	2.163E-05	3.344E-04	1.139E-04	2.091E-05	2.646E-05	2.873E-04	5.149E-06	3.190E-04	6.614E-06	1.231E-04	4.926E-06	1.347E-04	2.191E+00	1.005E-06
San Joaquin (SJV)	T6 Instate Heavy	60 MPH	2.270E-05	3.903E-04	1.195E-04	2.017E-05	2.646E-05	2.873E-04	5.472E-06	3.193E-04	6.614E-06	1.231E-04	5.235E-06	1.350E-04	2.114E+00	1.054E-06
San Joaquin (SJV)	T6 Instate Small	60 MPH	2.170E-05	3.429E-04	1.142E-04	2.093E-05	2.646E-05	2.873E-04	5.160E-06	3.190E-04	6.614E-06	1.231E-04	4.937E-06	1.347E-04	2.193E+00	1.008E-06
San Joaquin (SJV)	T6 OOS Heavy	60 MPH	2.086E-05	3.095E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.893E-06	3.187E-04	6.614E-06	1.231E-04	4.682E-06	1.344E-04	2.108E+00	9.689E-07
San Joaquin (SJV)	T6 OOS Small	60 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Public	60 MPH	1.820E-05	4.075E-04	9.385E-05	2.092E-05	2.646E-05	2.873E-04	4.994E-06	3.188E-04	6.614E-06	1.231E-04	4.778E-06	1.345E-04	2.193E+00	8.453E-07
San Joaquin (SJV)	T6 Utility	60 MPH	1.629E-05	2.041E-04	8.575E-05	2.086E-05	2.646E-05	2.873E-04	3.424E-06	3.172E-04	6.614E-06	1.231E-04	3.276E-06	1.330E-04	2.186E+00	7.567E-07
San Joaquin (SJV)	T6TS	60 MPH	1.635E-05	1.828E-04	3.296E-04	1.951E-05	2.646E-05	2.873E-04	1.981E-06	3.158E-04	6.614E-06	1.231E-04	1.822E-06	1.316E-04	1.955E+00	6.605E-06
San Joaquin (SJV)	T7 Ag	60 MPH	5.991E-05	1.547E-03	3.538E-04	2.887E-05	7.937E-05	1.361E-04	1.161E-05	2.271E-04	1.984E-05	5.833E-05	1.111E-05	8.928E-05	3.026E+00	2.783E-06
San Joaquin (SJV)	T7 CAIRP	60 MPH	5.203E-05	6.771E-04	3.072E-04	2.658E-05	7.937E-05	1.361E-04	9.886E-06	2.254E-04	1.984E-05	5.833E-05	9.459E-06	8.763E-05	2.786E+00	2.417E-06
San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	5.344E-05	6.908E-04	3.155E-04	2.757E-05	7.937E-05	1.361E-04	1.025E-05	2.257E-04	1.984E-05	5.833E-05	9.804E-06	8.798E-05	2.890E+00	2.482E-06
San Joaquin (SJV)	T7 NNOOS	60 MPH	4.578E-05	5.462E-04	2.703E-04	2.655E-05	7.937E-05	1.361E-04	8.352E-06	2.238E-04	1.984E-05	5.833E-05	7.990E-06	8.617E-05	2.783E+00	2.127E-06
San Joaquin (SJV)	T7 NOOS	60 MPH	5.204E-05	6.786E-04	3.073E-04	2.658E-05	7.937E-05	1.361E-04	9.889E-06	2.254E-04	1.984E-05	5.833E-05	9.462E-06	8.764E-05	2.787E+00	2.417E-06
San Joaquin (SJV)	T7 Other Port	60 MPH	5.660E-05	7.340E-04	3.342E-04	2.755E-05	7.937E-05	1.361E-04	1.102E-05	2.265E-04	1.984E-05	5.833E-05	1.055E-05	8.872E-05	2.887E+00	2.629E-06
San Joaquin (SJV)	T7 POAK	60 MPH	5.714E-05	7.432E-04	3.374E-04	2.755E-05	7.937E-05	1.361E-04	1.115E-05	2.266E-04	1.984E-05	5.833E-05	1.067E-05	8.885E-05	2.887E+00	2.654E-06
San Joaquin (SJV)	T7 POLA	60 MPH	5.638E-05	7.642E-04	3.329E-04	2.762E-05	7.937E-05	1.361E-04	1.096E-05	2.264E-04	1.984E-05	5.833E-05	1.048E-05	8.866E-05	2.895E+00	2.619E-06
San Joaquin (SJV)	T7 Public	60 MPH	4.176E-05	1.664E-03	2.281E-04	2.803E-05	7.937E-05	1.361E-04	1.188E-05	2.274E-04	1.984E-05	5.833E-05	1.137E-05	8.954E-05	2.938E+00	1.940E-06
San Joaquin (SJV)	T7 Single	60 MPH	4.416E-05	6.369E-04	2.608E-04	2.783E-05	7.937E-05	1.361E-04	7.916E-06	2.234E-04	1.984E-05	5.833E-05	7.573E-06	8.575E-05	2.917E+00	2.051E-06
San Joaquin (SJV)	T7 Single Construction	60 MPH	4.409E-05	6.197E-04	2.601E-04	2.778E-05	7.937E-05	1.361E-04	7.963E-06	2.234E-04	1.984E-05	5.833E-05	7.618E-06	8.579E-05	2.912E+00	2.048E-06
San Joaquin (SJV)	T7 SWCV	60 MPH	1.815E-05	1.914E-03	6.149E-04	5.425E-05	7.937E-05	1.361E-04	1.204E-05	2.275E-04	1.984E-05	5.833E-05	1.152E-05	8.969E-05	6.441E+00	2.142E-04
San Joaquin (SJV)	T7 Tractor	60 MPH	5.292E-05	7.134E-04	3.125E-04	2.662E-05	7.937E-05	1.361E-04	1.010E-05	2.256E-04	1.984E-05	5.833E-05	9.663E-06	8.784E-05	2.791E+00	2.458E-06
San Joaquin (SJV)	T7 Tractor Construction	60 MPH	5.503E-05	7.503E-04	3.249E-04	2.764E-05	7.937E-05	1.361E-04	1.064E-05	2.261E-04	1.984E-05	5.833E-05	1.018E-05	8.835E-05	2.897E+00	2.556E-06
San Joaquin (SJV)	T7 Utility	60 MPH	3.351E-05	3.332E-04	1.978E-04	2.755E-05	7.937E-05	1.361E-04	5.321E-06	2.208E-04	1.984E-05	5.833E-05	5.090E-06	8.327E-05	2.888E+00	1.556E-06
San Joaquin (SJV)	T7IS	60 MPH	5.348E-04	6.057E-03	4.940E-02	3.269E-05	4.409E-05	1.361E-04	1.987E-06	1.822E-04	1.102E-05	5.833E-05	1.827E-06	7.118E-05	3.196E+00	2.161E-04
San Joaquin (SJV)	UBUS	60 MPH	7.435E-05	2.365E-03	2.099E-03	1.336E-05	2.646E-05	1.096E-03	1.853E-05	1.141E-03	6.614E-06	4.695E-04	1.770E-05	4.938E-04	2.447E+00	2.986E-04

San Joaquin (SJV)	All Other Buses	65 MPH	2.273E-05	3.725E-04	1.197E-04	2.096E-05	2.646E-05	2.873E-04	5.490E-06	3.193E-04	6.614E-06	1.231E-04	5.252E-06	1.350E-04	2.197E+00	1.056E-06
San Joaquin (SJV)	LDA	65 MPH	6.148E-06	3.656E-05	3.802E-04	3.688E-06	1.764E-05	8.102E-05	1.307E-06	9.996E-05	4.409E-06	3.472E-05	1.203E-06	4.033E-05	3.692E-01	2.465E-06
San Joaquin (SJV)	LDT1	65 MPH	8.962E-06	5.170E-05	5.135E-04	4.722E-06	1.764E-05	8.102E-05	1.668E-06	1.003E-04	4.409E-06	3.472E-05	1.534E-06	4.067E-05	4.724E-01	3.618E-06
San Joaquin (SJV)	LDT2	65 MPH	9.700E-06	5.412E-05	6.005E-04	5.425E-06	1.764E-05	8.102E-05	1.594E-06	1.003E-04	4.409E-06	3.472E-05	1.467E-06	4.060E-05	5.428E-01	3.908E-06
San Joaquin (SJV)	LHD1	65 MPH	4.946E-05	8.576E-04	3.771E-04	1.199E-05	2.317E-05	1.685E-04	1.131E-05	2.030E-04	5.793E-06	7.222E-05	1.079E-05	8.880E-05	1.229E+00	3.361E-06
San Joaquin (SJV)	LHD2	65 MPH	3.327E-05	1.345E-04	2.002E-04	1.202E-05	2.392E-05	1.966E-04	9.419E-06	2.299E-04	5.979E-06	8.426E-05	8.987E-06	9.923E-05	1.238E+00	2.182E-06
San Joaquin (SJV)	MCY	65 MPH	4.573E-03	2.463E-03	4.339E-02	4.879E-06	8.818E-06	2.593E-05	4.793E-06	3.954E-05	2.205E-06	1.111E-05	4.469E-06	1.778E-05	4.039E-01	9.843E-04
San Joaquin (SJV)	MDV	65 MPH	1.352E-05	7.589E-05	7.214E-04	7.187E-06	1.764E-05	8.102E-05	1.692E-06	1.003E-04	4.409E-06	3.472E-05	1.557E-06	4.069E-05	7.199E-01	5.411E-06
San Joaquin (SJV)	MH	65 MPH	2.829E-05	1.002E-03	2.953E-04	1.966E-05	2.841E-05	2.873E-04	1.850E-05	3.343E-04	7.103E-06	1.231E-04	1.764E-05	1.479E-04	1.989E+00	6.885E-06
San Joaquin (SJV)	Motor Coach	65 MPH	4.757E-05	5.820E-04	2.809E-04	2.981E-05	2.646E-05	2.873E-04	8.791E-06	3.226E-04	6.614E-06	1.231E-04	8.410E-06	1.382E-04	3.125E+00	2.209E-06
San Joaquin (SJV)	OBUS	65 MPH	2.015E-05	2.005E-04	3.378E-04	1.989E-05	2.646E-05	2.873E-04	2.248E-06	3.161E-04	6.614E-06	1.231E-04	2.067E-06	1.318E-04	1.993E+00	8.143E-06
San Joaquin (SJV)	SBUS	65 MPH	1.929E-05	2.906E-04	1.756E-04	1.634E-05	2.293E-05	1.642E-03	3.923E-06	1.669E-03	5.731E-06	7.037E-04	3.721E-06	7.132E-04	1.695E+00	3.287E-06
San Joaquin (SJV)	T6 Ag	65 MPH	2.615E-05	6.616E-04	1.376E-04	2.126E-05	2.646E-05	2.873E-04	6.521E-06	3.203E-04	6.614E-06	1.231E-04	6.239E-06	1.360E-04	2.228E+00	1.215E-06
San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	2.085E-05	3.088E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.891E-06	3.187E-04	6.614E-06	1.231E-04	4.680E-06	1.344E-04	2.108E+00	9.685E-07
San Joaquin (SJV)	T6 CAIRP Small	65 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	2.339E-05	3.900E-04	1.231E-04	2.092E-05	2.646E-05	2.873E-04	5.706E-06	3.195E-04	6.614E-06	1.231E-04	5.459E-06	1.352E-04	2.193E+00	1.086E-06
San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	2.163E-05	3.344E-04	1.139E-04	2.091E-05	2.646E-05	2.873E-04	5.149E-06	3.190E-04	6.614E-06	1.231E-04	4.926E-06	1.347E-04	2.191E+00	1.005E-06
San Joaquin (SJV)	T6 Instate Heavy	65 MPH	2.270E-05	3.903E-04	1.195E-04	2.017E-05	2.646E-05	2.873E-04	5.472E-06	3.193E-04	6.614E-06	1.231E-04	5.235E-06	1.350E-04	2.114E+00	1.054E-06
San Joaquin (SJV)	T6 Instate Small	65 MPH	2.170E-05	3.429E-04	1.142E-04	2.093E-05	2.646E-05	2.873E-04	5.160E-06	3.190E-04	6.614E-06	1.231E-04	4.937E-06	1.347E-04	2.193E+00	1.008E-06
San Joaquin (SJV)	T6 OOS Heavy	65 MPH	2.086E-05	3.095E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.893E-06	3.187E-04	6.614E-06	1.231E-04	4.682E-06	1.344E-04	2.108E+00	9.689E-07
San Joaquin (SJV)	T6 OOS Small	65 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Public	65 MPH	1.820E-05	4.075E-04	9.385E-05	2.092E-05	2.646E-05	2.873E-04	4.994E-06	3.188E-04	6.614E-06	1.231E-04	4.778E-06	1.345E-04	2.193E+00	8.453E-07
San Joaquin (SJV)	T6 Utility	65 MPH	1.629E-05	2.041E-04	8.575E-05	2.086E-05	2.646E-05	2.873E-04	3.424E-06	3.172E-04	6.614E-06	1.231E-04	3.276E-06	1.330E-04	2.186E+00	7.567E-07
San Joaquin (SJV)	T6TS	65 MPH	1.853E-05	1.894E-04	3.093E-04	1.987E-05	2.646E-05	2.873E-04	2.245E-06	3.160E-04	6.614E-06	1.231E-04	2.064E-06	1.318E-04	1.991E+00	7.486E-06
San Joaquin (SJV)	T7 Ag	65 MPH	5.991E-05	1.547E-03	3.538E-04	2.887E-05	7.937E-05	1.361E-04	1.161E-05	2.271E-04	1.984E-05	5.833E-05	1.111E-05	8.928E-05	3.026E+00	2.783E-06
San Joaquin (SJV)	T7 CAIRP	65 MPH	5.203E-05	6.771E-04	3.072E-04	2.658E-05	7.937E-05	1.361E-04	9.886E-06	2.254E-04	1.984E-05	5.833E-05	9.459E-06	8.763E-05	2.786E+00	2.417E-06
San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	5.344E-05	6.908E-04	3.155E-04	2.757E-05	7.937E-05	1.361E-04	1.025E-05	2.257E-04	1.984E-05	5.833E-05	9.804E-06	8.798E-05	2.890E+00	2.482E-06
San Joaquin (SJV)	T7 NNOOS	65 MPH	4.578E-05	5.462E-04	2.703E-04	2.655E-05	7.937E-05	1.361E-04	8.352E-06	2.238E-04	1.984E-05	5.833E-05	7.990E-06	8.617E-05	2.783E+00	2.127E-06
San Joaquin (SJV)	T7 NOOS	65 MPH	5.204E-05	6.786E-04	3.073E-04	2.658E-05	7.937E-05	1.361E-04	9.889E-06	2.254E-04	1.984E-05	5.833E-05	9.462E-06	8.764E-05	2.787E+00	2.417E-06
San Joaquin (SJV)	T7 Other Port	65 MPH	5.660E-05	7.340E-04	3.342E-04	2.755E-05	7.937E-05	1.361E-04	1.102E-05	2.265E-04	1.984E-05	5.833E-05	1.055E-05	8.872E-05	2.887E+00	2.629E-06
San Joaquin (SJV)	T7 POAK	65 MPH	5.714E-05	7.432E-04	3.374E-04	2.755E-05	7.937E-05	1.361E-04	1.115E-05	2.266E-04	1.984E-05	5.833E-05	1.067E-05	8.885E-05	2.887E+00	2.654E-06
San Joaquin (SJV)	T7 POLA	65 MPH	5.638E-05	7.642E-04	3.329E-04	2.762E-05	7.937E-05	1.361E-04	1.096E-05	2.264E-04	1.984E-05	5.833E-05	1.048E-05	8.866E-05	2.895E+00	2.619E-06
San Joaquin (SJV)	T7 Public	65 MPH	4.176E-05	1.664E-03	2.281E-04	2.803E-05	7.937E-05	1.361E-04	1.188E-05	2.274E-04	1.984E-05	5.833E-05	1.137E-05	8.954E-05	2.938E+00	1.940E-06
San Joaquin (SJV)	T7 Single	65 MPH	4.416E-05	6.369E-04	2.608E-04	2.783E-05	7.937E-05	1.361E-04	7.916E-06	2.234E-04	1.984E-05	5.833E-05	7.573E-06	8.575E-05	2.917E+00	2.051E-06
San Joaquin (SJV)	T7 Single Construction	65 MPH	4.409E-05	6.197E-04	2.601E-04	2.778E-05	7.937E-05	1.361E-04	7.963E-06	2.234E-04	1.984E-05	5.833E-05	7.618E-06	8.579E-05	2.912E+00	2.048E-06
San Joaquin (SJV)	T7 SWCV	65 MPH	1.815E-05	1.914E-03	6.149E-04	5.425E-05	7.937E-05	1.361E-04	1.204E-05	2.275E-04	1.984E-05	5.833E-05	1.152E-05	8.969E-05	6.441E+00	2.142E-04
San Joaquin (SJV)	T7 Tractor	65 MPH	5.292E-05	7.134E-04	3.125E-04	2.662E-05	7.937E-05	1.361E-04	1.010E-05	2.256E-04	1.984E-05	5.833E-05	9.663E-06	8.784E-05	2.791E+00	2.458E-06
San Joaquin (SJV)	T7 Tractor Construction	65 MPH	5.503E-05	7.503E-04	3.249E-04	2.764E-05	7.937E-05	1.361E-04	1.064E-05	2.261E-04	1.984E-05	5.833E-05	1.018E-05	8.835E-05	2.897E+00	2.556E-06
San Joaquin (SJV)	T7 Utility	65 MPH	3.351E-05	3.332E-04	1.978E-04	2.755E-05	7.937E-05	1.361E-04	5.321E-06	2.208E-04	1.984E-05	5.833E-05	5.090E-06	8.327E-05	2.888E+00	1.556E-06
San Joaquin (SJV)	T7IS	65 MPH	6.061E-04	6.275E-03	4.634E-02	3.255E-05	4.409E-05	1.361E-04	2.252E-06	1.825E-04	1.102E-05	5.833E-05	2.071E-06	7.143E-05	3.187E+00	2.449E-04
San Joaquin (SJV)	UBUS	65 MPH	8.838E-05	2.423E-03	2.090E-03	1.360E-05	2.646E-05	1.096E-03	2.300E-05	1.145E-03	6.614E-06	4.695E-04	2.197E-05	4.981E-04	2.487E+00	3.188E-04

San Joaquin (SJV)	All Other Buses	70 MPH	2.273E-05	3.725E-04	1.197E-04	2.096E-05	2.646E-05	2.873E-04	5.490E-06	3.193E-04	6.614E-06	1.231E-04	5.252E-06	1.350E-04	2.197E+00	1.056E-06
San Joaquin (SJV)	LDA	70 MPH	6.673E-06	3.744E-05	3.687E-04	3.952E-06	1.764E-05	8.102E-05	1.419E-06	1.001E-04	4.409E-06	3.472E-05	1.305E-06	4.044E-05	3.956E-01	2.677E-06
San Joaquin (SJV)	LDT1	70 MPH	9.723E-06	5.302E-05	4.981E-04	5.059E-06	1.764E-05	8.102E-05	1.812E-06	1.005E-04	4.409E-06	3.472E-05	1.666E-06	4.080E-05	5.062E-01	3.925E-06
San Joaquin (SJV)	LDT2	70 MPH	1.053E-05	5.545E-05	5.823E-04	5.813E-06	1.764E-05	8.102E-05	1.730E-06	1.004E-04	4.409E-06	3.472E-05	1.592E-06	4.072E-05	5.816E-01	4.243E-06
San Joaquin (SJV)	LHD1	70 MPH	5.165E-05	8.722E-04	4.007E-04	1.187E-05	2.317E-05	1.685E-04	1.177E-05	2.035E-04	5.793E-06	7.222E-05	1.123E-05	8.924E-05	1.217E+00	3.554E-06
San Joaquin (SJV)	LHD2	70 MPH	3.359E-05	1.361E-04	2.010E-04	1.184E-05	2.392E-05	1.966E-04	9.509E-06	2.300E-04	5.979E-06	8.426E-05	9.071E-06	9.931E-05	1.219E+00	2.252E-06
San Joaquin (SJV)	MCY	70 MPH	4.973E-03	2.517E-03	4.760E-02	5.248E-06	8.818E-06	2.593E-05	5.211E-06	3.996E-05	2.205E-06	1.111E-05	4.859E-06	1.817E-05	4.328E-01	1.070E-03
San Joaquin (SJV)	MDV	70 MPH	1.465E-05	7.808E-05	7.000E-04	7.701E-06	1.764E-05	8.102E-05	1.833E-06	1.005E-04	4.409E-06	3.472E-05	1.687E-06	4.082E-05	7.715E-01	5.866E-06
San Joaquin (SJV)	MH	70 MPH	3.041E-05	1.015E-03	2.901E-04	2.026E-05	2.841E-05	2.873E-04	2.075E-05	3.365E-04	7.103E-06	1.231E-04	1.978E-05	1.500E-04	2.049E+00	7.464E-06
San Joaquin (SJV)	Motor Coach	70 MPH	4.757E-05	5.820E-04	2.809E-04	2.981E-05	2.646E-05	2.873E-04	8.791E-06	3.226E-04	6.614E-06	1.231E-04	8.410E-06	1.382E-04	3.125E+00	2.209E-06
San Joaquin (SJV)	OBUS	70 MPH	2.189E-05	2.053E-04	3.275E-04	2.052E-05	2.646E-05	2.873E-04	2.442E-06	3.162E-04	6.614E-06	1.231E-04	2.246E-06	1.320E-04	2.055E+00	8.845E-06
San Joaquin (SJV)	SBUS	70 MPH	1.986E-05	2.923E-04	1.722E-04	1.646E-05	2.293E-05	1.642E-03	3.999E-06	1.669E-03	5.731E-06	7.037E-04	3.790E-06	7.132E-04	1.707E+00	3.519E-06
San Joaquin (SJV)	T6 Ag	70 MPH	2.615E-05	6.616E-04	1.376E-04	2.126E-05	2.646E-05	2.873E-04	6.521E-06	3.203E-04	6.614E-06	1.231E-04	6.239E-06	1.360E-04	2.228E+00	1.215E-06
San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	2.085E-05	3.088E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.891E-06	3.187E-04	6.614E-06	1.231E-04	4.680E-06	1.344E-04	2.108E+00	9.685E-07
San Joaquin (SJV)	T6 CAIRP Small	70 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	2.339E-05	3.900E-04	1.231E-04	2.092E-05	2.646E-05	2.873E-04	5.706E-06	3.195E-04	6.614E-06	1.231E-04	5.459E-06	1.352E-04	2.193E+00	1.086E-06
San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	2.163E-05	3.344E-04	1.139E-04	2.091E-05	2.646E-05	2.873E-04	5.149E-06	3.190E-04	6.614E-06	1.231E-04	4.926E-06	1.347E-04	2.191E+00	1.005E-06
San Joaquin (SJV)	T6 Instate Heavy	70 MPH	2.270E-05	3.903E-04	1.195E-04	2.017E-05	2.646E-05	2.873E-04	5.472E-06	3.193E-04	6.614E-06	1.231E-04	5.235E-06	1.350E-04	2.114E+00	1.054E-06
San Joaquin (SJV)	T6 Instate Small	70 MPH	2.170E-05	3.429E-04	1.142E-04	2.093E-05	2.646E-05	2.873E-04	5.160E-06	3.190E-04	6.614E-06	1.231E-04	4.937E-06	1.347E-04	2.193E+00	1.008E-06
San Joaquin (SJV)	T6 OOS Heavy	70 MPH	2.086E-05	3.095E-04	1.098E-04	2.011E-05	2.646E-05	2.873E-04	4.893E-06	3.187E-04	6.614E-06	1.231E-04	4.682E-06	1.344E-04	2.108E+00	9.689E-07
San Joaquin (SJV)	T6 OOS Small	70 MPH	1.977E-05	2.797E-04	1.041E-04	2.086E-05	2.646E-05	2.873E-04	4.545E-06	3.183E-04	6.614E-06	1.231E-04	4.348E-06	1.341E-04	2.186E+00	9.183E-07
San Joaquin (SJV)	T6 Public	70 MPH	1.820E-05	4.075E-04	9.385E-05	2.092E-05	2.646E-05	2.873E-04	4.994E-06	3.188E-04	6.614E-06	1.231E-04	4.778E-06	1.345E-04	2.193E+00	8.453E-07
San Joaquin (SJV)	T6 Utility	70 MPH	1.629E-05	2.041E-04	8.575E-05	2.086E-05	2.646E-05	2.873E-04	3.424E-06	3.172E-04	6.614E-06	1.231E-04	3.276E-06	1.330E-04	2.186E+00	7.567E-07
San Joaquin (SJV)	T6TS	70 MPH	2.012E-05	1.939E-04	2.999E-04	2.049E-05	2.646E-05	2.873E-04	2.439E-06	3.162E-04	6.614E-06	1.231E-04	2.242E-06	1.320E-04	2.053E+00	8.131E-06
San Joaquin (SJV)	T7 Ag	70 MPH	5.991E-05	1.547E-03	3.538E-04	2.887E-05	7.937E-05	1.361E-04	1.161E-05	2.271E-04	1.984E-05	5.833E-05	1.111E-05	8.928E-05	3.026E+00	2.783E-06
San Joaquin (SJV)	T7 CAIRP	70 MPH	5.203E-05	6.771E-04	3.072E-04	2.658E-05	7.937E-05	1.361E-04	9.886E-06	2.254E-04	1.984E-05	5.833E-05	9.459E-06	8.763E-05	2.786E+00	2.417E-06
San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	5.344E-05	6.908E-04	3.155E-04	2.757E-05	7.937E-05	1.361E-04	1.025E-05	2.257E-04	1.984E-05	5.833E-05	9.804E-06	8.798E-05	2.890E+00	2.482E-06
San Joaquin (SJV)	T7 NNOOS	70 MPH	4.578E-05	5.462E-04	2.703E-04	2.655E-05	7.937E-05	1.361E-04	8.352E-06	2.238E-04	1.984E-05	5.833E-05	7.990E-06	8.617E-05	2.783E+00	2.127E-06
San Joaquin (SJV)	T7 NOOS	70 MPH	5.204E-05	6.786E-04	3.073E-04	2.658E-05	7.937E-05	1.361E-04	9.889E-06	2.254E-04	1.984E-05	5.833E-05	9.462E-06	8.764E-05	2.787E+00	2.417E-06
San Joaquin (SJV)	T7 Other Port	70 MPH	5.660E-05	7.340E-04	3.342E-04	2.755E-05	7.937E-05	1.361E-04	1.102E-05	2.265E-04	1.984E-05	5.833E-05	1.055E-05	8.872E-05	2.887E+00	2.629E-06
San Joaquin (SJV)	T7 POAK	70 MPH	5.714E-05	7.432E-04	3.374E-04	2.755E-05	7.937E-05	1.361E-04	1.115E-05	2.266E-04	1.984E-05	5.833E-05	1.067E-05	8.885E-05	2.887E+00	2.654E-06
San Joaquin (SJV)	T7 POLA	70 MPH	5.638E-05	7.642E-04	3.329E-04	2.762E-05	7.937E-05	1.361E-04	1.096E-05	2.264E-04	1.984E-05	5.833E-05	1.048E-05	8.866E-05	2.895E+00	2.619E-06
San Joaquin (SJV)	T7 Public	70 MPH	4.176E-05	1.664E-03	2.281E-04	2.803E-05	7.937E-05	1.361E-04	1.188E-05	2.274E-04	1.984E-05	5.833E-05	1.137E-05	8.954E-05	2.938E+00	1.940E-06
San Joaquin (SJV)	T7 Single	70 MPH	4.416E-05	6.369E-04	2.608E-04	2.783E-05	7.937E-05	1.361E-04	7.916E-06	2.234E-04	1.984E-05	5.833E-05	7.573E-06	8.575E-05	2.917E+00	2.051E-06
San Joaquin (SJV)	T7 Single Construction	70 MPH	4.409E-05	6.197E-04	2.601E-04	2.778E-05	7.937E-05	1.361E-04	7.963E-06	2.234E-04	1.984E-05	5.833E-05	7.618E-06	8.579E-05	2.912E+00	2.048E-06
San Joaquin (SJV)	T7 SWCV	70 MPH	1.815E-05	1.914E-03	6.149E-04	5.425E-05	7.937E-05	1.361E-04	1.204E-05	2.275E-04	1.984E-05	5.833E-05	1.152E-05	8.969E-05	6.441E+00	2.142E-04
San Joaquin (SJV)	T7 Tractor	70 MPH	5.292E-05	7.134E-04	3.125E-04	2.662E-05	7.937E-05	1.361E-04	1.010E-05	2.256E-04	1.984E-05	5.833E-05	9.663E-06	8.784E-05	2.791E+00	2.458E-06
San Joaquin (SJV)	T7 Tractor Construction	70 MPH	5.503E-05	7.503E-04	3.249E-04	2.764E-05	7.937E-05	1.361E-04	1.064E-05	2.261E-04	1.984E-05	5.833E-05	1.018E-05	8.835E-05	2.897E+00	2.556E-06
San Joaquin (SJV)	T7 Utility	70 MPH	3.351E-05	3.332E-04	1.978E-04	2.755E-05	7.937E-05	1.361E-04	5.321E-06	2.208E-04	1.984E-05	5.833E-05	5.090E-06	8.327E-05	2.888E+00	1.556E-06
San Joaquin (SJV)	T7IS	70 MPH	6.583E-04	6.426E-03	4.493E-02	3.245E-05	4.409E-05	1.361E-04	2.446E-06	1.827E-04	1.102E-05	5.833E-05	2.249E-06	7.161E-05	3.178E+00	2.660E-04
San Joaquin (SJV)	UBUS	70 MPH	1.049E-04	2.483E-03	2.132E-03	1.401E-05	2.646E-05	1.096E-03	2.875E-05	1.151E-03	6.614E-06	4.695E-04	2.747E-05	5.036E-04	2.560E+00	3.450E-04

Source: EMFAC2014, Version 1.0.7.

Stockton 2040 - all Model Years 1.0E-06 **MTons/Mile**

sub_area	vehicle_class	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX
San Joaquin (SJV)	All Other Buses	05 MPH	2.480E-07	1.037E-05	1.306E-06	2.022E-08	1.200E-08	1.303E-07	6.135E-09	1.485E-07	3.000E-09	5.586E-08	5.870E-09	6.473E-08	2.119E-03	1.152E-08
San Joaquin (SJV)	LDA	05 MPH	2.195E-08	3.149E-08	4.716E-07	5.161E-09	8.000E-09	3.675E-08	4.474E-09	4.922E-08	2.000E-09	1.575E-08	4.115E-09	2.186E-08	5.166E-04	8.536E-09
San Joaquin (SJV)	LDT1	05 MPH	3.090E-08	4.403E-08	6.011E-07	6.629E-09	8.000E-09	3.675E-08	5.742E-09	5.049E-08	2.000E-09	1.575E-08	5.280E-09	2.303E-08	6.632E-04	1.243E-08
San Joaquin (SJV)	LDT2	05 MPH	3.388E-08	4.632E-08	7.061E-07	7.613E-09	8.000E-09	3.675E-08	5.465E-09	5.022E-08	2.000E-09	1.575E-08	5.026E-09	2.278E-08	7.618E-04	1.349E-08
San Joaquin (SJV)	LHD1	05 MPH	4.897E-07	4.045E-07	2.299E-06	1.167E-08	1.051E-08	7.644E-08	1.838E-08	1.053E-07	2.628E-09	3.276E-08	1.748E-08	5.287E-08	1.200E-03	2.642E-08
San Joaquin (SJV)	LHD2	05 MPH	5.355E-07	2.037E-07	2.408E-06	1.201E-08	1.085E-08	8.918E-08	1.377E-08	1.138E-07	2.712E-09	3.822E-08	1.310E-08	5.403E-08	1.240E-03	2.707E-08
San Joaquin (SJV)	MCY	05 MPH	1.250E-05	1.573E-06	4.222E-05	6.782E-09	4.000E-09	1.176E-08	1.372E-08	2.948E-08	1.000E-09	5.040E-09	1.279E-08	1.883E-08	5.671E-04	2.703E-06
San Joaquin (SJV)	MDV	05 MPH	4.837E-08	6.543E-08	9.183E-07	1.001E-08	8.000E-09	3.675E-08	5.730E-09	5.048E-08	2.000E-09	1.575E-08	5.270E-09	2.302E-08	1.003E-03	1.863E-08
San Joaquin (SJV)	MH	05 MPH	2.290E-07	2.531E-06	7.651E-07	3.279E-08	1.289E-08	1.303E-07	2.078E-08	1.640E-07	3.222E-09	5.586E-08	1.966E-08	7.874E-08	3.305E-03	2.985E-08
San Joaquin (SJV)	Motor Coach	05 MPH	5.190E-07	1.768E-05	3.064E-06	2.875E-08	1.200E-08	1.303E-07	9.824E-09	1.522E-07	3.000E-09	5.586E-08	9.399E-09	6.826E-08	3.014E-03	2.411E-08
San Joaquin (SJV)	OBUS	05 MPH	6.951E-08	1.708E-07	3.939E-07	3.653E-08	1.200E-08	1.303E-07	7.756E-09	1.501E-07	3.000E-09	5.586E-08	7.131E-09	6.599E-08	3.660E-03	2.809E-08
San Joaquin (SJV)	SBUS	05 MPH	1.605E-07	5.480E-06	8.429E-07	1.906E-08	1.040E-08	7.448E-07	6.427E-09	7.616E-07	2.600E-09	3.192E-07	6.036E-09	3.278E-07	1.965E-03	1.570E-08
San Joaquin (SJV)	T6 Ag	05 MPH	2.853E-07	1.171E-05	1.502E-06	2.050E-08	1.200E-08	1.303E-07	7.287E-09	1.496E-07	3.000E-09	5.586E-08	6.972E-09	6.583E-08	2.149E-03	1.325E-08
San Joaquin (SJV)	T6 CAIRP Heavy	05 MPH	2.275E-07	9.231E-06	1.197E-06	1.995E-08	1.200E-08	1.303E-07	5.466E-09	1.478E-07	3.000E-09	5.586E-08	5.229E-09	6.409E-08	2.091E-03	1.057E-08
San Joaquin (SJV)	T6 CAIRP Small	05 MPH	2.157E-07	8.544E-06	1.135E-06	2.012E-08	1.200E-08	1.303E-07	5.079E-09	1.474E-07	3.000E-09	5.586E-08	4.859E-09	6.372E-08	2.109E-03	1.002E-08
San Joaquin (SJV)	T6 Instate Construction Heavy	05 MPH	2.551E-07	1.079E-05	1.343E-06	2.018E-08	1.200E-08	1.303E-07	6.376E-09	1.487E-07	3.000E-09	5.586E-08	6.100E-09	6.496E-08	2.115E-03	1.185E-08
San Joaquin (SJV)	T6 Instate Construction Small	05 MPH	2.360E-07	9.708E-06	1.242E-06	2.016E-08	1.200E-08	1.303E-07	5.749E-09	1.481E-07	3.000E-09	5.586E-08	5.500E-09	6.436E-08	2.114E-03	1.096E-08
San Joaquin (SJV)	T6 Instate Heavy	05 MPH	2.476E-07	1.027E-05	1.303E-06	2.002E-08	1.200E-08	1.303E-07	6.115E-09	1.485E-07	3.000E-09	5.586E-08	5.850E-09	6.471E-08	2.098E-03	1.150E-08
San Joaquin (SJV)	T6 Instate Small	05 MPH	2.368E-07	9.726E-06	1.246E-06	2.018E-08	1.200E-08	1.303E-07	5.767E-09	1.481E-07	3.000E-09	5.586E-08	5.517E-09	6.438E-08	2.116E-03	1.100E-08
San Joaquin (SJV)	T6 OOS Heavy	05 MPH	2.276E-07	9.233E-06	1.198E-06	1.995E-08	1.200E-08	1.303E-07	5.468E-09	1.478E-07	3.000E-09	5.586E-08	5.232E-09	6.409E-08	2.091E-03	1.057E-08
San Joaquin (SJV)	T6 OOS Small	05 MPH	2.157E-07	8.544E-06	1.135E-06	2.012E-08	1.200E-08	1.303E-07	5.079E-09	1.474E-07	3.000E-09	5.586E-08	4.859E-09	6.372E-08	2.109E-03	1.002E-08
San Joaquin (SJV)	T6 Public	05 MPH	1.953E-07	6.997E-06	9.950E-07	2.020E-08	1.200E-08	1.303E-07	5.314E-09	1.477E-07	3.000E-09	5.586E-08	5.084E-09	6.394E-08	2.118E-03	9.071E-09
San Joaquin (SJV)	T6 Utility	05 MPH	1.777E-07	6.258E-06	9.356E-07	2.012E-08	1.200E-08	1.303E-07	3.826E-09	1.462E-07	3.000E-09	5.586E-08	3.661E-09	6.252E-08	2.108E-03	8.256E-09
San Joaquin (SJV)	T6TS	05 MPH	6.390E-08	1.613E-07	3.606E-07	3.649E-08	1.200E-08	1.303E-07	7.745E-09	1.501E-07	3.000E-09	5.586E-08	7.121E-09	6.598E-08	3.656E-03	2.582E-08
San Joaquin (SJV)	T7 Ag	05 MPH	6.536E-07	2.108E-05	3.860E-06	2.785E-08	3.600E-08	6.174E-08	1.297E-08	1.107E-07	9.000E-09	2.646E-08	1.241E-08	4.787E-08	2.919E-03	3.036E-08
San Joaquin (SJV)	T7 CAIRP	05 MPH	5.676E-07	1.998E-05	3.352E-06	2.637E-08	3.600E-08	6.174E-08	1.105E-08	1.088E-07	9.000E-09	2.646E-08	1.057E-08	4.603E-08	2.764E-03	2.637E-08
San Joaquin (SJV)	T7 CAIRP Construction	05 MPH	5.830E-07	2.077E-05	3.442E-06	2.659E-08	3.600E-08	6.174E-08	1.145E-08	1.092E-07	9.000E-09	2.646E-08	1.095E-08	4.641E-08	2.788E-03	2.708E-08
San Joaquin (SJV)	T7 NNOOS	05 MPH	4.995E-07	1.675E-05	2.950E-06	2.634E-08	3.600E-08	6.174E-08	9.333E-09	1.071E-07	9.000E-09	2.646E-08	8.929E-09	4.439E-08	2.760E-03	2.320E-08
San Joaquin (SJV)	T7 NOOS	05 MPH	5.678E-07	1.998E-05	3.353E-06	2.637E-08	3.600E-08	6.174E-08	1.105E-08	1.088E-07	9.000E-09	2.646E-08	1.057E-08	4.603E-08	2.764E-03	2.637E-08
San Joaquin (SJV)	T7 Other Port	05 MPH	6.176E-07	2.251E-05	3.647E-06	2.657E-08	3.600E-08	6.174E-08	1.232E-08	1.101E-07	9.000E-09	2.646E-08	1.179E-08	4.725E-08	2.785E-03	2.868E-08
San Joaquin (SJV)	T7 POAK	05 MPH	6.234E-07	2.279E-05	3.681E-06	2.657E-08	3.600E-08	6.174E-08	1.247E-08	1.102E-07	9.000E-09	2.646E-08	1.193E-08	4.739E-08	2.785E-03	2.896E-08
San Joaquin (SJV)	T7 POLA	05 MPH	6.152E-07	2.225E-05	3.632E-06	2.664E-08	3.600E-08	6.174E-08	1.224E-08	1.100E-07	9.000E-09	2.646E-08	1.172E-08	4.718E-08	2.792E-03	2.857E-08
San Joaquin (SJV)	T7 Public	05 MPH	4.325E-07	1.206E-05	2.275E-06	2.717E-08	3.600E-08	6.174E-08	1.471E-08	1.124E-07	9.000E-09	2.646E-08	1.407E-08	4.953E-08	2.848E-03	2.009E-08
San Joaquin (SJV)	T7 Single	05 MPH	4.818E-07	1.539E-05	2.845E-06	2.684E-08	3.600E-08	6.174E-08	8.846E-09	1.066E-07	9.000E-09	2.646E-08	8.463E-09	4.392E-08	2.813E-03	2.238E-08
San Joaquin (SJV)	T7 Single Construction	05 MPH	4.807E-07	1.542E-05	2.835E-06	2.680E-08	3.600E-08	6.174E-08	8.897E-09	1.066E-07	9.000E-09	2.646E-08	8.512E-09	4.397E-08	2.809E-03	2.233E-08
San Joaquin (SJV)	T7 SWCV	05 MPH	1.624E-07	3.575E-06	6.599E-06	5.270E-08	3.600E-08	6.174E-08	1.219E-08	1.099E-07	9.000E-09	2.646E-08	1.167E-08	4.713E-08	6.256E-03	2.137E-06
San Joaquin (SJV)	T7 Tractor	05 MPH	5.774E-07	2.036E-05	3.409E-06	2.641E-08	3.600E-08	6.174E-08	1.129E-08	1.090E-07	9.000E-09	2.646E-08	1.080E-08	4.626E-08	2.769E-03	2.682E-08
San Joaquin (SJV)	T7 Tractor Construction	05 MPH	6.003E-07	2.148E-05	3.544E-06	2.666E-08	3.600E-08	6.174E-08	1.188E-08	1.096E-07	9.000E-09	2.646E-08	1.137E-08	4.683E-08	2.795E-03	2.788E-08
San Joaquin (SJV)	T7 Utility	05 MPH	3.656E-07	1.021E-05	2.159E-06	2.657E-08	3.600E-08	6.174E-08	5.946E-09	1.037E-07	9.000E-09	2.646E-08	5.689E-09	4.115E-08	2.785E-03	1.698E-08
San Joaquin (SJV)	T7IS	05 MPH	2.091E-06	5.344E-06	5.404E-05	3.875E-08	2.000E-08	6.174E-08	7.769E-09	8.951E-08	5.000E-09	2.646E-08	7.143E-09	3.860E-08	3.790E-03	8.448E-07
San Joaquin (SJV)	UBUS	05 MPH	4.437E-07	3.193E-06	1.833E-05	2.181E-08	1.200E-08	4.969E-07	5.208E-08	5.610E-07	3.000E-09	2.130E-07	4.969E-08	2.657E-07	3.345E-03	3.972E-06

San Joaquin (SJV)	All Other Buses	10 MPH	2.009E-07	7.868E-06	1.057E-06	1.793E-08	1.200E-08	1.303E-07	5.519E-09	1.479E-07	3.000E-09	5.586E-08	5.280E-09	6.414E-08	1.879E-03	9.330E-09
San Joaquin (SJV)	LDA	10 MPH	1.392E-08	2.734E-08	4.245E-07	3.834E-09	8.000E-09	3.675E-08	2.822E-09	4.757E-08	2.000E-09	1.575E-08	2.595E-09	2.035E-08	3.837E-04	5.377E-09
San Joaquin (SJV)	LDT1	10 MPH	1.950E-08	3.817E-08	5.466E-07	4.919E-09	8.000E-09	3.675E-08	3.615E-09	4.837E-08	2.000E-09	1.575E-08	3.324E-09	2.107E-08	4.920E-04	7.841E-09
San Joaquin (SJV)	LDT2	10 MPH	2.140E-08	4.020E-08	6.419E-07	5.650E-09	8.000E-09	3.675E-08	3.445E-09	4.820E-08	2.000E-09	1.575E-08	3.169E-09	2.092E-08	5.651E-04	8.494E-09
San Joaquin (SJV)	LHD1	10 MPH	3.634E-07	3.833E-07	1.729E-06	1.050E-08	1.051E-08	7.644E-08	1.455E-08	1.015E-07	2.628E-09	3.276E-08	1.385E-08	4.924E-08	1.078E-03	1.919E-08
San Joaquin (SJV)	LHD2	10 MPH	4.000E-07	1.738E-07	1.812E-06	1.126E-08	1.085E-08	8.918E-08	1.209E-08	1.121E-07	2.712E-09	3.822E-08	1.151E-08	5.245E-08	1.161E-03	1.996E-08
San Joaquin (SJV)	MCY	10 MPH	8.091E-06	1.411E-06	3.264E-05	5.008E-09	4.000E-09	1.176E-08	8.828E-09	2.459E-08	1.000E-09	5.040E-09	8.230E-09	1.427E-08	4.207E-04	1.749E-06
San Joaquin (SJV)	MDV	10 MPH	3.085E-08	5.640E-08	8.222E-07	7.448E-09	8.000E-09	3.675E-08	3.625E-09	4.838E-08	2.000E-09	1.575E-08	3.335E-09	2.109E-08	7.458E-04	1.178E-08
San Joaquin (SJV)	MH	10 MPH	1.651E-07	2.111E-06	6.235E-07	2.822E-08	1.289E-08	1.303E-07	1.701E-08	1.602E-07	3.222E-09	5.586E-08	1.613E-08	7.522E-08	2.845E-03	1.976E-08
San Joaquin (SJV)	Motor Coach	10 MPH	4.203E-07	1.339E-05	2.482E-06	2.550E-08	1.200E-08	1.303E-07	8.837E-09	1.512E-07	3.000E-09	5.586E-08	8.454E-09	6.731E-08	2.672E-03	1.952E-08
San Joaquin (SJV)	OBUS	10 MPH	4.374E-08	1.484E-07	3.587E-07	3.118E-08	1.200E-08	1.303E-07	4.880E-09	1.472E-07	3.000E-09	5.586E-08	4.487E-09	6.335E-08	3.124E-03	1.767E-08
San Joaquin (SJV)	SBUS	10 MPH	1.258E-07	4.166E-06	6.956E-07	1.667E-08	1.040E-08	7.448E-07	4.962E-09	7.602E-07	2.600E-09	3.192E-07	4.677E-09	3.265E-07	1.720E-03	1.103E-08
San Joaquin (SJV)	T6 Ag	10 MPH	2.311E-07	8.960E-06	1.216E-06	1.818E-08	1.200E-08	1.303E-07	6.555E-09	1.489E-07	3.000E-09	5.586E-08	6.272E-09	6.513E-08	1.906E-03	1.073E-08
San Joaquin (SJV)	T6 CAIRP Heavy	10 MPH	1.843E-07	6.995E-06	9.698E-07	1.769E-08	1.200E-08	1.303E-07	4.917E-09	1.473E-07	3.000E-09	5.586E-08	4.704E-09	6.356E-08	1.854E-03	8.558E-09
San Joaquin (SJV)	T6 CAIRP Small	10 MPH	1.747E-07	6.473E-06	9.196E-07	1.784E-08	1.200E-08	1.303E-07	4.569E-09	1.469E-07	3.000E-09	5.586E-08	4.371E-09	6.323E-08	1.870E-03	8.114E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	10 MPH	2.066E-07	8.182E-06	1.087E-06	1.790E-08	1.200E-08	1.303E-07	5.735E-09	1.481E-07	3.000E-09	5.586E-08	5.487E-09	6.435E-08	1.876E-03	9.597E-09
San Joaquin (SJV)	T6 Instate Construction Small	10 MPH	1.911E-07	7.359E-06	1.006E-06	1.788E-08	1.200E-08	1.303E-07	5.171E-09	1.475E-07	3.000E-09	5.586E-08	4.947E-09	6.381E-08	1.874E-03	8.878E-09
San Joaquin (SJV)	T6 Instate Heavy	10 MPH	2.006E-07	7.795E-06	1.056E-06	1.775E-08	1.200E-08	1.303E-07	5.501E-09	1.478E-07	3.000E-09	5.586E-08	5.263E-09	6.412E-08	1.860E-03	9.315E-09
San Joaquin (SJV)	T6 Instate Small	10 MPH	1.918E-07	7.375E-06	1.009E-06	1.790E-08	1.200E-08	1.303E-07	5.187E-09	1.475E-07	3.000E-09	5.586E-08	4.963E-09	6.382E-08	1.876E-03	8.908E-09
San Joaquin (SJV)	T6 OOS Heavy	10 MPH	1.843E-07	6.997E-06	9.702E-07	1.769E-08	1.200E-08	1.303E-07	4.919E-09	1.473E-07	3.000E-09	5.586E-08	4.706E-09	6.357E-08	1.854E-03	8.561E-09
San Joaquin (SJV)	T6 OOS Small	10 MPH	1.747E-07	6.473E-06	9.196E-07	1.784E-08	1.200E-08	1.303E-07	4.569E-09	1.469E-07	3.000E-09	5.586E-08	4.371E-09	6.323E-08	1.870E-03	8.114E-09
San Joaquin (SJV)	T6 Public	10 MPH	1.579E-07	5.324E-06	8.059E-07	1.792E-08	1.200E-08	1.303E-07	4.740E-09	1.471E-07	3.000E-09	5.586E-08	4.535E-09	6.340E-08	1.878E-03	7.332E-09
San Joaquin (SJV)	T6 Utility	10 MPH	1.440E-07	4.740E-06	7.577E-07	1.784E-08	1.200E-08	1.303E-07	3.442E-09	1.458E-07	3.000E-09	5.586E-08	3.293E-09	6.215E-08	1.870E-03	6.686E-09
San Joaquin (SJV)	T6TS	10 MPH	4.021E-08	1.401E-07	3.284E-07	3.115E-08	1.200E-08	1.303E-07	4.873E-09	1.472E-07	3.000E-09	5.586E-08	4.481E-09	6.334E-08	3.121E-03	1.625E-08
San Joaquin (SJV)	T7 Ag	10 MPH	5.294E-07	1.624E-05	3.126E-06	2.469E-08	3.600E-08	6.174E-08	1.167E-08	1.094E-07	9.000E-09	2.646E-08	1.116E-08	4.662E-08	2.588E-03	2.459E-08
San Joaquin (SJV)	T7 CAIRP	10 MPH	4.597E-07	1.514E-05	2.715E-06	2.338E-08	3.600E-08	6.174E-08	9.938E-09	1.077E-07	9.000E-09	2.646E-08	9.508E-09	4.497E-08	2.451E-03	2.135E-08
San Joaquin (SJV)	T7 CAIRP Construction	10 MPH	4.722E-07	1.574E-05	2.788E-06	2.358E-08	3.600E-08	6.174E-08	1.030E-08	1.080E-07	9.000E-09	2.646E-08	9.850E-09	4.531E-08	2.472E-03	2.193E-08
San Joaquin (SJV)	T7 NNOOS	10 MPH	4.046E-07	1.269E-05	2.389E-06	2.335E-08	3.600E-08	6.174E-08	8.396E-09	1.061E-07	9.000E-09	2.646E-08	8.032E-09	4.349E-08	2.448E-03	1.879E-08
San Joaquin (SJV)	T7 NOOS	10 MPH	4.599E-07	1.514E-05	2.715E-06	2.339E-08	3.600E-08	6.174E-08	9.941E-09	1.077E-07	9.000E-09	2.646E-08	9.511E-09	4.497E-08	2.451E-03	2.136E-08
San Joaquin (SJV)	T7 Other Port	10 MPH	5.002E-07	1.705E-05	2.953E-06	2.356E-08	3.600E-08	6.174E-08	1.108E-08	1.088E-07	9.000E-09	2.646E-08	1.060E-08	4.606E-08	2.469E-03	2.323E-08
San Joaquin (SJV)	T7 POAK	10 MPH	5.049E-07	1.726E-05	2.981E-06	2.356E-08	3.600E-08	6.174E-08	1.121E-08	1.090E-07	9.000E-09	2.646E-08	1.073E-08	4.619E-08	2.469E-03	2.345E-08
San Joaquin (SJV)	T7 POLA	10 MPH	4.982E-07	1.686E-05	2.942E-06	2.362E-08	3.600E-08	6.174E-08	1.101E-08	1.088E-07	9.000E-09	2.646E-08	1.054E-08	4.600E-08	2.476E-03	2.314E-08
San Joaquin (SJV)	T7 Public	10 MPH	3.478E-07	9.258E-06	1.843E-06	2.412E-08	3.600E-08	6.174E-08	1.271E-08	1.105E-07	9.000E-09	2.646E-08	1.216E-08	4.762E-08	2.528E-03	1.616E-08
San Joaquin (SJV)	T7 Single	10 MPH	3.902E-07	1.170E-05	2.304E-06	2.380E-08	3.600E-08	6.174E-08	7.957E-09	1.057E-07	9.000E-09	2.646E-08	7.613E-09	4.307E-08	2.495E-03	1.812E-08
San Joaquin (SJV)	T7 Single Construction	10 MPH	3.893E-07	1.172E-05	2.296E-06	2.376E-08	3.600E-08	6.174E-08	7.999E-09	1.057E-07	9.000E-09	2.646E-08	7.653E-09	4.311E-08	2.491E-03	1.808E-08
San Joaquin (SJV)	T7 SWCV	10 MPH	1.281E-07	2.949E-06	5.344E-06	4.680E-08	3.600E-08	6.174E-08	1.095E-08	1.087E-07	9.000E-09	2.646E-08	1.047E-08	4.593E-08	5.556E-03	1.712E-06
San Joaquin (SJV)	T7 Tractor	10 MPH	4.676E-07	1.544E-05	2.761E-06	2.342E-08	3.600E-08	6.174E-08	1.015E-08	1.079E-07	9.000E-09	2.646E-08	9.713E-09	4.517E-08	2.455E-03	2.172E-08
San Joaquin (SJV)	T7 Tractor Construction	10 MPH	4.862E-07	1.629E-05	2.870E-06	2.364E-08	3.600E-08	6.174E-08	1.069E-08	1.084E-07	9.000E-09	2.646E-08	1.022E-08	4.568E-08	2.478E-03	2.258E-08
San Joaquin (SJV)	T7 Utility	10 MPH	2.961E-07	7.736E-06	1.748E-06	2.356E-08	3.600E-08	6.174E-08	5.349E-09	1.031E-07	9.000E-09	2.646E-08	5.117E-09	4.058E-08	2.470E-03	1.375E-08
San Joaquin (SJV)	T7IS	10 MPH	1.315E-06	4.644E-06	4.921E-05	3.291E-08	2.000E-08	6.174E-08	4.888E-09	8.663E-08	5.000E-09	2.646E-08	4.494E-09	3.595E-08	3.215E-03	5.315E-07
San Joaquin (SJV)	UBUS	10 MPH	3.210E-07	2.632E-06	1.394E-05	1.884E-08	1.200E-08	4.969E-07	4.175E-08	5.507E-07	3.000E-09	2.130E-07	3.986E-08	2.558E-07	2.941E-03	2.971E-06

San Joaquin (SJV)	All Other Buses	15 MPH	1.415E-07	4.712E-06	7.447E-07	1.504E-08	1.200E-08	1.303E-07	4.742E-09	1.471E-07	3.000E-09	5.586E-08	4.537E-09	6.340E-08	1.576E-03	6.571E-09
San Joaquin (SJV)	LDA	15 MPH	9.121E-09	2.405E-08	3.781E-07	2.955E-09	8.000E-09	3.675E-08	1.877E-09	4.663E-08	2.000E-09	1.575E-08	1.726E-09	1.948E-08	2.956E-04	3.564E-09
San Joaquin (SJV)	LDT1	15 MPH	1.295E-08	3.364E-08	4.983E-07	3.788E-09	8.000E-09	3.675E-08	2.401E-09	4.715E-08	2.000E-09	1.575E-08	2.208E-09	1.996E-08	3.788E-04	5.215E-09
San Joaquin (SJV)	LDT2	15 MPH	1.414E-08	3.541E-08	5.842E-07	4.351E-09	8.000E-09	3.675E-08	2.291E-09	4.704E-08	2.000E-09	1.575E-08	2.107E-09	1.986E-08	4.351E-04	5.638E-09
San Joaquin (SJV)	LHD1	15 MPH	1.849E-07	3.463E-07	9.107E-07	7.054E-09	1.051E-08	7.644E-08	1.156E-08	9.851E-08	2.628E-09	3.276E-08	1.102E-08	4.640E-08	7.239E-04	1.012E-08
San Joaquin (SJV)	LHD2	15 MPH	1.965E-07	1.265E-07	9.111E-07	7.649E-09	1.085E-08	8.918E-08	1.018E-08	1.102E-07	2.712E-09	3.822E-08	9.709E-09	5.064E-08	7.882E-04	1.004E-08
San Joaquin (SJV)	MCY	15 MPH	5.523E-06	1.289E-06	2.641E-05	3.849E-09	4.000E-09	1.176E-08	5.990E-09	2.175E-08	1.000E-09	5.040E-09	5.585E-09	1.162E-08	3.238E-04	1.193E-06
San Joaquin (SJV)	MDV	15 MPH	2.021E-08	4.930E-08	7.244E-07	5.748E-09	8.000E-09	3.675E-08	2.419E-09	4.717E-08	2.000E-09	1.575E-08	2.226E-09	1.998E-08	5.754E-04	7.833E-09
San Joaquin (SJV)	MH	15 MPH	8.690E-08	1.450E-06	4.238E-07	1.996E-08	1.289E-08	1.303E-07	1.302E-08	1.562E-07	3.222E-09	5.586E-08	1.237E-08	7.145E-08	2.015E-03	1.206E-08
San Joaquin (SJV)	Motor Coach	15 MPH	2.960E-07	7.993E-06	1.748E-06	2.139E-08	1.200E-08	1.303E-07	7.593E-09	1.499E-07	3.000E-09	5.586E-08	7.265E-09	6.612E-08	2.242E-03	1.375E-08
San Joaquin (SJV)	OBUS	15 MPH	2.903E-08	1.310E-07	3.276E-07	2.150E-08	1.200E-08	1.303E-07	3.239E-09	1.456E-07	3.000E-09	5.586E-08	2.978E-09	6.184E-08	2.153E-03	1.173E-08
San Joaquin (SJV)	SBUS	15 MPH	8.801E-08	2.514E-06	5.143E-07	1.310E-08	1.040E-08	7.448E-07	3.892E-09	7.591E-07	2.600E-09	3.192E-07	3.676E-09	3.255E-07	1.354E-03	7.532E-09
San Joaquin (SJV)	T6 Ag	15 MPH	1.627E-07	5.494E-06	8.565E-07	1.525E-08	1.200E-08	1.303E-07	5.633E-09	1.480E-07	3.000E-09	5.586E-08	5.389E-09	6.425E-08	1.599E-03	7.558E-09
San Joaquin (SJV)	T6 CAIRP Heavy	15 MPH	1.298E-07	4.177E-06	6.830E-07	1.484E-08	1.200E-08	1.303E-07	4.225E-09	1.466E-07	3.000E-09	5.586E-08	4.042E-09	6.290E-08	1.556E-03	6.027E-09
San Joaquin (SJV)	T6 CAIRP Small	15 MPH	1.230E-07	3.862E-06	6.476E-07	1.497E-08	1.200E-08	1.303E-07	3.926E-09	1.463E-07	3.000E-09	5.586E-08	3.756E-09	6.262E-08	1.569E-03	5.715E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	15 MPH	1.455E-07	4.901E-06	7.658E-07	1.501E-08	1.200E-08	1.303E-07	4.927E-09	1.473E-07	3.000E-09	5.586E-08	4.714E-09	6.357E-08	1.574E-03	6.759E-09
San Joaquin (SJV)	T6 Instate Construction Small	15 MPH	1.346E-07	4.400E-06	7.084E-07	1.500E-08	1.200E-08	1.303E-07	4.443E-09	1.468E-07	3.000E-09	5.586E-08	4.251E-09	6.311E-08	1.572E-03	6.252E-09
San Joaquin (SJV)	T6 Instate Heavy	15 MPH	1.412E-07	4.680E-06	7.435E-07	1.489E-08	1.200E-08	1.303E-07	4.727E-09	1.471E-07	3.000E-09	5.586E-08	4.522E-09	6.338E-08	1.561E-03	6.560E-09
San Joaquin (SJV)	T6 Instate Small	15 MPH	1.351E-07	4.414E-06	7.109E-07	1.501E-08	1.200E-08	1.303E-07	4.458E-09	1.468E-07	3.000E-09	5.586E-08	4.265E-09	6.312E-08	1.574E-03	6.273E-09
San Joaquin (SJV)	T6 OOS Heavy	15 MPH	1.298E-07	4.179E-06	6.833E-07	1.484E-08	1.200E-08	1.303E-07	4.227E-09	1.466E-07	3.000E-09	5.586E-08	4.044E-09	6.290E-08	1.556E-03	6.029E-09
San Joaquin (SJV)	T6 OOS Small	15 MPH	1.230E-07	3.862E-06	6.476E-07	1.497E-08	1.200E-08	1.303E-07	3.926E-09	1.463E-07	3.000E-09	5.586E-08	3.756E-09	6.262E-08	1.569E-03	5.715E-09
San Joaquin (SJV)	T6 Public	15 MPH	1.103E-07	3.210E-06	5.672E-07	1.503E-08	1.200E-08	1.303E-07	3.964E-09	1.463E-07	3.000E-09	5.586E-08	3.793E-09	6.265E-08	1.575E-03	5.124E-09
San Joaquin (SJV)	T6 Utility	15 MPH	1.014E-07	2.828E-06	5.336E-07	1.496E-08	1.200E-08	1.303E-07	2.958E-09	1.453E-07	3.000E-09	5.586E-08	2.830E-09	6.169E-08	1.569E-03	4.709E-09
San Joaquin (SJV)	T6TS	15 MPH	2.669E-08	1.237E-07	2.999E-07	2.147E-08	1.200E-08	1.303E-07	3.235E-09	1.456E-07	3.000E-09	5.586E-08	2.974E-09	6.183E-08	2.151E-03	1.078E-08
San Joaquin (SJV)	T7 Ag	15 MPH	3.728E-07	1.014E-05	2.201E-06	2.072E-08	3.600E-08	6.174E-08	1.003E-08	1.078E-07	9.000E-09	2.646E-08	9.593E-09	4.505E-08	2.171E-03	1.732E-08
San Joaquin (SJV)	T7 CAIRP	15 MPH	3.238E-07	9.046E-06	1.912E-06	1.962E-08	3.600E-08	6.174E-08	8.540E-09	1.063E-07	9.000E-09	2.646E-08	8.170E-09	4.363E-08	2.056E-03	1.504E-08
San Joaquin (SJV)	T7 CAIRP Construction	15 MPH	3.325E-07	9.396E-06	1.963E-06	1.978E-08	3.600E-08	6.174E-08	8.847E-09	1.066E-07	9.000E-09	2.646E-08	8.464E-09	4.392E-08	2.074E-03	1.545E-08
San Joaquin (SJV)	T7 NNOOS	15 MPH	2.849E-07	7.569E-06	1.682E-06	1.959E-08	3.600E-08	6.174E-08	7.214E-09	1.050E-07	9.000E-09	2.646E-08	6.902E-09	4.236E-08	2.054E-03	1.323E-08
San Joaquin (SJV)	T7 NOOS	15 MPH	3.239E-07	9.048E-06	1.912E-06	1.962E-08	3.600E-08	6.174E-08	8.543E-09	1.063E-07	9.000E-09	2.646E-08	8.173E-09	4.363E-08	2.057E-03	1.504E-08
San Joaquin (SJV)	T7 Other Port	15 MPH	3.523E-07	1.017E-05	2.080E-06	1.977E-08	3.600E-08	6.174E-08	9.522E-09	1.073E-07	9.000E-09	2.646E-08	9.110E-09	4.457E-08	2.072E-03	1.636E-08
San Joaquin (SJV)	T7 POAK	15 MPH	3.556E-07	1.030E-05	2.100E-06	1.977E-08	3.600E-08	6.174E-08	9.636E-09	1.074E-07	9.000E-09	2.646E-08	9.219E-09	4.468E-08	2.072E-03	1.652E-08
San Joaquin (SJV)	T7 POLA	15 MPH	3.509E-07	1.008E-05	2.072E-06	1.982E-08	3.600E-08	6.174E-08	9.465E-09	1.072E-07	9.000E-09	2.646E-08	9.056E-09	4.452E-08	2.077E-03	1.630E-08
San Joaquin (SJV)	T7 Public	15 MPH	2.382E-07	5.696E-06	1.297E-06	2.022E-08	3.600E-08	6.174E-08	9.749E-09	1.075E-07	9.000E-09	2.646E-08	9.327E-09	4.479E-08	2.119E-03	1.106E-08
San Joaquin (SJV)	T7 Single	15 MPH	2.748E-07	7.054E-06	1.623E-06	1.997E-08	3.600E-08	6.174E-08	6.838E-09	1.046E-07	9.000E-09	2.646E-08	6.542E-09	4.200E-08	2.093E-03	1.276E-08
San Joaquin (SJV)	T7 Single Construction	15 MPH	2.741E-07	7.048E-06	1.617E-06	1.994E-08	3.600E-08	6.174E-08	6.863E-09	1.046E-07	9.000E-09	2.646E-08	6.566E-09	4.203E-08	2.090E-03	1.273E-08
San Joaquin (SJV)	T7 SWCV	15 MPH	8.144E-08	2.098E-06	3.762E-06	3.922E-08	3.600E-08	6.174E-08	9.300E-09	1.070E-07	9.000E-09	2.646E-08	8.897E-09	4.436E-08	4.656E-03	1.156E-06
San Joaquin (SJV)	T7 Tractor	15 MPH	3.293E-07	9.237E-06	1.945E-06	1.965E-08	3.600E-08	6.174E-08	8.724E-09	1.065E-07	9.000E-09	2.646E-08	8.347E-09	4.381E-08	2.060E-03	1.530E-08
San Joaquin (SJV)	T7 Tractor Construction	15 MPH	3.424E-07	9.743E-06	2.021E-06	1.983E-08	3.600E-08	6.174E-08	9.181E-09	1.069E-07	9.000E-09	2.646E-08	8.784E-09	4.424E-08	2.079E-03	1.590E-08
San Joaquin (SJV)	T7 Utility	15 MPH	2.085E-07	4.616E-06	1.231E-06	1.977E-08	3.600E-08	6.174E-08	4.596E-09	1.023E-07	9.000E-09	2.646E-08	4.397E-09	3.986E-08	2.072E-03	9.685E-09
San Joaquin (SJV)	T7IS	15 MPH	8.731E-07	4.100E-06	4.494E-05	2.388E-08	2.000E-08	6.174E-08	3.245E-09	8.498E-08	5.000E-09	2.646E-08	2.983E-09	3.444E-08	2.319E-03	3.528E-07
San Joaquin (SJV)	UBUS	15 MPH	1.725E-07	1.828E-06	7.292E-06	1.347E-08	1.200E-08	4.969E-07	2.649E-08	5.354E-07	3.000E-09	2.130E-07	2.529E-08	2.413E-07	2.215E-03	1.465E-06

San Joaquin (SJV)	All Other Buses	20 MPH	1.023E-07	2.634E-06	5.387E-07	1.314E-08	1.200E-08	1.303E-07	4.231E-09	1.466E-07	3.000E-09	5.586E-08	4.048E-09	6.291E-08	1.377E-03	4.754E-09
San Joaquin (SJV)	LDA	20 MPH	6.282E-09	2.151E-08	3.403E-07	2.362E-09	8.000E-09	3.675E-08	1.317E-09	4.607E-08	2.000E-09	1.575E-08	1.211E-09	1.896E-08	2.363E-04	2.491E-09
San Joaquin (SJV)	LDT1	20 MPH	9.072E-09	3.014E-08	4.558E-07	3.027E-09	8.000E-09	3.675E-08	1.683E-09	4.643E-08	2.000E-09	1.575E-08	1.547E-09	1.930E-08	3.026E-04	3.658E-09
San Joaquin (SJV)	LDT2	20 MPH	9.841E-09	3.171E-08	5.337E-07	3.478E-09	8.000E-09	3.675E-08	1.607E-09	4.636E-08	2.000E-09	1.575E-08	1.478E-09	1.923E-08	3.477E-04	3.947E-09
San Joaquin (SJV)	LHD1	20 MPH	8.038E-08	3.241E-07	4.296E-07	6.065E-09	1.051E-08	7.644E-08	9.333E-09	9.628E-08	2.628E-09	3.276E-08	8.899E-09	4.429E-08	6.223E-04	4.806E-09
San Joaquin (SJV)	LHD2	20 MPH	7.781E-08	9.389E-08	3.842E-07	6.588E-09	1.085E-08	8.918E-08	8.517E-09	1.085E-07	2.712E-09	3.822E-08	8.124E-09	4.906E-08	6.787E-04	4.256E-09
San Joaquin (SJV)	MCY	20 MPH	3.973E-06	1.197E-06	2.221E-05	3.077E-09	4.000E-09	1.176E-08	4.285E-09	2.005E-08	1.000E-09	5.040E-09	3.996E-09	1.004E-08	2.588E-04	8.577E-07
San Joaquin (SJV)	MDV	20 MPH	1.391E-08	4.389E-08	6.472E-07	4.598E-09	8.000E-09	3.675E-08	1.702E-09	4.645E-08	2.000E-09	1.575E-08	1.567E-09	1.932E-08	4.602E-04	5.489E-09
San Joaquin (SJV)	MH	20 MPH	4.142E-08	9.991E-07	2.994E-07	1.441E-08	1.289E-08	1.303E-07	1.011E-08	1.533E-07	3.222E-09	5.586E-08	9.606E-09	6.869E-08	1.455E-03	7.544E-09
San Joaquin (SJV)	Motor Coach	20 MPH	2.141E-07	4.437E-06	1.265E-06	1.869E-08	1.200E-08	1.303E-07	6.775E-09	1.491E-07	3.000E-09	5.586E-08	6.481E-09	6.534E-08	1.959E-03	9.947E-09
San Joaquin (SJV)	OBUS	20 MPH	2.033E-08	1.175E-07	3.000E-07	1.511E-08	1.200E-08	1.303E-07	2.268E-09	1.446E-07	3.000E-09	5.586E-08	2.086E-09	6.095E-08	1.514E-03	8.215E-09
San Joaquin (SJV)	SBUS	20 MPH	6.343E-08	1.426E-06	3.925E-07	1.075E-08	1.040E-08	7.448E-07	3.229E-09	7.584E-07	2.600E-09	3.192E-07	3.056E-09	3.249E-07	1.113E-03	5.358E-09
San Joaquin (SJV)	T6 Ag	20 MPH	1.177E-07	3.210E-06	6.196E-07	1.332E-08	1.200E-08	1.303E-07	5.025E-09	1.474E-07	3.000E-09	5.586E-08	4.808E-09	6.367E-08	1.397E-03	5.468E-09
San Joaquin (SJV)	T6 CAIRP Heavy	20 MPH	9.387E-08	2.322E-06	4.941E-07	1.295E-08	1.200E-08	1.303E-07	3.769E-09	1.461E-07	3.000E-09	5.586E-08	3.606E-09	6.247E-08	1.358E-03	4.360E-09
San Joaquin (SJV)	T6 CAIRP Small	20 MPH	8.901E-08	2.143E-06	4.685E-07	1.308E-08	1.200E-08	1.303E-07	3.502E-09	1.458E-07	3.000E-09	5.586E-08	3.351E-09	6.221E-08	1.370E-03	4.134E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	20 MPH	1.053E-07	2.741E-06	5.540E-07	1.312E-08	1.200E-08	1.303E-07	4.395E-09	1.467E-07	3.000E-09	5.586E-08	4.204E-09	6.306E-08	1.375E-03	4.889E-09
San Joaquin (SJV)	T6 Instate Construction Small	20 MPH	9.737E-08	2.450E-06	5.125E-07	1.310E-08	1.200E-08	1.303E-07	3.964E-09	1.463E-07	3.000E-09	5.586E-08	3.792E-09	6.265E-08	1.374E-03	4.523E-09
San Joaquin (SJV)	T6 Instate Heavy	20 MPH	1.022E-07	2.628E-06	5.378E-07	1.299E-08	1.200E-08	1.303E-07	4.217E-09	1.466E-07	3.000E-09	5.586E-08	4.035E-09	6.289E-08	1.362E-03	4.746E-09
San Joaquin (SJV)	T6 Instate Small	20 MPH	9.771E-08	2.463E-06	5.143E-07	1.312E-08	1.200E-08	1.303E-07	3.977E-09	1.463E-07	3.000E-09	5.586E-08	3.805E-09	6.266E-08	1.375E-03	4.538E-09
San Joaquin (SJV)	T6 OOS Heavy	20 MPH	9.391E-08	2.323E-06	4.943E-07	1.295E-08	1.200E-08	1.303E-07	3.771E-09	1.461E-07	3.000E-09	5.586E-08	3.608E-09	6.247E-08	1.358E-03	4.362E-09
San Joaquin (SJV)	T6 OOS Small	20 MPH	8.901E-08	2.143E-06	4.685E-07	1.308E-08	1.200E-08	1.303E-07	3.502E-09	1.458E-07	3.000E-09	5.586E-08	3.351E-09	6.221E-08	1.370E-03	4.134E-09
San Joaquin (SJV)	T6 Public	20 MPH	7.924E-08	1.821E-06	4.100E-07	1.312E-08	1.200E-08	1.303E-07	3.442E-09	1.458E-07	3.000E-09	5.586E-08	3.293E-09	6.215E-08	1.376E-03	3.680E-09
San Joaquin (SJV)	T6 Utility	20 MPH	7.334E-08	1.569E-06	3.861E-07	1.307E-08	1.200E-08	1.303E-07	2.639E-09	1.450E-07	3.000E-09	5.586E-08	2.525E-09	6.138E-08	1.370E-03	3.407E-09
San Joaquin (SJV)	T6TS	20 MPH	1.869E-08	1.110E-07	2.746E-07	1.510E-08	1.200E-08	1.303E-07	2.265E-09	1.446E-07	3.000E-09	5.586E-08	2.083E-09	6.094E-08	1.512E-03	7.552E-09
San Joaquin (SJV)	T7 Ag	20 MPH	2.697E-07	6.127E-06	1.593E-06	1.810E-08	3.600E-08	6.174E-08	8.946E-09	1.067E-07	9.000E-09	2.646E-08	8.559E-09	4.402E-08	1.897E-03	1.253E-08
San Joaquin (SJV)	T7 CAIRP	20 MPH	2.342E-07	5.033E-06	1.383E-06	1.712E-08	3.600E-08	6.174E-08	7.619E-09	1.054E-07	9.000E-09	2.646E-08	7.289E-09	4.275E-08	1.795E-03	1.088E-08
San Joaquin (SJV)	T7 CAIRP Construction	20 MPH	2.406E-07	5.219E-06	1.420E-06	1.728E-08	3.600E-08	6.174E-08	7.893E-09	1.056E-07	9.000E-09	2.646E-08	7.551E-09	4.301E-08	1.812E-03	1.117E-08
San Joaquin (SJV)	T7 NNOOS	20 MPH	2.061E-07	4.198E-06	1.217E-06	1.710E-08	3.600E-08	6.174E-08	6.436E-09	1.042E-07	9.000E-09	2.646E-08	6.158E-09	4.162E-08	1.792E-03	9.574E-09
San Joaquin (SJV)	T7 NOOS	20 MPH	2.343E-07	5.034E-06	1.383E-06	1.712E-08	3.600E-08	6.174E-08	7.621E-09	1.054E-07	9.000E-09	2.646E-08	7.292E-09	4.275E-08	1.795E-03	1.088E-08
San Joaquin (SJV)	T7 Other Port	20 MPH	2.548E-07	5.642E-06	1.505E-06	1.727E-08	3.600E-08	6.174E-08	8.495E-09	1.062E-07	9.000E-09	2.646E-08	8.127E-09	4.359E-08	1.810E-03	1.184E-08
San Joaquin (SJV)	T7 POAK	20 MPH	2.572E-07	5.713E-06	1.519E-06	1.727E-08	3.600E-08	6.174E-08	8.596E-09	1.063E-07	9.000E-09	2.646E-08	8.225E-09	4.368E-08	1.810E-03	1.195E-08
San Joaquin (SJV)	T7 POLA	20 MPH	2.538E-07	5.615E-06	1.499E-06	1.731E-08	3.600E-08	6.174E-08	8.444E-09	1.062E-07	9.000E-09	2.646E-08	8.079E-09	4.354E-08	1.815E-03	1.179E-08
San Joaquin (SJV)	T7 Public	20 MPH	1.676E-07	3.397E-06	9.368E-07	1.762E-08	3.600E-08	6.174E-08	7.732E-09	1.055E-07	9.000E-09	2.646E-08	7.398E-09	4.286E-08	1.847E-03	7.785E-09
San Joaquin (SJV)	T7 Single	20 MPH	1.988E-07	3.991E-06	1.174E-06	1.744E-08	3.600E-08	6.174E-08	6.100E-09	1.038E-07	9.000E-09	2.646E-08	5.836E-09	4.130E-08	1.828E-03	9.234E-09
San Joaquin (SJV)	T7 Single Construction	20 MPH	1.982E-07	3.973E-06	1.170E-06	1.741E-08	3.600E-08	6.174E-08	6.114E-09	1.039E-07	9.000E-09	2.646E-08	5.850E-09	4.131E-08	1.825E-03	9.207E-09
San Joaquin (SJV)	T7 SWCV	20 MPH	5.333E-08	1.582E-06	2.720E-06	3.413E-08	3.600E-08	6.174E-08	8.189E-09	1.059E-07	9.000E-09	2.646E-08	7.835E-09	4.330E-08	4.053E-03	8.051E-07
San Joaquin (SJV)	T7 Tractor	20 MPH	2.382E-07	5.153E-06	1.407E-06	1.715E-08	3.600E-08	6.174E-08	7.783E-09	1.055E-07	9.000E-09	2.646E-08	7.447E-09	4.291E-08	1.797E-03	1.107E-08
San Joaquin (SJV)	T7 Tractor Construction	20 MPH	2.477E-07	5.432E-06	1.462E-06	1.733E-08	3.600E-08	6.174E-08	8.190E-09	1.059E-07	9.000E-09	2.646E-08	7.835E-09	4.330E-08	1.816E-03	1.150E-08
San Joaquin (SJV)	T7 Utility	20 MPH	1.508E-07	2.560E-06	8.907E-07	1.727E-08	3.600E-08	6.174E-08	4.100E-09	1.018E-07	9.000E-09	2.646E-08	3.923E-09	3.938E-08	1.810E-03	7.006E-09
San Joaquin (SJV)	T7IS	20 MPH	6.114E-07	3.679E-06	4.115E-05	1.937E-08	2.000E-08	6.174E-08	2.272E-09	8.401E-08	5.000E-09	2.646E-08	2.089E-09	3.355E-08	1.874E-03	2.471E-07
San Joaquin (SJV)	UBUS	20 MPH	8.714E-08	1.377E-06	3.368E-06	9.827E-09	1.200E-08	4.969E-07	1.615E-08	5.251E-07	3.000E-09	2.130E-07	1.541E-08	2.314E-07	1.694E-03	5.925E-07

San Joaquin (SJV)	All Other Buses	25 MPH	7.500E-08	1.419E-06	3.948E-07	1.213E-08	1.200E-08	1.303E-07	3.849E-09	1.462E-07	3.000E-09	5.586E-08	3.682E-09	6.254E-08	1.271E-03	3.484E-09
San Joaquin (SJV)	LDA	25 MPH	4.623E-09	1.959E-08	3.111E-07	1.960E-09	8.000E-09	3.675E-08	9.746E-10	4.572E-08	2.000E-09	1.575E-08	8.965E-10	1.865E-08	1.960E-04	1.839E-09
San Joaquin (SJV)	LDT1	25 MPH	6.710E-09	2.745E-08	4.182E-07	2.511E-09	8.000E-09	3.675E-08	1.244E-09	4.599E-08	2.000E-09	1.575E-08	1.144E-09	1.889E-08	2.510E-04	2.707E-09
San Joaquin (SJV)	LDT2	25 MPH	7.262E-09	2.889E-08	4.897E-07	2.885E-09	8.000E-09	3.675E-08	1.189E-09	4.594E-08	2.000E-09	1.575E-08	1.094E-09	1.884E-08	2.884E-04	2.917E-09
San Joaquin (SJV)	LHD1	25 MPH	5.155E-08	3.191E-07	2.961E-07	5.464E-09	1.051E-08	7.644E-08	7.729E-09	9.468E-08	2.628E-09	3.276E-08	7.372E-09	4.276E-08	5.604E-04	3.187E-09
San Joaquin (SJV)	LHD2	25 MPH	4.720E-08	7.891E-08	2.469E-07	5.904E-09	1.085E-08	8.918E-08	7.209E-09	1.072E-07	2.712E-09	3.822E-08	6.879E-09	4.781E-08	6.081E-04	2.667E-09
San Joaquin (SJV)	MCY	25 MPH	3.012E-06	1.130E-06	1.932E-05	2.555E-09	4.000E-09	1.176E-08	3.232E-09	1.899E-08	1.000E-09	5.040E-09	3.013E-09	9.053E-09	2.146E-04	6.498E-07
San Joaquin (SJV)	MDV	25 MPH	1.025E-08	3.984E-08	5.902E-07	3.816E-09	8.000E-09	3.675E-08	1.263E-09	4.601E-08	2.000E-09	1.575E-08	1.162E-09	1.891E-08	3.818E-04	4.064E-09
San Joaquin (SJV)	MH	25 MPH	2.761E-08	7.921E-07	2.538E-07	1.264E-08	1.289E-08	1.303E-07	8.431E-09	1.517E-07	3.222E-09	5.586E-08	8.019E-09	6.710E-08	1.277E-03	5.435E-09
San Joaquin (SJV)	Motor Coach	25 MPH	1.569E-07	2.366E-06	9.267E-07	1.725E-08	1.200E-08	1.303E-07	6.163E-09	1.485E-07	3.000E-09	5.586E-08	5.896E-09	6.476E-08	1.808E-03	7.289E-09
San Joaquin (SJV)	OBUS	25 MPH	1.502E-08	1.072E-07	2.754E-07	1.320E-08	1.200E-08	1.303E-07	1.676E-09	1.440E-07	3.000E-09	5.586E-08	1.541E-09	6.040E-08	1.322E-03	6.069E-09
San Joaquin (SJV)	SBUS	25 MPH	4.653E-08	7.896E-07	3.058E-07	9.778E-09	1.040E-08	7.448E-07	2.786E-09	7.580E-07	2.600E-09	3.192E-07	2.641E-09	3.244E-07	1.013E-03	3.943E-09
San Joaquin (SJV)	T6 Ag	25 MPH	8.627E-08	1.844E-06	4.541E-07	1.230E-08	1.200E-08	1.303E-07	4.572E-09	1.469E-07	3.000E-09	5.586E-08	4.374E-09	6.323E-08	1.289E-03	4.007E-09
San Joaquin (SJV)	T6 CAIRP Heavy	25 MPH	6.879E-08	1.241E-06	3.621E-07	1.194E-08	1.200E-08	1.303E-07	3.429E-09	1.458E-07	3.000E-09	5.586E-08	3.281E-09	6.214E-08	1.252E-03	3.195E-09
San Joaquin (SJV)	T6 CAIRP Small	25 MPH	6.523E-08	1.142E-06	3.433E-07	1.207E-08	1.200E-08	1.303E-07	3.186E-09	1.455E-07	3.000E-09	5.586E-08	3.048E-09	6.191E-08	1.265E-03	3.030E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	25 MPH	7.714E-08	1.478E-06	4.060E-07	1.211E-08	1.200E-08	1.303E-07	3.998E-09	1.463E-07	3.000E-09	5.586E-08	3.825E-09	6.268E-08	1.269E-03	3.583E-09
San Joaquin (SJV)	T6 Instate Construction Small	25 MPH	7.136E-08	1.314E-06	3.756E-07	1.209E-08	1.200E-08	1.303E-07	3.606E-09	1.459E-07	3.000E-09	5.586E-08	3.450E-09	6.231E-08	1.268E-03	3.315E-09
San Joaquin (SJV)	T6 Instate Heavy	25 MPH	7.488E-08	1.427E-06	3.942E-07	1.198E-08	1.200E-08	1.303E-07	3.836E-09	1.462E-07	3.000E-09	5.586E-08	3.670E-09	6.253E-08	1.256E-03	3.478E-09
San Joaquin (SJV)	T6 Instate Small	25 MPH	7.161E-08	1.325E-06	3.769E-07	1.211E-08	1.200E-08	1.303E-07	3.618E-09	1.460E-07	3.000E-09	5.586E-08	3.461E-09	6.232E-08	1.269E-03	3.326E-09
San Joaquin (SJV)	T6 OOS Heavy	25 MPH	6.882E-08	1.241E-06	3.622E-07	1.194E-08	1.200E-08	1.303E-07	3.431E-09	1.458E-07	3.000E-09	5.586E-08	3.282E-09	6.214E-08	1.252E-03	3.196E-09
San Joaquin (SJV)	T6 OOS Small	25 MPH	6.523E-08	1.142E-06	3.433E-07	1.207E-08	1.200E-08	1.303E-07	3.186E-09	1.455E-07	3.000E-09	5.586E-08	3.048E-09	6.191E-08	1.265E-03	3.030E-09
San Joaquin (SJV)	T6 Public	25 MPH	5.808E-08	1.017E-06	3.007E-07	1.211E-08	1.200E-08	1.303E-07	3.105E-09	1.454E-07	3.000E-09	5.586E-08	2.971E-09	6.183E-08	1.269E-03	2.698E-09
San Joaquin (SJV)	T6 Utility	25 MPH	5.375E-08	8.357E-07	2.829E-07	1.207E-08	1.200E-08	1.303E-07	2.400E-09	1.447E-07	3.000E-09	5.586E-08	2.297E-09	6.116E-08	1.265E-03	2.496E-09
San Joaquin (SJV)	T6TS	25 MPH	1.381E-08	1.012E-07	2.521E-07	1.318E-08	1.200E-08	1.303E-07	1.673E-09	1.440E-07	3.000E-09	5.586E-08	1.539E-09	6.040E-08	1.321E-03	5.579E-09
San Joaquin (SJV)	T7 Ag	25 MPH	1.977E-07	3.676E-06	1.167E-06	1.670E-08	3.600E-08	6.174E-08	8.138E-09	1.059E-07	9.000E-09	2.646E-08	7.786E-09	4.325E-08	1.751E-03	9.181E-09
San Joaquin (SJV)	T7 CAIRP	25 MPH	1.717E-07	2.693E-06	1.014E-06	1.579E-08	3.600E-08	6.174E-08	6.931E-09	1.047E-07	9.000E-09	2.646E-08	6.631E-09	4.209E-08	1.655E-03	7.973E-09
San Joaquin (SJV)	T7 CAIRP Construction	25 MPH	1.763E-07	2.787E-06	1.041E-06	1.595E-08	3.600E-08	6.174E-08	7.180E-09	1.049E-07	9.000E-09	2.646E-08	6.869E-09	4.233E-08	1.672E-03	8.188E-09
San Joaquin (SJV)	T7 NNOOS	25 MPH	1.511E-07	2.237E-06	8.919E-07	1.577E-08	3.600E-08	6.174E-08	5.855E-09	1.036E-07	9.000E-09	2.646E-08	5.602E-09	4.106E-08	1.652E-03	7.016E-09
San Joaquin (SJV)	T7 NOOS	25 MPH	1.717E-07	2.695E-06	1.014E-06	1.579E-08	3.600E-08	6.174E-08	6.933E-09	1.047E-07	9.000E-09	2.646E-08	6.633E-09	4.209E-08	1.655E-03	7.975E-09
San Joaquin (SJV)	T7 Other Port	25 MPH	1.867E-07	3.005E-06	1.103E-06	1.594E-08	3.600E-08	6.174E-08	7.728E-09	1.055E-07	9.000E-09	2.646E-08	7.393E-09	4.285E-08	1.670E-03	8.674E-09
San Joaquin (SJV)	T7 POAK	25 MPH	1.885E-07	3.043E-06	1.113E-06	1.594E-08	3.600E-08	6.174E-08	7.820E-09	1.056E-07	9.000E-09	2.646E-08	7.482E-09	4.294E-08	1.670E-03	8.756E-09
San Joaquin (SJV)	T7 POLA	25 MPH	1.860E-07	3.010E-06	1.098E-06	1.598E-08	3.600E-08	6.174E-08	7.682E-09	1.054E-07	9.000E-09	2.646E-08	7.350E-09	4.281E-08	1.675E-03	8.640E-09
San Joaquin (SJV)	T7 Public	25 MPH	1.228E-07	2.115E-06	6.884E-07	1.623E-08	3.600E-08	6.174E-08	6.729E-09	1.045E-07	9.000E-09	2.646E-08	6.438E-09	4.190E-08	1.702E-03	5.702E-09
San Joaquin (SJV)	T7 Single	25 MPH	1.457E-07	2.191E-06	8.603E-07	1.610E-08	3.600E-08	6.174E-08	5.550E-09	1.033E-07	9.000E-09	2.646E-08	5.309E-09	4.077E-08	1.687E-03	6.767E-09
San Joaquin (SJV)	T7 Single Construction	25 MPH	1.453E-07	2.170E-06	8.573E-07	1.607E-08	3.600E-08	6.174E-08	5.559E-09	1.033E-07	9.000E-09	2.646E-08	5.319E-09	4.078E-08	1.685E-03	6.747E-09
San Joaquin (SJV)	T7 SWCV	25 MPH	3.959E-08	1.325E-06	1.994E-06	3.143E-08	3.600E-08	6.174E-08	7.432E-09	1.052E-07	9.000E-09	2.646E-08	7.110E-09	4.257E-08	3.733E-03	5.929E-07
San Joaquin (SJV)	T7 Tractor	25 MPH	1.746E-07	2.769E-06	1.031E-06	1.581E-08	3.600E-08	6.174E-08	7.081E-09	1.048E-07	9.000E-09	2.646E-08	6.774E-09	4.223E-08	1.657E-03	8.109E-09
San Joaquin (SJV)	T7 Tractor Construction	25 MPH	1.815E-07	2.917E-06	1.072E-06	1.599E-08	3.600E-08	6.174E-08	7.450E-09	1.052E-07	9.000E-09	2.646E-08	7.128E-09	4.259E-08	1.676E-03	8.430E-09
San Joaquin (SJV)	T7 Utility	25 MPH	1.105E-07	1.364E-06	6.527E-07	1.594E-08	3.600E-08	6.174E-08	3.730E-09	1.015E-07	9.000E-09	2.646E-08	3.569E-09	3.903E-08	1.671E-03	5.134E-09
San Joaquin (SJV)	T7IS	25 MPH	4.517E-07	3.354E-06	3.778E-05	1.820E-08	2.000E-08	6.174E-08	1.678E-09	8.342E-08	5.000E-09	2.646E-08	1.543E-09	3.300E-08	1.763E-03	1.825E-07
San Joaquin (SJV)	UBUS	25 MPH	6.168E-08	1.239E-06	2.304E-06	8.640E-09	1.200E-08	4.969E-07	1.195E-08	5.209E-07	3.000E-09	2.130E-07	1.140E-08	2.274E-07	1.502E-03	3.722E-07

San Joaquin (SJV)	All Other Buses	30 MPH	5.527E-08	8.757E-07	2.909E-07	1.148E-08	1.200E-08	1.303E-07	3.544E-09	1.459E-07	3.000E-09	5.586E-08	3.390E-09	6.225E-08	1.203E-03	2.567E-09
San Joaquin (SJV)	LDA	30 MPH	3.601E-09	1.813E-08	2.860E-07	1.687E-09	8.000E-09	3.675E-08	7.608E-10	4.551E-08	2.000E-09	1.575E-08	7.000E-10	1.845E-08	1.687E-04	1.433E-09
San Joaquin (SJV)	LDT1	30 MPH	5.236E-09	2.542E-08	3.849E-07	2.162E-09	8.000E-09	3.675E-08	9.697E-10	4.572E-08	2.000E-09	1.575E-08	8.917E-10	1.864E-08	2.160E-04	2.112E-09
San Joaquin (SJV)	LDT2	30 MPH	5.660E-09	2.674E-08	4.507E-07	2.484E-09	8.000E-09	3.675E-08	9.278E-10	4.568E-08	2.000E-09	1.575E-08	8.535E-10	1.860E-08	2.482E-04	2.274E-09
San Joaquin (SJV)	LHD1	30 MPH	3.992E-08	3.216E-07	2.411E-07	4.961E-09	1.051E-08	7.644E-08	6.664E-09	9.361E-08	2.628E-09	3.276E-08	6.358E-09	4.175E-08	5.088E-04	2.472E-09
San Joaquin (SJV)	LHD2	30 MPH	3.577E-08	7.123E-08	1.942E-07	5.329E-09	1.085E-08	8.918E-08	6.325E-09	1.064E-07	2.712E-09	3.822E-08	6.038E-09	4.697E-08	5.489E-04	2.031E-09
San Joaquin (SJV)	MCY	30 MPH	2.405E-06	1.082E-06	1.731E-05	2.203E-09	4.000E-09	1.176E-08	2.568E-09	1.833E-08	1.000E-09	5.040E-09	2.394E-09	8.434E-09	1.847E-04	5.186E-07
San Joaquin (SJV)	MDV	30 MPH	7.998E-09	3.681E-08	5.420E-07	3.285E-09	8.000E-09	3.675E-08	9.882E-10	4.574E-08	2.000E-09	1.575E-08	9.099E-10	1.866E-08	3.287E-04	3.173E-09
San Joaquin (SJV)	MH	30 MPH	2.135E-08	6.798E-07	2.270E-07	1.166E-08	1.289E-08	1.303E-07	7.428E-09	1.507E-07	3.222E-09	5.586E-08	7.069E-09	6.615E-08	1.179E-03	4.228E-09
San Joaquin (SJV)	Motor Coach	30 MPH	1.157E-07	1.445E-06	6.829E-07	1.633E-08	1.200E-08	1.303E-07	5.674E-09	1.480E-07	3.000E-09	5.586E-08	5.429E-09	6.429E-08	1.712E-03	5.372E-09
San Joaquin (SJV)	OBUS	30 MPH	1.170E-08	9.927E-08	2.535E-07	1.213E-08	1.200E-08	1.303E-07	1.306E-09	1.436E-07	3.000E-09	5.586E-08	1.201E-09	6.006E-08	1.215E-03	4.730E-09
San Joaquin (SJV)	SBUS	30 MPH	3.450E-08	5.037E-07	2.418E-07	9.188E-09	1.040E-08	7.448E-07	2.473E-09	7.577E-07	2.600E-09	3.192E-07	2.347E-09	3.241E-07	9.523E-04	2.991E-09
San Joaquin (SJV)	T6 Ag	30 MPH	6.357E-08	1.204E-06	3.346E-07	1.164E-08	1.200E-08	1.303E-07	4.209E-09	1.465E-07	3.000E-09	5.586E-08	4.027E-09	6.289E-08	1.221E-03	2.953E-09
San Joaquin (SJV)	T6 CAIRP Heavy	30 MPH	5.070E-08	7.591E-07	2.669E-07	1.129E-08	1.200E-08	1.303E-07	3.157E-09	1.455E-07	3.000E-09	5.586E-08	3.021E-09	6.188E-08	1.183E-03	2.355E-09
San Joaquin (SJV)	T6 CAIRP Small	30 MPH	4.807E-08	6.971E-07	2.530E-07	1.143E-08	1.200E-08	1.303E-07	2.934E-09	1.453E-07	3.000E-09	5.586E-08	2.807E-09	6.167E-08	1.198E-03	2.233E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	30 MPH	5.685E-08	9.126E-07	2.992E-07	1.146E-08	1.200E-08	1.303E-07	3.681E-09	1.460E-07	3.000E-09	5.586E-08	3.521E-09	6.238E-08	1.201E-03	2.640E-09
San Joaquin (SJV)	T6 Instate Construction Small	30 MPH	5.259E-08	8.065E-07	2.768E-07	1.145E-08	1.200E-08	1.303E-07	3.320E-09	1.457E-07	3.000E-09	5.586E-08	3.177E-09	6.204E-08	1.200E-03	2.443E-09
San Joaquin (SJV)	T6 Instate Heavy	30 MPH	5.518E-08	8.861E-07	2.905E-07	1.133E-08	1.200E-08	1.303E-07	3.532E-09	1.459E-07	3.000E-09	5.586E-08	3.379E-09	6.224E-08	1.187E-03	2.563E-09
San Joaquin (SJV)	T6 Instate Small	30 MPH	5.277E-08	8.155E-07	2.778E-07	1.146E-08	1.200E-08	1.303E-07	3.331E-09	1.457E-07	3.000E-09	5.586E-08	3.187E-09	6.205E-08	1.201E-03	2.451E-09
San Joaquin (SJV)	T6 OOS Heavy	30 MPH	5.071E-08	7.599E-07	2.669E-07	1.129E-08	1.200E-08	1.303E-07	3.159E-09	1.455E-07	3.000E-09	5.586E-08	3.022E-09	6.188E-08	1.183E-03	2.356E-09
San Joaquin (SJV)	T6 OOS Small	30 MPH	4.807E-08	6.971E-07	2.530E-07	1.143E-08	1.200E-08	1.303E-07	2.934E-09	1.453E-07	3.000E-09	5.586E-08	2.807E-09	6.167E-08	1.198E-03	2.233E-09
San Joaquin (SJV)	T6 Public	30 MPH	4.288E-08	6.568E-07	2.219E-07	1.146E-08	1.200E-08	1.303E-07	2.858E-09	1.452E-07	3.000E-09	5.586E-08	2.734E-09	6.159E-08	1.201E-03	1.991E-09
San Joaquin (SJV)	T6 Utility	30 MPH	3.961E-08	5.099E-07	2.085E-07	1.142E-08	1.200E-08	1.303E-07	2.210E-09	1.446E-07	3.000E-09	5.586E-08	2.115E-09	6.097E-08	1.197E-03	1.840E-09
San Joaquin (SJV)	T6TS	30 MPH	1.076E-08	9.375E-08	2.321E-07	1.211E-08	1.200E-08	1.303E-07	1.304E-09	1.436E-07	3.000E-09	5.586E-08	1.199E-09	6.006E-08	1.214E-03	4.348E-09
San Joaquin (SJV)	T7 Ag	30 MPH	1.457E-07	2.485E-06	8.601E-07	1.582E-08	3.600E-08	6.174E-08	7.493E-09	1.052E-07	9.000E-09	2.646E-08	7.169E-09	4.263E-08	1.658E-03	6.766E-09
San Joaquin (SJV)	T7 CAIRP	30 MPH	1.265E-07	1.651E-06	7.469E-07	1.493E-08	3.600E-08	6.174E-08	6.382E-09	1.041E-07	9.000E-09	2.646E-08	6.106E-09	4.157E-08	1.564E-03	5.875E-09
San Joaquin (SJV)	T7 CAIRP Construction	30 MPH	1.299E-07	1.704E-06	7.670E-07	1.510E-08	3.600E-08	6.174E-08	6.611E-09	1.044E-07	9.000E-09	2.646E-08	6.325E-09	4.179E-08	1.583E-03	6.034E-09
San Joaquin (SJV)	T7 NNOOS	30 MPH	1.113E-07	1.365E-06	6.573E-07	1.491E-08	3.600E-08	6.174E-08	5.391E-09	1.031E-07	9.000E-09	2.646E-08	5.158E-09	4.062E-08	1.562E-03	5.170E-09
San Joaquin (SJV)	T7 NOOS	30 MPH	1.265E-07	1.652E-06	7.471E-07	1.493E-08	3.600E-08	6.174E-08	6.384E-09	1.041E-07	9.000E-09	2.646E-08	6.108E-09	4.157E-08	1.565E-03	5.877E-09
San Joaquin (SJV)	T7 Other Port	30 MPH	1.376E-07	1.834E-06	8.126E-07	1.509E-08	3.600E-08	6.174E-08	7.115E-09	1.049E-07	9.000E-09	2.646E-08	6.808E-09	4.227E-08	1.582E-03	6.392E-09
San Joaquin (SJV)	T7 POAK	30 MPH	1.389E-07	1.857E-06	8.203E-07	1.509E-08	3.600E-08	6.174E-08	7.200E-09	1.049E-07	9.000E-09	2.646E-08	6.889E-09	4.235E-08	1.582E-03	6.452E-09
San Joaquin (SJV)	T7 POLA	30 MPH	1.371E-07	1.847E-06	8.095E-07	1.513E-08	3.600E-08	6.174E-08	7.073E-09	1.048E-07	9.000E-09	2.646E-08	6.767E-09	4.223E-08	1.586E-03	6.367E-09
San Joaquin (SJV)	T7 Public	30 MPH	9.089E-08	1.533E-06	5.098E-07	1.536E-08	3.600E-08	6.174E-08	6.081E-09	1.038E-07	9.000E-09	2.646E-08	5.818E-09	4.128E-08	1.610E-03	4.221E-09
San Joaquin (SJV)	T7 Single	30 MPH	1.074E-07	1.375E-06	6.340E-07	1.524E-08	3.600E-08	6.174E-08	5.110E-09	1.028E-07	9.000E-09	2.646E-08	4.889E-09	4.035E-08	1.598E-03	4.987E-09
San Joaquin (SJV)	T7 Single Construction	30 MPH	1.071E-07	1.356E-06	6.318E-07	1.522E-08	3.600E-08	6.174E-08	5.118E-09	1.029E-07	9.000E-09	2.646E-08	4.897E-09	4.036E-08	1.595E-03	4.973E-09
San Joaquin (SJV)	T7 SWCV	30 MPH	3.027E-08	1.172E-06	1.471E-06	2.973E-08	3.600E-08	6.174E-08	6.866E-09	1.046E-07	9.000E-09	2.646E-08	6.569E-09	4.203E-08	3.531E-03	4.431E-07
San Joaquin (SJV)	T7 Tractor	30 MPH	1.287E-07	1.703E-06	7.597E-07	1.495E-08	3.600E-08	6.174E-08	6.519E-09	1.043E-07	9.000E-09	2.646E-08	6.237E-09	4.170E-08	1.567E-03	5.976E-09
San Joaquin (SJV)	T7 Tractor Construction	30 MPH	1.338E-07	1.794E-06	7.897E-07	1.514E-08	3.600E-08	6.174E-08	6.860E-09	1.046E-07	9.000E-09	2.646E-08	6.563E-09	4.202E-08	1.587E-03	6.213E-09
San Joaquin (SJV)	T7 Utility	30 MPH	8.146E-08	8.324E-07	4.810E-07	1.509E-08	3.600E-08	6.174E-08	3.435E-09	1.012E-07	9.000E-09	2.646E-08	3.286E-09	3.875E-08	1.582E-03	3.784E-09
San Joaquin (SJV)	T7IS	30 MPH	3.520E-07	3.107E-06	3.478E-05	1.731E-08	2.000E-08	6.174E-08	1.308E-09	8.305E-08	5.000E-09	2.646E-08	1.203E-09	3.266E-08	1.678E-03	1.422E-07
San Joaquin (SJV)	UBUS	30 MPH	4.839E-08	1.167E-06	1.869E-06	7.983E-09	1.200E-08	4.969E-07	9.487E-09	5.184E-07	3.000E-09	2.130E-07	9.053E-09	2.250E-07	1.397E-03	2.865E-07

San Joaquin (SJV)	All Other Buses	35 MPH	4.073E-08	5.869E-07	2.144E-07	1.097E-08	1.200E-08	1.303E-07	3.290E-09	1.456E-07	3.000E-09	5.586E-08	3.147E-09	6.201E-08	1.150E-03	1.892E-09
San Joaquin (SJV)	LDA	35 MPH	2.959E-09	1.706E-08	2.637E-07	1.508E-09	8.000E-09	3.675E-08	6.264E-10	4.538E-08	2.000E-09	1.575E-08	5.763E-10	1.833E-08	1.507E-04	1.178E-09
San Joaquin (SJV)	LDT1	35 MPH	4.307E-09	2.392E-08	3.552E-07	1.932E-09	8.000E-09	3.675E-08	7.976E-10	4.555E-08	2.000E-09	1.575E-08	7.335E-10	1.848E-08	1.930E-04	1.738E-09
San Joaquin (SJV)	LDT2	35 MPH	4.654E-09	2.517E-08	4.159E-07	2.219E-09	8.000E-09	3.675E-08	7.637E-10	4.551E-08	2.000E-09	1.575E-08	7.026E-10	1.845E-08	2.217E-04	1.870E-09
San Joaquin (SJV)	LHD1	35 MPH	3.255E-08	3.271E-07	2.056E-07	4.961E-09	1.051E-08	7.644E-08	5.927E-09	9.288E-08	2.628E-09	3.276E-08	5.656E-09	4.104E-08	5.088E-04	2.020E-09
San Joaquin (SJV)	LHD2	35 MPH	2.853E-08	6.638E-08	1.600E-07	5.329E-09	1.085E-08	8.918E-08	5.683E-09	1.057E-07	2.712E-09	3.822E-08	5.426E-09	4.636E-08	5.489E-04	1.629E-09
San Joaquin (SJV)	MCY	35 MPH	2.022E-06	1.051E-06	1.596E-05	1.971E-09	4.000E-09	1.176E-08	2.150E-09	1.791E-08	1.000E-09	5.040E-09	2.004E-09	8.044E-09	1.650E-04	4.358E-07
San Joaquin (SJV)	MDV	35 MPH	6.579E-09	3.462E-08	4.995E-07	2.936E-09	8.000E-09	3.675E-08	8.152E-10	4.557E-08	2.000E-09	1.575E-08	7.507E-10	1.850E-08	2.938E-04	2.612E-09
San Joaquin (SJV)	MH	35 MPH	1.732E-08	6.032E-07	2.055E-07	1.082E-08	1.289E-08	1.303E-07	6.796E-09	1.500E-07	3.222E-09	5.586E-08	6.472E-09	6.555E-08	1.093E-03	3.465E-09
San Joaquin (SJV)	Motor Coach	35 MPH	8.523E-08	9.591E-07	5.032E-07	1.560E-08	1.200E-08	1.303E-07	5.268E-09	1.476E-07	3.000E-09	5.586E-08	5.040E-09	6.390E-08	1.636E-03	3.959E-09
San Joaquin (SJV)	OBUS	35 MPH	9.623E-09	9.344E-08	2.340E-07	1.120E-08	1.200E-08	1.303E-07	1.074E-09	1.434E-07	3.000E-09	5.586E-08	9.872E-10	5.985E-08	1.122E-03	3.888E-09
San Joaquin (SJV)	SBUS	35 MPH	2.576E-08	3.512E-07	1.936E-07	8.705E-09	1.040E-08	7.448E-07	2.242E-09	7.574E-07	2.600E-09	3.192E-07	2.129E-09	3.239E-07	9.025E-04	2.338E-09
San Joaquin (SJV)	T6 Ag	35 MPH	4.685E-08	8.509E-07	2.466E-07	1.113E-08	1.200E-08	1.303E-07	3.908E-09	1.462E-07	3.000E-09	5.586E-08	3.739E-09	6.260E-08	1.166E-03	2.176E-09
San Joaquin (SJV)	T6 CAIRP Heavy	35 MPH	3.736E-08	5.046E-07	1.967E-07	1.077E-08	1.200E-08	1.303E-07	2.931E-09	1.453E-07	3.000E-09	5.586E-08	2.804E-09	6.166E-08	1.129E-03	1.735E-09
San Joaquin (SJV)	T6 CAIRP Small	35 MPH	3.542E-08	4.623E-07	1.865E-07	1.092E-08	1.200E-08	1.303E-07	2.723E-09	1.451E-07	3.000E-09	5.586E-08	2.606E-09	6.147E-08	1.144E-03	1.645E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	35 MPH	4.189E-08	6.121E-07	2.205E-07	1.095E-08	1.200E-08	1.303E-07	3.417E-09	1.458E-07	3.000E-09	5.586E-08	3.269E-09	6.213E-08	1.148E-03	1.946E-09
San Joaquin (SJV)	T6 Instate Construction Small	35 MPH	3.875E-08	5.379E-07	2.040E-07	1.094E-08	1.200E-08	1.303E-07	3.083E-09	1.454E-07	3.000E-09	5.586E-08	2.949E-09	6.181E-08	1.147E-03	1.800E-09
San Joaquin (SJV)	T6 Instate Heavy	35 MPH	4.067E-08	5.978E-07	2.140E-07	1.080E-08	1.200E-08	1.303E-07	3.279E-09	1.456E-07	3.000E-09	5.586E-08	3.137E-09	6.200E-08	1.132E-03	1.889E-09
San Joaquin (SJV)	T6 Instate Small	35 MPH	3.889E-08	5.454E-07	2.047E-07	1.095E-08	1.200E-08	1.303E-07	3.092E-09	1.454E-07	3.000E-09	5.586E-08	2.959E-09	6.182E-08	1.148E-03	1.806E-09
San Joaquin (SJV)	T6 OOS Heavy	35 MPH	3.737E-08	5.053E-07	1.967E-07	1.077E-08	1.200E-08	1.303E-07	2.932E-09	1.453E-07	3.000E-09	5.586E-08	2.806E-09	6.167E-08	1.129E-03	1.736E-09
San Joaquin (SJV)	T6 OOS Small	35 MPH	3.542E-08	4.623E-07	1.865E-07	1.092E-08	1.200E-08	1.303E-07	2.723E-09	1.451E-07	3.000E-09	5.586E-08	2.606E-09	6.147E-08	1.144E-03	1.645E-09
San Joaquin (SJV)	T6 Public	35 MPH	3.166E-08	4.641E-07	1.639E-07	1.095E-08	1.200E-08	1.303E-07	2.665E-09	1.450E-07	3.000E-09	5.586E-08	2.550E-09	6.141E-08	1.148E-03	1.471E-09
San Joaquin (SJV)	T6 Utility	35 MPH	2.919E-08	3.380E-07	1.536E-07	1.092E-08	1.200E-08	1.303E-07	2.052E-09	1.444E-07	3.000E-09	5.586E-08	1.963E-09	6.082E-08	1.144E-03	1.356E-09
San Joaquin (SJV)	T6TS	35 MPH	8.846E-09	8.825E-08	2.143E-07	1.119E-08	1.200E-08	1.303E-07	1.072E-09	1.434E-07	3.000E-09	5.586E-08	9.858E-10	5.985E-08	1.120E-03	3.575E-09
San Joaquin (SJV)	T7 Ag	35 MPH	1.073E-07	1.809E-06	6.338E-07	1.511E-08	3.600E-08	6.174E-08	6.956E-09	1.047E-07	9.000E-09	2.646E-08	6.655E-09	4.212E-08	1.584E-03	4.986E-09
San Joaquin (SJV)	T7 CAIRP	35 MPH	9.322E-08	1.099E-06	5.504E-07	1.423E-08	3.600E-08	6.174E-08	5.924E-09	1.037E-07	9.000E-09	2.646E-08	5.668E-09	4.113E-08	1.492E-03	4.330E-09
San Joaquin (SJV)	T7 CAIRP Construction	35 MPH	9.574E-08	1.132E-06	5.653E-07	1.443E-08	3.600E-08	6.174E-08	6.138E-09	1.039E-07	9.000E-09	2.646E-08	5.872E-09	4.133E-08	1.513E-03	4.447E-09
San Joaquin (SJV)	T7 NNOOS	35 MPH	8.203E-08	9.046E-07	4.844E-07	1.421E-08	3.600E-08	6.174E-08	5.005E-09	1.027E-07	9.000E-09	2.646E-08	4.788E-09	4.025E-08	1.490E-03	3.810E-09
San Joaquin (SJV)	T7 NOOS	35 MPH	9.324E-08	1.100E-06	5.506E-07	1.423E-08	3.600E-08	6.174E-08	5.926E-09	1.037E-07	9.000E-09	2.646E-08	5.670E-09	4.113E-08	1.492E-03	4.331E-09
San Joaquin (SJV)	T7 Other Port	35 MPH	1.014E-07	1.216E-06	5.988E-07	1.442E-08	3.600E-08	6.174E-08	6.605E-09	1.043E-07	9.000E-09	2.646E-08	6.320E-09	4.178E-08	1.511E-03	4.711E-09
San Joaquin (SJV)	T7 POAK	35 MPH	1.024E-07	1.231E-06	6.045E-07	1.442E-08	3.600E-08	6.174E-08	6.685E-09	1.044E-07	9.000E-09	2.646E-08	6.395E-09	4.186E-08	1.511E-03	4.755E-09
San Joaquin (SJV)	T7 POLA	35 MPH	1.010E-07	1.232E-06	5.965E-07	1.446E-08	3.600E-08	6.174E-08	6.566E-09	1.043E-07	9.000E-09	2.646E-08	6.282E-09	4.174E-08	1.515E-03	4.692E-09
San Joaquin (SJV)	T7 Public	35 MPH	6.735E-08	1.215E-06	3.780E-07	1.467E-08	3.600E-08	6.174E-08	5.611E-09	1.034E-07	9.000E-09	2.646E-08	5.368E-09	4.083E-08	1.537E-03	3.128E-09
San Joaquin (SJV)	T7 Single	35 MPH	7.912E-08	9.368E-07	4.672E-07	1.457E-08	3.600E-08	6.174E-08	4.744E-09	1.025E-07	9.000E-09	2.646E-08	4.538E-09	4.000E-08	1.527E-03	3.675E-09
San Joaquin (SJV)	T7 Single Construction	35 MPH	7.890E-08	9.205E-07	4.656E-07	1.454E-08	3.600E-08	6.174E-08	4.752E-09	1.025E-07	9.000E-09	2.646E-08	4.546E-09	4.001E-08	1.524E-03	3.665E-09
San Joaquin (SJV)	T7 SWCV	35 MPH	2.327E-08	1.065E-06	1.085E-06	2.838E-08	3.600E-08	6.174E-08	6.423E-09	1.042E-07	9.000E-09	2.646E-08	6.145E-09	4.161E-08	3.371E-03	3.319E-07
San Joaquin (SJV)	T7 Tractor	35 MPH	9.481E-08	1.138E-06	5.599E-07	1.426E-08	3.600E-08	6.174E-08	6.052E-09	1.038E-07	9.000E-09	2.646E-08	5.790E-09	4.125E-08	1.494E-03	4.404E-09
San Joaquin (SJV)	T7 Tractor Construction	35 MPH	9.857E-08	1.198E-06	5.820E-07	1.447E-08	3.600E-08	6.174E-08	6.368E-09	1.041E-07	9.000E-09	2.646E-08	6.093E-09	4.155E-08	1.516E-03	4.578E-09
San Joaquin (SJV)	T7 Utility	35 MPH	6.003E-08	5.517E-07	3.545E-07	1.442E-08	3.600E-08	6.174E-08	3.188E-09	1.009E-07	9.000E-09	2.646E-08	3.050E-09	3.851E-08	1.511E-03	2.788E-09
San Joaquin (SJV)	T7IS	35 MPH	2.894E-07	2.924E-06	3.210E-05	1.658E-08	2.000E-08	6.174E-08	1.075E-09	8.282E-08	5.000E-09	2.646E-08	9.889E-10	3.245E-08	1.609E-03	1.169E-07
San Joaquin (SJV)	UBUS	35 MPH	3.911E-08	1.118E-06	1.574E-06	7.417E-09	1.200E-08	4.969E-07	7.718E-09	5.167E-07	3.000E-09	2.130E-07	7.365E-09	2.233E-07	1.308E-03	2.298E-07

San Joaquin (SJV)	All Other Buses	40 MPH	3.002E-08	4.173E-07	1.580E-07	1.055E-08	1.200E-08	1.303E-07	3.072E-09	1.454E-07	3.000E-09	5.586E-08	2.939E-09	6.180E-08	1.106E-03	1.394E-09
San Joaquin (SJV)	LDA	40 MPH	2.564E-09	1.631E-08	2.439E-07	1.398E-09	8.000E-09	3.675E-08	5.438E-10	4.529E-08	2.000E-09	1.575E-08	5.004E-10	1.825E-08	1.398E-04	1.022E-09
San Joaquin (SJV)	LDT1	40 MPH	3.737E-09	2.289E-08	3.287E-07	1.791E-09	8.000E-09	3.675E-08	6.919E-10	4.544E-08	2.000E-09	1.575E-08	6.363E-10	1.839E-08	1.789E-04	1.507E-09
San Joaquin (SJV)	LDT2	40 MPH	4.035E-09	2.407E-08	3.849E-07	2.058E-09	8.000E-09	3.675E-08	6.629E-10	4.541E-08	2.000E-09	1.575E-08	6.098E-10	1.836E-08	2.056E-04	1.622E-09
San Joaquin (SJV)	LHD1	40 MPH	2.766E-08	3.346E-07	1.817E-07	4.881E-09	1.051E-08	7.644E-08	5.412E-09	9.236E-08	2.628E-09	3.276E-08	5.165E-09	4.055E-08	5.005E-04	1.725E-09
San Joaquin (SJV)	LHD2	40 MPH	2.362E-08	6.321E-08	1.362E-07	5.162E-09	1.085E-08	8.918E-08	5.198E-09	1.052E-07	2.712E-09	3.822E-08	4.963E-09	4.590E-08	5.316E-04	1.361E-09
San Joaquin (SJV)	MCY	40 MPH	1.789E-06	1.033E-06	1.512E-05	1.830E-09	4.000E-09	1.176E-08	1.895E-09	1.765E-08	1.000E-09	5.040E-09	1.767E-09	7.807E-09	1.530E-04	3.855E-07
San Joaquin (SJV)	MDV	40 MPH	5.703E-09	3.312E-08	4.619E-07	2.723E-09	8.000E-09	3.675E-08	7.086E-10	4.546E-08	2.000E-09	1.575E-08	6.525E-10	1.840E-08	2.724E-04	2.266E-09
San Joaquin (SJV)	MH	40 MPH	1.465E-08	5.484E-07	1.878E-07	1.011E-08	1.289E-08	1.303E-07	6.460E-09	1.497E-07	3.222E-09	5.586E-08	6.154E-09	6.524E-08	1.022E-03	2.988E-09
San Joaquin (SJV)	Motor Coach	40 MPH	6.281E-08	6.750E-07	3.709E-07	1.501E-08	1.200E-08	1.303E-07	4.920E-09	1.473E-07	3.000E-09	5.586E-08	4.707E-09	6.357E-08	1.573E-03	2.917E-09
San Joaquin (SJV)	OBUS	40 MPH	8.347E-09	8.937E-08	2.166E-07	1.042E-08	1.200E-08	1.303E-07	9.312E-10	1.433E-07	3.000E-09	5.586E-08	8.562E-10	5.972E-08	1.044E-03	3.373E-09
San Joaquin (SJV)	SBUS	40 MPH	1.940E-08	2.612E-07	1.570E-07	8.305E-09	1.040E-08	7.448E-07	2.066E-09	7.573E-07	2.600E-09	3.192E-07	1.963E-09	3.238E-07	8.613E-04	1.891E-09
San Joaquin (SJV)	T6 Ag	40 MPH	3.452E-08	6.358E-07	1.817E-07	1.070E-08	1.200E-08	1.303E-07	3.649E-09	1.460E-07	3.000E-09	5.586E-08	3.492E-09	6.235E-08	1.122E-03	1.604E-09
San Joaquin (SJV)	T6 CAIRP Heavy	40 MPH	2.753E-08	3.559E-07	1.449E-07	1.030E-08	1.200E-08	1.303E-07	2.737E-09	1.451E-07	3.000E-09	5.586E-08	2.619E-09	6.148E-08	1.079E-03	1.279E-09
San Joaquin (SJV)	T6 CAIRP Small	40 MPH	2.610E-08	3.252E-07	1.374E-07	1.050E-08	1.200E-08	1.303E-07	2.543E-09	1.449E-07	3.000E-09	5.586E-08	2.433E-09	6.129E-08	1.101E-03	1.212E-09
San Joaquin (SJV)	T6 Instate Construction Heavy	40 MPH	3.087E-08	4.355E-07	1.625E-07	1.053E-08	1.200E-08	1.303E-07	3.191E-09	1.455E-07	3.000E-09	5.586E-08	3.053E-09	6.191E-08	1.104E-03	1.434E-09
San Joaquin (SJV)	T6 Instate Construction Small	40 MPH	2.856E-08	3.806E-07	1.503E-07	1.052E-08	1.200E-08	1.303E-07	2.879E-09	1.452E-07	3.000E-09	5.586E-08	2.755E-09	6.161E-08	1.103E-03	1.327E-09
San Joaquin (SJV)	T6 Instate Heavy	40 MPH	2.997E-08	4.278E-07	1.577E-07	1.033E-08	1.200E-08	1.303E-07	3.062E-09	1.454E-07	3.000E-09	5.586E-08	2.930E-09	6.179E-08	1.083E-03	1.392E-09
San Joaquin (SJV)	T6 Instate Small	40 MPH	2.866E-08	3.869E-07	1.508E-07	1.053E-08	1.200E-08	1.303E-07	2.888E-09	1.452E-07	3.000E-09	5.586E-08	2.763E-09	6.162E-08	1.104E-03	1.331E-09
San Joaquin (SJV)	T6 OOS Heavy	40 MPH	2.754E-08	3.564E-07	1.450E-07	1.030E-08	1.200E-08	1.303E-07	2.738E-09	1.451E-07	3.000E-09	5.586E-08	2.620E-09	6.148E-08	1.079E-03	1.279E-09
San Joaquin (SJV)	T6 OOS Small	40 MPH	2.610E-08	3.252E-07	1.374E-07	1.050E-08	1.200E-08	1.303E-07	2.543E-09	1.449E-07	3.000E-09	5.586E-08	2.433E-09	6.129E-08	1.101E-03	1.212E-09
San Joaquin (SJV)	T6 Public	40 MPH	2.340E-08	3.503E-07	1.211E-07	1.053E-08	1.200E-08	1.303E-07	2.516E-09	1.449E-07	3.000E-09	5.586E-08	2.407E-09	6.127E-08	1.104E-03	1.087E-09
San Joaquin (SJV)	T6 Utility	40 MPH	2.151E-08	2.377E-07	1.132E-07	1.050E-08	1.200E-08	1.303E-07	1.916E-09	1.443E-07	3.000E-09	5.586E-08	1.833E-09	6.069E-08	1.101E-03	9.991E-10
San Joaquin (SJV)	T6TS	40 MPH	7.673E-09	8.441E-08	1.983E-07	1.041E-08	1.200E-08	1.303E-07	9.299E-10	1.433E-07	3.000E-09	5.586E-08	8.550E-10	5.972E-08	1.042E-03	3.100E-09
San Joaquin (SJV)	T7 Ag	40 MPH	7.910E-08	1.388E-06	4.671E-07	1.453E-08	3.600E-08	6.174E-08	6.496E-09	1.042E-07	9.000E-09	2.646E-08	6.215E-09	4.168E-08	1.524E-03	3.674E-09
San Joaquin (SJV)	T7 CAIRP	40 MPH	6.870E-08	7.761E-07	4.056E-07	1.361E-08	3.600E-08	6.174E-08	5.533E-09	1.033E-07	9.000E-09	2.646E-08	5.293E-09	4.075E-08	1.427E-03	3.191E-09
San Joaquin (SJV)	T7 CAIRP Construction	40 MPH	7.055E-08	7.977E-07	4.166E-07	1.388E-08	3.600E-08	6.174E-08	5.732E-09	1.035E-07	9.000E-09	2.646E-08	5.484E-09	4.094E-08	1.455E-03	3.277E-09
San Joaquin (SJV)	T7 NNOOS	40 MPH	6.045E-08	6.360E-07	3.569E-07	1.360E-08	3.600E-08	6.174E-08	4.674E-09	1.024E-07	9.000E-09	2.646E-08	4.472E-09	3.993E-08	1.425E-03	2.808E-09
San Joaquin (SJV)	T7 NOOS	40 MPH	6.871E-08	7.771E-07	4.057E-07	1.361E-08	3.600E-08	6.174E-08	5.534E-09	1.033E-07	9.000E-09	2.646E-08	5.295E-09	4.076E-08	1.427E-03	3.192E-09
San Joaquin (SJV)	T7 Other Port	40 MPH	7.474E-08	8.547E-07	4.413E-07	1.387E-08	3.600E-08	6.174E-08	6.169E-09	1.039E-07	9.000E-09	2.646E-08	5.902E-09	4.136E-08	1.454E-03	3.471E-09
San Joaquin (SJV)	T7 POAK	40 MPH	7.544E-08	8.655E-07	4.455E-07	1.387E-08	3.600E-08	6.174E-08	6.243E-09	1.040E-07	9.000E-09	2.646E-08	5.973E-09	4.143E-08	1.454E-03	3.504E-09
San Joaquin (SJV)	T7 POLA	40 MPH	7.445E-08	8.713E-07	4.396E-07	1.391E-08	3.600E-08	6.174E-08	6.132E-09	1.039E-07	9.000E-09	2.646E-08	5.867E-09	4.133E-08	1.458E-03	3.458E-09
San Joaquin (SJV)	T7 Public	40 MPH	5.002E-08	1.024E-06	2.808E-07	1.410E-08	3.600E-08	6.174E-08	5.301E-09	1.030E-07	9.000E-09	2.646E-08	5.072E-09	4.053E-08	1.478E-03	2.323E-09
San Joaquin (SJV)	T7 Single	40 MPH	5.831E-08	6.768E-07	3.443E-07	1.401E-08	3.600E-08	6.174E-08	4.430E-09	1.022E-07	9.000E-09	2.646E-08	4.238E-09	3.970E-08	1.468E-03	2.708E-09
San Joaquin (SJV)	T7 Single Construction	40 MPH	5.815E-08	6.629E-07	3.432E-07	1.399E-08	3.600E-08	6.174E-08	4.439E-09	1.022E-07	9.000E-09	2.646E-08	4.247E-09	3.971E-08	1.466E-03	2.701E-09
San Joaquin (SJV)	T7 SWCV	40 MPH	1.802E-08	9.883E-07	8.008E-07	2.728E-08	3.600E-08	6.174E-08	6.079E-09	1.038E-07	9.000E-09	2.646E-08	5.816E-09	4.128E-08	3.239E-03	2.495E-07
San Joaquin (SJV)	T7 Tractor	40 MPH	6.987E-08	8.070E-07	4.126E-07	1.363E-08	3.600E-08	6.174E-08	5.652E-09	1.034E-07	9.000E-09	2.646E-08	5.408E-09	4.087E-08	1.429E-03	3.245E-09
San Joaquin (SJV)	T7 Tractor Construction	40 MPH	7.264E-08	8.492E-07	4.289E-07	1.392E-08	3.600E-08	6.174E-08	5.948E-09	1.037E-07	9.000E-09	2.646E-08	5.691E-09	4.115E-08	1.459E-03	3.374E-09
San Joaquin (SJV)	T7 Utility	40 MPH	4.424E-08	3.879E-07	2.612E-07	1.387E-08	3.600E-08	6.174E-08	2.978E-09	1.007E-07	9.000E-09	2.646E-08	2.849E-09	3.831E-08	1.454E-03	2.055E-09
San Joaquin (SJV)	T7IS	40 MPH	2.510E-07	2.797E-06	2.972E-05	1.596E-08	2.000E-08	6.174E-08	9.328E-10	8.267E-08	5.000E-09	2.646E-08	8.577E-10	3.232E-08	1.551E-03	1.014E-07
San Joaquin (SJV)	UBUS	40 MPH	3.298E-08	1.085E-06	1.361E-06	6.948E-09	1.200E-08	4.969E-07	6.602E-09	5.155E-07	3.000E-09	2.130E-07	6.299E-09	2.223E-07	1.235E-03	1.908E-07

San Joaquin (SJV)	All Other Buses	45 MPH	2.212E-08	3.100E-07	1.164E-07	1.020E-08	1.200E-08	1.303E-07	2.882E-09	1.452E-07	3.000E-09	5.586E-08	2.757E-09	6.162E-08	1.069E-03	1.027E-09
San Joaquin (SJV)	LDA	45 MPH	2.344E-09	1.585E-08	2.263E-07	1.345E-09	8.000E-09	3.675E-08	4.977E-10	4.525E-08	2.000E-09	1.575E-08	4.580E-10	1.821E-08	1.345E-04	9.350E-10
San Joaquin (SJV)	LDT1	45 MPH	3.418E-09	2.226E-08	3.051E-07	1.723E-09	8.000E-09	3.675E-08	6.332E-10	4.538E-08	2.000E-09	1.575E-08	5.823E-10	1.833E-08	1.722E-04	1.379E-09
San Joaquin (SJV)	LDT2	45 MPH	3.690E-09	2.340E-08	3.573E-07	1.980E-09	8.000E-09	3.675E-08	6.067E-10	4.536E-08	2.000E-09	1.575E-08	5.581E-10	1.831E-08	1.979E-04	1.484E-09
San Joaquin (SJV)	LHD1	45 MPH	2.435E-08	3.435E-07	1.657E-07	4.808E-09	1.051E-08	7.644E-08	5.060E-09	9.201E-08	2.628E-09	3.276E-08	4.830E-09	4.022E-08	4.930E-04	1.534E-09
San Joaquin (SJV)	LHD2	45 MPH	2.012E-08	6.116E-08	1.187E-07	4.993E-09	1.085E-08	8.918E-08	4.821E-09	1.048E-07	2.712E-09	3.822E-08	4.603E-09	4.554E-08	5.141E-04	1.176E-09
San Joaquin (SJV)	MCY	45 MPH	1.666E-06	1.028E-06	1.475E-05	1.762E-09	4.000E-09	1.176E-08	1.759E-09	1.752E-08	1.000E-09	5.040E-09	1.640E-09	7.680E-09	1.472E-04	3.588E-07
San Joaquin (SJV)	MDV	45 MPH	5.209E-09	3.223E-08	4.284E-07	2.620E-09	8.000E-09	3.675E-08	6.487E-10	4.540E-08	2.000E-09	1.575E-08	5.974E-10	1.835E-08	2.622E-04	2.072E-09
San Joaquin (SJV)	MH	45 MPH	1.292E-08	5.079E-07	1.728E-07	9.468E-09	1.289E-08	1.303E-07	6.375E-09	1.496E-07	3.222E-09	5.586E-08	6.075E-09	6.516E-08	9.572E-04	2.711E-09
San Joaquin (SJV)	Motor Coach	45 MPH	4.628E-08	4.966E-07	2.733E-07	1.451E-08	1.200E-08	1.303E-07	4.615E-09	1.470E-07	3.000E-09	5.586E-08	4.415E-09	6.328E-08	1.520E-03	2.150E-09
San Joaquin (SJV)	OBUS	45 MPH	7.637E-09	8.686E-08	2.010E-07	9.679E-09	1.200E-08	1.303E-07	8.521E-10	1.432E-07	3.000E-09	5.586E-08	7.835E-10	5.964E-08	9.696E-04	3.086E-09
San Joaquin (SJV)	SBUS	45 MPH	1.479E-08	2.043E-07	1.292E-07	7.953E-09	1.040E-08	7.448E-07	1.930E-09	7.571E-07	2.600E-09	3.192E-07	1.834E-09	3.236E-07	8.250E-04	1.593E-09
San Joaquin (SJV)	T6 Ag	45 MPH	2.544E-08	4.952E-07	1.339E-07	1.034E-08	1.200E-08	1.303E-07	3.423E-09	1.458E-07	3.000E-09	5.586E-08	3.275E-09	6.214E-08	1.084E-03	1.182E-09
San Joaquin (SJV)	T6 CAIRP Heavy	45 MPH	2.029E-08	2.623E-07	1.068E-07	9.946E-09	1.200E-08	1.303E-07	2.568E-09	1.449E-07	3.000E-09	5.586E-08	2.457E-09	6.132E-08	1.043E-03	9.424E-10
San Joaquin (SJV)	T6 CAIRP Small	45 MPH	1.924E-08	2.390E-07	1.013E-07	1.015E-08	1.200E-08	1.303E-07	2.386E-09	1.447E-07	3.000E-09	5.586E-08	2.283E-09	6.114E-08	1.064E-03	8.935E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	45 MPH	2.275E-08	3.239E-07	1.197E-07	1.018E-08	1.200E-08	1.303E-07	2.994E-09	1.453E-07	3.000E-09	5.586E-08	2.864E-09	6.172E-08	1.067E-03	1.057E-09
San Joaquin (SJV)	T6 Instate Construction Small	45 MPH	2.105E-08	2.815E-07	1.108E-07	1.017E-08	1.200E-08	1.303E-07	2.701E-09	1.450E-07	3.000E-09	5.586E-08	2.584E-09	6.144E-08	1.066E-03	9.776E-10
San Joaquin (SJV)	T6 Instate Heavy	45 MPH	2.208E-08	3.199E-07	1.162E-07	9.978E-09	1.200E-08	1.303E-07	2.873E-09	1.452E-07	3.000E-09	5.586E-08	2.748E-09	6.161E-08	1.046E-03	1.026E-09
San Joaquin (SJV)	T6 Instate Small	45 MPH	2.112E-08	2.869E-07	1.112E-07	1.018E-08	1.200E-08	1.303E-07	2.709E-09	1.450E-07	3.000E-09	5.586E-08	2.592E-09	6.145E-08	1.067E-03	9.809E-10
San Joaquin (SJV)	T6 OOS Heavy	45 MPH	2.030E-08	2.627E-07	1.068E-07	9.947E-09	1.200E-08	1.303E-07	2.569E-09	1.449E-07	3.000E-09	5.586E-08	2.458E-09	6.132E-08	1.043E-03	9.427E-10
San Joaquin (SJV)	T6 OOS Small	45 MPH	1.924E-08	2.390E-07	1.013E-07	1.015E-08	1.200E-08	1.303E-07	2.386E-09	1.447E-07	3.000E-09	5.586E-08	2.283E-09	6.114E-08	1.064E-03	8.935E-10
San Joaquin (SJV)	T6 Public	45 MPH	1.731E-08	2.782E-07	8.956E-08	1.018E-08	1.200E-08	1.303E-07	2.405E-09	1.447E-07	3.000E-09	5.586E-08	2.301E-09	6.116E-08	1.067E-03	8.039E-10
San Joaquin (SJV)	T6 Utility	45 MPH	1.585E-08	1.746E-07	8.344E-08	1.015E-08	1.200E-08	1.303E-07	1.798E-09	1.441E-07	3.000E-09	5.586E-08	1.720E-09	6.058E-08	1.064E-03	7.363E-10
San Joaquin (SJV)	T6TS	45 MPH	7.021E-09	8.204E-08	1.840E-07	9.669E-09	1.200E-08	1.303E-07	8.509E-10	1.432E-07	3.000E-09	5.586E-08	7.824E-10	5.964E-08	9.686E-04	2.837E-09
San Joaquin (SJV)	T7 Ag	45 MPH	5.829E-08	1.106E-06	3.442E-07	1.405E-08	3.600E-08	6.174E-08	6.094E-09	1.038E-07	9.000E-09	2.646E-08	5.830E-09	4.129E-08	1.472E-03	2.708E-09
San Joaquin (SJV)	T7 CAIRP	45 MPH	5.062E-08	5.729E-07	2.989E-07	1.315E-08	3.600E-08	6.174E-08	5.190E-09	1.029E-07	9.000E-09	2.646E-08	4.966E-09	4.043E-08	1.378E-03	2.351E-09
San Joaquin (SJV)	T7 CAIRP Construction	45 MPH	5.199E-08	5.875E-07	3.070E-07	1.342E-08	3.600E-08	6.174E-08	5.378E-09	1.031E-07	9.000E-09	2.646E-08	5.145E-09	4.061E-08	1.406E-03	2.415E-09
San Joaquin (SJV)	T7 NNOOS	45 MPH	4.455E-08	4.674E-07	2.630E-07	1.313E-08	3.600E-08	6.174E-08	4.384E-09	1.021E-07	9.000E-09	2.646E-08	4.195E-09	3.965E-08	1.376E-03	2.069E-09
San Joaquin (SJV)	T7 NOOS	45 MPH	5.064E-08	5.738E-07	2.990E-07	1.315E-08	3.600E-08	6.174E-08	5.192E-09	1.029E-07	9.000E-09	2.646E-08	4.967E-09	4.043E-08	1.378E-03	2.352E-09
San Joaquin (SJV)	T7 Other Port	45 MPH	5.508E-08	6.280E-07	3.252E-07	1.340E-08	3.600E-08	6.174E-08	5.787E-09	1.035E-07	9.000E-09	2.646E-08	5.536E-09	4.100E-08	1.405E-03	2.558E-09
San Joaquin (SJV)	T7 POAK	45 MPH	5.560E-08	6.360E-07	3.283E-07	1.340E-08	3.600E-08	6.174E-08	5.856E-09	1.036E-07	9.000E-09	2.646E-08	5.603E-09	4.106E-08	1.405E-03	2.582E-09
San Joaquin (SJV)	T7 POLA	45 MPH	5.486E-08	6.441E-07	3.239E-07	1.344E-08	3.600E-08	6.174E-08	5.752E-09	1.035E-07	9.000E-09	2.646E-08	5.504E-09	4.096E-08	1.409E-03	2.548E-09
San Joaquin (SJV)	T7 Public	45 MPH	3.733E-08	9.023E-07	2.093E-07	1.362E-08	3.600E-08	6.174E-08	5.144E-09	1.029E-07	9.000E-09	2.646E-08	4.922E-09	4.038E-08	1.428E-03	1.734E-09
San Joaquin (SJV)	T7 Single	45 MPH	4.297E-08	5.108E-07	2.537E-07	1.354E-08	3.600E-08	6.174E-08	4.156E-09	1.019E-07	9.000E-09	2.646E-08	3.976E-09	3.944E-08	1.419E-03	1.996E-09
San Joaquin (SJV)	T7 Single Construction	45 MPH	4.286E-08	4.990E-07	2.529E-07	1.352E-08	3.600E-08	6.174E-08	4.166E-09	1.019E-07	9.000E-09	2.646E-08	3.986E-09	3.945E-08	1.417E-03	1.991E-09
San Joaquin (SJV)	T7 SWCV	45 MPH	1.409E-08	9.335E-07	5.915E-07	2.636E-08	3.600E-08	6.174E-08	5.817E-09	1.036E-07	9.000E-09	2.646E-08	5.565E-09	4.103E-08	3.130E-03	1.884E-07
San Joaquin (SJV)	T7 Tractor	45 MPH	5.149E-08	5.980E-07	3.040E-07	1.317E-08	3.600E-08	6.174E-08	5.302E-09	1.030E-07	9.000E-09	2.646E-08	5.073E-09	4.053E-08	1.380E-03	2.392E-09
San Joaquin (SJV)	T7 Tractor Construction	45 MPH	5.353E-08	6.290E-07	3.161E-07	1.345E-08	3.600E-08	6.174E-08	5.580E-09	1.033E-07	9.000E-09	2.646E-08	5.339E-09	4.080E-08	1.410E-03	2.486E-09
San Joaquin (SJV)	T7 Utility	45 MPH	3.260E-08	2.851E-07	1.925E-07	1.340E-08	3.600E-08	6.174E-08	2.793E-09	1.005E-07	9.000E-09	2.646E-08	2.672E-09	3.813E-08	1.405E-03	1.514E-09
San Joaquin (SJV)	T7IS	45 MPH	2.297E-07	2.718E-06	2.758E-05	1.558E-08	2.000E-08	6.174E-08	8.535E-10	8.259E-08	5.000E-09	2.646E-08	7.848E-10	3.224E-08	1.517E-03	9.281E-08
San Joaquin (SJV)	UBUS	45 MPH	2.955E-08	1.066E-06	1.202E-06	6.522E-09	1.200E-08	4.969E-07	6.119E-09	5.151E-07	3.000E-09	2.130E-07	5.839E-09	2.218E-07	1.174E-03	1.638E-07

San Joaquin (SJV)	All Other Buses	50 MPH	1.630E-08	2.384E-07	8.580E-08	9.895E-09	1.200E-08	1.303E-07	2.713E-09	1.451E-07	3.000E-09	5.586E-08	2.596E-09	6.146E-08	1.037E-03	7.571E-10
San Joaquin (SJV)	LDA	50 MPH	2.259E-09	1.565E-08	2.105E-07	1.344E-09	8.000E-09	3.675E-08	4.802E-10	4.523E-08	2.000E-09	1.575E-08	4.418E-10	1.819E-08	1.344E-04	9.024E-10
San Joaquin (SJV)	LDT1	50 MPH	3.296E-09	2.200E-08	2.840E-07	1.721E-09	8.000E-09	3.675E-08	6.111E-10	4.536E-08	2.000E-09	1.575E-08	5.620E-10	1.831E-08	1.720E-04	1.330E-09
San Joaquin (SJV)	LDT2	50 MPH	3.559E-09	2.311E-08	3.325E-07	1.977E-09	8.000E-09	3.675E-08	5.854E-10	4.534E-08	2.000E-09	1.575E-08	5.385E-10	1.829E-08	1.976E-04	1.432E-09
San Joaquin (SJV)	LHD1	50 MPH	2.217E-08	3.534E-07	1.559E-07	5.056E-09	1.051E-08	7.644E-08	4.840E-09	9.179E-08	2.628E-09	3.276E-08	4.620E-09	4.001E-08	5.183E-04	1.419E-09
San Joaquin (SJV)	LHD2	50 MPH	1.754E-08	5.988E-08	1.055E-07	5.188E-09	1.085E-08	8.918E-08	4.525E-09	1.046E-07	2.712E-09	3.822E-08	4.320E-09	4.525E-08	5.342E-04	1.048E-09
San Joaquin (SJV)	MCY	50 MPH	1.632E-06	1.034E-06	1.488E-05	1.761E-09	4.000E-09	1.176E-08	1.718E-09	1.748E-08	1.000E-09	5.040E-09	1.602E-09	7.642E-09	1.471E-04	3.513E-07
San Joaquin (SJV)	MDV	50 MPH	5.012E-09	3.191E-08	3.986E-07	2.617E-09	8.000E-09	3.675E-08	6.254E-10	4.538E-08	2.000E-09	1.575E-08	5.759E-10	1.833E-08	2.619E-04	1.997E-09
San Joaquin (SJV)	MH	50 MPH	1.188E-08	4.779E-07	1.601E-07	8.934E-09	1.289E-08	1.303E-07	6.518E-09	1.497E-07	3.222E-09	5.586E-08	6.213E-09	6.529E-08	9.035E-04	2.590E-09
San Joaquin (SJV)	Motor Coach	50 MPH	3.411E-08	3.781E-07	2.014E-07	1.407E-08	1.200E-08	1.303E-07	4.344E-09	1.467E-07	3.000E-09	5.586E-08	4.156E-09	6.302E-08	1.475E-03	1.584E-09
San Joaquin (SJV)	OBUS	50 MPH	7.372E-09	8.578E-08	1.871E-07	9.055E-09	1.200E-08	1.303E-07	8.225E-10	1.432E-07	3.000E-09	5.586E-08	7.563E-10	5.962E-08	9.070E-04	2.979E-09
San Joaquin (SJV)	SBUS	50 MPH	1.148E-08	1.665E-07	1.079E-07	7.652E-09	1.040E-08	7.448E-07	1.825E-09	7.570E-07	2.600E-09	3.192E-07	1.734E-09	3.235E-07	7.940E-04	1.408E-09
San Joaquin (SJV)	T6 Ag	50 MPH	1.875E-08	3.980E-07	9.869E-08	1.003E-08	1.200E-08	1.303E-07	3.223E-09	1.456E-07	3.000E-09	5.586E-08	3.083E-09	6.194E-08	1.052E-03	8.709E-10
San Joaquin (SJV)	T6 CAIRP Heavy	50 MPH	1.495E-08	2.001E-07	7.870E-08	9.607E-09	1.200E-08	1.303E-07	2.417E-09	1.448E-07	3.000E-09	5.586E-08	2.313E-09	6.117E-08	1.007E-03	6.945E-10
San Joaquin (SJV)	T6 CAIRP Small	50 MPH	1.418E-08	1.819E-07	7.462E-08	9.847E-09	1.200E-08	1.303E-07	2.246E-09	1.446E-07	3.000E-09	5.586E-08	2.149E-09	6.101E-08	1.032E-03	6.584E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	50 MPH	1.677E-08	2.493E-07	8.824E-08	9.878E-09	1.200E-08	1.303E-07	2.819E-09	1.452E-07	3.000E-09	5.586E-08	2.697E-09	6.156E-08	1.035E-03	7.788E-10
San Joaquin (SJV)	T6 Instate Construction Small	50 MPH	1.551E-08	2.154E-07	8.163E-08	9.869E-09	1.200E-08	1.303E-07	2.543E-09	1.449E-07	3.000E-09	5.586E-08	2.433E-09	6.129E-08	1.034E-03	7.204E-10
San Joaquin (SJV)	T6 Instate Heavy	50 MPH	1.627E-08	2.475E-07	8.566E-08	9.638E-09	1.200E-08	1.303E-07	2.704E-09	1.450E-07	3.000E-09	5.586E-08	2.587E-09	6.145E-08	1.010E-03	7.559E-10
San Joaquin (SJV)	T6 Instate Small	50 MPH	1.556E-08	2.201E-07	8.192E-08	9.878E-09	1.200E-08	1.303E-07	2.550E-09	1.449E-07	3.000E-09	5.586E-08	2.440E-09	6.130E-08	1.035E-03	7.228E-10
San Joaquin (SJV)	T6 OOS Heavy	50 MPH	1.496E-08	2.004E-07	7.873E-08	9.607E-09	1.200E-08	1.303E-07	2.418E-09	1.448E-07	3.000E-09	5.586E-08	2.314E-09	6.117E-08	1.007E-03	6.947E-10
San Joaquin (SJV)	T6 OOS Small	50 MPH	1.418E-08	1.819E-07	7.462E-08	9.847E-09	1.200E-08	1.303E-07	2.246E-09	1.446E-07	3.000E-09	5.586E-08	2.149E-09	6.101E-08	1.032E-03	6.584E-10
San Joaquin (SJV)	T6 Public	50 MPH	1.283E-08	2.302E-07	6.636E-08	9.875E-09	1.200E-08	1.303E-07	2.326E-09	1.447E-07	3.000E-09	5.586E-08	2.226E-09	6.109E-08	1.035E-03	5.960E-10
San Joaquin (SJV)	T6 Utility	50 MPH	1.168E-08	1.328E-07	6.149E-08	9.845E-09	1.200E-08	1.303E-07	1.692E-09	1.440E-07	3.000E-09	5.586E-08	1.619E-09	6.048E-08	1.032E-03	5.426E-10
San Joaquin (SJV)	T6TS	50 MPH	6.777E-09	8.102E-08	1.713E-07	9.045E-09	1.200E-08	1.303E-07	8.214E-10	1.432E-07	3.000E-09	5.586E-08	7.552E-10	5.962E-08	9.061E-04	2.738E-09
San Joaquin (SJV)	T7 Ag	50 MPH	4.296E-08	9.068E-07	2.537E-07	1.363E-08	3.600E-08	6.174E-08	5.737E-09	1.035E-07	9.000E-09	2.646E-08	5.488E-09	4.095E-08	1.429E-03	1.995E-09
San Joaquin (SJV)	T7 CAIRP	50 MPH	3.731E-08	4.376E-07	2.203E-07	1.270E-08	3.600E-08	6.174E-08	4.886E-09	1.026E-07	9.000E-09	2.646E-08	4.674E-09	4.013E-08	1.331E-03	1.733E-09
San Joaquin (SJV)	T7 CAIRP Construction	50 MPH	3.832E-08	4.479E-07	2.262E-07	1.302E-08	3.600E-08	6.174E-08	5.063E-09	1.028E-07	9.000E-09	2.646E-08	4.844E-09	4.030E-08	1.364E-03	1.780E-09
San Joaquin (SJV)	T7 NNOOS	50 MPH	3.283E-08	3.554E-07	1.938E-07	1.268E-08	3.600E-08	6.174E-08	4.127E-09	1.019E-07	9.000E-09	2.646E-08	3.949E-09	3.941E-08	1.329E-03	1.525E-09
San Joaquin (SJV)	T7 NOOS	50 MPH	3.732E-08	4.384E-07	2.203E-07	1.270E-08	3.600E-08	6.174E-08	4.887E-09	1.026E-07	9.000E-09	2.646E-08	4.676E-09	4.014E-08	1.331E-03	1.733E-09
San Joaquin (SJV)	T7 Other Port	50 MPH	4.059E-08	4.776E-07	2.397E-07	1.300E-08	3.600E-08	6.174E-08	5.447E-09	1.032E-07	9.000E-09	2.646E-08	5.212E-09	4.067E-08	1.363E-03	1.885E-09
San Joaquin (SJV)	T7 POAK	50 MPH	4.097E-08	4.837E-07	2.419E-07	1.300E-08	3.600E-08	6.174E-08	5.512E-09	1.033E-07	9.000E-09	2.646E-08	5.274E-09	4.073E-08	1.363E-03	1.903E-09
San Joaquin (SJV)	T7 POLA	50 MPH	4.043E-08	4.928E-07	2.387E-07	1.304E-08	3.600E-08	6.174E-08	5.415E-09	1.032E-07	9.000E-09	2.646E-08	5.181E-09	4.064E-08	1.367E-03	1.878E-09
San Joaquin (SJV)	T7 Public	50 MPH	2.809E-08	8.234E-07	1.568E-07	1.322E-08	3.600E-08	6.174E-08	5.135E-09	1.029E-07	9.000E-09	2.646E-08	4.913E-09	4.037E-08	1.385E-03	1.305E-09
San Joaquin (SJV)	T7 Single	50 MPH	3.166E-08	3.988E-07	1.870E-07	1.314E-08	3.600E-08	6.174E-08	3.912E-09	1.017E-07	9.000E-09	2.646E-08	3.743E-09	3.920E-08	1.377E-03	1.471E-09
San Joaquin (SJV)	T7 Single Construction	50 MPH	3.159E-08	3.888E-07	1.864E-07	1.311E-08	3.600E-08	6.174E-08	3.926E-09	1.017E-07	9.000E-09	2.646E-08	3.756E-09	3.922E-08	1.375E-03	1.467E-09
San Joaquin (SJV)	T7 SWCV	50 MPH	1.117E-08	8.964E-07	4.373E-07	2.557E-08	3.600E-08	6.174E-08	5.627E-09	1.034E-07	9.000E-09	2.646E-08	5.383E-09	4.084E-08	3.037E-03	1.433E-07
San Joaquin (SJV)	T7 Tractor	50 MPH	3.794E-08	4.585E-07	2.241E-07	1.272E-08	3.600E-08	6.174E-08	4.991E-09	1.027E-07	9.000E-09	2.646E-08	4.775E-09	4.024E-08	1.333E-03	1.762E-09
San Joaquin (SJV)	T7 Tractor Construction	50 MPH	3.945E-08	4.822E-07	2.329E-07	1.305E-08	3.600E-08	6.174E-08	5.254E-09	1.030E-07	9.000E-09	2.646E-08	5.027E-09	4.049E-08	1.368E-03	1.832E-09
San Joaquin (SJV)	T7 Utility	50 MPH	2.402E-08	2.168E-07	1.419E-07	1.301E-08	3.600E-08	6.174E-08	2.629E-09	1.004E-07	9.000E-09	2.646E-08	2.516E-09	3.798E-08	1.363E-03	1.116E-09
San Joaquin (SJV)	T7IS	50 MPH	2.217E-07	2.685E-06	2.566E-05	1.536E-08	2.000E-08	6.174E-08	8.239E-10	8.256E-08	5.000E-09	2.646E-08	7.576E-10	3.222E-08	1.498E-03	8.959E-08
San Joaquin (SJV)	UBUS	50 MPH	2.856E-08	1.058E-06	1.083E-06	6.175E-09	1.200E-08	4.969E-07	6.258E-09	5.152E-07	3.000E-09	2.130E-07	5.973E-09	2.220E-07	1.126E-03	1.459E-07

San Joaquin (SJV)	All Other Buses	55 MPH	1.201E-08	1.884E-07	6.323E-08	9.629E-09	1.200E-08	1.303E-07	2.561E-09	1.449E-07	3.000E-09	5.586E-08	2.450E-09	6.131E-08	1.009E-03	5.580E-10
San Joaquin (SJV)	LDA	55 MPH	2.296E-09	1.570E-08	1.964E-07	1.393E-09	8.000E-09	3.675E-08	4.884E-10	4.524E-08	2.000E-09	1.575E-08	4.494E-10	1.820E-08	1.393E-04	9.187E-10
San Joaquin (SJV)	LDT1	55 MPH	3.351E-09	2.210E-08	2.651E-07	1.784E-09	8.000E-09	3.675E-08	6.221E-10	4.537E-08	2.000E-09	1.575E-08	5.721E-10	1.832E-08	1.783E-04	1.353E-09
San Joaquin (SJV)	LDT2	55 MPH	3.621E-09	2.320E-08	3.102E-07	2.049E-09	8.000E-09	3.675E-08	5.955E-10	4.535E-08	2.000E-09	1.575E-08	5.478E-10	1.830E-08	2.049E-04	1.458E-09
San Joaquin (SJV)	LHD1	55 MPH	2.088E-08	3.640E-07	1.518E-07	5.304E-09	1.051E-08	7.644E-08	4.739E-09	9.169E-08	2.628E-09	3.276E-08	4.522E-09	3.991E-08	5.437E-04	1.366E-09
San Joaquin (SJV)	LHD2	55 MPH	1.560E-08	5.917E-08	9.538E-08	5.391E-09	1.085E-08	8.918E-08	4.292E-09	1.043E-07	2.712E-09	3.822E-08	4.097E-09	4.503E-08	5.550E-04	9.620E-10
San Joaquin (SJV)	MCY	55 MPH	1.681E-06	1.050E-06	1.559E-05	1.828E-09	4.000E-09	1.176E-08	1.766E-09	1.753E-08	1.000E-09	5.040E-09	1.647E-09	7.687E-09	1.525E-04	3.619E-07
San Joaquin (SJV)	MDV	55 MPH	5.082E-09	3.215E-08	3.720E-07	2.714E-09	8.000E-09	3.675E-08	6.350E-10	4.538E-08	2.000E-09	1.575E-08	5.846E-10	1.833E-08	2.717E-04	2.029E-09
San Joaquin (SJV)	MH	55 MPH	1.143E-08	4.559E-07	1.493E-07	8.717E-09	1.289E-08	1.303E-07	6.875E-09	1.501E-07	3.222E-09	5.586E-08	6.554E-09	6.564E-08	8.817E-04	2.607E-09
San Joaquin (SJV)	Motor Coach	55 MPH	2.514E-08	2.959E-07	1.484E-07	1.369E-08	1.200E-08	1.303E-07	4.101E-09	1.464E-07	3.000E-09	5.586E-08	3.923E-09	6.278E-08	1.435E-03	1.167E-09
San Joaquin (SJV)	OBUS	55 MPH	7.508E-09	8.609E-08	1.746E-07	8.805E-09	1.200E-08	1.303E-07	8.376E-10	1.432E-07	3.000E-09	5.586E-08	7.702E-10	5.963E-08	8.820E-04	3.034E-09
San Joaquin (SJV)	SBUS	55 MPH	9.149E-09	1.403E-07	9.149E-08	7.444E-09	1.040E-08	7.448E-07	1.747E-09	7.569E-07	2.600E-09	3.192E-07	1.659E-09	3.235E-07	7.725E-04	1.316E-09
San Joaquin (SJV)	T6 Ag	55 MPH	1.382E-08	3.280E-07	7.273E-08	9.765E-09	1.200E-08	1.303E-07	3.042E-09	1.454E-07	3.000E-09	5.586E-08	2.910E-09	6.177E-08	1.024E-03	6.418E-10
San Joaquin (SJV)	T6 CAIRP Heavy	55 MPH	1.102E-08	1.568E-07	5.800E-08	9.299E-09	1.200E-08	1.303E-07	2.282E-09	1.446E-07	3.000E-09	5.586E-08	2.183E-09	6.104E-08	9.747E-04	5.118E-10
San Joaquin (SJV)	T6 CAIRP Small	55 MPH	1.045E-08	1.422E-07	5.499E-08	9.582E-09	1.200E-08	1.303E-07	2.120E-09	1.445E-07	3.000E-09	5.586E-08	2.028E-09	6.089E-08	1.004E-03	4.852E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	55 MPH	1.236E-08	1.972E-07	6.503E-08	9.612E-09	1.200E-08	1.303E-07	2.661E-09	1.450E-07	3.000E-09	5.586E-08	2.546E-09	6.141E-08	1.008E-03	5.739E-10
San Joaquin (SJV)	T6 Instate Construction Small	55 MPH	1.143E-08	1.695E-07	6.016E-08	9.603E-09	1.200E-08	1.303E-07	2.401E-09	1.447E-07	3.000E-09	5.586E-08	2.297E-09	6.116E-08	1.007E-03	5.309E-10
San Joaquin (SJV)	T6 Instate Heavy	55 MPH	1.199E-08	1.968E-07	6.313E-08	9.328E-09	1.200E-08	1.303E-07	2.553E-09	1.449E-07	3.000E-09	5.586E-08	2.442E-09	6.130E-08	9.777E-04	5.570E-10
San Joaquin (SJV)	T6 Instate Small	55 MPH	1.147E-08	1.736E-07	6.037E-08	9.613E-09	1.200E-08	1.303E-07	2.407E-09	1.447E-07	3.000E-09	5.586E-08	2.303E-09	6.116E-08	1.008E-03	5.327E-10
San Joaquin (SJV)	T6 OOS Heavy	55 MPH	1.102E-08	1.572E-07	5.802E-08	9.299E-09	1.200E-08	1.303E-07	2.283E-09	1.446E-07	3.000E-09	5.586E-08	2.184E-09	6.104E-08	9.747E-04	5.119E-10
San Joaquin (SJV)	T6 OOS Small	55 MPH	1.045E-08	1.422E-07	5.499E-08	9.582E-09	1.200E-08	1.303E-07	2.120E-09	1.445E-07	3.000E-09	5.586E-08	2.028E-09	6.089E-08	1.004E-03	4.852E-10
San Joaquin (SJV)	T6 Public	55 MPH	9.548E-09	1.974E-07	4.931E-08	9.610E-09	1.200E-08	1.303E-07	2.279E-09	1.446E-07	3.000E-09	5.586E-08	2.180E-09	6.104E-08	1.007E-03	4.435E-10
San Joaquin (SJV)	T6 Utility	55 MPH	8.608E-09	1.038E-07	4.531E-08	9.581E-09	1.200E-08	1.303E-07	1.597E-09	1.439E-07	3.000E-09	5.586E-08	1.528E-09	6.039E-08	1.004E-03	3.998E-10
San Joaquin (SJV)	T6TS	55 MPH	6.901E-09	8.130E-08	1.598E-07	8.795E-09	1.200E-08	1.303E-07	8.365E-10	1.432E-07	3.000E-09	5.586E-08	7.691E-10	5.963E-08	8.811E-04	2.789E-09
San Joaquin (SJV)	T7 Ag	55 MPH	3.166E-08	7.607E-07	1.869E-07	1.326E-08	3.600E-08	6.174E-08	5.415E-09	1.032E-07	9.000E-09	2.646E-08	5.181E-09	4.064E-08	1.390E-03	1.470E-09
San Joaquin (SJV)	T7 CAIRP	55 MPH	2.749E-08	3.436E-07	1.623E-07	1.229E-08	3.600E-08	6.174E-08	4.612E-09	1.024E-07	9.000E-09	2.646E-08	4.412E-09	3.987E-08	1.288E-03	1.277E-09
San Joaquin (SJV)	T7 CAIRP Construction	55 MPH	2.824E-08	3.509E-07	1.667E-07	1.267E-08	3.600E-08	6.174E-08	4.780E-09	1.025E-07	9.000E-09	2.646E-08	4.573E-09	4.003E-08	1.328E-03	1.312E-09
San Joaquin (SJV)	T7 NNOOS	55 MPH	2.419E-08	2.778E-07	1.428E-07	1.228E-08	3.600E-08	6.174E-08	3.896E-09	1.016E-07	9.000E-09	2.646E-08	3.727E-09	3.919E-08	1.287E-03	1.124E-09
San Joaquin (SJV)	T7 NOOS	55 MPH	2.750E-08	3.443E-07	1.624E-07	1.229E-08	3.600E-08	6.174E-08	4.613E-09	1.024E-07	9.000E-09	2.646E-08	4.414E-09	3.987E-08	1.288E-03	1.277E-09
San Joaquin (SJV)	T7 Other Port	55 MPH	2.991E-08	3.733E-07	1.766E-07	1.265E-08	3.600E-08	6.174E-08	5.142E-09	1.029E-07	9.000E-09	2.646E-08	4.919E-09	4.038E-08	1.326E-03	1.389E-09
San Joaquin (SJV)	T7 POAK	55 MPH	3.019E-08	3.780E-07	1.783E-07	1.265E-08	3.600E-08	6.174E-08	5.203E-09	1.029E-07	9.000E-09	2.646E-08	4.978E-09	4.044E-08	1.326E-03	1.402E-09
San Joaquin (SJV)	T7 POLA	55 MPH	2.979E-08	3.875E-07	1.759E-07	1.269E-08	3.600E-08	6.174E-08	5.111E-09	1.029E-07	9.000E-09	2.646E-08	4.890E-09	4.035E-08	1.330E-03	1.384E-09
San Joaquin (SJV)	T7 Public	55 MPH	2.147E-08	7.730E-07	1.185E-07	1.287E-08	3.600E-08	6.174E-08	5.273E-09	1.030E-07	9.000E-09	2.646E-08	5.045E-09	4.050E-08	1.349E-03	9.971E-10
San Joaquin (SJV)	T7 Single	55 MPH	2.333E-08	3.199E-07	1.378E-07	1.278E-08	3.600E-08	6.174E-08	3.693E-09	1.014E-07	9.000E-09	2.646E-08	3.533E-09	3.899E-08	1.340E-03	1.084E-09
San Joaquin (SJV)	T7 Single Construction	55 MPH	2.329E-08	3.114E-07	1.374E-07	1.276E-08	3.600E-08	6.174E-08	3.711E-09	1.015E-07	9.000E-09	2.646E-08	3.551E-09	3.901E-08	1.338E-03	1.082E-09
San Joaquin (SJV)	T7 SWCV	55 MPH	9.050E-09	8.744E-07	3.238E-07	2.491E-08	3.600E-08	6.174E-08	5.501E-09	1.032E-07	9.000E-09	2.646E-08	5.263E-09	4.072E-08	2.957E-03	1.102E-07
San Joaquin (SJV)	T7 Tractor	55 MPH	2.796E-08	3.614E-07	1.651E-07	1.231E-08	3.600E-08	6.174E-08	4.711E-09	1.025E-07	9.000E-09	2.646E-08	4.507E-09	3.997E-08	1.290E-03	1.299E-09
San Joaquin (SJV)	T7 Tractor Construction	55 MPH	2.908E-08	3.800E-07	1.717E-07	1.270E-08	3.600E-08	6.174E-08	4.961E-09	1.027E-07	9.000E-09	2.646E-08	4.746E-09	4.021E-08	1.331E-03	1.350E-09
San Joaquin (SJV)	T7 Utility	55 MPH	1.770E-08	1.695E-07	1.045E-07	1.266E-08	3.600E-08	6.174E-08	2.482E-09	1.002E-07	9.000E-09	2.646E-08	2.375E-09	3.783E-08	1.327E-03	8.223E-10
San Joaquin (SJV)	T7IS	55 MPH	2.258E-07	2.694E-06	2.395E-05	1.505E-08	2.000E-08	6.174E-08	8.391E-10	8.258E-08	5.000E-09	2.646E-08	7.715E-10	3.223E-08	1.470E-03	9.124E-08
San Joaquin (SJV)	UBUS	55 MPH	2.992E-08	1.059E-06	9.937E-07	6.033E-09	1.200E-08	4.969E-07	7.015E-09	5.160E-07	3.000E-09	2.130E-07	6.696E-09	2.227E-07	1.106E-03	1.352E-07

San Joaquin (SJV)	All Other Buses	60 MPH	1.031E-08	1.689E-07	5.428E-08	9.508E-09	1.200E-08	1.303E-07	2.490E-09	1.448E-07	3.000E-09	5.586E-08	2.382E-09	6.124E-08	9.966E-04	4.790E-10
San Joaquin (SJV)	LDA	60 MPH	2.464E-09	1.601E-08	1.838E-07	1.498E-09	8.000E-09	3.675E-08	5.240E-10	4.527E-08	2.000E-09	1.575E-08	4.821E-10	1.823E-08	1.499E-04	9.868E-10
San Joaquin (SJV)	LDT1	60 MPH	3.594E-09	2.258E-08	2.481E-07	1.919E-09	8.000E-09	3.675E-08	6.681E-10	4.542E-08	2.000E-09	1.575E-08	6.143E-10	1.836E-08	1.919E-04	1.451E-09
San Joaquin (SJV)	LDT2	60 MPH	3.886E-09	2.367E-08	2.903E-07	2.204E-09	8.000E-09	3.675E-08	6.390E-10	4.539E-08	2.000E-09	1.575E-08	5.878E-10	1.834E-08	2.205E-04	1.565E-09
San Joaquin (SJV)	LHD1	60 MPH	2.102E-08	3.760E-07	1.565E-07	5.369E-09	1.051E-08	7.644E-08	4.833E-09	9.178E-08	2.628E-09	3.276E-08	4.612E-09	4.000E-08	5.504E-04	1.402E-09
San Joaquin (SJV)	LHD2	60 MPH	1.489E-08	5.963E-08	9.090E-08	5.424E-09	1.085E-08	8.918E-08	4.215E-09	1.042E-07	2.712E-09	3.822E-08	4.023E-09	4.496E-08	5.585E-04	9.463E-10
San Joaquin (SJV)	MCY	60 MPH	1.821E-06	1.078E-06	1.707E-05	1.972E-09	4.000E-09	1.176E-08	1.910E-09	1.767E-08	1.000E-09	5.040E-09	1.781E-09	7.821E-09	1.640E-04	3.920E-07
San Joaquin (SJV)	MDV	60 MPH	5.436E-09	3.297E-08	3.483E-07	2.920E-09	8.000E-09	3.675E-08	6.798E-10	4.543E-08	2.000E-09	1.575E-08	6.258E-10	1.838E-08	2.924E-04	2.173E-09
San Joaquin (SJV)	MH	60 MPH	1.176E-08	4.491E-07	1.407E-07	8.763E-09	1.289E-08	1.303E-07	7.503E-09	1.507E-07	3.222E-09	5.586E-08	7.152E-09	6.623E-08	8.863E-04	2.776E-09
San Joaquin (SJV)	Motor Coach	60 MPH	2.158E-08	2.640E-07	1.274E-07	1.352E-08	1.200E-08	1.303E-07	3.987E-09	1.463E-07	3.000E-09	5.586E-08	3.815E-09	6.267E-08	1.417E-03	1.002E-09
San Joaquin (SJV)	OBUS	60 MPH	8.066E-09	8.778E-08	1.633E-07	8.859E-09	1.200E-08	1.303E-07	8.999E-10	1.432E-07	3.000E-09	5.586E-08	8.274E-10	5.969E-08	8.875E-04	3.259E-09
San Joaquin (SJV)	SBUS	60 MPH	8.392E-09	1.307E-07	8.294E-08	7.382E-09	1.040E-08	7.448E-07	1.733E-09	7.569E-07	2.600E-09	3.192E-07	1.645E-09	3.234E-07	7.659E-04	1.347E-09
San Joaquin (SJV)	T6 Ag	60 MPH	1.186E-08	3.001E-07	6.243E-08	9.642E-09	1.200E-08	1.303E-07	2.958E-09	1.453E-07	3.000E-09	5.586E-08	2.830E-09	6.169E-08	1.011E-03	5.509E-10
San Joaquin (SJV)	T6 CAIRP Heavy	60 MPH	9.458E-09	1.401E-07	4.979E-08	9.122E-09	1.200E-08	1.303E-07	2.219E-09	1.446E-07	3.000E-09	5.586E-08	2.123E-09	6.098E-08	9.561E-04	4.393E-10
San Joaquin (SJV)	T6 CAIRP Small	60 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	60 MPH	1.061E-08	1.769E-07	5.583E-08	9.491E-09	1.200E-08	1.303E-07	2.588E-09	1.449E-07	3.000E-09	5.586E-08	2.476E-09	6.134E-08	9.948E-04	4.927E-10
San Joaquin (SJV)	T6 Instate Construction Small	60 MPH	9.813E-09	1.517E-07	5.165E-08	9.483E-09	1.200E-08	1.303E-07	2.335E-09	1.447E-07	3.000E-09	5.586E-08	2.234E-09	6.109E-08	9.939E-04	4.558E-10
San Joaquin (SJV)	T6 Instate Heavy	60 MPH	1.030E-08	1.770E-07	5.419E-08	9.150E-09	1.200E-08	1.303E-07	2.482E-09	1.448E-07	3.000E-09	5.586E-08	2.375E-09	6.123E-08	9.591E-04	4.782E-10
San Joaquin (SJV)	T6 Instate Small	60 MPH	9.845E-09	1.555E-07	5.182E-08	9.492E-09	1.200E-08	1.303E-07	2.341E-09	1.447E-07	3.000E-09	5.586E-08	2.239E-09	6.110E-08	9.949E-04	4.573E-10
San Joaquin (SJV)	T6 OOS Heavy	60 MPH	9.462E-09	1.404E-07	4.980E-08	9.122E-09	1.200E-08	1.303E-07	2.220E-09	1.446E-07	3.000E-09	5.586E-08	2.124E-09	6.098E-08	9.561E-04	4.395E-10
San Joaquin (SJV)	T6 OOS Small	60 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Public	60 MPH	8.255E-09	1.848E-07	4.257E-08	9.490E-09	1.200E-08	1.303E-07	2.265E-09	1.446E-07	3.000E-09	5.586E-08	2.167E-09	6.103E-08	9.947E-04	3.834E-10
San Joaquin (SJV)	T6 Utility	60 MPH	7.390E-09	9.258E-08	3.890E-08	9.460E-09	1.200E-08	1.303E-07	1.553E-09	1.439E-07	3.000E-09	5.586E-08	1.486E-09	6.035E-08	9.916E-04	3.432E-10
San Joaquin (SJV)	T6TS	60 MPH	7.414E-09	8.290E-08	1.495E-07	8.850E-09	1.200E-08	1.303E-07	8.986E-10	1.432E-07	3.000E-09	5.586E-08	8.263E-10	5.969E-08	8.866E-04	2.996E-09
San Joaquin (SJV)	T7 Ag	60 MPH	2.718E-08	7.017E-07	1.605E-07	1.310E-08	3.600E-08	6.174E-08	5.265E-09	1.030E-07	9.000E-09	2.646E-08	5.038E-09	4.050E-08	1.373E-03	1.262E-09
San Joaquin (SJV)	T7 CAIRP	60 MPH	2.360E-08	3.071E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.484E-09	1.022E-07	9.000E-09	2.646E-08	4.290E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 CAIRP Construction	60 MPH	2.424E-08	3.133E-07	1.431E-07	1.251E-08	3.600E-08	6.174E-08	4.648E-09	1.024E-07	9.000E-09	2.646E-08	4.447E-09	3.991E-08	1.311E-03	1.126E-09
San Joaquin (SJV)	T7 NNOOS	60 MPH	2.077E-08	2.478E-07	1.226E-07	1.204E-08	3.600E-08	6.174E-08	3.788E-09	1.015E-07	9.000E-09	2.646E-08	3.624E-09	3.908E-08	1.262E-03	9.646E-10
San Joaquin (SJV)	T7 NOOS	60 MPH	2.361E-08	3.078E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.486E-09	1.022E-07	9.000E-09	2.646E-08	4.292E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 Other Port	60 MPH	2.568E-08	3.329E-07	1.516E-07	1.250E-08	3.600E-08	6.174E-08	5.000E-09	1.027E-07	9.000E-09	2.646E-08	4.784E-09	4.024E-08	1.310E-03	1.193E-09
San Joaquin (SJV)	T7 POAK	60 MPH	2.592E-08	3.371E-07	1.530E-07	1.250E-08	3.600E-08	6.174E-08	5.060E-09	1.028E-07	9.000E-09	2.646E-08	4.841E-09	4.030E-08	1.310E-03	1.204E-09
San Joaquin (SJV)	T7 POLA	60 MPH	2.558E-08	3.466E-07	1.510E-07	1.253E-08	3.600E-08	6.174E-08	4.970E-09	1.027E-07	9.000E-09	2.646E-08	4.755E-09	4.022E-08	1.313E-03	1.188E-09
San Joaquin (SJV)	T7 Public	60 MPH	1.894E-08	7.549E-07	1.035E-07	1.271E-08	3.600E-08	6.174E-08	5.390E-09	1.031E-07	9.000E-09	2.646E-08	5.156E-09	4.062E-08	1.332E-03	8.799E-10
San Joaquin (SJV)	T7 Single	60 MPH	2.003E-08	2.889E-07	1.183E-07	1.262E-08	3.600E-08	6.174E-08	3.591E-09	1.013E-07	9.000E-09	2.646E-08	3.435E-09	3.890E-08	1.323E-03	9.304E-10
San Joaquin (SJV)	T7 Single Construction	60 MPH	2.000E-08	2.811E-07	1.180E-07	1.260E-08	3.600E-08	6.174E-08	3.612E-09	1.014E-07	9.000E-09	2.646E-08	3.456E-09	3.892E-08	1.321E-03	9.290E-10
San Joaquin (SJV)	T7 SWCV	60 MPH	8.231E-09	8.680E-07	2.789E-07	2.461E-08	3.600E-08	6.174E-08	5.461E-09	1.032E-07	9.000E-09	2.646E-08	5.225E-09	4.068E-08	2.922E-03	9.716E-08
San Joaquin (SJV)	T7 Tractor	60 MPH	2.400E-08	3.236E-07	1.417E-07	1.208E-08	3.600E-08	6.174E-08	4.581E-09	1.023E-07	9.000E-09	2.646E-08	4.383E-09	3.984E-08	1.266E-03	1.115E-09
San Joaquin (SJV)	T7 Tractor Construction	60 MPH	2.496E-08	3.403E-07	1.474E-07	1.254E-08	3.600E-08	6.174E-08	4.825E-09	1.026E-07	9.000E-09	2.646E-08	4.616E-09	4.008E-08	1.314E-03	1.159E-09
San Joaquin (SJV)	T7 Utility	60 MPH	1.520E-08	1.511E-07	8.974E-08	1.250E-08	3.600E-08	6.174E-08	2.413E-09	1.002E-07	9.000E-09	2.646E-08	2.309E-09	3.777E-08	1.310E-03	7.059E-10
San Joaquin (SJV)	T7IS	60 MPH	2.426E-07	2.747E-06	2.241E-05	1.483E-08	2.000E-08	6.174E-08	9.014E-10	8.264E-08	5.000E-09	2.646E-08	8.288E-10	3.229E-08	1.449E-03	9.802E-08
San Joaquin (SJV)	UBUS	60 MPH	3.373E-08	1.073E-06	9.522E-07	6.062E-09	1.200E-08	4.969E-07	8.407E-09	5.174E-07	3.000E-09	2.130E-07	8.027E-09	2.240E-07	1.110E-03	1.355E-07

San Joaquin (SJV)	All Other Buses	65 MPH	1.031E-08	1.689E-07	5.428E-08	9.508E-09	1.200E-08	1.303E-07	2.490E-09	1.448E-07	3.000E-09	5.586E-08	2.382E-09	6.124E-08	9.966E-04	4.790E-10
San Joaquin (SJV)	LDA	65 MPH	2.789E-09	1.658E-08	1.724E-07	1.673E-09	8.000E-09	3.675E-08	5.930E-10	4.534E-08	2.000E-09	1.575E-08	5.455E-10	1.830E-08	1.674E-04	1.118E-09
San Joaquin (SJV)	LDT1	65 MPH	4.065E-09	2.345E-08	2.329E-07	2.142E-09	8.000E-09	3.675E-08	7.568E-10	4.551E-08	2.000E-09	1.575E-08	6.959E-10	1.845E-08	2.143E-04	1.641E-09
San Joaquin (SJV)	LDT2	65 MPH	4.400E-09	2.455E-08	2.724E-07	2.461E-09	8.000E-09	3.675E-08	7.232E-10	4.547E-08	2.000E-09	1.575E-08	6.652E-10	1.842E-08	2.462E-04	1.773E-09
San Joaquin (SJV)	LHD1	65 MPH	2.243E-08	3.890E-07	1.710E-07	5.441E-09	1.051E-08	7.644E-08	5.130E-09	9.208E-08	2.628E-09	3.276E-08	4.894E-09	4.028E-08	5.577E-04	1.524E-09
San Joaquin (SJV)	LHD2	65 MPH	1.509E-08	6.100E-08	9.083E-08	5.454E-09	1.085E-08	8.918E-08	4.272E-09	1.043E-07	2.712E-09	3.822E-08	4.077E-09	4.501E-08	5.615E-04	9.897E-10
San Joaquin (SJV)	MCY	65 MPH	2.074E-06	1.117E-06	1.968E-05	2.213E-09	4.000E-09	1.176E-08	2.174E-09	1.793E-08	1.000E-09	5.040E-09	2.027E-09	8.067E-09	1.832E-04	4.465E-07
San Joaquin (SJV)	MDV	65 MPH	6.132E-09	3.442E-08	3.272E-07	3.260E-09	8.000E-09	3.675E-08	7.674E-10	4.552E-08	2.000E-09	1.575E-08	7.064E-10	1.846E-08	3.265E-04	2.454E-09
San Joaquin (SJV)	MH	65 MPH	1.283E-08	4.545E-07	1.339E-07	8.918E-09	1.289E-08	1.303E-07	8.393E-09	1.516E-07	3.222E-09	5.586E-08	8.001E-09	6.708E-08	9.020E-04	3.123E-09
San Joaquin (SJV)	Motor Coach	65 MPH	2.158E-08	2.640E-07	1.274E-07	1.352E-08	1.200E-08	1.303E-07	3.987E-09	1.463E-07	3.000E-09	5.586E-08	3.815E-09	6.267E-08	1.417E-03	1.002E-09
San Joaquin (SJV)	OBUS	65 MPH	9.141E-09	9.095E-08	1.532E-07	9.023E-09	1.200E-08	1.303E-07	1.020E-09	1.434E-07	3.000E-09	5.586E-08	9.378E-10	5.980E-08	9.040E-04	3.694E-09
San Joaquin (SJV)	SBUS	65 MPH	8.749E-09	1.318E-07	7.965E-08	7.413E-09	1.040E-08	7.448E-07	1.779E-09	7.570E-07	2.600E-09	3.192E-07	1.688E-09	3.235E-07	7.690E-04	1.491E-09
San Joaquin (SJV)	T6 Ag	65 MPH	1.186E-08	3.001E-07	6.243E-08	9.642E-09	1.200E-08	1.303E-07	2.958E-09	1.453E-07	3.000E-09	5.586E-08	2.830E-09	6.169E-08	1.011E-03	5.509E-10
San Joaquin (SJV)	T6 CAIRP Heavy	65 MPH	9.458E-09	1.401E-07	4.979E-08	9.122E-09	1.200E-08	1.303E-07	2.219E-09	1.446E-07	3.000E-09	5.586E-08	2.123E-09	6.098E-08	9.561E-04	4.393E-10
San Joaquin (SJV)	T6 CAIRP Small	65 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	65 MPH	1.061E-08	1.769E-07	5.583E-08	9.491E-09	1.200E-08	1.303E-07	2.588E-09	1.449E-07	3.000E-09	5.586E-08	2.476E-09	6.134E-08	9.948E-04	4.927E-10
San Joaquin (SJV)	T6 Instate Construction Small	65 MPH	9.813E-09	1.517E-07	5.165E-08	9.483E-09	1.200E-08	1.303E-07	2.335E-09	1.447E-07	3.000E-09	5.586E-08	2.234E-09	6.109E-08	9.939E-04	4.558E-10
San Joaquin (SJV)	T6 Instate Heavy	65 MPH	1.030E-08	1.770E-07	5.419E-08	9.150E-09	1.200E-08	1.303E-07	2.482E-09	1.448E-07	3.000E-09	5.586E-08	2.375E-09	6.123E-08	9.591E-04	4.782E-10
San Joaquin (SJV)	T6 Instate Small	65 MPH	9.845E-09	1.555E-07	5.182E-08	9.492E-09	1.200E-08	1.303E-07	2.341E-09	1.447E-07	3.000E-09	5.586E-08	2.239E-09	6.110E-08	9.949E-04	4.573E-10
San Joaquin (SJV)	T6 OOS Heavy	65 MPH	9.462E-09	1.404E-07	4.980E-08	9.122E-09	1.200E-08	1.303E-07	2.220E-09	1.446E-07	3.000E-09	5.586E-08	2.124E-09	6.098E-08	9.561E-04	4.395E-10
San Joaquin (SJV)	T6 OOS Small	65 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Public	65 MPH	8.255E-09	1.848E-07	4.257E-08	9.490E-09	1.200E-08	1.303E-07	2.265E-09	1.446E-07	3.000E-09	5.586E-08	2.167E-09	6.103E-08	9.947E-04	3.834E-10
San Joaquin (SJV)	T6 Utility	65 MPH	7.390E-09	9.258E-08	3.890E-08	9.460E-09	1.200E-08	1.303E-07	1.553E-09	1.439E-07	3.000E-09	5.586E-08	1.486E-09	6.035E-08	9.916E-04	3.432E-10
San Joaquin (SJV)	T6TS	65 MPH	8.403E-09	8.590E-08	1.403E-07	9.014E-09	1.200E-08	1.303E-07	1.018E-09	1.434E-07	3.000E-09	5.586E-08	9.364E-10	5.980E-08	9.030E-04	3.396E-09
San Joaquin (SJV)	T7 Ag	65 MPH	2.718E-08	7.017E-07	1.605E-07	1.310E-08	3.600E-08	6.174E-08	5.265E-09	1.030E-07	9.000E-09	2.646E-08	5.038E-09	4.050E-08	1.373E-03	1.262E-09
San Joaquin (SJV)	T7 CAIRP	65 MPH	2.360E-08	3.071E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.484E-09	1.022E-07	9.000E-09	2.646E-08	4.290E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 CAIRP Construction	65 MPH	2.424E-08	3.133E-07	1.431E-07	1.251E-08	3.600E-08	6.174E-08	4.648E-09	1.024E-07	9.000E-09	2.646E-08	4.447E-09	3.991E-08	1.311E-03	1.126E-09
San Joaquin (SJV)	T7 NNOOS	65 MPH	2.077E-08	2.478E-07	1.226E-07	1.204E-08	3.600E-08	6.174E-08	3.788E-09	1.015E-07	9.000E-09	2.646E-08	3.624E-09	3.908E-08	1.262E-03	9.646E-10
San Joaquin (SJV)	T7 NOOS	65 MPH	2.361E-08	3.078E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.486E-09	1.022E-07	9.000E-09	2.646E-08	4.292E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 Other Port	65 MPH	2.568E-08	3.329E-07	1.516E-07	1.250E-08	3.600E-08	6.174E-08	5.000E-09	1.027E-07	9.000E-09	2.646E-08	4.784E-09	4.024E-08	1.310E-03	1.193E-09
San Joaquin (SJV)	T7 POAK	65 MPH	2.592E-08	3.371E-07	1.530E-07	1.250E-08	3.600E-08	6.174E-08	5.060E-09	1.028E-07	9.000E-09	2.646E-08	4.841E-09	4.030E-08	1.310E-03	1.204E-09
San Joaquin (SJV)	T7 POLA	65 MPH	2.558E-08	3.466E-07	1.510E-07	1.253E-08	3.600E-08	6.174E-08	4.970E-09	1.027E-07	9.000E-09	2.646E-08	4.755E-09	4.022E-08	1.313E-03	1.188E-09
San Joaquin (SJV)	T7 Public	65 MPH	1.894E-08	7.549E-07	1.035E-07	1.271E-08	3.600E-08	6.174E-08	5.390E-09	1.031E-07	9.000E-09	2.646E-08	5.156E-09	4.062E-08	1.332E-03	8.799E-10
San Joaquin (SJV)	T7 Single	65 MPH	2.003E-08	2.889E-07	1.183E-07	1.262E-08	3.600E-08	6.174E-08	3.591E-09	1.013E-07	9.000E-09	2.646E-08	3.435E-09	3.890E-08	1.323E-03	9.304E-10
San Joaquin (SJV)	T7 Single Construction	65 MPH	2.000E-08	2.811E-07	1.180E-07	1.260E-08	3.600E-08	6.174E-08	3.612E-09	1.014E-07	9.000E-09	2.646E-08	3.456E-09	3.892E-08	1.321E-03	9.290E-10
San Joaquin (SJV)	T7 SWCV	65 MPH	8.231E-09	8.680E-07	2.789E-07	2.461E-08	3.600E-08	6.174E-08	5.461E-09	1.032E-07	9.000E-09	2.646E-08	5.225E-09	4.068E-08	2.922E-03	9.716E-08
San Joaquin (SJV)	T7 Tractor	65 MPH	2.400E-08	3.236E-07	1.417E-07	1.208E-08	3.600E-08	6.174E-08	4.581E-09	1.023E-07	9.000E-09	2.646E-08	4.383E-09	3.984E-08	1.266E-03	1.115E-09
San Joaquin (SJV)	T7 Tractor Construction	65 MPH	2.496E-08	3.403E-07	1.474E-07	1.254E-08	3.600E-08	6.174E-08	4.825E-09	1.026E-07	9.000E-09	2.646E-08	4.616E-09	4.008E-08	1.314E-03	1.159E-09
San Joaquin (SJV)	T7 Utility	65 MPH	1.520E-08	1.511E-07	8.974E-08	1.250E-08	3.600E-08	6.174E-08	2.413E-09	1.002E-07	9.000E-09	2.646E-08	2.309E-09	3.777E-08	1.310E-03	7.059E-10
San Joaquin (SJV)	T7IS	65 MPH	2.749E-07	2.847E-06	2.102E-05	1.477E-08	2.000E-08	6.174E-08	1.022E-09	8.276E-08	5.000E-09	2.646E-08	9.394E-10	3.240E-08	1.446E-03	1.111E-07
San Joaquin (SJV)	UBUS	65 MPH	4.009E-08	1.099E-06	9.482E-07	6.167E-09	1.200E-08	4.969E-07	1.043E-08	5.194E-07	3.000E-09	2.130E-07	9.964E-09	2.259E-07	1.128E-03	1.446E-07

San Joaquin (SJV)	All Other Buses	70 MPH	1.031E-08	1.689E-07	5.428E-08	9.508E-09	1.200E-08	1.303E-07	2.490E-09	1.448E-07	3.000E-09	5.586E-08	2.382E-09	6.124E-08	9.966E-04	4.790E-10
San Joaquin (SJV)	LDA	70 MPH	3.027E-09	1.698E-08	1.672E-07	1.792E-09	8.000E-09	3.675E-08	6.434E-10	4.539E-08	2.000E-09	1.575E-08	5.919E-10	1.834E-08	1.795E-04	1.214E-09
San Joaquin (SJV)	LDT1	70 MPH	4.410E-09	2.405E-08	2.259E-07	2.295E-09	8.000E-09	3.675E-08	8.217E-10	4.557E-08	2.000E-09	1.575E-08	7.556E-10	1.851E-08	2.296E-04	1.780E-09
San Joaquin (SJV)	LDT2	70 MPH	4.776E-09	2.515E-08	2.641E-07	2.637E-09	8.000E-09	3.675E-08	7.849E-10	4.553E-08	2.000E-09	1.575E-08	7.220E-10	1.847E-08	2.638E-04	1.925E-09
San Joaquin (SJV)	LHD1	70 MPH	2.343E-08	3.956E-07	1.817E-07	5.384E-09	1.051E-08	7.644E-08	5.338E-09	9.229E-08	2.628E-09	3.276E-08	5.092E-09	4.048E-08	5.519E-04	1.612E-09
San Joaquin (SJV)	LHD2	70 MPH	1.524E-08	6.174E-08	9.116E-08	5.371E-09	1.085E-08	8.918E-08	4.313E-09	1.043E-07	2.712E-09	3.822E-08	4.115E-09	4.505E-08	5.530E-04	1.021E-09
San Joaquin (SJV)	MCY	70 MPH	2.256E-06	1.142E-06	2.159E-05	2.381E-09	4.000E-09	1.176E-08	2.364E-09	1.812E-08	1.000E-09	5.040E-09	2.204E-09	8.244E-09	1.963E-04	4.855E-07
San Joaquin (SJV)	MDV	70 MPH	6.644E-09	3.542E-08	3.175E-07	3.493E-09	8.000E-09	3.675E-08	8.315E-10	4.558E-08	2.000E-09	1.575E-08	7.654E-10	1.852E-08	3.500E-04	2.661E-09
San Joaquin (SJV)	MH	70 MPH	1.379E-08	4.603E-07	1.316E-07	9.191E-09	1.289E-08	1.303E-07	9.411E-09	1.526E-07	3.222E-09	5.586E-08	8.973E-09	6.805E-08	9.296E-04	3.386E-09
San Joaquin (SJV)	Motor Coach	70 MPH	2.158E-08	2.640E-07	1.274E-07	1.352E-08	1.200E-08	1.303E-07	3.987E-09	1.463E-07	3.000E-09	5.586E-08	3.815E-09	6.267E-08	1.417E-03	1.002E-09
San Joaquin (SJV)	OBUS	70 MPH	9.929E-09	9.314E-08	1.486E-07	9.306E-09	1.200E-08	1.303E-07	1.108E-09	1.434E-07	3.000E-09	5.586E-08	1.019E-09	5.988E-08	9.323E-04	4.012E-09
San Joaquin (SJV)	SBUS	70 MPH	9.010E-09	1.326E-07	7.813E-08	7.467E-09	1.040E-08	7.448E-07	1.814E-09	7.570E-07	2.600E-09	3.192E-07	1.719E-09	3.235E-07	7.744E-04	1.596E-09
San Joaquin (SJV)	T6 Ag	70 MPH	1.186E-08	3.001E-07	6.243E-08	9.642E-09	1.200E-08	1.303E-07	2.958E-09	1.453E-07	3.000E-09	5.586E-08	2.830E-09	6.169E-08	1.011E-03	5.509E-10
San Joaquin (SJV)	T6 CAIRP Heavy	70 MPH	9.458E-09	1.401E-07	4.979E-08	9.122E-09	1.200E-08	1.303E-07	2.219E-09	1.446E-07	3.000E-09	5.586E-08	2.123E-09	6.098E-08	9.561E-04	4.393E-10
San Joaquin (SJV)	T6 CAIRP Small	70 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Instate Construction Heavy	70 MPH	1.061E-08	1.769E-07	5.583E-08	9.491E-09	1.200E-08	1.303E-07	2.588E-09	1.449E-07	3.000E-09	5.586E-08	2.476E-09	6.134E-08	9.948E-04	4.927E-10
San Joaquin (SJV)	T6 Instate Construction Small	70 MPH	9.813E-09	1.517E-07	5.165E-08	9.483E-09	1.200E-08	1.303E-07	2.335E-09	1.447E-07	3.000E-09	5.586E-08	2.234E-09	6.109E-08	9.939E-04	4.558E-10
San Joaquin (SJV)	T6 Instate Heavy	70 MPH	1.030E-08	1.770E-07	5.419E-08	9.150E-09	1.200E-08	1.303E-07	2.482E-09	1.448E-07	3.000E-09	5.586E-08	2.375E-09	6.123E-08	9.591E-04	4.782E-10
San Joaquin (SJV)	T6 Instate Small	70 MPH	9.845E-09	1.555E-07	5.182E-08	9.492E-09	1.200E-08	1.303E-07	2.341E-09	1.447E-07	3.000E-09	5.586E-08	2.239E-09	6.110E-08	9.949E-04	4.573E-10
San Joaquin (SJV)	T6 OOS Heavy	70 MPH	9.462E-09	1.404E-07	4.980E-08	9.122E-09	1.200E-08	1.303E-07	2.220E-09	1.446E-07	3.000E-09	5.586E-08	2.124E-09	6.098E-08	9.561E-04	4.395E-10
San Joaquin (SJV)	T6 OOS Small	70 MPH	8.968E-09	1.268E-07	4.720E-08	9.462E-09	1.200E-08	1.303E-07	2.061E-09	1.444E-07	3.000E-09	5.586E-08	1.972E-09	6.083E-08	9.917E-04	4.165E-10
San Joaquin (SJV)	T6 Public	70 MPH	8.255E-09	1.848E-07	4.257E-08	9.490E-09	1.200E-08	1.303E-07	2.265E-09	1.446E-07	3.000E-09	5.586E-08	2.167E-09	6.103E-08	9.947E-04	3.834E-10
San Joaquin (SJV)	T6 Utility	70 MPH	7.390E-09	9.258E-08	3.890E-08	9.460E-09	1.200E-08	1.303E-07	1.553E-09	1.439E-07	3.000E-09	5.586E-08	1.486E-09	6.035E-08	9.916E-04	3.432E-10
San Joaquin (SJV)	T6TS	70 MPH	9.127E-09	8.796E-08	1.360E-07	9.296E-09	1.200E-08	1.303E-07	1.106E-09	1.434E-07	3.000E-09	5.586E-08	1.017E-09	5.988E-08	9.313E-04	3.688E-09
San Joaquin (SJV)	T7 Ag	70 MPH	2.718E-08	7.017E-07	1.605E-07	1.310E-08	3.600E-08	6.174E-08	5.265E-09	1.030E-07	9.000E-09	2.646E-08	5.038E-09	4.050E-08	1.373E-03	1.262E-09
San Joaquin (SJV)	T7 CAIRP	70 MPH	2.360E-08	3.071E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.484E-09	1.022E-07	9.000E-09	2.646E-08	4.290E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 CAIRP Construction	70 MPH	2.424E-08	3.133E-07	1.431E-07	1.251E-08	3.600E-08	6.174E-08	4.648E-09	1.024E-07	9.000E-09	2.646E-08	4.447E-09	3.991E-08	1.311E-03	1.126E-09
San Joaquin (SJV)	T7 NNOOS	70 MPH	2.077E-08	2.478E-07	1.226E-07	1.204E-08	3.600E-08	6.174E-08	3.788E-09	1.015E-07	9.000E-09	2.646E-08	3.624E-09	3.908E-08	1.262E-03	9.646E-10
San Joaquin (SJV)	T7 NOOS	70 MPH	2.361E-08	3.078E-07	1.394E-07	1.206E-08	3.600E-08	6.174E-08	4.486E-09	1.022E-07	9.000E-09	2.646E-08	4.292E-09	3.975E-08	1.264E-03	1.096E-09
San Joaquin (SJV)	T7 Other Port	70 MPH	2.568E-08	3.329E-07	1.516E-07	1.250E-08	3.600E-08	6.174E-08	5.000E-09	1.027E-07	9.000E-09	2.646E-08	4.784E-09	4.024E-08	1.310E-03	1.193E-09
San Joaquin (SJV)	T7 POAK	70 MPH	2.592E-08	3.371E-07	1.530E-07	1.250E-08	3.600E-08	6.174E-08	5.060E-09	1.028E-07	9.000E-09	2.646E-08	4.841E-09	4.030E-08	1.310E-03	1.204E-09
San Joaquin (SJV)	T7 POLA	70 MPH	2.558E-08	3.466E-07	1.510E-07	1.253E-08	3.600E-08	6.174E-08	4.970E-09	1.027E-07	9.000E-09	2.646E-08	4.755E-09	4.022E-08	1.313E-03	1.188E-09
San Joaquin (SJV)	T7 Public	70 MPH	1.894E-08	7.549E-07	1.035E-07	1.271E-08	3.600E-08	6.174E-08	5.390E-09	1.031E-07	9.000E-09	2.646E-08	5.156E-09	4.062E-08	1.332E-03	8.799E-10
San Joaquin (SJV)	T7 Single	70 MPH	2.003E-08	2.889E-07	1.183E-07	1.262E-08	3.600E-08	6.174E-08	3.591E-09	1.013E-07	9.000E-09	2.646E-08	3.435E-09	3.890E-08	1.323E-03	9.304E-10
San Joaquin (SJV)	T7 Single Construction	70 MPH	2.000E-08	2.811E-07	1.180E-07	1.260E-08	3.600E-08	6.174E-08	3.612E-09	1.014E-07	9.000E-09	2.646E-08	3.456E-09	3.892E-08	1.321E-03	9.290E-10
San Joaquin (SJV)	T7 SWCV	70 MPH	8.231E-09	8.680E-07	2.789E-07	2.461E-08	3.600E-08	6.174E-08	5.461E-09	1.032E-07	9.000E-09	2.646E-08	5.225E-09	4.068E-08	2.922E-03	9.716E-08
San Joaquin (SJV)	T7 Tractor	70 MPH	2.400E-08	3.236E-07	1.417E-07	1.208E-08	3.600E-08	6.174E-08	4.581E-09	1.023E-07	9.000E-09	2.646E-08	4.383E-09	3.984E-08	1.266E-03	1.115E-09
San Joaquin (SJV)	T7 Tractor Construction	70 MPH	2.496E-08	3.403E-07	1.474E-07	1.254E-08	3.600E-08	6.174E-08	4.825E-09	1.026E-07	9.000E-09	2.646E-08	4.616E-09	4.008E-08	1.314E-03	1.159E-09
San Joaquin (SJV)	T7 Utility	70 MPH	1.520E-08	1.511E-07	8.974E-08	1.250E-08	3.600E-08	6.174E-08	2.413E-09	1.002E-07	9.000E-09	2.646E-08	2.309E-09	3.777E-08	1.310E-03	7.059E-10
San Joaquin (SJV)	T7IS	70 MPH	2.986E-07	2.915E-06	2.038E-05	1.472E-08	2.000E-08	6.174E-08	1.110E-09	8.285E-08	5.000E-09	2.646E-08	1.020E-09	3.248E-08	1.442E-03	1.207E-07
San Joaquin (SJV)	UBUS	70 MPH	4.758E-08	1.126E-06	9.670E-07	6.354E-09	1.200E-08	4.969E-07	1.304E-08	5.220E-07	3.000E-09	2.130E-07	1.246E-08	2.284E-07	1.161E-03	1.565E-07

Source: EMFAC2014, Version 1.0.7.

General Plan: Criteria Air Pollutant and GHG Emissions Area Sources

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Area Sources - Consumer Products

Source: CalEEMod Users Guide. Version 2016.3.2

Residential and Non-Residential Consumer Product Use[a]

Emissions = EF x Building Area

Non-SCAQMD EF = 2.14E-05 lbs/sqft/day

Sources/Notes:

a. California Emissions Estimator Model, Version 2016.3.2, Users Guide. Appendix A.

AVERAGE HOUSING SQFT ASSUMPTIONS

Year Structure was Built	Percent of Housing Stock [a]	Average Square Feet of New Single Family Homes[b]	Average Square Feet (Weighted)
2010 or later	0.8%	2,467	21
2000 to 2009	17.3%	2,404	417
1980 to 1999	26.8%	1,968	528
1979 or earlier	55.0%	1,699	934
	100%		1,900

Sources/Notes:

a. United States Cenus Bureau, American FactFinder, City of Stockton,San Joaquin, California, Physical Housing Characteristics for Occupied Housing Units, 2015 American Community Survey 5-Year Estimates, Year structure built. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

b. United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. Obtained from http://www.census.gov/construction/chars/

	2017	2040
	CEQA Baseline	**Proposed Project**
Non-Residential SQFT	82,559,618	131,993,588
Housing Units	100,300	141,200
Residential SQFT	190,559,802	291,460,102
lbs VOC per day	5,845	9,062

Source

1 New housing units constructed post-2014 assumed to be 2,467 square feet (based on Source 2).

Area Sources - Criteria Air Pollutants

2017	OFFROAD2007 Estimate based on:	ROG Exhaust lbs/day	NO_x Exhaust	CO Exhaust	SO_2 Exhaust	PM_{10} Exhaust	$PM_{2.5}$ Exhaust*
Construction Equipment	Based on the percentage of building permits issued in Stockton compared to San Joaquin County.	211	1,595	1,153	3	67	66
Lawn & Garden Equipment	Based on the percentage of households in Stockton compared to San Joaquin County.	770	200	9,951	1	28	28
Agricultural Equipment	Based on the percentage of agricultural land in Stockton compared to San Joaquin County.	113	720	1,166	1	39	39
Light Commercial Equipment	Based on the percentage of employment in Stockton compared to San Joaquin County.	145	284	4,733	1	33	33
TOTAL		1,238	2,799	17,004	5	167	165

Proposed Project 2040	Forecast Adjusted for:	ROG Exhaust lbs/day	NO_x Exhaust	CO Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Construction Equipment	similar to historic	211	1,595	1,153	3	67	66
Lawn & Garden Equipment	proportional to population growth	1,088	283	14,054	1	39	39
Agricultural Equipment	Based on the dcrease in agricultural land	106	682	1,103	1	37	37
Light Commercial Equipment	proportional to employment growth	258	504	8,418	1	59	58
TOTAL		1,662	3,064	24,729	6	202	200

Agricultural Land with the City + Planning Area

2017	2040**	% Change
66,220	62,665	-5%

* assumes PM2.5 is 99 percent of PM10

**Based on forecasted rate of change for the County of San Joaquin for years from 2000 to 2014.

Sources

Building Permits

Source: U.S. Census Bureau. https://www.census.gov/construction/bps/

Employment

Source. U.S. Census Bureau. 2010. Longitudinal Employer-Household Dynamics. http://lehd.ces.census.gov/

Population

Source. U.S. Census Bureau, 2010. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#

Farmland

Source: California Department of Conservation data: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls

Other Emissions Sources - Off-road Equipment

Source: OFFROAD2007. Based on equipment use in San Joaquin County.

Year 2017	2017 MTons of CO_2e	Notes
Construction Equipment	41,049	Based on the percentage of residential building permits issued in the City of Stockton compared to San Joaquin County.
Lawn & Garden Equipment	6,156	Based on the percentage of residential units in the City of Stockton compared to San Joaquin County.
Agricultural Equipment	17,443	Based on the percentage of agricultural land in the City of Stockton compared to San Joaquin County
Light Commercial Equipment	7,458	Based on the percentage of employment in the City of Stockton compared to San Joaquin County.
TOTAL	72,107	

Year 2040	2040 MTons of CO_2e	Notes
Construction Equipment	41,049	similar to historic
Lawn & Garden Equipment	8,694.778	proportional to population growth
Agricultural Equipment	16,506.769	proportional to change in farmland
Light Commercial Equipment	13,263	proportional to employment growth
TOTAL	79,513	

Adjusted Business as Usual - Low Carbon Fuel Standard

Year 2040 Adjusted	2040 MTons of CO_2e	Notes
Construction Equipment	36,944	With LCFS (10% reduction)
Lawn&Garden Equipment	7,825	With LCFS (10% reduction)
Light Commercial Equipment	11,937	With LCFS (10% reduction)
TOTAL	56,706	
reduction	22,807	

Sources

Building Permits

Source: U.S. Census Bureau. https://www.census.gov/construction/bps/

Employment

Source. U.S. Census Bureau. 2010. Longitudinal Employer-Household Dynamics. http://lehd.ces.census.gov/

Population

Source. U.S. Census Bureau, 2010. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#

Farmland

Source: California Department of Conservation data: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls

Construction

CY	Season	AvgDays	Code	Equipment	Fuel	MaxHP	Class	C/R	Pre	Hand	Port	County	Air Basin	Air Dist.	Population	Activity
2017	Annual	Mon-Sun	2260002006	Tampers/Rammers	G2	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	68.83	3.43E+01
2017	Annual	Mon-Sun	2260002009	Plate Compactors	G2	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	5.90	3.33E+00
2017	Annual	Mon-Sun	2265002003	Asphalt Pavers	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.50	1.63E+00
2017	Annual	Mon-Sun	2265002003	Asphalt Pavers	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.57	2.79E+00
2017	Annual	Mon-Sun	2265002003	Asphalt Pavers	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.27	1.37E+00
2017	Annual	Mon-Sun	2265002003	Asphalt Pavers	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.70	7.51E-01
2017	Annual	Mon-Sun	2265002006	Tampers/Rammers	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	3.18	1.59E+00
2017	Annual	Mon-Sun	2265002009	Plate Compactors	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	116.60	5.76E+01
2017	Annual	Mon-Sun	2265002009	Plate Compactors	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	123.67	6.99E+01
2017	Annual	Mon-Sun	2265002015	Rollers	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	12.99	2.96E+00
2017	Annual	Mon-Sun	2265002015	Rollers	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	21.01	1.79E+01
2017	Annual	Mon-Sun	2265002015	Rollers	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	14.18	1.21E+01
2017	Annual	Mon-Sun	2265002015	Rollers	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.90	1.52E+00
2017	Annual	Mon-Sun	2265002015	Rollers	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.68	2.87E+00
2017	Annual	Mon-Sun	2265002021	Paving Equipment	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	163.17	7.61E+01
2017	Annual	Mon-Sun	2265002021	Paving Equipment	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	276.03	1.51E+02
2017	Annual	Mon-Sun	2265002021	Paving Equipment	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	6.13	3.36E+00
2017	Annual	Mon-Sun	2265002021	Paving Equipment	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	3.47	1.67E+00
2017	Annual	Mon-Sun	2265002021	Paving Equipment	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.90	4.30E-01
2017	Annual	Mon-Sun	2265002024	Surfacing Equipment	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	29.95	1.64E+01
2017	Annual	Mon-Sun	2265002024	Surfacing Equipment	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	89.01	1.23E+02
2017	Annual	Mon-Sun	2265002024	Surfacing Equipment	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.22	1.68E+00
2017	Annual	Mon-Sun	2265002027	Signal Boards	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.37	1.32E-01
2017	Annual	Mon-Sun	2265002027	Signal Boards	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.63	2.05E+00
2017	Annual	Mon-Sun	2265002030	Trenchers	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	24.34	2.90E+01
2017	Annual	Mon-Sun	2265002030	Trenchers	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	18.86	2.24E+01
2017	Annual	Mon-Sun	2265002030	Trenchers	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	8.15	8.98E+00
2017	Annual	Mon-Sun	2265002030	Trenchers	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.70	2.98E+00
2017	Annual	Mon-Sun	2265002033	Bore/Drill Rigs	G4	15	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.70	2.37E-01
2017	Annual	Mon-Sun	2265002033	Bore/Drill Rigs	G4	25	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	3.46	1.18E+00
2017	Annual	Mon-Sun	2265002033	Bore/Drill Rigs	G4	50	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.39	1.16E-01
2017	Annual	Mon-Sun	2265002033	Bore/Drill Rigs	G4	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	1.81	5.31E-01
2017	Annual	Mon-Sun	2265002033	Bore/Drill Rigs	G4	175	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.45	1.31E-01
2017	Annual	Mon-Sun	2265002039	Concrete/Industrial Saws	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	12.77	4.55E+00
2017	Annual	Mon-Sun	2265002039	Concrete/Industrial Saws	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	57.43	4.88E+01
2017	Annual	Mon-Sun	2265002039	Concrete/Industrial Saws	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	17.97	1.53E+01
2017	Annual	Mon-Sun	2265002039	Concrete/Industrial Saws	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.47	2.46E+00
2017	Annual	Mon-Sun	2265002039	Concrete/Industrial Saws	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.84	1.41E+00
2017	Annual	Mon-Sun	2265002042	Cement and Mortar Mixers	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	231.87	5.85E+01
2017	Annual	Mon-Sun	2265002042	Cement and Mortar Mixers	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	392.87	9.91E+01
2017	Annual	Mon-Sun	2265002042	Cement and Mortar Mixers	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.65	4.17E-01
2017	Annual	Mon-Sun	2265002045	Cranes	G4	50	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.45	5.10E-01
2017	Annual	Mon-Sun	2265002045	Cranes	G4	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.90	1.02E+00
2017	Annual	Mon-Sun	2265002045	Cranes	G4	175	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.04	4.08E-02
2017	Annual	Mon-Sun	2265002054	Crushing/Proc. Equipment	G4	15	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.63	5.00E-01
2017	Annual	Mon-Sun	2265002054	Crushing/Proc. Equipment	G4	25	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.41	3.28E-01
2017	Annual	Mon-Sun	2265002054	Crushing/Proc. Equipment	G4	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.52	3.43E-01
2017	Annual	Mon-Sun	2265002057	Rough Terrain Forklifts	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.18	2.03E-01
2017	Annual	Mon-Sun	2265002057	Rough Terrain Forklifts	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.54	2.88E+00
2017	Annual	Mon-Sun	2265002057	Rough Terrain Forklifts	G4	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.09	1.01E-01
2017	Annual	Mon-Sun	2265002060	Rubber Tired Loaders	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.45	6.29E-01
2017	Annual	Mon-Sun	2265002060	Rubber Tired Loaders	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.97	4.17E+00

Construction

CY	Season	AvgDays	Code	Equipment	Fuel	MaxHP	Class	C/R	Pre	Hand	Port	County	Air Basin	Air Dist.	Population	Activity
2017	Annual	Mon-Sun	2265002066	Tractors/Loaders/Backhoes	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.58	3.76E+00
2017	Annual	Mon-Sun	2265002072	Skid Steer Loaders	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.24	1.08E+00
2017	Annual	Mon-Sun	2265002072	Skid Steer Loaders	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	82.90	7.25E+01
2017	Annual	Mon-Sun	2265002072	Skid Steer Loaders	G4	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	12.21	1.04E+01
2017	Annual	Mon-Sun	2265002072	Skid Steer Loaders	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	7.31	6.21E+00
2017	Annual	Mon-Sun	2265002078	Dumpers/Tenders	G4	5	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	11.83	4.83E+00
2017	Annual	Mon-Sun	2265002078	Dumpers/Tenders	G4	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	25.23	1.03E+01
2017	Annual	Mon-Sun	2265002078	Dumpers/Tenders	G4	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	4.68	1.91E+00
2017	Annual	Mon-Sun	2265002078	Dumpers/Tenders	G4	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.32	1.12E-01
2017	Annual	Mon-Sun	2265002081	Other Construction Equipment	G4	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.25	1.28E+00
2017	Annual	Mon-Sun	2270002003	Pavers	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.37	8.26E-01
2017	Annual	Mon-Sun	2270002003	Pavers	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	21.33	4.86E+01
2017	Annual	Mon-Sun	2270002003	Pavers	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	25.14	5.73E+01
2017	Annual	Mon-Sun	2270002003	Pavers	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	15.63	3.56E+01
2017	Annual	Mon-Sun	2270002003	Pavers	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.88	4.29E+00
2017	Annual	Mon-Sun	2270002003	Pavers	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.93	4.41E+00
2017	Annual	Mon-Sun	2270002009	Plate Compactors	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	7.88	1.30E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	14.80	2.82E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	6.19	1.18E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	19.25	3.70E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	103.34	1.99E+02
2017	Annual	Mon-Sun	2270002015	Rollers	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	41.55	7.99E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	5.89	1.13E+01
2017	Annual	Mon-Sun	2270002015	Rollers	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	4.13	7.94E+00
2017	Annual	Mon-Sun	2270002018	Scrapers	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.95	2.90E+00
2017	Annual	Mon-Sun	2270002018	Scrapers	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	8.73	2.66E+01
2017	Annual	Mon-Sun	2270002018	Scrapers	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	8.51	2.59E+01
2017	Annual	Mon-Sun	2270002018	Scrapers	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	23.43	7.13E+01
2017	Annual	Mon-Sun	2270002018	Scrapers	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	39.99	1.22E+02
2017	Annual	Mon-Sun	2270002021	Paving Equipment	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.64	1.45E+00
2017	Annual	Mon-Sun	2270002021	Paving Equipment	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.54	1.23E+00
2017	Annual	Mon-Sun	2270002021	Paving Equipment	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	7.75	1.78E+01
2017	Annual	Mon-Sun	2270002021	Paving Equipment	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	3.64	8.35E+00
2017	Annual	Mon-Sun	2270002021	Paving Equipment	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.03	2.35E+00
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.49	6.07E-01
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.10	1.21E-01
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.07	9.10E-02
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.15	1.82E-01
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.22	1.52E+00
2017	Annual	Mon-Sun	2270002024	Surfacing Equipment	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	7.64	9.46E+00
2017	Annual	Mon-Sun	2270002027	Signal Boards	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	68.85	1.42E+02
2017	Annual	Mon-Sun	2270002027	Signal Boards	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.34	5.02E-01
2017	Annual	Mon-Sun	2270002027	Signal Boards	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	5.60	8.22E+00
2017	Annual	Mon-Sun	2270002027	Signal Boards	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	3.47	5.10E+00
2017	Annual	Mon-Sun	2270002027	Signal Boards	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.73	1.08E+00
2017	Annual	Mon-Sun	2270002030	Trenchers	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.83	3.11E+00
2017	Annual	Mon-Sun	2270002030	Trenchers	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.93	3.27E+00
2017	Annual	Mon-Sun	2270002030	Trenchers	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	73.55	1.27E+02
2017	Annual	Mon-Sun	2270002030	Trenchers	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	99.67	1.72E+02
2017	Annual	Mon-Sun	2270002030	Trenchers	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	10.91	1.88E+01
2017	Annual	Mon-Sun	2270002030	Trenchers	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.98	1.69E+00
2017	Annual	Mon-Sun	2270002030	Trenchers	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.25	2.15E+00

Construction

CY	Season	AvgDays	Code	Equipment	Fuel	MaxHP	Class	C/R	Pre	Hand	Port	County	Air Basin	Air Dist.	Population	Activity
2017	Annual	Mon-Sun	2270002030	Trenchers	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.53	2.63E+00
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	15	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.24	5.44E-01
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	25	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.73	1.63E+00
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	50	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	3.20	7.39E+00
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	9.83	2.27E+01
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	175	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	2.27	5.25E+00
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	250	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	1.96	4.51E+00
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	500	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	4.35	1.00E+01
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	750	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	23.69	5.46E+01
2017	Annual	Mon-Sun	2270002033	Bore/Drill Rigs	D	1000	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	39.74	9.15E+01
2017	Annual	Mon-Sun	2270002036	Excavators	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.90	3.46E+00
2017	Annual	Mon-Sun	2270002036	Excavators	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	34.07	1.32E+02
2017	Annual	Mon-Sun	2270002036	Excavators	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	92.53	3.60E+02
2017	Annual	Mon-Sun	2270002036	Excavators	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	178.50	6.94E+02
2017	Annual	Mon-Sun	2270002036	Excavators	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	72.59	2.82E+02
2017	Annual	Mon-Sun	2270002036	Excavators	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	52.37	2.04E+02
2017	Annual	Mon-Sun	2270002036	Excavators	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	11.97	4.64E+01
2017	Annual	Mon-Sun	2270002039	Concrete/Industrial Saws	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.10	1.59E-01
2017	Annual	Mon-Sun	2270002039	Concrete/Industrial Saws	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.86	1.36E+00
2017	Annual	Mon-Sun	2270002039	Concrete/Industrial Saws	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.49	2.37E+00
2017	Annual	Mon-Sun	2270002039	Concrete/Industrial Saws	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.05	7.78E-02
2017	Annual	Mon-Sun	2270002042	Cement and Mortar Mixers	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	12.50	1.03E+01
2017	Annual	Mon-Sun	2270002042	Cement and Mortar Mixers	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.13	9.26E-01
2017	Annual	Mon-Sun	2270002045	Cranes	D	50	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	0.83	2.92E+00
2017	Annual	Mon-Sun	2270002045	Cranes	D	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	9.12	3.20E+01
2017	Annual	Mon-Sun	2270002045	Cranes	D	175	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	9.12	3.20E+01
2017	Annual	Mon-Sun	2270002045	Cranes	D	250	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	17.68	6.21E+01
2017	Annual	Mon-Sun	2270002045	Cranes	D	500	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	6.48	2.27E+01
2017	Annual	Mon-Sun	2270002045	Cranes	D	750	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	49.67	1.74E+02
2017	Annual	Mon-Sun	2270002045	Cranes	D	9999	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	62.41	2.19E+02
2017	Annual	Mon-Sun	2270002048	Graders	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.34	8.91E-01
2017	Annual	Mon-Sun	2270002048	Graders	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	22.84	5.95E+01
2017	Annual	Mon-Sun	2270002048	Graders	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	78.05	2.03E+02
2017	Annual	Mon-Sun	2270002048	Graders	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	48.43	1.26E+02
2017	Annual	Mon-Sun	2270002048	Graders	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	1.37	3.56E+00
2017	Annual	Mon-Sun	2270002048	Graders	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.76	1.98E+00
2017	Annual	Mon-Sun	2270002051	Off-Highway Trucks	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.59	8.65E+00
2017	Annual	Mon-Sun	2270002051	Off-Highway Trucks	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	11.74	6.38E+01
2017	Annual	Mon-Sun	2270002051	Off-Highway Trucks	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	16.53	8.99E+01
2017	Annual	Mon-Sun	2270002051	Off-Highway Trucks	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	160.22	8.70E+02
2017	Annual	Mon-Sun	2270002051	Off-Highway Trucks	D	1000	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	75.14	4.08E+02
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	50	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	3.91	1.02E+01
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	120	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	11.03	2.89E+01
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	175	Construction and Mining Equipment	U	P	NHH	P	Total	Total	Total	4.67	1.22E+01
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	250	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	0.46	1.22E+00
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	500	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	2.62	6.85E+00
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	750	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	1.27	3.34E+00
2017	Annual	Mon-Sun	2270002054	Crushing/Proc. Equipment	D	9999	Construction and Mining Equipment	U	N	NHH	P	Total	Total	Total	1.27	3.34E+00

Construction

CY	Season	AvgDays	Code	Equipment	Fuel	MaxHP	Class	C/R	Pre	Hand	Port	County	Air Basin	Air Dist.	Population	Activity
2017	Annual	Mon-Sun	2270002057	Rough Terrain Forklifts	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.71	8.42E+00
2017	Annual	Mon-Sun	2270002057	Rough Terrain Forklifts	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	130.02	4.03E+02
2017	Annual	Mon-Sun	2270002057	Rough Terrain Forklifts	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	16.66	5.16E+01
2017	Annual	Mon-Sun	2270002057	Rough Terrain Forklifts	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.93	2.88E+00
2017	Annual	Mon-Sun	2270002057	Rough Terrain Forklifts	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	0.61	1.90E+00
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.34	8.99E-01
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	6.65	1.78E+01
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	180.87	4.83E+02
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	101.94	2.72E+02
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	101.38	2.71E+02
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	42.19	1.13E+02
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	30.82	8.21E+01
2017	Annual	Mon-Sun	2270002060	Rubber Tired Loaders	D	1000	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	3.31	8.81E+00
2017	Annual	Mon-Sun	2270002063	Rubber Tired Dozers	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.24	1.09E+00
2017	Annual	Mon-Sun	2270002063	Rubber Tired Dozers	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	5.99	2.66E+01
2017	Annual	Mon-Sun	2270002063	Rubber Tired Dozers	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	9.22	4.10E+01
2017	Annual	Mon-Sun	2270002063	Rubber Tired Dozers	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	33.88	1.51E+02
2017	Annual	Mon-Sun	2270002063	Rubber Tired Dozers	D	1000	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	2.29	1.02E+01
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	6.90	1.78E+01
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	41.21	1.09E+02
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	551.24	1.46E+03
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	41.14	1.09E+02
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	13.31	3.51E+01
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	21.47	5.67E+01
2017	Annual	Mon-Sun	2270002066	Tractors/Loaders/Backhoes	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	154.11	4.05E+02
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.34	9.77E-01
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	194.27	5.54E+02
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	65.74	1.88E+02
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	56.50	1.61E+02
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	38.72	1.10E+02
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	20.38	5.81E+01
2017	Annual	Mon-Sun	2270002069	Crawler Tractors	D	1000	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	20.38	5.81E+01
2017	Annual	Mon-Sun	2270002072	Skid Steer Loaders	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	46.96	1.07E+02
2017	Annual	Mon-Sun	2270002072	Skid Steer Loaders	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	425.94	9.93E+02
2017	Annual	Mon-Sun	2270002072	Skid Steer Loaders	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	223.18	5.20E+02
2017	Annual	Mon-Sun	2270002075	Off-Highway Tractors	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.02	7.46E-02
2017	Annual	Mon-Sun	2270002075	Off-Highway Tractors	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	29.91	9.12E+01
2017	Annual	Mon-Sun	2270002075	Off-Highway Tractors	D	250	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	28.27	8.62E+01

Construction

CY	Season	AvgDays	Code	Equipment	Fuel	MaxHP	Class	C/R	Pre	Hand	Port	County	Air Basin	Air Dist.	Population	Activity
2017	Annual	Mon-Sun	2270002075	Off-Highway Tractors	D	750	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	127.87	3.90E+02
2017	Annual	Mon-Sun	2270002075	Off-Highway Tractors	D	1000	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	13.50	4.11E+01
2017	Annual	Mon-Sun	2270002078	Dumpers/Tenders	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	0.59	1.07E+00
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	15	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	8.10	1.53E+01
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	25	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	1.37	2.59E+00
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	50	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	2.10	4.04E+00
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	120	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	3.47	6.66E+00
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	175	Construction and Mining Equipment	U	P	NHH	NP	Total	Total	Total	4.79	9.20E+00
2017	Annual	Mon-Sun	2270002081	Other Construction Equipment	D	500	Construction and Mining Equipment	U	N	NHH	NP	Total	Total	Total	11.13	2.14E+01
															6,494	14,255

	Population	Activity
[redacted]	635	1,393

As a percent of Total Building Permits issued. San Joaquin County

SOURCE: U.S. Census Bureau. https://www.census.gov/construction/bps/

Annual GHG emissions (MTons/Year) multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. This assumption is consistent with the California A

	Buildings Estima
	San Joaquin
2016	1,868
2015	1,749
2014	1,246
2013	1,072
avg	**1,484**

Tons/Day										MTons/Year
Consumption	**ROG Exhaust**	**NOX Exhaust**	**CO Exhaust**	**SO2 Exhaust**	**PM Exhaust**	**CO2 Exhaust**	**N2O Exhaust**	**CH4 Exhaust**	**CO2e**	**CO2e**
6.93E+00	4.36E-04	3.37E-04	1.87E-02	1.47E-06	3.00E-04	3.58E-02	5.34E-05	2.71E-05	5.24E-02	16
6.72E-01	4.23E-05	3.27E-05	1.82E-03	1.43E-07	2.91E-05	3.47E-03	5.18E-06	2.63E-06	5.08E-03	2
9.45E-01	7.14E-05	5.27E-05	2.71E-03	1.31E-07	3.84E-05	4.58E-03	4.66E-06	4.04E-06	6.07E-03	2
4.07E+00	3.15E-04	2.04E-04	1.20E-02	4.86E-07	1.61E-04	1.92E-02	1.23E-05	1.78E-05	2.33E-02	7
3.16E+00	6.80E-05	9.75E-05	3.36E-03	3.03E-07	1.91E-06	2.49E-02	5.54E-06	3.84E-06	2.67E-02	8
2.87E+00	3.92E-05	1.06E-04	1.11E-03	2.49E-07	2.00E-06	2.58E-02	4.01E-06	2.21E-06	2.71E-02	9
7.65E-01	5.72E-05	4.22E-05	2.20E-03	1.06E-07	3.11E-05	3.71E-03	4.09E-06	3.23E-06	5.01E-03	2
1.05E+01	1.47E-03	6.60E-04	2.25E-02	2.07E-06	1.95E-05	5.99E-02	9.47E-05	8.33E-05	9.02E-02	28
3.00E+01	2.24E-03	1.66E-03	8.61E-02	4.15E-06	1.22E-03	1.46E-01	1.69E-04	1.27E-04	1.99E-01	63
8.00E-01	9.60E-05	4.30E-05	1.92E-03	1.50E-07	1.41E-06	4.34E-03	5.51E-06	5.43E-06	6.12E-03	2
9.72E+00	7.28E-04	5.38E-04	2.79E-02	1.35E-06	3.96E-04	4.72E-02	4.92E-05	4.12E-05	6.29E-02	20
1.43E+01	1.10E-03	7.08E-04	4.22E-02	1.70E-06	5.64E-04	6.72E-02	4.74E-05	6.19E-05	8.29E-02	26
4.10E+00	1.33E-04	1.68E-04	5.67E-03	3.67E-07	2.31E-06	3.02E-02	7.82E-06	7.48E-06	3.27E-02	10
1.31E+01	3.02E-04	7.09E-04	7.35E-03	1.10E-06	8.82E-06	1.14E-01	2.11E-05	1.71E-05	1.21E-01	38
1.49E+01	2.08E-03	9.29E-04	3.23E-02	2.93E-06	2.77E-05	8.50E-02	1.29E-04	1.17E-04	1.26E-01	40
8.71E+01	6.50E-03	4.80E-03	2.50E-01	1.21E-05	3.54E-03	4.23E-01	4.28E-04	3.67E-04	5.60E-01	176
4.39E+00	3.36E-04	2.17E-04	1.30E-02	5.24E-07	1.73E-04	2.07E-02	1.39E-05	1.90E-05	2.53E-02	8
3.74E+00	5.16E-05	7.97E-05	2.82E-03	3.82E-07	2.41E-06	3.14E-02	5.56E-06	2.91E-06	3.32E-02	10
1.54E+00	1.12E-05	3.25E-05	3.64E-04	1.38E-07	1.11E-06	1.43E-02	1.65E-06	6.35E-07	1.48E-02	5
3.30E+00	4.75E-04	2.13E-04	6.96E-03	6.58E-07	6.21E-06	1.91E-02	2.89E-05	2.69E-05	2.83E-02	9
4.71E+01	3.69E-03	2.72E-03	1.35E-01	6.50E-06	1.91E-03	2.28E-01	2.87E-04	2.08E-04	3.19E-01	100
1.58E+00	1.27E-04	8.19E-05	4.66E-03	1.88E-07	6.21E-05	7.40E-03	5.98E-06	7.15E-06	9.37E-03	3
4.28E-02	5.48E-06	2.45E-06	9.86E-05	8.19E-09	7.73E-08	2.37E-04	2.81E-07	3.10E-07	3.28E-04	0
1.22E+00	9.04E-05	6.68E-05	3.49E-03	1.68E-07	4.95E-05	5.90E-03	5.88E-06	5.11E-06	7.78E-03	2
1.87E+01	1.43E-03	1.06E-03	5.36E-02	2.58E-06	7.59E-04	9.05E-02	8.84E-05	8.08E-05	1.19E-01	37
3.13E+01	2.46E-03	1.59E-03	9.26E-02	3.73E-06	1.23E-03	1.47E-01	9.75E-05	1.39E-04	1.80E-01	57
1.98E+01	5.47E-04	7.72E-04	2.26E-02	1.87E-06	1.18E-05	1.54E-01	4.02E-05	3.09E-05	1.66E-01	52
1.25E+01	2.37E-04	6.47E-04	5.61E-03	1.07E-06	8.59E-06	1.11E-01	2.02E-05	1.34E-05	1.17E-01	37
1.82E-01	1.32E-05	9.73E-06	5.24E-04	2.52E-08	7.42E-06	8.85E-04	7.68E-07	7.45E-07	1.13E-03	0
1.68E+00	1.24E-04	8.04E-05	4.97E-03	2.01E-07	6.64E-05	7.92E-03	5.01E-06	7.03E-06	9.58E-03	3
3.02E-01	6.21E-06	1.09E-05	2.34E-04	3.07E-08	1.93E-07	2.52E-03	5.33E-07	3.51E-07	2.69E-03	1
3.45E+00	4.57E-05	1.67E-04	1.00E-03	3.04E-07	2.44E-06	3.15E-02	4.23E-06	2.58E-06	3.28E-02	10
1.19E+00	9.41E-06	6.52E-05	3.51E-04	1.08E-07	8.65E-07	1.09E-02	1.33E-06	5.32E-07	1.13E-02	4
1.21E+00	1.55E-04	6.95E-05	2.80E-03	2.32E-07	2.19E-06	6.72E-03	8.72E-06	8.78E-06	9.54E-03	3
3.34E+01	2.50E-03	1.85E-03	9.60E-02	4.63E-06	1.36E-03	1.62E-01	1.52E-04	1.42E-04	2.11E-01	66
2.04E+01	1.56E-03	1.01E-03	6.02E-02	2.43E-06	8.04E-04	9.59E-02	6.40E-05	8.83E-05	1.17E-01	37
6.81E+00	7.13E-05	1.04E-04	4.82E-03	7.04E-07	4.44E-06	5.79E-02	8.12E-06	4.02E-06	6.04E-02	19
6.64E+00	2.93E-05	6.68E-05	1.31E-03	5.98E-07	4.79E-06	6.19E-02	4.93E-06	1.65E-06	6.34E-02	20
1.49E+01	1.85E-03	8.30E-04	3.49E-02	2.82E-06	2.66E-05	8.17E-02	1.08E-04	1.05E-04	1.16E-01	37
4.65E+01	3.76E-03	2.37E-03	1.36E-01	6.31E-06	1.85E-03	2.21E-01	2.41E-04	2.13E-04	2.99E-01	94
6.26E-01	5.03E-05	2.87E-05	1.87E-03	7.38E-08	2.43E-05	2.91E-03	1.78E-06	2.84E-06	3.51E-03	1
9.90E-01	2.76E-05	3.87E-05	1.14E-03	9.30E-08	5.86E-07	7.65E-03	2.13E-06	1.56E-06	8.33E-03	3
3.41E+00	6.57E-05	1.77E-04	1.56E-03	2.92E-07	2.34E-06	3.03E-02	6.13E-06	3.71E-06	3.22E-02	10
2.19E-01	2.35E-06	1.35E-05	7.17E-05	1.98E-08	1.58E-07	1.99E-03	3.43E-07	1.33E-07	2.09E-03	1
3.73E-01	2.78E-05	2.05E-05	1.07E-03	5.16E-08	1.52E-05	1.81E-03	1.62E-06	1.57E-06	2.33E-03	1
4.48E-01	3.42E-05	2.21E-05	1.32E-03	5.34E-08	1.77E-05	2.11E-03	1.39E-06	1.93E-06	2.57E-03	1
2.65E+00	4.22E-05	1.32E-04	9.66E-04	2.31E-07	1.85E-06	2.39E-02	3.10E-06	2.38E-06	2.49E-02	8
6.71E-01	1.87E-05	2.62E-05	7.73E-04	6.30E-08	3.97E-07	5.19E-03	1.13E-06	1.06E-06	5.55E-03	2
1.49E+01	2.85E-04	7.71E-04	6.76E-03	1.27E-06	1.02E-05	1.32E-01	2.18E-05	1.61E-05	1.39E-01	44
8.28E-01	8.90E-06	5.10E-05	2.71E-04	7.48E-08	6.00E-07	7.53E-03	1.07E-06	5.03E-07	7.86E-03	2
1.54E+00	4.14E-05	5.59E-05	1.89E-03	1.43E-07	8.98E-07	1.17E-02	2.86E-06	2.34E-06	1.26E-02	4
1.57E+01	2.87E-04	7.24E-04	7.45E-03	1.34E-06	1.07E-05	1.39E-01	2.51E-05	1.62E-05	1.46E-01	46

Tons/Day										MTons/Year
Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
1.10E+01	1.21E-04	2.73E-04	5.70E-03	9.38E-07	7.52E-06	9.71E-02	1.53E-05	6.82E-06	1.02E-01	32
8.59E-01	6.52E-05	4.81E-05	2.47E-03	1.19E-07	3.49E-05	4.17E-03	3.67E-06	3.69E-06	5.36E-03	2
8.04E+01	6.25E-03	4.04E-03	2.38E-01	9.59E-06	3.17E-03	3.78E-01	2.77E-04	3.53E-04	4.70E-01	148
1.99E+01	2.19E-04	3.16E-04	1.56E-02	2.02E-06	1.27E-05	1.66E-01	2.87E-05	1.24E-05	1.75E-01	55
2.65E+01	1.26E-04	2.96E-04	6.00E-03	2.38E-06	1.91E-05	2.46E-01	2.17E-05	7.13E-06	2.53E-01	80
6.50E-01	9.34E-05	4.18E-05	1.38E-03	1.30E-07	1.22E-06	3.75E-03	6.84E-06	5.28E-06	5.92E-03	2
3.78E+00	3.09E-04	2.01E-04	1.10E-02	5.13E-07	1.51E-04	1.80E-02	2.25E-05	1.75E-05	2.52E-02	8
1.51E+00	1.24E-04	7.25E-05	4.51E-03	1.79E-07	5.89E-05	7.05E-03	5.94E-06	7.01E-06	8.99E-03	3
2.84E-01	3.88E-06	1.38E-05	8.60E-05	2.51E-08	2.01E-07	2.59E-03	5.45E-07	2.20E-07	2.76E-03	1
6.99E+00	2.74E-05	8.23E-05	2.12E-03	6.36E-07	5.10E-06	6.40E-02	5.26E-06	1.55E-06	6.56E-02	21
7.01E-01	9.40E-06	5.94E-05	3.18E-05	9.77E-08	2.39E-06	7.70E-03	0.00E+00	8.48E-07	7.72E-03	2
6.33E+01	2.53E-03	6.35E-03	7.92E-03	8.79E-06	5.69E-04	6.80E-01	0.00E+00	2.28E-04	6.86E-01	216
1.82E+02	3.14E-03	1.89E-02	1.40E-02	2.33E-05	1.57E-03	1.98E+00	0.00E+00	2.83E-04	1.99E+00	626
2.09E+02	2.57E-03	1.86E-02	1.36E-02	2.57E-05	1.04E-03	2.28E+00	0.00E+00	2.32E-04	2.29E+00	721
3.78E+01	3.57E-04	3.07E-03	1.11E-03	4.69E-06	1.15E-04	4.17E-01	0.00E+00	3.22E-05	4.18E-01	132
4.66E+01	4.09E-04	3.39E-03	1.59E-03	5.04E-06	1.29E-04	5.13E-01	0.00E+00	3.69E-05	5.14E-01	162
2.55E+00	3.25E-05	2.04E-04	1.70E-04	4.35E-07	7.95E-06	2.79E-02	0.00E+00	2.93E-06	2.80E-02	9
8.13E+00	1.04E-04	6.49E-04	5.44E-04	1.39E-06	2.54E-05	8.90E-02	0.00E+00	9.35E-06	8.93E-02	28
7.16E+00	9.48E-05	5.99E-04	3.24E-04	9.97E-07	2.25E-05	7.86E-02	0.00E+00	8.56E-06	7.88E-02	25
4.44E+01	1.35E-03	4.15E-03	4.83E-03	6.21E-06	3.22E-04	4.80E-01	0.00E+00	1.21E-04	4.83E-01	152
5.35E+02	7.31E-03	4.71E-02	3.91E-02	6.87E-05	3.75E-03	5.85E+00	0.00E+00	6.59E-04	5.87E+00	1,847
3.93E+02	3.84E-03	2.89E-02	2.45E-02	4.85E-05	1.57E-03	4.31E+00	0.00E+00	3.47E-04	4.32E+00	1,361
7.85E+01	5.57E-04	5.11E-03	1.91E-03	9.75E-06	1.71E-04	8.66E-01	0.00E+00	5.03E-05	8.68E-01	273
7.88E+01	5.25E-04	4.55E-03	2.02E-03	8.53E-06	1.59E-04	8.70E-01	0.00E+00	4.74E-05	8.71E-01	274
1.25E+01	2.13E-04	1.26E-03	9.75E-04	1.60E-06	1.04E-04	1.36E-01	0.00E+00	1.92E-05	1.37E-01	43
1.79E+02	2.22E-03	1.54E-02	1.19E-02	2.21E-05	8.69E-04	1.96E+00	0.00E+00	2.00E-04	1.97E+00	620
2.46E+02	2.33E-03	1.91E-02	7.11E-03	3.05E-05	7.14E-04	2.71E+00	0.00E+00	2.11E-04	2.71E+00	854
1.04E+03	9.24E-03	7.25E-02	3.42E-02	1.12E-04	2.77E-03	1.14E+01	0.00E+00	8.33E-04	1.15E+01	3,609
3.06E+03	2.73E-02	2.20E-01	1.00E-01	3.39E-04	8.26E-03	3.37E+01	0.00E+00	2.47E-03	3.38E+01	10,633
8.31E-01	1.10E-05	6.95E-05	3.75E-05	1.16E-07	2.61E-06	9.12E-03	0.00E+00	9.93E-07	9.14E-03	3
1.37E+00	5.45E-05	1.37E-04	1.70E-04	1.90E-07	1.23E-05	1.47E-02	0.00E+00	4.92E-06	1.49E-02	5
4.43E+01	7.61E-04	4.60E-03	3.40E-03	5.67E-06	3.85E-04	4.84E-01	0.00E+00	6.87E-05	4.85E-01	153
3.85E+01	4.69E-04	3.42E-03	2.50E-03	4.74E-06	1.91E-04	4.21E-01	0.00E+00	4.23E-05	4.22E-01	133
1.30E+01	1.20E-04	1.05E-03	3.74E-04	1.62E-06	3.87E-05	1.44E-01	0.00E+00	1.08E-05	1.44E-01	45
3.94E-01	1.05E-05	3.57E-05	3.85E-05	5.53E-08	2.57E-06	4.27E-03	0.00E+00	9.45E-07	4.30E-03	1
3.53E-01	4.38E-06	3.03E-05	2.48E-05	4.53E-08	2.23E-06	3.86E-03	0.00E+00	3.95E-07	3.87E-03	1
3.55E-01	3.11E-06	2.54E-05	2.13E-05	4.39E-08	1.28E-06	3.90E-03	0.00E+00	2.81E-07	3.91E-03	1
1.11E+00	7.09E-06	7.03E-05	2.66E-05	1.38E-07	2.30E-06	1.23E-02	0.00E+00	6.40E-07	1.23E-02	4
1.52E+01	8.98E-05	8.63E-04	3.98E-04	1.64E-06	2.92E-05	1.68E-01	0.00E+00	8.11E-06	1.68E-01	53
1.49E+02	8.94E-04	8.73E-03	3.88E-03	1.65E-05	2.91E-04	1.64E+00	0.00E+00	8.06E-05	1.64E+00	517
3.99E+01	5.08E-04	3.18E-03	2.66E-03	6.79E-06	1.24E-04	4.36E-01	0.00E+00	4.58E-05	4.38E-01	138
8.36E-01	1.85E-05	7.34E-05	7.65E-05	1.17E-07	4.90E-06	9.08E-03	0.00E+00	1.67E-06	9.12E-03	3
3.01E+01	3.21E-04	2.35E-03	2.07E-03	3.86E-06	1.68E-04	3.29E-01	0.00E+00	2.89E-05	3.30E-01	104
3.58E+01	2.69E-04	2.29E-03	2.11E-03	4.43E-06	1.12E-04	3.93E-01	0.00E+00	2.43E-05	3.94E-01	124
1.24E+01	6.62E-05	6.90E-04	2.65E-04	1.54E-06	2.04E-05	1.37E-01	0.00E+00	5.97E-06	1.37E-01	43
1.20E+00	1.53E-05	9.58E-05	8.03E-05	2.05E-07	3.74E-06	1.31E-02	0.00E+00	1.38E-06	1.32E-02	4
4.90E+00	6.50E-05	4.10E-04	2.22E-04	6.83E-07	1.53E-05	5.38E-02	0.00E+00	5.86E-06	5.40E-02	17
1.94E+02	7.74E-03	1.93E-02	2.36E-02	2.69E-05	1.73E-03	2.08E+00	0.00E+00	6.98E-04	2.10E+00	662
5.10E+02	8.73E-03	5.38E-02	3.89E-02	6.53E-05	4.41E-03	5.57E+00	0.00E+00	7.88E-04	5.59E+00	1,759
1.23E+02	1.49E-03	1.12E-02	7.95E-03	1.52E-05	6.13E-04	1.35E+00	0.00E+00	1.35E-04	1.35E+00	427
1.70E+01	1.59E-04	1.41E-03	5.08E-04	2.11E-06	5.35E-05	1.88E-01	0.00E+00	1.43E-05	1.88E-01	59
3.04E+01	2.61E-04	2.26E-03	1.08E-03	3.28E-06	8.65E-05	3.34E-01	0.00E+00	2.36E-05	3.35E-01	105

Tons/Day										MTons/Year
Consumption	**ROG Exhaust**	**NOX Exhaust**	**CO Exhaust**	**SO2 Exhaust**	**PM Exhaust**	**CO2 Exhaust**	**N2O Exhaust**	**CH4 Exhaust**	**CO2e**	**CO2e**
7.01E+01	6.07E-04	5.36E-03	2.49E-03	7.76E-06	2.02E-04	7.72E-01	0.00E+00	5.47E-05	7.73E-01	243
2.57E-01	3.27E-06	2.05E-05	1.72E-05	4.37E-08	8.01E-07	2.81E-03	0.00E+00	2.95E-07	2.82E-03	1
1.19E+00	1.57E-05	9.94E-05	5.37E-05	1.65E-07	3.73E-06	1.30E-02	0.00E+00	1.42E-06	1.31E-02	4
1.05E+01	7.75E-05	7.35E-04	8.18E-04	1.48E-06	1.63E-05	1.15E-01	0.00E+00	6.99E-06	1.15E-01	36
7.95E+01	3.70E-04	3.36E-03	5.29E-03	1.02E-05	1.08E-04	8.73E-01	0.00E+00	3.34E-05	8.74E-01	275
3.36E+01	1.36E-04	9.40E-04	1.98E-03	4.16E-06	3.17E-05	3.70E-01	0.00E+00	1.23E-05	3.70E-01	116
3.83E+01	1.31E-04	7.04E-04	7.72E-04	4.77E-06	1.99E-05	4.24E-01	0.00E+00	1.18E-05	4.24E-01	134
1.41E+02	4.79E-04	2.53E-03	2.76E-03	1.53E-05	7.26E-05	1.56E+00	0.00E+00	4.32E-05	1.56E+00	492
1.52E+03	5.16E-03	2.73E-02	2.97E-02	1.69E-04	7.81E-04	1.68E+01	0.00E+00	4.66E-04	1.68E+01	5,284
3.84E+03	1.38E-02	2.01E-01	7.52E-02	4.27E-04	3.91E-03	4.24E+01	0.00E+00	1.24E-03	4.24E+01	13,363
2.59E+00	3.43E-05	2.17E-04	1.17E-04	3.61E-07	8.10E-06	2.84E-02	0.00E+00	3.10E-06	2.85E-02	9
1.53E+02	3.45E-03	1.38E-02	1.70E-02	2.14E-05	8.48E-04	1.65E+00	0.00E+00	3.11E-04	1.66E+00	523
1.21E+03	1.36E-02	8.69E-02	9.06E-02	1.55E-04	6.11E-03	1.32E+01	0.00E+00	1.23E-03	1.33E+01	4,173
3.55E+03	3.10E-02	2.00E-01	2.30E-01	4.38E-04	1.07E-02	3.89E+01	0.00E+00	2.80E-03	3.90E+01	12,265
2.03E+03	1.40E-02	9.69E-02	4.73E-02	2.52E-04	3.25E-03	2.24E+01	0.00E+00	1.26E-03	2.24E+01	7,051
2.15E+03	1.44E-02	9.14E-02	4.84E-02	2.33E-04	3.28E-03	2.38E+01	0.00E+00	1.30E-03	2.38E+01	7,491
8.14E+02	5.47E-03	3.57E-02	1.83E-02	9.04E-05	1.26E-03	8.99E+00	0.00E+00	4.93E-04	9.00E+00	2,833
1.19E-01	1.58E-06	9.97E-06	5.38E-06	1.66E-08	3.72E-07	1.31E-03	0.00E+00	1.42E-07	1.31E-03	0
1.89E+00	4.25E-05	1.68E-04	1.77E-04	2.66E-07	1.13E-05	2.05E-02	0.00E+00	3.83E-06	2.06E-02	6
8.03E+00	8.62E-05	6.32E-04	5.56E-04	1.03E-06	4.56E-05	8.79E-02	0.00E+00	7.78E-06	8.81E-02	28
5.67E-01	4.34E-06	3.63E-05	3.37E-05	7.01E-08	1.81E-06	6.23E-03	0.00E+00	3.91E-07	6.24E-03	2
2.97E+00	3.78E-05	2.37E-04	1.98E-04	5.05E-07	9.44E-06	3.25E-02	0.00E+00	3.41E-06	3.25E-02	10
7.40E-01	1.10E-05	6.52E-05	3.52E-05	1.03E-07	3.09E-06	8.12E-03	0.00E+00	9.89E-07	8.14E-03	3
3.14E+00	1.03E-04	3.04E-04	3.77E-04	4.37E-07	2.44E-05	3.38E-02	0.00E+00	9.33E-06	3.40E-02	11
7.34E+01	1.10E-03	6.65E-03	5.61E-03	9.41E-06	5.46E-04	8.02E-01	0.00E+00	9.96E-05	8.04E-01	253
1.17E+02	1.29E-03	8.87E-03	7.63E-03	1.45E-05	5.02E-04	1.28E+00	0.00E+00	1.16E-04	1.29E+00	405
3.15E+02	2.57E-03	2.12E-02	7.97E-03	3.91E-05	7.28E-04	3.48E+00	0.00E+00	2.32E-04	3.48E+00	1,096
1.85E+02	1.43E-03	1.10E-02	4.82E-03	2.01E-05	3.99E-04	2.05E+00	0.00E+00	1.29E-04	2.05E+00	645
2.39E+03	1.86E-02	1.48E-01	6.20E-02	2.65E-04	5.25E-03	2.64E+01	0.00E+00	1.68E-03	2.64E+01	8,314
9.62E+03	8.55E-02	9.06E-01	2.76E-01	1.07E-03	2.56E-02	1.06E+02	0.00E+00	7.71E-03	1.06E+02	33,429
1.13E+00	3.31E-05	1.06E-04	1.31E-04	1.58E-07	7.83E-06	1.23E-02	0.00E+00	2.98E-06	1.23E-02	4
2.04E+02	2.76E-03	1.71E-02	1.53E-02	2.61E-05	1.33E-03	2.23E+00	0.00E+00	2.49E-04	2.23E+00	703
1.15E+03	1.15E-02	7.90E-02	7.41E-02	1.41E-04	4.36E-03	1.26E+01	0.00E+00	1.04E-03	1.26E+01	3,966
9.82E+02	7.43E-03	5.91E-02	2.42E-02	1.22E-04	2.02E-03	1.08E+01	0.00E+00	6.70E-04	1.09E+01	3,416
3.70E+01	2.67E-04	1.98E-03	9.52E-04	4.01E-06	7.13E-05	4.09E-01	0.00E+00	2.40E-05	4.09E-01	129
4.36E+01	3.16E-04	2.42E-03	1.12E-03	4.84E-06	8.57E-05	4.82E-01	0.00E+00	2.85E-05	4.82E-01	152
4.93E+01	4.63E-04	2.92E-03	3.26E-03	6.08E-06	1.57E-04	5.40E-01	0.00E+00	4.18E-05	5.41E-01	170
4.81E+02	3.54E-03	2.43E-02	1.15E-02	5.98E-05	8.18E-04	5.31E+00	0.00E+00	3.19E-04	5.32E+00	1,675
1.11E+03	7.87E-03	4.96E-02	2.55E-02	1.20E-04	1.78E-03	1.22E+01	0.00E+00	7.11E-04	1.22E+01	3,856
1.74E+04	1.24E-01	8.05E-01	4.00E-01	1.93E-03	2.85E-02	1.92E+02	0.00E+00	1.12E-02	1.92E+02	60,510
1.15E+04	8.77E-02	9.38E-01	2.78E-01	1.28E-03	2.50E-02	1.27E+02	0.00E+00	7.91E-03	1.27E+02	40,098
2.08E+01	5.56E-04	1.91E-03	2.23E-03	2.91E-06	1.41E-04	2.25E-01	0.00E+00	5.02E-05	2.27E-01	71
1.10E+02	1.37E-03	8.96E-03	8.00E-03	1.41E-05	6.98E-04	1.20E+00	0.00E+00	1.23E-04	1.20E+00	379
9.32E+01	8.43E-04	6.21E-03	5.82E-03	1.15E-05	3.33E-04	1.02E+00	0.00E+00	7.61E-05	1.02E+00	322
1.35E+01	8.91E-05	7.81E-04	3.04E-04	1.67E-06	2.46E-05	1.49E-01	0.00E+00	8.04E-06	1.49E-01	47
1.16E+02	7.31E-04	5.86E-03	2.52E-03	1.26E-05	1.99E-04	1.28E+00	0.00E+00	6.59E-05	1.28E+00	403
8.88E+01	5.58E-04	4.61E-03	1.92E-03	9.86E-06	1.53E-04	9.81E-01	0.00E+00	5.03E-05	9.82E-01	309
1.97E+02	1.45E-03	1.70E-02	4.71E-03	2.19E-05	4.48E-04	2.18E+00	0.00E+00	1.31E-04	2.18E+00	687

Tons/Day										MTons/Year
Consumption	**ROG Exhaust**	**NOX Exhaust**	**CO Exhaust**	**SO2 Exhaust**	**PM Exhaust**	**CO2 Exhaust**	**N2O Exhaust**	**CH4 Exhaust**	**CO2e**	**CO2e**
1.31E+01	3.12E-04	1.20E-03	1.42E-03	1.84E-06	8.00E-05	1.42E-01	0.00E+00	2.82E-05	1.43E-01	45
1.15E+03	1.33E-02	8.74E-02	8.47E-02	1.48E-04	6.43E-03	1.26E+01	0.00E+00	1.20E-03	1.26E+01	3,969
2.94E+02	2.56E-03	1.78E-02	1.87E-02	3.63E-05	9.56E-04	3.22E+00	0.00E+00	2.31E-04	3.23E+00	1,016
2.23E+01	1.51E-04	1.17E-03	5.10E-04	2.77E-06	3.87E-05	2.46E-01	0.00E+00	1.36E-05	2.46E-01	78
2.20E+01	1.43E-04	1.01E-03	4.83E-04	2.39E-06	3.62E-05	2.43E-01	0.00E+00	1.29E-05	2.43E-01	77
6.92E-01	9.17E-06	5.79E-05	3.13E-05	9.64E-08	2.16E-06	7.60E-03	0.00E+00	8.27E-07	7.62E-03	2
2.56E+01	7.25E-04	2.38E-03	2.90E-03	3.57E-06	1.73E-04	2.76E-01	0.00E+00	6.55E-05	2.78E-01	87
1.30E+03	1.72E-02	1.08E-01	9.74E-02	1.67E-04	8.33E-03	1.42E+01	0.00E+00	1.55E-03	1.42E+01	4,485
1.32E+03	1.30E-02	8.93E-02	8.47E-02	1.63E-04	4.92E-03	1.45E+01	0.00E+00	1.17E-03	1.45E+01	4,558
1.82E+03	1.35E-02	1.08E-01	4.45E-02	2.27E-04	3.67E-03	2.01E+01	0.00E+00	1.22E-03	2.02E+01	6,349
1.21E+03	8.52E-03	6.35E-02	3.04E-02	1.31E-04	2.28E-03	1.33E+01	0.00E+00	7.68E-04	1.34E+01	4,203
1.80E+03	1.28E-02	9.84E-02	4.54E-02	2.00E-04	3.47E-03	1.99E+01	0.00E+00	1.16E-03	1.99E+01	6,277
2.37E+02	1.83E-03	2.08E-02	6.52E-03	2.63E-05	5.74E-04	2.61E+00	0.00E+00	1.65E-04	2.62E+00	824
6.43E+00	9.58E-05	6.65E-04	4.47E-04	7.91E-07	3.76E-05	7.03E-02	0.00E+00	8.64E-06	7.06E-02	22
2.22E+02	2.65E-03	2.12E-02	7.78E-03	2.75E-05	8.71E-04	2.44E+00	0.00E+00	2.39E-04	2.45E+00	771
4.94E+02	5.45E-03	4.28E-02	2.25E-02	5.32E-05	1.74E-03	5.42E+00	0.00E+00	4.92E-04	5.44E+00	1,711
2.73E+03	3.02E-02	2.42E-01	1.24E-01	3.02E-04	9.70E-03	3.00E+01	0.00E+00	2.72E-03	3.01E+01	9,468
2.74E+02	3.19E-03	3.19E-02	1.35E-02	3.03E-05	1.03E-03	3.01E+00	0.00E+00	2.88E-04	3.02E+00	950
1.29E+01	1.71E-04	1.08E-03	5.81E-04	1.79E-06	4.19E-05	1.41E-01	0.00E+00	1.54E-05	1.42E-01	45
1.52E+02	3.02E-03	1.32E-02	1.57E-02	2.13E-05	7.64E-04	1.65E+00	0.00E+00	2.72E-04	1.66E+00	521
3.43E+03	3.47E-02	2.34E-01	2.50E-01	4.41E-04	1.57E-02	3.76E+01	0.00E+00	3.13E-03	3.77E+01	11,862
5.01E+02	3.94E-03	2.65E-02	3.17E-02	6.19E-05	1.38E-03	5.50E+00	0.00E+00	3.55E-04	5.51E+00	1,734
2.73E+02	1.70E-03	1.21E-02	6.15E-03	3.39E-05	4.02E-04	3.01E+00	0.00E+00	1.53E-04	3.02E+00	950
8.84E+02	5.34E-03	3.49E-02	1.94E-02	1.10E-04	1.24E-03	9.77E+00	0.00E+00	4.82E-04	9.78E+00	3,078
9.49E+03	5.76E-02	3.87E-01	2.08E-01	1.18E-03	1.36E-02	1.05E+02	0.00E+00	5.20E-03	1.05E+02	33,020
1.13E+00	4.28E-05	1.13E-04	1.44E-04	1.57E-07	9.63E-06	1.21E-02	0.00E+00	3.86E-06	1.22E-02	4
1.67E+03	2.79E-02	1.65E-01	1.30E-01	2.14E-04	1.35E-02	1.82E+01	0.00E+00	2.52E-03	1.83E+01	5,757
1.04E+03	1.26E-02	8.71E-02	6.88E-02	1.28E-04	4.89E-03	1.14E+01	0.00E+00	1.14E-03	1.14E+01	3,584
1.21E+03	1.14E-02	9.18E-02	3.47E-02	1.51E-04	3.43E-03	1.34E+01	0.00E+00	1.03E-03	1.34E+01	4,220
1.30E+03	1.14E-02	8.82E-02	4.16E-02	1.40E-04	3.36E-03	1.43E+01	0.00E+00	1.03E-03	1.43E+01	4,512
1.22E+03	1.08E-02	8.57E-02	3.91E-02	1.36E-04	3.22E-03	1.35E+01	0.00E+00	9.77E-04	1.35E+01	4,255
1.73E+03	1.65E-02	1.75E-01	6.13E-02	1.92E-04	5.21E-03	1.91E+01	0.00E+00	1.48E-03	1.91E+01	6,021
6.74E+01	9.62E-04	5.85E-03	3.15E-03	9.39E-06	2.71E-04	7.40E-01	0.00E+00	8.68E-05	7.42E-01	234
1.16E+03	1.43E-02	9.25E-02	1.02E-01	1.64E-04	3.90E-03	1.27E+01	0.00E+00	1.29E-03	1.27E+01	3,994
1.01E+03	6.96E-03	5.64E-02	6.98E-02	1.30E-04	2.97E-03	1.11E+01	0.00E+00	6.28E-04	1.11E+01	3,503
3.21E-01	6.38E-06	3.72E-05	2.58E-05	4.10E-08	3.11E-06	3.49E-03	0.00E+00	5.75E-07	3.51E-03	1
5.43E+02	7.73E-03	5.46E-02	3.70E-02	6.69E-05	3.08E-03	5.94E+00	0.00E+00	6.98E-04	5.96E+00	1,876
5.10E+02	5.79E-03	4.74E-02	1.72E-02	6.32E-05	1.92E-03	5.62E+00	0.00E+00	5.22E-04	5.63E+00	1,772

Tons/Day										MTons/Year
Consumption	**ROG Exhaust**	**NOX Exhaust**	**CO Exhaust**	**SO2 Exhaust**	**PM Exhaust**	**CO2 Exhaust**	**N2O Exhaust**	**CH4 Exhaust**	**CO2e**	**CO2e**
1.01E+04	1.06E-01	8.65E-01	4.31E-01	1.11E-03	3.44E-02	1.11E+02	0.00E+00	9.55E-03	1.11E+02	34,908
1.52E+03	1.69E-02	1.73E-01	7.11E-02	1.68E-04	5.54E-03	1.67E+01	0.00E+00	1.52E-03	1.68E+01	5,278
3.70E-01	4.91E-06	3.12E-05	1.67E-05	5.15E-08	1.23E-06	4.06E-03	0.00E+00	4.43E-07	4.07E-03	1
7.07E+00	9.00E-05	5.64E-04	4.72E-04	1.20E-06	2.20E-05	7.73E-02	0.00E+00	8.12E-06	7.75E-02	24
1.56E+00	2.06E-05	1.30E-04	7.05E-05	2.17E-07	4.89E-06	1.71E-02	0.00E+00	1.86E-06	1.72E-02	5
5.19E+00	9.43E-05	4.41E-04	4.82E-04	7.30E-07	2.52E-05	5.64E-02	0.00E+00	8.51E-06	5.66E-02	18
2.46E+01	2.24E-04	1.67E-03	1.71E-03	3.16E-06	1.10E-04	2.69E-01	0.00E+00	2.02E-05	2.70E-01	85
4.46E+01	3.06E-04	2.36E-03	2.69E-03	5.51E-06	1.16E-04	4.89E-01	0.00E+00	2.76E-05	4.90E-01	154
2.45E+02	1.26E-03	9.75E-03	5.12E-03	2.66E-05	3.32E-04	2.71E+00	0.00E+00	1.14E-04	2.71E+00	855
121,197	1.078	8.162	5.901	0.014	0.342	1,331.149	0.003	0.096	1,334	420,043
Consumption	**lbs/day**					Tons/Day				MTons/Year
11,844	211	1,595	1,153	3	67	130	0	0	130	**41,049**

1,484 Stockton 145 Percent 9.77%

ir Resources Board's (CARB) methodology for transportation within the Climate Change Scoping Plan Measure Documentation Supplement.

ites with Imputation

Stockton	
229	12.3%
169	9.7%
77	6.2%
105	9.8%
145	9.5%

Global Warming Potentials (GWP)

CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

Survey	FIPS	FIPS	Region	Division	County	1-unit			2-units			3-4 units			5+ units			1-unit rep			2-units rep			3-4 units rep			5+units rep		
Date	State	County	Code	Code	Name	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value
2013		6	77	4	9 San Joaquin County	1062	1062	266842281	1	2	265452	0	0	0	9	70	7265315	1058	1058	2.65E+08	1	2	265452	0	0	0	9	70	7265315

Survey Date	FIPS State	FIPS County	Region Code	Division Code	County Name	1-unit Bldgs	1-unit Units	1-unit Value	2-units Bldgs	2-units Units	2-units Value	3-4 units Bldgs	3-4 units Units	3-4 units Value	5+ units Bldgs	5+ units Units	5+ units Value	1-unit rep Bldgs	1-unit rep Units	1-unit rep Value	2-units rep Bldgs	2-units rep Units	2-units rep Value	3-4 units rep Bldgs	3-4 units rep Units	3-4 units rep Value	5+units rep Bldgs	5+units rep Units	5+units rep Value
2014	6	77	4	9	San Joaquin County	1245	1245	3.27E+08	0	0	0	0	0	0	1	20	2440620	1240	1240	3.26E+08	0	0	0	0	0	0	1	20	2440620

Survey Date	FIPS State	FIPS County	Region Code	Division Code	County Name	1-unit Bldgs	1-unit Units	1-unit Value	2-units Bldgs	2-units Units	2-units Value	3-4 units Bldgs	3-4 units Units	3-4 units Value	5+ units Bldgs	5+ units Units	5+ units Value	1-unit rep Bldgs	1-unit rep Units	1-unit rep Value	2-units rep Bldgs	2-units rep Units	2-units rep Value	3-4 units rep Bldgs	3-4 units rep Units	3-4 units rep Value	5+units rep Bldgs	5+units rep Units	5+units rep Value
2015	6	77	4	9	San Joaquin County	1708	1708	4.6E+08	12	24	4082568	0	0	0	29	699	85924791	1688	1688	4.55E+08	12	24	4082568	0	0	0	29	699	85924791

Survey	FIPS	FIPS	Region	Division	County	1-unit			2-units			3-4 units			5+ units			1-unit rep			2-units rep			3-4 units rep			5+units rep	
Date	State	County	Code	Code	Name	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value
2016	6	77	4	9	San Joaquin County	1862	1862	5.3E+08	2	4	451863	0	0	0	4	132	17648606	1835	1835	5.23E+08	2	4	451863	0	0	0	2	80	11633360

Survey	State	6-Digit	County	Census Plac	FIPS Place	FIPS MCD	Pop	CSA	CBSA	Footnote	Central	Zip	Region	Division	Number of Place		1-unit			2-units			3-4 units			5+ units			1-unit rep			2-units rep			3-4 units rep			5+ units rep	
Date	Code	ID	Code	Code	Code	Code		Code	Code	Code	City	Code	Code	Code	Months Re	Name	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value
2013	6	452000	77	2805	75000	0	291707	999	44700		1	95202-199	4	9	12	Stockton	96	96	24633252	0	0	0	0	0	0	9	70	7265315	96	96	24633252	0	0	0	0	0	0	9	70	7265315
2013	49	445000	45	965	73050	0	616	482	41620			84071	4	8	12	Stockton tc	4	4	684453	0	0	0	0	0	0	0	0	0	4	4	684453	0	0	0	0	0	0	0	0	0

Survey Date	State Code	6-Digit ID	County Code	Census Plac Code	FIPS Place Code	FIPS MCD Code	Pop	CSA Code	CBSA Code	Footnote Code	Central City	Zip Code	Region Code	Division Code	Number of Place Months	Re	Name	1-unit Bldgs	1-unit Units	1-unit Value	2-units Bldgs	2-units Units	2-units Value	3-4 units Bldgs	3-4 units Units	3-4 units Value	5+ units Bldgs	5+ units Units	5+ units Value	1-unit rep Bldgs	1-unit rep Units	1-unit rep Value	2-units rep Bldgs	2-units rep Units	2-units rep Value	3-4 units rep Bldgs	3-4 units rep Units	3-4 units rep Value	5+ units rep Bldgs	5+ units rep Units	5+ units rep Value
2014	6	452000	77	2805	75000	0	291707	488	44700		1	9.52E+08	4	9	12	Stockton		76	76	19466620	0	0	0	0	0	0	1	20	2440620	76	76	19466620	0	0	0	0	0	0	1	20	2440620
2014	49	445000	45	965	73050	0	616	482	41620			84071	4	8	12	Stockton tc		1	1	110000	0	0	0	0	0	0	0	0	0	1	1	110000	0	0	0	0	0	0	0	0	0

Survey	State	6-Digit	County	Census Plac	FIPS Place	FIPS MCD	Pop	CSA	CBSA	Footnote	Central	Zip	Region	Division	Number of Place		1-unit			2-units			3-4 units			5+ units			1-unit rep			2-units rep			3-4 units rep			5+ units rep	
Date	Code	ID	Code	Code	Code	Code		Code	Code	Code	City	Code	Code	Code	Months Re	Name	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value
2015	6	452000	77	2805	75000	0	291707	488	44700		1	9.52E+08	4	9	12	Stockton	157	157	42199653	0	0	0	0	0	0	12	253	29266483	157	157	42199653	0	0	0	0	0	0	12	253	29266483
2015	49	445000	45	965	73050	0	616	482	41620			84071	4	8	12	Stockton tc	1	1	178869	0	0	0	0	0	0	0	0	0	1	1	178869	0	0	0	0	0	0	0	0	0

Survey	State	6-Digit	County	Census Plac	FIPS Place	FIPS MCD	Pop	CSA	CBSA	Footnote	Central	Zip	Region	Division	Number of	Place	1-unit			2-units			3-4 units			5+ units			1-unit rep			2-units rep			3-4 units rep			5+ units rep	
Date	Code	ID	Code	Code	Code	Code		Code	Code	Code	City	Code	Code	Code	Months Rep	Name	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value	Bldgs	Units	Value
2016	6	452000	77	2805	75000	0	291707	488	44700		1	9.52E+08	4	9	10	Stockton	227	227	62756082	0	0	0	0	0	0	2	52	6015246	200	200	55498817	0	0	0	0	0	0	0	0	0
2016	49	445000	45	965	73050	0	616	482	41620			84071	4	8	12	Stockton town	3	3	502401	0	0	0	0	0	0	0	0	0	3	3	502401	0	0	0	0	0	0	0	0	0

CY	Season	AvgDays	Code	Light Commercial Equipment	Fuel	MaxHP	Population	Activity
2017	Annual	Mon-Sun	2260006005	Generator Sets	G2	2	4.61E+01	1.69E+01
2017	Annual	Mon-Sun	2260006005	Generator Sets	G2	2	3.62E+01	8.96E+00
2017	Annual	Mon-Sun	2260006005	Generator Sets	G2	15	4.65E-01	1.71E-01
2017	Annual	Mon-Sun	2260006005	Generator Sets	G2	15	3.54E-01	8.76E-02
2017	Annual	Mon-Sun	2260006010	Pumps	G2	2	1.83E+02	1.29E+02
2017	Annual	Mon-Sun	2260006010	Pumps	G2	2	1.44E+02	6.84E+01
2017	Annual	Mon-Sun	2260006010	Pumps	G2	15	4.94E+01	3.49E+01
2017	Annual	Mon-Sun	2260006010	Pumps	G2	15	3.88E+01	1.84E+01
2017	Annual	Mon-Sun	2260006010	Pumps	G2	25	5.98E-01	4.22E-01
2017	Annual	Mon-Sun	2260006010	Pumps	G2	25	4.65E-01	2.21E-01
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	5	6.05E+02	2.22E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	5	4.75E+02	1.18E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	15	1.66E+03	6.11E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	15	1.31E+03	3.23E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	25	8.93E+02	3.28E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	25	7.01E+02	1.74E+02
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	50	2.97E+02	9.35E+01
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	120	5.74E+01	1.81E+01
2017	Annual	Mon-Sun	2265006005	Generator Sets	G4	175	5.42E+00	1.71E+00
2017	Annual	Mon-Sun	2265006010	Pumps	G4	5	2.15E+02	1.52E+02
2017	Annual	Mon-Sun	2265006010	Pumps	G4	5	1.69E+02	8.01E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	15	2.33E+02	1.64E+02
2017	Annual	Mon-Sun	2265006010	Pumps	G4	15	1.83E+02	8.68E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	25	5.96E+01	4.21E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	25	4.68E+01	2.22E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	50	2.37E+01	1.44E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	120	3.01E+01	1.82E+01
2017	Annual	Mon-Sun	2265006010	Pumps	G4	175	9.07E-01	5.49E-01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	5	7.75E+01	1.20E+02
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	5	6.09E+01	6.34E+01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	15	3.92E+01	6.07E+01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	15	3.08E+01	3.21E+01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	25	5.29E+00	8.19E+00
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	25	4.16E+00	4.33E+00
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	50	9.03E+00	1.20E+01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	120	2.93E+01	3.88E+01
2017	Annual	Mon-Sun	2265006015	Air Compressors	G4	175	1.97E+00	2.61E+00
2017	Annual	Mon-Sun	2265006025	Welders	G4	15	1.52E+02	8.63E+01
2017	Annual	Mon-Sun	2265006025	Welders	G4	25	5.48E+02	3.12E+02

CY	Season	AvgDays	Code	Light Commercial Equipment	Fuel	MaxHP	Population	Activity
2017	Annual	Mon-Sun	2265006025	Welders	G4	50	4.72E+01	2.69E+01
2017	Annual	Mon-Sun	2265006025	Welders	G4	120	4.82E+01	2.74E+01
2017	Annual	Mon-Sun	2265006025	Welders	G4	175	3.32E+00	1.89E+00
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	5	1.62E+02	5.98E+01
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	5	1.28E+02	3.16E+01
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	15	1.45E+02	5.33E+01
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	15	1.14E+02	2.82E+01
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	25	2.72E+01	1.00E+01
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	25	2.14E+01	5.29E+00
2017	Annual	Mon-Sun	2265006030	Pressure Washers	G4	50	2.66E+00	8.36E-01
2017	Annual	Mon-Sun	2266006005	Generator Sets	C4	120	4.27E+00	1.34E+00
2017	Annual	Mon-Sun	2266006005	Generator Sets	C4	175	3.54E+00	1.11E+00
2017	Annual	Mon-Sun	2266006020	Gas Compressors	C4	50	6.64E-01	1.55E+01
2017	Annual	Mon-Sun	2266006020	Gas Compressors	C4	120	1.37E+00	3.19E+01
2017	Annual	Mon-Sun	2266006020	Gas Compressors	C4	175	2.21E-01	5.15E+00
2017	Annual	Mon-Sun	2266006020	Gas Compressors	C4	250	1.77E-01	4.12E+00
2017	Annual	Mon-Sun	2266006020	Gas Compressors	C4	500	1.55E-01	3.61E+00
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	15	1.12E+02	1.03E+02
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	25	8.17E+01	7.56E+01
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	50	9.98E+01	9.23E+01
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	120	1.52E+02	1.40E+02
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	175	8.96E+00	8.29E+00
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	250	5.01E+00	4.63E+00
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	500	1.11E+01	1.03E+01
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	750	6.92E+00	6.40E+00
2017	Annual	Mon-Sun	2270006005	Generator Sets	D	9999	1.80E+00	1.67E+00
2017	Annual	Mon-Sun	2270006010	Pumps	D	15	8.39E+01	9.25E+01
2017	Annual	Mon-Sun	2270006010	Pumps	D	25	2.51E+01	2.76E+01
2017	Annual	Mon-Sun	2270006010	Pumps	D	50	4.37E+01	4.82E+01
2017	Annual	Mon-Sun	2270006010	Pumps	D	120	8.57E+01	9.45E+01
2017	Annual	Mon-Sun	2270006010	Pumps	D	175	9.27E+00	1.02E+01
2017	Annual	Mon-Sun	2270006010	Pumps	D	250	6.68E+00	7.36E+00
2017	Annual	Mon-Sun	2270006010	Pumps	D	500	1.32E-01	1.45E-01
2017	Annual	Mon-Sun	2270006010	Pumps	D	750	2.20E-02	2.42E-02
2017	Annual	Mon-Sun	2270006010	Pumps	D	9999	4.83E-01	5.33E-01
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	15	1.14E+00	2.55E+00
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	25	2.26E+00	5.05E+00
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	50	2.06E+01	4.58E+01
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	120	1.37E+02	3.05E+02

CY	Season	AvgDays	Code	Light Commercial Equipment	Fuel	MaxHP	Population	Activity
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	175	5.18E+00	1.16E+01
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	250	7.29E+00	1.63E+01
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	500	9.51E+00	2.12E+01
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	750	3.56E+00	7.93E+00
2017	Annual	Mon-Sun	2270006015	Air Compressors	D	1000	8.79E-02	1.96E-01
2017	Annual	Mon-Sun	2270006025	Welders	D	15	3.79E+01	6.67E+01
2017	Annual	Mon-Sun	2270006025	Welders	D	25	3.34E+01	5.87E+01
2017	Annual	Mon-Sun	2270006025	Welders	D	50	1.03E+02	1.81E+02
2017	Annual	Mon-Sun	2270006025	Welders	D	120	7.98E+01	1.40E+02
2017	Annual	Mon-Sun	2270006025	Welders	D	175	3.95E-01	6.96E-01
2017	Annual	Mon-Sun	2270006025	Welders	D	250	8.79E-02	1.55E-01
2017	Annual	Mon-Sun	2270006025	Welders	D	500	2.20E-01	3.86E-01
2017	Annual	Mon-Sun	2270006030	Pressure Washers	D	15	5.18E+00	2.06E+00
2017	Annual	Mon-Sun	2270006030	Pressure Washers	D	25	1.21E+00	4.79E-01
2017	Annual	Mon-Sun	2270006030	Pressure Washers	D	50	2.39E+00	9.50E-01
2017	Annual	Mon-Sun	2270006030	Pressure Washers	D	120	9.88E-01	3.92E-01
							10,312	5,387
							Population	**Activity**
							3,600	1,880

As a percent of 2010 Total Employment San Joaquin County

SOURCE: U.S. Census Bureau. 2010. Longitudinal Employer-Household Dy

Tons/Day										MTons/Year
Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
9.19E-01	1.52E-04	3.68E-05	1.81E-03	2.25E-07	1.94E-05	5.46E-03	1.16E-05	9.45E-06	9.16E-03	3
5.11E-01	1.02E-04	2.00E-05	1.05E-03	1.19E-07	1.06E-05	2.88E-03	6.21E-06	6.34E-06	4.89E-03	2
9.55E-02	4.51E-06	3.32E-06	2.60E-04	2.04E-08	2.26E-07	4.95E-04	3.82E-07	2.80E-07	6.16E-04	0
5.03E-02	4.06E-06	1.81E-06	1.37E-04	1.05E-08	1.71E-07	2.54E-04	2.01E-07	2.52E-07	3.20E-04	0
6.71E+00	9.12E-04	2.56E-04	1.21E-02	1.74E-06	1.48E-04	4.23E-02	8.52E-05	5.67E-05	6.91E-02	23
3.69E+00	5.65E-04	1.47E-04	7.07E-03	9.19E-07	7.87E-05	2.23E-02	4.69E-05	3.51E-05	3.72E-02	12
1.77E+01	1.13E-03	8.77E-04	4.77E-02	3.75E-06	7.64E-04	9.12E-02	8.96E-05	7.05E-05	1.20E-01	40
9.36E+00	6.09E-04	4.58E-04	2.54E-02	1.98E-06	4.04E-04	4.82E-02	4.70E-05	3.78E-05	6.31E-02	21
4.67E-01	3.07E-05	2.08E-05	1.30E-03	9.66E-08	1.97E-05	2.34E-03	1.55E-06	1.91E-06	2.85E-03	1
2.44E-01	1.60E-05	1.08E-05	6.81E-04	5.05E-08	1.03E-05	1.23E-03	8.09E-07	9.93E-07	1.49E-03	0
5.01E+01	7.75E-03	2.03E-03	1.07E-01	9.89E-06	9.89E-04	2.86E-01	3.20E-04	4.38E-04	3.93E-01	130
2.75E+01	4.40E-03	1.11E-03	6.17E-02	5.23E-06	5.14E-04	1.51E-01	1.72E-04	2.48E-04	2.09E-01	69
3.63E+02	2.07E-02	1.43E-02	1.05E+00	5.05E-05	9.31E-04	1.77E+00	1.47E-03	1.17E-03	2.24E+00	741
1.96E+02	1.36E-02	8.01E-03	5.75E-01	2.67E-05	4.88E-04	9.36E-01	7.96E-04	7.68E-04	1.19E+00	395
4.23E+02	2.31E-02	1.65E-02	1.27E+00	5.09E-05	1.06E-03	2.01E+00	1.18E-03	1.30E-03	2.39E+00	792
2.27E+02	1.50E-02	8.84E-03	6.83E-01	2.69E-05	5.53E-04	1.06E+00	6.28E-04	8.47E-04	1.27E+00	420
2.10E+02	3.48E-03	6.68E-03	1.61E-01	2.14E-05	1.35E-04	1.76E+00	3.85E-04	1.97E-04	1.88E+00	621
9.47E+01	9.30E-04	4.26E-03	2.57E-02	8.41E-06	6.74E-05	8.70E-01	1.39E-04	5.26E-05	9.13E-01	302
1.53E+01	9.04E-05	7.52E-04	4.53E-03	1.40E-06	1.12E-05	1.41E-01	1.83E-05	5.11E-06	1.46E-01	48
2.48E+01	3.97E-03	1.77E-03	4.80E-02	5.13E-06	5.28E-05	1.49E-01	2.52E-04	2.24E-04	2.29E-01	76
1.37E+01	2.32E-03	9.06E-04	2.86E-02	2.71E-06	6.21E-05	7.85E-02	1.31E-04	1.31E-04	1.21E-01	40
8.85E+01	6.76E-03	4.99E-03	2.54E-01	1.22E-05	3.60E-03	4.29E-01	4.55E-04	3.82E-04	5.74E-01	190
4.70E+01	3.64E-03	2.59E-03	1.35E-01	6.47E-06	1.90E-03	2.27E-01	2.37E-04	2.06E-04	3.03E-01	100
4.96E+01	3.85E-03	2.49E-03	1.47E-01	5.92E-06	1.96E-03	2.34E-01	1.66E-04	2.18E-04	2.89E-01	96
2.62E+01	2.02E-03	1.30E-03	7.75E-02	3.13E-06	1.03E-03	1.23E-01	8.72E-05	1.14E-04	1.52E-01	50
3.21E+01	5.12E-04	7.90E-04	2.68E-02	3.22E-06	2.03E-05	2.65E-01	5.11E-05	2.89E-05	2.81E-01	93
1.09E+02	9.82E-04	2.92E-03	3.00E-02	9.63E-06	7.73E-05	9.97E-01	1.04E-04	5.55E-05	1.03E+00	341
4.95E+00	2.90E-05	1.50E-04	1.50E-03	4.50E-07	3.61E-06	4.53E-02	4.12E-06	1.64E-06	4.65E-02	15
2.64E+01	4.26E-03	1.91E-03	5.05E-02	5.49E-06	5.18E-05	1.59E-01	2.35E-04	2.40E-04	2.35E-01	78
1.39E+01	2.25E-03	1.01E-03	2.66E-02	2.90E-06	2.74E-05	8.40E-02	1.24E-04	1.27E-04	1.24E-01	41
2.33E+01	1.83E-03	1.35E-03	6.69E-02	3.21E-06	9.45E-04	1.13E-01	1.42E-04	1.03E-04	1.58E-01	52
1.23E+01	9.43E-04	6.96E-04	3.53E-02	1.70E-06	4.99E-04	5.95E-02	7.42E-05	5.32E-05	8.30E-02	27
7.86E+00	6.32E-04	4.08E-04	2.32E-02	9.35E-07	3.09E-04	3.69E-02	2.95E-05	3.56E-05	4.66E-02	15
4.15E+00	3.28E-04	2.12E-04	1.23E-02	4.95E-07	1.64E-04	1.95E-02	1.54E-05	1.85E-05	2.46E-02	8
2.64E+01	7.09E-04	9.33E-04	3.17E-02	2.46E-06	1.55E-05	2.02E-01	5.08E-05	4.00E-05	2.19E-01	72
1.47E+02	2.67E-03	6.70E-03	6.78E-02	1.25E-05	1.01E-04	1.30E+00	2.32E-04	1.51E-04	1.37E+00	454
1.79E+01	1.85E-04	9.70E-04	5.91E-03	1.61E-06	1.29E-05	1.63E-01	2.33E-05	1.04E-05	1.70E-01	56
4.77E+01	3.81E-03	2.62E-03	1.38E-01	6.53E-06	1.92E-03	2.29E-01	2.39E-04	2.16E-04	3.06E-01	101
2.72E+02	2.13E-02	1.36E-02	8.06E-01	3.24E-05	1.07E-02	1.28E+00	1.05E-03	1.21E-03	1.62E+00	537

Tons/Day										MTons/Year
Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
6.49E+01	1.37E-03	2.15E-03	5.67E-02	6.47E-06	4.08E-05	5.32E-01	1.15E-04	7.72E-05	5.68E-01	188
9.19E+01	1.24E-03	3.91E-03	2.96E-02	8.07E-06	6.47E-05	8.35E-01	1.44E-04	7.00E-05	8.80E-01	291
1.14E+01	9.01E-05	5.55E-04	3.46E-03	1.03E-06	8.29E-06	1.04E-01	1.45E-05	5.09E-06	1.08E-01	36
2.03E+01	2.82E-03	7.53E-04	4.13E-02	4.15E-06	4.11E-04	1.20E-01	1.03E-04	1.59E-04	1.55E-01	51
1.14E+01	1.76E-03	4.56E-04	2.50E-02	2.19E-06	2.15E-04	6.35E-02	5.78E-05	9.93E-05	8.32E-02	28
3.08E+01	1.75E-03	1.22E-03	8.93E-02	4.28E-06	7.89E-05	1.50E-01	1.26E-04	9.90E-05	1.90E-01	63
1.66E+01	1.15E-03	6.79E-04	4.88E-02	2.26E-06	4.14E-05	7.94E-02	6.84E-05	6.52E-05	1.01E-01	34
1.53E+01	8.04E-04	5.89E-04	4.56E-02	1.84E-06	3.79E-05	7.25E-02	3.93E-05	4.55E-05	8.54E-02	28
8.17E+00	5.19E-04	3.16E-04	2.45E-02	9.71E-07	1.99E-05	3.83E-02	2.09E-05	2.94E-05	4.53E-02	15
2.09E+00	2.99E-05	4.96E-05	1.47E-03	2.16E-07	1.36E-06	1.78E-02	3.09E-06	1.69E-06	1.88E-02	6
8.42E+00	3.86E-06	2.65E-04	1.77E-03	0.00E+00	5.02E-06	5.64E-02	0.00E+00	3.24E-05	5.72E-02	19
1.22E+01	4.39E-06	3.75E-04	2.12E-03	0.00E+00	7.32E-06	8.23E-02	0.00E+00	3.68E-05	8.32E-02	28
5.29E+01	3.01E-05	1.09E-03	5.33E-03	0.00E+00	2.78E-05	3.63E-01	0.00E+00	2.52E-04	3.69E-01	122
3.09E+02	1.64E-04	6.46E-03	8.52E-02	0.00E+00	1.58E-04	2.04E+00	0.00E+00	1.38E-03	2.07E+00	687
7.94E+01	4.57E-05	1.73E-03	1.73E-02	0.00E+00	4.23E-05	5.31E-01	0.00E+00	3.83E-04	5.41E-01	179
8.23E+01	3.52E-05	1.67E-03	2.00E-02	0.00E+00	4.87E-05	5.47E-01	0.00E+00	2.95E-04	5.55E-01	184
1.16E+02	4.96E-05	2.36E-03	2.81E-02	0.00E+00	6.85E-05	7.71E-01	0.00E+00	4.16E-04	7.81E-01	259
4.82E+01	6.44E-04	4.46E-03	3.33E-03	8.20E-06	2.29E-04	5.27E-01	0.00E+00	5.81E-05	5.28E-01	175
6.07E+01	8.84E-04	5.52E-03	2.99E-03	8.44E-06	2.71E-04	6.66E-01	0.00E+00	7.97E-05	6.68E-01	221
1.30E+02	2.44E-03	1.11E-02	1.06E-02	1.83E-05	6.90E-04	1.41E+00	0.00E+00	2.21E-04	1.42E+00	469
4.98E+02	4.86E-03	3.85E-02	3.30E-02	6.41E-05	2.56E-03	5.46E+00	0.00E+00	4.39E-04	5.47E+00	1,812
5.35E+01	3.59E-04	3.39E-03	3.03E-03	6.61E-06	1.53E-04	5.88E-01	0.00E+00	3.24E-05	5.89E-01	195
4.45E+01	2.08E-04	2.46E-03	9.16E-04	5.53E-06	6.85E-05	4.92E-01	0.00E+00	1.87E-05	4.92E-01	163
1.57E+02	6.71E-04	7.68E-03	3.18E-03	1.70E-05	2.28E-04	1.73E+00	0.00E+00	6.05E-05	1.73E+00	574
1.57E+02	6.90E-04	7.94E-03	3.19E-03	1.75E-05	2.33E-04	1.74E+00	0.00E+00	6.23E-05	1.74E+00	576
7.90E+01	4.53E-04	6.50E-03	1.77E-03	8.77E-06	1.57E-04	8.73E-01	0.00E+00	4.09E-05	8.74E-01	289
3.14E+01	4.71E-04	2.93E-03	2.17E-03	5.34E-06	1.62E-04	3.43E-01	0.00E+00	4.25E-05	3.44E-01	114
2.45E+01	3.90E-04	2.23E-03	1.21E-03	3.41E-06	1.14E-04	2.69E-01	0.00E+00	3.52E-05	2.70E-01	89
7.59E+01	1.55E-03	6.60E-03	6.49E-03	1.07E-05	4.25E-04	8.26E-01	0.00E+00	1.40E-04	8.30E-01	275
3.36E+02	3.44E-03	2.63E-02	2.26E-02	4.31E-05	1.81E-03	3.68E+00	0.00E+00	3.10E-04	3.69E+00	1,220
6.51E+01	4.62E-04	4.19E-03	3.74E-03	8.05E-06	1.95E-04	7.15E-01	0.00E+00	4.17E-05	7.16E-01	237
6.70E+01	3.32E-04	3.76E-03	1.40E-03	8.33E-06	1.07E-04	7.41E-01	0.00E+00	3.00E-05	7.41E-01	246
2.27E+00	1.04E-05	1.12E-04	4.67E-05	2.46E-07	3.43E-06	2.51E-02	0.00E+00	9.35E-07	2.51E-02	8
6.25E-01	2.92E-06	3.20E-05	1.29E-05	6.94E-08	9.60E-07	6.91E-03	0.00E+00	2.63E-07	6.91E-03	2
3.27E+01	1.95E-04	2.72E-03	7.41E-04	3.63E-06	6.64E-05	3.61E-01	0.00E+00	1.76E-05	3.61E-01	120
8.41E-01	1.26E-05	7.85E-05	5.81E-05	1.43E-07	4.34E-06	9.19E-03	0.00E+00	1.14E-06	9.22E-03	3
3.32E+00	5.27E-05	3.02E-04	1.64E-04	4.62E-07	1.54E-05	3.64E-02	0.00E+00	4.76E-06	3.65E-02	12
4.71E+01	1.29E-03	4.34E-03	4.97E-03	6.59E-06	3.24E-04	5.10E-01	0.00E+00	1.16E-04	5.13E-01	170
6.55E+02	8.24E-03	5.46E-02	4.74E-02	8.40E-05	4.29E-03	7.16E+00	0.00E+00	7.44E-04	7.18E+00	2,378

Tons/Day										MTons/Year
Consumption	**ROG Exhaust**	**NOX Exhaust**	**CO Exhaust**	**SO2 Exhaust**	**PM Exhaust**	**CO2 Exhaust**	**N2O Exhaust**	**CH4 Exhaust**	**CO2e**	**CO2e**
4.66E+01	4.19E-04	3.19E-03	2.88E-03	5.75E-06	1.70E-04	5.11E-01	0.00E+00	3.78E-05	5.12E-01	170
9.65E+01	6.26E-04	5.79E-03	2.17E-03	1.20E-05	1.80E-04	1.07E+00	0.00E+00	5.65E-05	1.07E+00	353
2.22E+02	1.37E-03	1.16E-02	4.83E-03	2.41E-05	3.90E-04	2.46E+00	0.00E+00	1.23E-04	2.46E+00	814
1.29E+02	7.95E-04	6.94E-03	2.79E-03	1.43E-05	2.30E-04	1.42E+00	0.00E+00	7.18E-05	1.42E+00	471
4.31E+00	2.98E-05	3.78E-04	1.03E-04	4.79E-07	9.96E-06	4.76E-02	0.00E+00	2.69E-06	4.77E-02	16
1.89E+01	2.84E-04	1.77E-03	1.31E-03	3.22E-06	9.77E-05	2.07E-01	0.00E+00	2.57E-05	2.08E-01	69
3.02E+01	4.80E-04	2.75E-03	1.49E-03	4.20E-06	1.40E-04	3.31E-01	0.00E+00	4.33E-05	3.32E-01	110
2.16E+02	5.48E-03	1.95E-02	2.13E-02	3.03E-05	1.40E-03	2.34E+00	0.00E+00	4.94E-04	2.36E+00	780
2.53E+02	2.99E-03	2.07E-02	1.78E-02	3.25E-05	1.57E-03	2.77E+00	0.00E+00	2.70E-04	2.78E+00	920
3.11E+00	2.59E-05	2.09E-04	1.87E-04	3.84E-07	1.07E-05	3.41E-02	0.00E+00	2.34E-06	3.42E-02	11
8.32E-01	4.93E-06	4.90E-05	1.82E-05	1.03E-07	1.49E-06	9.19E-03	0.00E+00	4.45E-07	9.21E-03	3
2.93E+00	1.63E-05	1.51E-04	6.25E-05	3.18E-07	4.91E-06	3.24E-02	0.00E+00	1.47E-06	3.24E-02	11
4.59E-01	6.14E-06	4.26E-05	3.18E-05	7.82E-08	2.19E-06	5.02E-03	0.00E+00	5.54E-07	5.04E-03	2
1.56E-01	2.27E-06	1.42E-05	7.69E-06	2.17E-08	6.97E-07	1.71E-03	0.00E+00	2.05E-07	1.72E-03	1
6.20E-01	8.78E-06	5.16E-05	4.30E-05	8.77E-08	2.79E-06	6.78E-03	0.00E+00	7.92E-07	6.80E-03	2
4.30E-01	3.58E-06	3.17E-05	2.72E-05	5.53E-08	1.88E-06	4.72E-03	0.00E+00	3.23E-07	4.72E-03	2
7,167	0.208	0.406	6.780	0.001	0.047	61.210	0.010	0.016	64.523	21,365
Consumption	**lbs/day**					Tons/Day				MTons/Year
2,502	145	284	4,733	1	33	21	0	0	23	**7,458**

232,610 Stockton 81,200 Percent 34.9%

namics. http://lehd.ces.census.gov/

Global Warming Potentials (GWP)

CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

CY	Season	AvgDays	Code	Lawn & Garden Equipment	Fuel	MaxHP	Population	Activity	Tons/Day Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	MTons/Year CO2e
2017	Annual	Mon-Sun	2260004010	Lawn Mowers	G2	15	9.86E+02	6.18E+02	6.99E+01	7.90E-03	2.10E-03	1.42E-01	1.73E-05	1.33E-03	4.21E-01	5.46E-04	4.91E-04	5.96E-01	188
2017	Annual	Mon-Sun	2260004010	Lawn Mowers	G2	15	7.41E+03	3.14E+02	4.06E+01	5.80E-03	1.11E-03	9.91E-02	8.83E-06	6.24E-04	2.14E-01	2.70E-04	3.61E-04	3.04E-01	96
2017	Annual	Mon-Sun	2260004020	Chainsaws	G2	2	1.77E+03	1.40E+03	8.35E+01	6.98E-02	1.10E-03	1.26E-01	1.41E-05	1.99E-04	3.41E-01	5.66E-04	4.34E-03	6.18E-01	195
2017	Annual	Mon-Sun	2260004020	Chainsaws	G2	2	1.99E+04	2.67E+02	1.31E+01	5.26E-03	2.20E-04	2.65E-02	2.68E-06	7.32E-05	6.50E-02	1.10E-04	3.27E-04	1.06E-01	33
2017	Annual	Mon-Sun	2260004020	Chainsaws	G2	15	1.24E+03	9.86E+02	1.42E+02	1.19E-01	1.87E-03	2.15E-01	2.39E-05	3.38E-04	5.81E-01	6.38E-04	7.39E-03	9.56E-01	301
2017	Annual	Mon-Sun	2260004020	Chainsaws	G2	15	1.40E+04	1.88E+02	2.20E+01	8.49E-03	3.73E-04	4.39E-02	4.56E-06	1.33E-04	1.11E-01	1.24E-04	5.28E-04	1.61E-01	51
2017	Annual	Mon-Sun	2260004021	Chainsaws Preempt	G2	15	1.55E+03	1.23E+03	1.77E+02	1.48E-01	2.32E-03	2.68E-01	2.98E-05	4.21E-04	7.23E-01	7.94E-04	9.20E-03	1.19E+00	375
2017	Annual	Mon-Sun	2260004021	Chainsaws Preempt	G2	15	1.74E+04	2.34E+02	2.96E+01	1.32E-02	4.14E-04	6.23E-02	5.68E-06	1.22E-04	1.38E-01	1.46E-04	8.18E-04	2.02E-01	63
2017	Annual	Mon-Sun	2260004025	Trimmers/Edgers/Brush Cutters	G2	2	5.76E+03	1.92E+03	8.49E+01	4.58E-02	1.31E-03	1.51E-01	1.68E-05	2.38E-04	4.08E-01	7.20E-04	2.85E-03	6.94E-01	218
2017	Annual	Mon-Sun	2260004025	Trimmers/Edgers/Brush Cutters	G2	2	6.42E+04	3.78E+03	1.60E+02	7.16E-02	2.59E-03	2.98E-01	3.32E-05	4.69E-04	8.05E-01	1.42E-03	4.45E-03	1.34E+00	422
2017	Annual	Mon-Sun	2260004030	Leaf Blowers/Vacuums	G2	2	8.60E+03	4.63E+03	2.47E+02	1.70E-01	3.52E-03	4.05E-01	4.51E-05	6.38E-04	1.10E+00	1.84E-03	1.06E-02	1.91E+00	601
2017	Annual	Mon-Sun	2260004030	Leaf Blowers/Vacuums	G2	2	2.22E+04	2.92E+02	1.39E+01	5.55E-03	2.34E-04	2.82E-02	2.84E-06	7.77E-05	6.90E-02	1.19E-04	3.45E-04	1.13E-01	36
2017	Annual	Mon-Sun	2260004035	Snowblowers	G2	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2260004035	Snowblowers	G2	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2260004035	Snowblowers	G2	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2260004035	Snowblowers	G2	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2260004050	Shredders	G2	15	4.35E+01	1.62E+01	7.09E+00	3.99E-04	3.08E-04	1.92E-02	1.51E-06	3.08E-04	3.67E-02	3.58E-05	2.48E-05	4.80E-02	15
2017	Annual	Mon-Sun	2260004050	Shredders	G2	15	1.55E+03	3.82E+00	1.77E+00	2.24E-04	5.98E-05	4.78E-03	3.57E-07	7.27E-05	8.67E-03	7.55E-06	1.39E-05	1.13E-02	4
2017	Annual	Mon-Sun	2260004070	Commercial Turf Equipment	G2	15	2.31E+01	5.05E+01	2.07E+01	9.32E-04	7.00E-04	5.63E-02	4.43E-06	5.01E-05	1.08E-01	9.45E-05	5.79E-05	1.37E-01	43
2017	Annual	Mon-Sun	2260004070	Commercial Turf Equipment	G2	25	1.14E+01	2.49E+01	2.21E+01	9.64E-04	7.38E-04	6.23E-02	4.62E-06	5.22E-05	1.12E-01	6.99E-05	5.99E-05	1.34E-01	42
2017	Annual	Mon-Sun	2260004075	Other Lawn & Garden Equipment	G2	2	9.74E+00	1.83E+00	1.02E-01	5.02E-05	1.62E-06	1.86E-04	2.07E-08	2.93E-07	5.03E-04	7.88E-07	3.12E-06	8.15E-04	0
2017	Annual	Mon-Sun	2260004075	Other Lawn & Garden Equipment	G2	2	2.99E+02	3.52E+00	1.94E-01	7.55E-05	3.27E-06	3.94E-04	3.98E-08	1.09E-06	9.65E-04	1.55E-06	4.69E-06	1.54E-03	0
2017	Annual	Mon-Sun	2260004075	Other Lawn & Garden Equipment	G2	15	4.24E+00	7.96E-01	2.22E-01	1.09E-04	3.51E-06	4.04E-04	4.50E-08	6.36E-07	1.09E-03	8.09E-07	6.79E-06	1.50E-03	0
2017	Annual	Mon-Sun	2260004075	Other Lawn & Garden Equipment	G2	15	1.30E+02	1.53E+00	4.15E-01	1.55E-04	7.08E-06	8.33E-04	8.66E-08	2.52E-06	2.10E-03	1.59E-06	9.66E-06	2.82E-03	1
2017	Annual	Mon-Sun	2265004010	Lawn Mowers	G4	5	5.84E+03	3.66E+03	4.35E+02	5.18E-02	1.31E-02	9.59E-01	8.61E-05	7.86E-03	2.49E+00	3.23E-03	2.91E-03	3.53E+00	1,111
2017	Annual	Mon-Sun	2265004010	Lawn Mowers	G4	5	9.26E+04	3.93E+03	5.25E+02	4.39E-02	1.21E-02	1.41E+00	9.25E-05	6.39E-03	2.68E+00	3.09E-03	2.47E-03	3.66E+00	1,153
2017	Annual	Mon-Sun	2265004015	Tillers	G4	5	6.06E+02	9.28E+01	1.31E+01	1.17E-03	2.91E-04	3.29E-02	2.43E-06	1.85E-04	7.03E-02	7.61E-05	6.59E-05	9.46E-02	30
2017	Annual	Mon-Sun	2265004015	Tillers	G4	5	2.35E+03	1.16E+02	1.70E+01	1.53E-03	4.11E-04	4.49E-02	3.04E-06	2.18E-04	8.79E-02	9.88E-05	8.66E-05	1.20E-01	38
2017	Annual	Mon-Sun	2265004025	Trimmers/Edgers/Brush Cutters	G4	5	1.07E+03	3.96E+02	1.21E+01	1.58E-03	7.06E-04	2.76E-02	2.33E-06	2.20E-05	6.75E-02	2.41E-04	8.92E-05	1.42E-01	45
2017	Annual	Mon-Sun	2265004025	Trimmers/Edgers/Brush Cutters	G4	5	4.97E+03	2.93E+02	9.65E+00	1.20E-03	4.66E-04	2.47E-02	1.72E-06	3.52E-05	4.99E-02	1.68E-04	6.77E-05	1.01E-01	32
2017	Annual	Mon-Sun	2265004030	Leaf Blowers/Vacuums	G4	5	2.72E+02	4.62E+01	3.05E+00	2.26E-04	5.56E-05	8.14E-03	5.44E-07	3.69E-05	1.58E-02	2.28E-05	1.28E-05	2.29E-02	7
2017	Annual	Mon-Sun	2265004030	Leaf Blowers/Vacuums	G4	5	2.33E+02	3.07E+00	2.20E-01	1.67E-05	4.43E-06	6.44E-04	3.61E-08	2.08E-06	1.05E-03	1.61E-06	9.44E-07	1.55E-03	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004035	Snowblowers	G4	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2265004040	Rear Engine Riding Mowers	G4	15	3.20E+03	2.38E+03	7.84E+02	3.65E-02	2.62E-02	2.28E+00	1.10E-04	1.79E-03	3.85E+00	3.83E-03	2.06E-03	5.04E+00	1,587
2017	Annual	Mon-Sun	2265004040	Rear Engine Riding Mowers	G4	15	2.80E+03	2.17E+02	7.14E+01	2.98E-03	2.15E-03	2.08E-01	1.00E-05	1.40E-04	3.51E-01	3.28E-04	1.69E-04	4.53E-01	143
2017	Annual	Mon-Sun	2265004040	Rear Engine Riding Mowers	G4	25	1.46E+01	1.09E+01	6.97E+00	3.13E-04	2.29E-04	2.09E-02	8.43E-07	1.54E-05	3.32E-02	2.47E-05	1.77E-05	4.11E-02	13
2017	Annual	Mon-Sun	2265004040	Rear Engine Riding Mowers	G4	25	1.26E+01	9.74E-01	6.24E-01	2.59E-05	1.75E-05	1.87E-03	7.55E-08	1.19E-06	2.98E-03	2.03E-06	1.46E-06	3.62E-03	1
2017	Annual	Mon-Sun	2265004045	Front Mowers	G4	15	1.47E+02	1.09E+02	5.74E+01	2.67E-03	1.92E-03	1.67E-01	8.03E-06	1.31E-04	2.82E-01	2.25E-04	1.51E-04	3.53E-01	111
2017	Annual	Mon-Sun	2265004045	Front Mowers	G4	15	4.74E+03	3.66E+02	1.93E+02	8.05E-03	5.79E-03	5.61E-01	2.70E-05	3.77E-04	9.46E-01	7.12E-04	4.55E-04	1.17E+00	368
2017	Annual	Mon-Sun	2265004045	Front Mowers	G4	25	1.15E+02	8.53E+01	6.05E+01	2.72E-03	1.99E-03	1.81E-01	7.31E-06	1.34E-04	2.88E-01	2.05E-04	1.54E-04	3.53E-01	111
2017	Annual	Mon-Sun	2265004045	Front Mowers	G4	25	3.71E+03	2.87E+02	2.03E+02	8.42E-03	5.71E-03	6.09E-01	2.46E-05	3.86E-04	9.69E-01	6.30E-04	4.76E-04	1.17E+00	368
2017	Annual	Mon-Sun	2265004050	Shredders	G4	5	1.15E+02	4.28E+01	1.16E+01	1.51E-03	6.78E-04	2.65E-02	2.24E-06	2.11E-05	6.48E-02	8.36E-05	8.56E-05	9.19E-02	29
2017	Annual	Mon-Sun	2265004050	Shredders	G4	5	4.28E+03	1.06E+01	3.46E+00	2.89E-04	1.11E-04	1.04E-02	5.52E-07	1.49E-05	1.60E-02	1.66E-05	1.63E-05	2.13E-02	7
2017	Annual	Mon-Sun	2265004055	Lawn & Garden Tractors	G4	15	5.86E+02	2.07E+02	1.31E+02	5.12E-03	3.72E-03	3.82E-01	1.84E-05	2.53E-04	6.45E-01	4.33E-04	2.90E-04	7.81E-01	246
2017	Annual	Mon-Sun	2265004055	Lawn & Garden Tractors	G4	15	3.81E+03	1.52E+02	9.67E+01	3.66E-03	2.66E-03	2.82E-01	1.36E-05	1.73E-04	4.76E-01	3.13E-04	2.07E-04	5.74E-01	181
2017	Annual	Mon-Sun	2265004055	Lawn & Garden Tractors	G4	25	2.31E+02	8.14E+01	8.22E+01	3.18E-03	2.20E-03	2.47E-01	9.97E-06	1.54E-04	3.93E-01	2.12E-04	1.80E-04	4.61E-01	145

CY	Season	AvgDays	Code	Lawn & Garden Equipment	Fuel	MaxHP	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	MTons/Year CO2e
									Tons/Day										
2017	Annual	Mon-Sun	2265004055	Lawn & Garden Tractors	G4	25	1.50E+03	6.01E+01	6.07E+01	2.31E-03	1.53E-03	1.82E-01	7.35E-06	1.05E-04	2.90E-01	1.51E-04	1.30E-04	3.38E-01	106
2017	Annual	Mon-Sun	2265004055	Lawn & Garden Tractors	G4	50	3.35E+00	9.53E-01	1.45E+00	1.95E-05	3.77E-05	1.02E-03	1.50E-07	9.46E-07	1.23E-02	2.90E-06	1.10E-06	1.32E-02	4
2017	Annual	Mon-Sun	2265004060	Wood Splitters	G4	5	1.97E+02	6.94E+01	2.03E+01	2.14E-03	5.41E-04	4.73E-02	3.91E-06	3.32E-04	1.13E-01	9.26E-05	1.21E-04	1.44E-01	45
2017	Annual	Mon-Sun	2265004060	Wood Splitters	G4	5	4.92E+03	1.48E+01	5.16E+00	3.28E-04	9.22E-05	1.55E-02	8.36E-07	4.32E-05	2.42E-02	1.70E-05	1.85E-05	2.97E-02	9
2017	Annual	Mon-Sun	2265004065	Chippers/Stump Grinders	G4	15	2.78E+00	9.60E+00	8.12E+00	6.41E-04	4.70E-04	2.35E-02	1.11E-06	3.27E-04	3.90E-02	3.41E-05	3.57E-05	5.00E-02	16
2017	Annual	Mon-Sun	2265004065	Chippers/Stump Grinders	G4	15	4.96E+00	2.24E-01	1.92E-01	1.29E-05	7.70E-06	5.68E-04	2.59E-08	7.34E-06	9.10E-04	6.62E-07	7.27E-07	1.13E-03	0
2017	Annual	Mon-Sun	2265004065	Chippers/Stump Grinders	G4	25	1.58E+01	5.45E+01	7.78E+01	6.29E-03	4.04E-03	2.32E-01	9.18E-06	3.04E-03	3.62E-01	2.41E-04	3.50E-04	4.43E-01	139
2017	Annual	Mon-Sun	2265004065	Chippers/Stump Grinders	G4	25	2.81E+01	1.27E+00	1.82E+00	1.20E-04	6.54E-05	5.50E-03	2.14E-07	6.80E-05	8.43E-03	4.65E-06	6.76E-06	9.98E-03	3
2017	Annual	Mon-Sun	2265004070	Commercial Turf Equipment	G4	15	2.08E+02	4.55E+02	2.43E+02	1.37E-02	9.74E-03	7.06E-01	3.38E-05	6.62E-04	1.18E+00	1.04E-03	7.72E-04	1.51E+00	477
2017	Annual	Mon-Sun	2265004070	Commercial Turf Equipment	G4	25	1.02E+02	2.24E+02	2.13E+02	1.14E-02	8.68E-03	6.38E-01	2.55E-05	5.63E-04	1.01E+00	7.05E-04	6.38E-04	1.23E+00	388
2017	Annual	Mon-Sun	2265004070	Commercial Turf Equipment	G4	50	4.12E+01	8.28E+01	1.38E+02	2.79E-03	5.04E-03	2.03E-01	1.22E-05	7.67E-05	1.00E+00	3.21E-04	1.57E-04	1.10E+00	346
2017	Annual	Mon-Sun	2265004070	Commercial Turf Equipment	G4	120	2.73E-01	5.47E-01	1.34E+00	6.01E-06	3.57E-05	3.25E-04	1.20E-07	9.59E-07	1.24E-02	2.28E-06	3.39E-07	1.31E-02	4
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	5	1.82E+02	3.42E+01	7.02E+00	6.22E-04	1.55E-04	1.77E-02	1.30E-06	9.88E-05	3.76E-02	3.42E-05	3.52E-05	4.87E-02	15
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	5	5.59E+03	6.58E+01	1.52E+01	1.13E-03	3.02E-04	4.47E-02	2.50E-06	1.42E-04	7.23E-02	6.41E-05	6.39E-05	9.30E-02	29
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	15	8.09E+01	1.52E+01	6.79E+00	2.68E-04	1.95E-04	1.98E-02	9.53E-07	1.33E-05	3.34E-02	2.65E-05	1.52E-05	4.17E-02	13
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	15	2.48E+03	2.92E+01	1.32E+01	5.76E-04	3.90E-04	3.90E-02	1.83E-06	2.21E-05	6.42E-02	5.18E-05	3.26E-05	8.04E-02	25
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	25	1.71E+00	3.21E-01	3.14E-01	1.22E-05	8.51E-06	9.42E-04	3.80E-08	5.95E-07	1.50E-03	8.26E-07	6.92E-07	1.76E-03	1
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	25	5.27E+01	6.21E-01	6.14E-01	2.67E-05	1.62E-05	1.86E-03	7.35E-08	9.98E-07	2.90E-03	1.57E-06	1.51E-06	3.41E-03	1
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	50	1.24E-01	2.07E-02	4.38E-02	6.48E-07	1.29E-06	2.96E-05	4.54E-09	2.86E-08	3.73E-04	7.91E-08	3.66E-08	3.98E-04	0
2017	Annual	Mon-Sun	2265004075	Other Lawn & Garden Equipment	G4	120	2.97E-01	4.97E-02	2.71E-01	2.29E-06	1.14E-05	6.32E-05	2.42E-08	1.94E-07	2.51E-03	3.77E-07	1.30E-07	2.63E-03	1
2017	Annual	Mon-Sun	2270004030	Leaf Blowers/Vacuums	D	15	1.98E-01	6.52E-02	8.95E-03	1.02E-07	7.14E-07	5.98E-07	1.52E-09	2.80E-08	9.80E-05	0.00E+00	9.17E-09	9.82E-05	0
2017	Annual	Mon-Sun	2270004030	Leaf Blowers/Vacuums	D	120	1.73E-01	5.70E-02	1.26E-01	9.80E-07	9.10E-06	7.92E-06	1.63E-08	5.22E-07	1.39E-03	0.00E+00	8.84E-08	1.39E-03	0
2017	Annual	Mon-Sun	2270004030	Leaf Blowers/Vacuums	D	250	4.96E-02	1.63E-02	7.38E-02	2.69E-07	3.77E-06	1.45E-06	9.19E-09	9.76E-08	8.17E-04	0.00E+00	2.42E-08	8.17E-04	0
2017	Annual	Mon-Sun	2270004035	Snowblowers	D	175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2270004035	Snowblowers	D	250	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2270004035	Snowblowers	D	500	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
2017	Annual	Mon-Sun	2270004055	Lawn & Garden Tractors	D	15	4.79E+02	7.13E+02	3.02E+02	3.43E-03	2.41E-02	2.02E-02	5.15E-05	9.63E-04	3.31E+00	0.00E+00	3.10E-04	3.32E+00	1,044
2017	Annual	Mon-Sun	2270004055	Lawn & Garden Tractors	D	25	3.74E+02	5.58E+02	3.63E+02	4.81E-03	3.04E-02	1.64E-02	5.06E-05	1.16E-03	3.98E+00	0.00E+00	4.34E-04	3.99E+00	1,258
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	25	2.23E-01	2.84E-01	2.60E-01	3.45E-06	2.18E-05	1.18E-05	3.63E-08	8.12E-07	2.86E-03	0.00E+00	3.11E-07	2.87E-03	1
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	120	6.15E+00	7.83E+00	2.71E+01	2.77E-04	2.11E-03	1.84E-03	3.49E-06	1.47E-04	2.97E-01	0.00E+00	2.50E-05	2.98E-01	94
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	175	4.21E-01	5.37E-01	3.22E+00	2.30E-05	2.04E-04	1.87E-04	3.98E-07	9.73E-06	3.53E-02	0.00E+00	2.08E-06	3.54E-02	11
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	250	9.91E-02	1.26E-01	1.27E+00	6.57E-06	7.06E-05	2.71E-05	1.58E-07	2.10E-06	1.40E-02	0.00E+00	5.93E-07	1.40E-02	4
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	500	9.17E-01	1.17E+00	1.30E+01	6.26E-05	6.39E-04	2.72E-04	1.42E-06	2.03E-05	1.44E-01	0.00E+00	5.65E-06	1.44E-01	45
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	750	1.04E+00	1.33E+00	3.57E+01	1.74E-04	1.80E-03	7.44E-04	3.96E-06	5.64E-05	3.94E-01	0.00E+00	1.57E-05	3.95E-01	124
2017	Annual	Mon-Sun	2270004065	Chippers/Stump Grinders	D	1000	1.98E+00	2.52E+00	9.66E+01	5.54E-04	8.00E-03	2.16E-03	1.07E-05	1.95E-04	1.07E+00	0.00E+00	5.00E-05	1.07E+00	336
2017	Annual	Mon-Sun	2270004070	Commercial Turf Equipment	D	15	1.20E+01	3.52E+01	1.55E+01	1.76E-04	1.24E-03	1.04E-03	2.64E-06	4.84E-05	1.70E-01	0.00E+00	1.59E-05	1.70E-01	54
2017	Annual	Mon-Sun	2270004070	Commercial Turf Equipment	D	25	2.26E+02	6.62E+02	4.37E+02	5.78E-03	3.65E-02	1.97E-02	6.08E-05	1.36E-03	4.79E+00	0.00E+00	5.22E-04	4.81E+00	1,513
2017	Annual	Mon-Sun	2270004075	Other Lawn & Garden Equipment	D	15	1.73E-01	2.06E-01	1.15E-01	1.30E-06	9.16E-06	7.67E-06	1.96E-08	3.57E-07	1.26E-03	0.00E+00	1.18E-07	1.26E-03	0
2017	Annual	Mon-Sun	2270004075	Other Lawn & Garden Equipment	D	25	2.48E-02	2.94E-02	2.18E-02	2.89E-07	1.82E-06	9.86E-07	3.04E-09	6.80E-08	2.39E-04	0.00E+00	2.61E-08	2.40E-04	0
							315,262	31,534	5,961	0.908	0.236	11.735	0.001	0.033	37.508	0.024	0.056	46.125	14,520
							Population	Activity	Consumption	lbs/day					Tons/Day				MTons/Year
							133,668	13,370	2,528	770	200	9,951	1	28	16	0	0	20	**6,156**

As a percent of 2017 Total Housing Units — San Joaquin County 236,562 — Stockton 100,300 — Percent 42.40%

SOURCE: U.S. Census Bureau. 2011-2015 American Community Survey 5-Year Estimates

https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#

Global Warming Potentials (GWP)

CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

Agriculture						Tons/Day									MTons/Year
Equipment	Fuel	MaxHP	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
2-Wheel Tractors	G4	5	59.85045	2.63E+01	5.42E+00	7.48E-04	3.35E-04	1.19E-02	1.07E-06	1.01E-05	3.08E-02	4.57E-05	4.23E-05	4.55E-02	14
2-Wheel Tractors	G4	15	69.64622	6.34E+01	3.07E+01	2.31E-03	1.71E-03	8.82E-02	4.25E-06	1.25E-03	1.49E-01	1.65E-04	1.31E-04	2.01E-01	63
2-Wheel Tractors	G4	25	1.868557	1.70E+00	1.70E+00	1.31E-04	8.47E-05	5.02E-03	2.03E-07	6.70E-05	7.99E-03	6.13E-06	7.41E-06	1.00E-02	3
Agricultural Tractors	G4	120	26.41869	3.99E+01	1.98E+02	4.32E-03	1.06E-02	1.04E-01	1.67E-05	1.34E-04	1.73E+00	3.04E-04	2.44E-04	1.83E+00	575
Agricultural Tractors	G4	175	3.620549	5.46E+00	3.88E+01	4.66E-04	2.51E-03	1.33E-02	3.49E-06	2.80E-05	3.52E-01	5.54E-05	2.63E-05	3.69E-01	116
Combines	G4	120	6.618815	2.27E+00	1.58E+01	7.61E-05	2.02E-04	2.86E-03	1.43E-06	1.14E-05	1.48E-01	1.03E-05	4.30E-06	1.51E-01	48
Combines	G4	175	3.67712	1.26E+00	1.39E+01	4.64E-05	1.94E-04	4.08E-03	1.26E-06	1.01E-05	1.27E-01	7.65E-06	2.62E-06	1.29E-01	41
Combines	G4	250	0.678853	2.33E-01	2.94E+00	8.39E-06	8.53E-05	8.91E-04	2.76E-07	2.21E-06	2.70E-02	2.41E-06	4.74E-07	2.77E-02	9
Balers	G4	50	96.45367	1.80E+01	3.54E+01	6.94E-04	1.26E-03	2.56E-02	3.64E-06	2.29E-05	2.99E-01	7.07E-05	3.92E-05	3.21E-01	101
Balers	G4	120	49.32998	9.20E+00	3.01E+01	3.77E-04	1.45E-03	8.16E-03	2.67E-06	2.14E-05	2.77E-01	5.05E-05	2.13E-05	2.92E-01	92
Agricultural Mowers	G4	15	62.17199	3.07E+01	1.15E+01	8.67E-04	6.38E-04	3.31E-02	1.59E-06	4.68E-04	5.58E-02	6.94E-05	4.90E-05	7.77E-02	24
Agricultural Mowers	G4	25	50.8474	2.51E+01	2.18E+01	1.68E-03	1.09E-03	6.45E-02	2.60E-06	8.61E-04	1.03E-01	8.39E-05	9.52E-05	1.30E-01	41
Sprayers	G4	5	235.8345	6.34E+01	1.06E+01	1.44E-03	6.44E-04	2.36E-02	2.07E-06	1.96E-05	6.00E-02	9.77E-05	8.13E-05	9.12E-02	29
Sprayers	G4	15	73.38333	1.97E+01	6.96E+00	5.99E-04	3.48E-04	2.05E-02	9.32E-07	2.71E-04	3.27E-02	4.07E-05	3.39E-05	4.57E-02	14
Sprayers	G4	25	189.8567	5.11E+01	4.46E+01	3.76E-03	2.00E-03	1.34E-01	5.21E-06	1.70E-03	2.05E-01	1.61E-04	2.12E-04	2.59E-01	81
Sprayers	G4	50	18.15932	3.99E+00	6.75E+00	1.34E-04	2.41E-04	4.99E-03	6.90E-07	4.35E-06	5.68E-02	1.45E-05	7.59E-06	6.13E-02	19
Sprayers	G4	120	30.60495	6.72E+00	2.13E+01	2.72E-04	1.03E-03	5.90E-03	1.88E-06	1.51E-05	1.95E-01	3.63E-05	1.53E-05	2.06E-01	65
Sprayers	G4	175	6.901671	1.51E+00	9.61E+00	7.41E-05	5.25E-04	2.82E-03	8.75E-07	7.01E-06	8.81E-02	1.27E-05	4.19E-06	9.19E-02	29
Tillers	G4	15	8026.528	1.56E+03	7.69E+02	5.12E-02	3.04E-02	2.26E+00	1.05E-04	1.85E-03	3.68E+00	3.38E-03	2.89E-03	4.76E+00	1,498
Swathers	G4	120	98.88625	2.58E+01	1.10E+02	1.44E-03	5.33E-03	3.14E-02	9.73E-06	7.80E-05	1.01E+00	1.64E-04	8.12E-05	1.06E+00	333
Swathers	G4	175	75.80525	1.98E+01	1.20E+02	9.43E-04	6.60E-03	3.55E-02	1.09E-05	8.77E-05	1.10E+00	1.62E-04	5.33E-05	1.15E+00	362
Hydro Power Units	G4	5	14.21236	6.82E+00	1.58E+00	2.22E-04	9.93E-05	3.41E-03	3.12E-07	2.95E-06	9.05E-03	1.27E-05	1.25E-05	1.32E-02	4
Hydro Power Units	G4	15	28.3681	3.61E+01	1.58E+01	1.22E-03	9.03E-04	4.54E-02	2.18E-06	6.42E-04	7.66E-02	9.01E-05	6.92E-05	1.05E-01	33
Hydro Power Units	G4	25	10.81498	1.38E+01	1.32E+01	1.05E-03	6.77E-04	3.90E-02	1.57E-06	5.20E-04	6.20E-02	4.93E-05	5.92E-05	7.82E-02	25
Hydro Power Units	G4	50	0.9051372	1.12E+00	2.46E+00	2.75E-05	3.86E-05	1.99E-03	2.50E-07	1.57E-06	2.05E-02	3.31E-06	1.56E-06	2.16E-02	7
Hydro Power Units	G4	120	0.1131422	1.40E-01	4.73E-01	2.08E-06	4.74E-06	9.31E-05	4.26E-08	3.41E-07	4.41E-03	4.10E-07	1.18E-07	4.53E-03	1
Other Agricultural Equipment	G4	5	9.909015	3.94E+00	7.29E-01	9.79E-05	4.38E-05	1.63E-03	1.42E-07	1.34E-06	4.11E-03	6.37E-06	5.53E-06	6.14E-03	2
Other Agricultural Equipment	G4	15	8.663311	3.45E+00	1.85E+00	1.39E-04	1.01E-04	5.33E-03	2.56E-07	7.52E-05	8.97E-03	9.35E-06	7.88E-06	1.20E-02	4
Other Agricultural Equipment	G4	25	2.208295	8.79E-01	1.22E+00	9.34E-05	5.95E-05	3.60E-03	1.45E-07	4.79E-05	5.72E-03	3.72E-06	5.28E-06	6.96E-03	2
Other Agricultural Equipment	G4	50	2.998267	1.02E+00	1.66E+00	2.60E-05	4.32E-05	1.20E-03	1.71E-07	1.08E-06	1.40E-02	3.11E-06	1.47E-06	1.50E-02	5
Other Agricultural Equipment	G4	120	17.36732	5.91E+00	2.01E+01	1.81E-04	5.97E-04	4.81E-03	1.80E-06	1.44E-05	1.86E-01	2.55E-05	1.02E-05	1.94E-01	61
Other Agricultural Equipment	G4	175	1.979988	6.74E-01	4.57E+00	2.55E-05	1.52E-04	1.35E-03	4.16E-07	3.33E-06	4.18E-02	4.44E-06	1.44E-06	4.32E-02	14
Other Agricultural Equipment	G4	250	0.735424	2.50E-01	2.98E+00	1.43E-05	1.25E-04	9.09E-04	2.79E-07	2.24E-06	2.73E-02	2.90E-06	8.11E-07	2.82E-02	9
Agricultural Tractors	D	15	826.3392	1.21E+03	5.80E+02	7.39E-03	4.63E-02	3.88E-02	9.88E-05	1.81E-03	6.35E+00	0.00E+00	6.67E-04	6.36E+00	2,003
Agricultural Tractors	D	25	1019	1.49E+03	1.37E+03	1.81E-02	1.14E-01	6.18E-02	1.90E-04	4.29E-03	1.50E+01	0.00E+00	1.63E-03	1.50E+01	4,735
Agricultural Tractors	D	50	2375.801	3.10E+03	4.87E+03	1.13E-01	4.38E-01	4.48E-01	6.85E-04	3.02E-02	5.30E+01	0.00E+00	1.02E-02	5.32E+01	16,750
Agricultural Tractors	D	120	2747.678	3.58E+03	1.19E+04	1.32E-01	9.82E-01	8.17E-01	1.53E-03	6.95E-02	1.30E+02	0.00E+00	1.19E-02	1.31E+02	41,122
Agricultural Tractors	D	175	1547.431	2.02E+03	1.14E+04	8.85E-02	7.77E-01	6.70E-01	1.41E-03	3.71E-02	1.26E+02	0.00E+00	7.98E-03	1.26E+02	39,594
Agricultural Tractors	D	250	999.5199	1.30E+03	1.05E+04	5.81E-02	6.24E-01	2.28E-01	1.30E-03	1.87E-02	1.16E+02	0.00E+00	5.24E-03	1.16E+02	36,545
Agricultural Tractors	D	500	198.5321	2.59E+02	3.41E+03	1.75E-02	1.80E-01	7.26E-02	3.70E-04	5.72E-03	3.77E+01	0.00E+00	1.58E-03	3.77E+01	11,870
Combines	D	120	58.00123	2.39E+01	1.03E+02	8.85E-04	7.89E-03	6.54E-03	1.33E-05	4.65E-04	1.13E+00	0.00E+00	7.98E-05	1.13E+00	357
Combines	D	175	86.09644	3.54E+01	2.01E+02	1.16E-03	1.26E-02	1.09E-02	2.48E-05	5.03E-04	2.21E+00	0.00E+00	1.05E-04	2.21E+00	695
Combines	D	250	92.02277	3.79E+01	3.00E+02	1.20E-03	1.65E-02	6.01E-03	3.74E-05	4.30E-04	3.32E+00	0.00E+00	1.09E-04	3.32E+00	1,046
Combines	D	500	3.676521	1.51E+00	1.65E+01	5.99E-05	8.15E-04	3.28E-04	1.79E-06	2.27E-05	1.82E-01	0.00E+00	5.41E-06	1.83E-01	57
Balers	D	50	0.1097469	2.86E-02	4.75E-02	6.39E-07	3.99E-06	3.18E-06	6.72E-09	2.13E-07	5.20E-04	0.00E+00	5.76E-08	5.21E-04	0
Balers	D	120	77.26183	2.01E+01	5.00E+01	4.08E-04	3.78E-03	3.13E-03	6.44E-06	2.14E-04	5.49E-01	0.00E+00	3.68E-05	5.50E-01	173
Agricultural Mowers	D	120	3.621647	3.61E+00	5.76E+00	5.90E-05	4.64E-04	3.86E-04	7.41E-07	3.11E-05	6.32E-02	0.00E+00	5.32E-06	6.33E-02	20
Sprayers	D	25	17.01077	5.13E+00	2.79E+00	4.56E-05	2.55E-04	1.40E-04	3.88E-07	1.34E-05	3.06E-02	0.00E+00	4.12E-06	3.07E-02	10
Sprayers	D	50	3.841141	9.49E-01	9.77E-01	1.30E-05	8.21E-05	6.52E-05	1.38E-07	4.35E-06	1.07E-02	0.00E+00	1.17E-06	1.07E-02	3
Sprayers	D	120	36.76521	9.08E+00	2.36E+01	1.92E-04	1.78E-03	1.47E-03	3.04E-06	1.01E-04	2.59E-01	0.00E+00	1.73E-05	2.59E-01	82
Sprayers	D	175	15.47431	3.82E+00	1.64E+01	8.90E-05	1.02E-03	8.79E-04	2.03E-06	3.89E-05	1.81E-01	0.00E+00	8.03E-06	1.81E-01	57
Sprayers	D	250	9.657729	2.38E+00	1.68E+01	6.23E-05	9.03E-04	3.30E-04	2.08E-06	2.29E-05	1.85E-01	0.00E+00	5.62E-06	1.85E-01	58
Sprayers	D	500	1.646204	4.07E-01	3.12E+00	1.05E-05	1.52E-04	6.11E-05	3.39E-07	4.10E-06	3.45E-02	0.00E+00	9.44E-07	3.45E-02	11
Tillers	D	15	0.3841141	2.77E-01	8.66E-02	9.83E-07	6.91E-06	5.79E-06	1.48E-08	2.71E-07	9.48E-04	0.00E+00	8.87E-08	9.50E-04	0
Tillers	D	250	0.05487343	2.59E-02	2.80E-01	1.15E-06	1.54E-05	5.64E-06	3.49E-08	4.08E-07	3.10E-03	0.00E+00	1.04E-07	3.10E-03	1
Tillers	D	500	0.1646203	7.77E-02	1.50E+00	5.61E-06	7.45E-05	3.00E-05	1.63E-07	2.09E-06	1.66E-02	0.00E+00	5.06E-07	1.66E-02	5
Swathers	D	120	417.7517	1.26E+02	3.09E+02	2.56E-03	2.34E-02	1.94E-02	3.97E-05	1.34E-03	3.39E+00	0.00E+00	2.31E-04	3.39E+00	1,068
Swathers	D	175	3.731395	1.13E+00	5.29E+00	2.93E-05	3.29E-04	2.85E-04	6.55E-07	1.28E-05	5.82E-02	0.00E+00	2.65E-06	5.83E-02	18
Hydro Power Units	D	15	3.18266	7.11E+00	1.95E+00	2.49E-05	1.56E-04	1.31E-04	3.33E-07	6.09E-06	2.14E-02	0.00E+00	2.24E-06	2.14E-02	7
Hydro Power Units	D	25	9.602853	2.14E+01	1.12E+01	1.48E-04	9.34E-04	5.05E-04	1.55E-06	3.50E-05	1.23E-01	0.00E+00	1.33E-05	1.23E-01	39
Hydro Power Units	D	50	10.7552	2.33E+01	2.27E+01	6.39E-04	2.12E-03	2.42E-03	3.17E-06	1.62E-04	2.45E-01	0.00E+00	5.76E-05	2.47E-01	78
Hydro Power Units	D	120	0.987722	2.14E+00	4.12E+00	5.29E-05	3.55E-04	2.99E-04	5.29E-07	2.75E-05	4.51E-02	0.00E+00	4.77E-06	4.52E-02	14
Other Agricultural Equipment	D	15	11.63317	1.42E+01	4.99E+00	6.35E-05	3.98E-04	3.33E-04	8.49E-07	1.55E-05	5.46E-02	0.00E+00	5.73E-06	5.47E-02	17
Other Agricultural Equipment	D	25	32.37533	3.96E+01	2.54E+01	3.49E-04	2.17E-03	1.16E-03	3.53E-06	9.41E-05	2.78E-01	0.00E+00	3.15E-05	2.79E-01	88
Other Agricultural Equipment	D	50	28.3147	2.96E+01	3.48E+01	7.27E-04	3.08E-03	2.99E-03	4.89E-06	2.01E-04	3.78E-01	0.00E+00	6.56E-05	3.80E-01	120
Other Agricultural Equipment	D	120	95.58955	9.99E+01	2.33E+02	2.42E-03	1.88E-02	1.57E-02	3.00E-05	1.27E-03	2.55E+00	0.00E+00	2.18E-04	2.56E+00	806
Other Agricultural Equipment	D	175	7.95665	8.32E+00	3.51E+01	2.52E-04	2.33E-03	2.01E-03	4.34E-06	1.07E-04	3.85E-01	0.00E+00	2.27E-05	3.86E-01	121
Other Agricultural Equipment	D	250	7.95665	8.32E+00	5.05E+01	2.58E-04	2.94E-03	1.07E-03	6.28E-06	8.51E-05	5.58E-01	0.00E+00	2.33E-05	5.59E-01	176
Other Agricultural Equipment	D	500	1.920571	2.01E+00	1.75E+01	8.27E-05	9.08E-04	3.67E-04	1.90E-06	2.79E-05	1.94E-01	0.00E+00	7.46E-06	1.94E-01	61
			20,037	15,530	47,133	0.521	3.335	5.399	0.006	0.181	510.495	0.005	0.044	513	161,534
			Population	**Activity**	**Consumption**	**lbs/day**					Tons/Day				MTons/Year
			2,164	1,677	5,090	113	720	1,166	1	39	55	0	0	55	**17,443**

As a percetage of Countywide Farmland Acreage — San Joaquin County 614,992 Stockton 66,410 Percent 10.80%

SOURCE: Acreage based on lands designated as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. City acreage from Section 5.2, Agriculture and Forestry Resources, of the DEIR. County acreage based on the California Department of Conservation data: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls

Global Warming Potentials (GWP)

CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

Available Farmland Worksheet

San Joaquin County

Available Farmland (Acreage)[a]

	2000	2002	2004	2006	2008	2010	2012	2014	Forecast 2040
Prime Farmland	419,227	416,307	412,548	407,609	396,984	385,337	382,115	382,877	298,691
Farmland of Statewide Importance	93,739	92,559	91,225	89,273	86,297	83,307	82,160	82,271	56,372
Unique Farmland	59,118	61,030	62,534	63,231	66,621	69,481	72,053	76,415	105,680
Farmland of Local Importance	58,906	56,506	57,808	59,957	65,788	76,869	76,405	73,429	117,599
Total Farmland	630,990	626,402	624,115	620,070	615,690	614,994	612,733	614,992	578,341
Percent Change from Prior Year	NA	-0.73%	-0.37%	-0.65%	-0.71%	-0.11%	-0.37%	0.37%	
		-0.51%							

Average Yearly Change (2000 to 2040): -0.21%

City of Stockton

Available Farmland (Acreage)

	2000	2002	2004	2006	2008	2010	2012	2014	2015	2016	2017[b]	2040[c]
Prime Farmland											40,110	
Farmland of Statewide Importance											17,250	
Unique Farmland											2,190	
Farmland of Local Importance											6,670	
Estimated Total Farmland[d]	68,370	67,872	67,625	67,186	66,712	66,636	66,391	66,636	66,497	66,358	**66,220**	**62,665**
Percent Change from Prior Year	**NA**	-0.73%	-0.37%	-0.65%	-0.71%	-0.11%	-0.37%	0.37%	-0.21%	-0.21%		

Sources:

a.County acreage based on the California Department of Conservation data: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2012-2014/conversion_tables/sjqcon14.xls

b. City acreage from Section 5.2, Agriculture and Forestry Resources, of the DEIR.

c. Forecasted based the available farmland in the City of Stockton and on the percent change in farmland in County of San Joaquin from year 2000 to 2014.

d. Forecasted based the available farmland in the City of Stockton and on the percent change in farmland in County of San Joaquin.

TABLE A-27
SAN JOAQUIN COUNTY
2000-2002 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2000-02 ACREAGE CHANGES			
	2000 (1)	2002	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	419,227	415,527	4,102	402	4,504	-3,700
Farmland of Statewide Importance	93,739	92,521	1,374	156	1,530	-1,218
Unique Farmland	59,118	61,849	745	3,476	4,221	2,731
Farmland of Local Importance	58,906	56,507	3,728	1,329	5,057	-2,399
IMPORTANT FARMLAND SUBTOTAL	630,990	626,404	9,949	5,363	15,312	-4,586
Grazing Land	150,341	148,710	1,699	68	1,767	-1,631
AGRICULTURAL LAND SUBTOTAL	781,331	775,114	11,648	5,431	17,079	-6,217
Urban and Built-up Land	74,149	80,360	115	6,326	6,441	6,211
Other Land	45,473	45,479	625	631	1,256	6
Water Area	11,648	11,648	0	0	0	0
TOTAL AREA INVENTORIED	912,601	912,601	12,388	12,388	24,776	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2002
Prime Farmland	4,270
Farmland of Statewide Importance	1,018
Unique Farmland	371
Farmland of Local Importance	900
IMPORTANT FARMLAND SUBTOTAL	6,559
Grazing Land	0
AGRICULTURAL LAND SUBTOTAL	6,559
Urban and Built-up Land	0
Other Land	200
Water Area	0
TOTAL ACREAGE REPORTED	6,759

PART III Land Use Conversion from 2000 to 2002

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland	to:	--	1	6	372	379	6	385	3,451	266	0	4,102
Farmland of Statewide Importance	to:	2	--	17	189	208	0	208	1,095	71	0	1,374
Unique Farmland	to:	17	1	--	561	579	51	630	21	94	0	745
Farmland of Local Importance (2)	to:	242	48	2,025	--	2,315	11	2,326	1,204	198	0	3,728
IMPORTANT FARMLAND SUBTOTAL		261	50	2,048	1,122	3,481	68	3,549	5,771	629	0	9,949
Grazing Land (2)	to:	109	29	1,413	86	1,637	--	1,637	62	0	0	1,699
AGRICULTURAL LAND SUBTOTAL		370	79	3,461	1,208	5,118	68	5,186	5,833	629	0	11,648
Urban and Built-up Land (3)	to:	16	28	5	64	113	0	113	--	2	0	115
Other Land	to:	16	49	10	57	132	0	132	493	--	0	625
Water Area	to:	0	0	0	0	0	0	0	0	0	--	0
TOTAL ACREAGE CONVERTED	to:	402	156	3,476	1,329	5,363	68	5,431	6,326	631	0	12,388

(1) Due to the incorporation of digital soil survey data (SSURGO) during this update, acreages for farmland, grazing and other land categories may differ from those published in the 1998-2000 California Farmland Conversion Report.
(2) Conversion to Unique Farmland due to newly irrigated agriculture, primarily vines and row crops in the central north portion of the county.
(3) Conversion from Urban and Built-up Land primarily the result of refinements made to the urban boundary.

TABLE A-27
SAN JOAQUIN COUNTY
2002-2004 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2002-04 ACREAGE CHANGES			
	2002 (1)	2004	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	416,307	412,550	4,207	450	4,657	-3,757
Farmland of Statewide Importance	92,559	91,222	1,753	416	2,169	-1,337
Unique Farmland	61,030	62,535	943	2,448	3,391	1,505
Farmland of Local Importance	56,506	57,808	2,881	4,183	7,064	1,302
IMPORTANT FARMLAND SUBTOTAL	626,402	624,115	9,784	7,497	17,281	-2,287
Grazing Land	148,712	147,653	1,062	3	1,065	-1,059
AGRICULTURAL LAND SUBTOTAL	775,114	771,768	10,846	7,500	18,346	-3,346
Urban and Built-up Land	80,360	83,409	18	3,067	3,085	3,049
Other Land	45,480	45,777	543	840	1,383	297
Water Area	11,648	11,648	0	0	0	0
TOTAL AREA INVENTORIED	912,602	912,602	11,407	11,407	22,814	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2004
Prime Farmland	3,614
Farmland of Statewide Importance	716
Unique Farmland	358
Farmland of Local Importance	814
IMPORTANT FARMLAND SUBTOTAL	5,502
Grazing Land	0
AGRICULTURAL LAND SUBTOTAL	5,502
Urban and Built-up Land	0
Other Land	201
Water Area	0
TOTAL ACREAGE REPORTED	5,703

PART III Land Use Conversion from 2002 to 2004

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland (2)	to:	--	1	6	2,470	2,477	3	2,480	1,446	281	0	4,207
Farmland of Statewide Importance	to:	2	--	12	839	853	0	853	784	116	0	1,753
Unique Farmland	to:	2	11	--	782	795	0	795	24	124	0	943
Farmland of Local Importance (3)	to:	251	204	1,886	--	2,341	0	2,341	391	149	0	2,881
IMPORTANT FARMLAND SUBTOTAL		255	216	1,904	4,091	6,466	3	6,469	2,645	670	0	9,784
Grazing Land	to:	78	141	428	64	711	--	711	181	170	0	1,062
AGRICULTURAL LAND SUBTOTAL		333	357	2,332	4,155	7,177	3	7,180	2,826	840	0	10,846
Urban and Built-up Land	to:	1	14	0	3	18	0	18	--	0	0	18
Other Land	to:	116	45	116	25	302	0	302	241	--	0	543
Water Area	to:	0	0	0	0	0	0	0	0	0	--	0
TOTAL ACREAGE CONVERTED	to:	450	416	2,448	4,183	7,497	3	7,500	3,067	840	0	11,407

(1) Due to the incorporation of an updated digital soil survey data (SSURGO) during this update, acreages for farmland, grazing and other land use categories may differ from those published in the 2000-2002 California Farmland Conversion Report.
(2) Conversion from Prime Farmland primarily due to land left idle for three or more update cycles.
(3) Conversions to Unique Farmland are due to addition of irrigated orchards, vineyards, and crops throughout the county.

TABLE A-30
SAN JOAQUIN COUNTY
2004-2006 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2004-06 ACREAGE CHANGES			
	2004	2006	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	412,548	407,609	5,467	528	5,995	-4,939
Farmland of Statewide Importance	91,225	89,273	2,105	153	2,258	-1,952
Unique Farmland	62,534	63,231	1,068	1,765	2,833	697
Farmland of Local Importance	57,808	59,957	2,814	4,963	7,777	2,149
IMPORTANT FARMLAND SUBTOTAL	624,115	620,070	11,454	7,409	18,863	-4,045
Grazing Land	147,653	144,933	2,815	95	2,910	-2,720
AGRICULTURAL LAND SUBTOTAL	771,768	765,003	14,269	7,504	21,773	-6,765
Urban and Built-up Land	83,407	87,833	71	4,497	4,568	4,426
Other Land	45,777	47,991	1,107	3,321	4,428	2,214
Water Area	11,648	11,773	2	127	129	125
TOTAL AREA INVENTORIED	912,600	912,600	15,449	15,449	30,898	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2006
Prime Farmland	2,965
Farmland of Statewide Importance	508
Unique Farmland	347
Farmland of Local Importance	746
IMPORTANT FARMLAND SUBTOTAL	4,566
Grazing Land	0
AGRICULTURAL LAND SUBTOTAL	4,566
Urban and Built-up Land	0
Other Land	222
Water Area	0
TOTAL ACREAGE REPORTED	4,788

PART III Land Use Conversion from 2004 to 2006

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland (1)(2)(3)	to:	--	1	64	1,955	2,020	35	2,055	2,034	1,378	0	5,467
Farmland of Statewide Importance	to:	4	--	28	650	682	0	682	1,090	332	1	2,105
Unique Farmland	to:	10	0	--	800	810	41	851	33	184	0	1,068
Farmland of Local Importance	to:	354	89	786	--	1,229	19	1,248	589	977	0	2,814
IMPORTANT FARMLAND SUBTOTAL		368	90	878	3,405	4,741	95	4,836	3,746	2,871	1	11,454
Grazing Land (4)	to:	10	0	813	1,519	2,342	--	2,342	35	438	0	2,815
AGRICULTURAL LAND SUBTOTAL		378	90	1,691	4,924	7,083	95	7,178	3,781	3,309	1	14,269
Urban and Built-up Land (5)	to:	13	8	0	11	32	0	32	--	10	29	71
Other Land (5)	to:	137	55	74	28	294	0	294	716	--	97	1,107
Water Area	to:	0	0	0	0	0	0	0	0	2	--	2
TOTAL ACREAGE CONVERTED	to:	528	153	1,765	4,963	7,409	95	7,504	4,497	3,321	127	15,449

(1) Conversion to Unique Farmland primarily due to the delineation of nonirrigated orchards on the Escalon, Lodi North and Lodi South quads.
(2) Conversion to Farmland of Local Importance due to land left idle for three or more update cycles.
(3) Conversion to Other Land primarily due to the delineation of low-density housing and farmsteads throughout the county.
(4) Conversion to Farmland of Local Importance due to land used for dryland grain production and the addition or expansion of confined livestock facilities.
(5) Conversion to Water due to the delineation of two man-made lakes at the "Oakwood Shores" housing development south of Lathrop.

TABLE A-30
SAN JOAQUIN COUNTY
2006-2008 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2006-08 ACREAGE CHANGES			
	2006	2008	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	407,609	396,985	11,941	1,317	13,258	-10,624
Farmland of Statewide Importance	89,274	86,299	3,517	542	4,059	-2,975
Unique Farmland	63,232	66,624	1,658	5,050	6,708	3,392
Farmland of Local Importance	59,965	65,788	5,356	11,179	16,535	5,823
IMPORTANT FARMLAND SUBTOTAL	620,080	615,696	22,472	18,088	40,560	-4,384
Grazing Land	144,933	142,460	2,709	236	2,945	-2,473
AGRICULTURAL LAND SUBTOTAL	765,013	758,156	25,181	18,324	43,505	-6,857
Urban and Built-up Land	87,832	90,530	327	3,025	3,352	2,698
Other Land	47,982	52,141	1,203	5,362	6,565	4,159
Water Area	11,773	11,773	0	0	0	0
TOTAL AREA INVENTORIED	912,600	912,600	26,711	26,711	53,422	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2008
Prime Farmland	1,668
Farmland of Statewide Importance	410
Unique Farmland	339
Farmland of Local Importance	1,406
IMPORTANT FARMLAND SUBTOTAL	3,823
Grazing Land	0
AGRICULTURAL LAND SUBTOTAL	3,823
Urban and Built-up Land	0
Other Land	569
Water Area	0
TOTAL ACREAGE REPORTED	4,392

PART III Land Use Conversion from 2006 to 2008

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland (1)(2)(3)	to:	--	11	62	8,218	8,291	32	8,323	1,320	2,298	0	11,941
Farmland of Statewide Importance (2)	to:	21	--	28	1,613	1,662	8	1,670	913	934	0	3,517
Unique Farmland (2)	to:	27	3	--	1,147	1,177	121	1,298	30	330	0	1,658
Farmland of Local Importance (3)(4)	to:	530	331	2,703	--	3,564	43	3,607	456	1,293	0	5,356
IMPORTANT FARMLAND SUBTOTAL		578	345	2,793	10,978	14,694	204	14,898	2,719	4,855	0	22,472
Grazing Land (4)	to:	96	1	2,044	80	2,221	--	2,221	14	474	0	2,709
AGRICULTURAL LAND SUBTOTAL		674	346	4,837	11,058	16,915	204	17,119	2,733	5,329	0	25,181
Urban and Built-up Land (5)	to:	162	48	47	19	276	18	294	--	33	0	327
Other Land	to:	481	148	166	102	897	14	911	292	--	0	1,203
Water Area	to:	0	0	0	0	0	0	0	0	0	--	0
TOTAL ACREAGE CONVERTED	to:	1,317	542	5,050	11,179	18,088	236	18,324	3,025	5,362	0	26,711

(1) Conversion from Prime Farmland is primarily due to the delineation of potted plant nurseries.
(2) Conversion to Farmland of Local Importance due to land left idle or land used for dryland grain production for three or more update cycles.
(3) Conversion to Other Land due to delineation of low-density housing, land left idle for three or more update cycles that has been graded for development, and mining expansions.
(4) Conversion to Unique Farmland is primarily due to the delineation of new irrigated crops, orchards, and potted plant nurseries.
(5) Conversion from Urban and Built-up Land primarily the result of the use of detailed digital imagery to delineate more distinct urban boundaries.

TABLE A-30
SAN JOAQUIN COUNTY
2008-2010 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2008-10 ACREAGE CHANGES			
	2008	2010	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	396,984	385,337	12,570	923	13,493	-11,647
Farmland of Statewide Importance	86,297	83,307	3,202	212	3,414	-2,990
Unique Farmland	66,621	69,481	1,590	4,450	6,040	2,860
Farmland of Local Importance	65,788	76,869	3,644	14,725	18,369	11,081
IMPORTANT FARMLAND SUBTOTAL	615,690	614,994	21,006	20,310	41,316	-696
Grazing Land	142,460	139,235	3,341	116	3,457	-3,225
AGRICULTURAL LAND SUBTOTAL	758,150	754,229	24,347	20,426	44,773	-3,921
Urban and Built-up Land	90,529	91,929	127	1,527	1,654	1,400
Other Land	52,141	54,662	838	3,359	4,197	2,521
Water Area	11,773	11,773	0	0	0	0
TOTAL AREA INVENTORIED	912,593	912,593	25,312	25,312	50,624	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2010
Prime Farmland	404
Farmland of Statewide Importance	386
Unique Farmland	0
Farmland of Local Importance	3,018
IMPORTANT FARMLAND SUBTOTAL	3,808
Grazing Land	0
AGRICULTURAL LAND SUBTOTAL	3,808
Urban and Built-up Land	0
Other Land	485
Water Area	0
TOTAL ACREAGE REPORTED	4,293

PART III Land Use Conversion from 2008 to 2010

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland (1)(3)	to:	--	4	2	10,533	10,539	48	10,587	526	1,457	0	12,570
Farmland of Statewide Importance (1)	to:	4	--	3	2,158	2,165	0	2,165	339	698	0	3,202
Unique Farmland (1)	to:	33	0	--	1,322	1,355	14	1,369	16	205	0	1,590
Farmland of Local Importance (2)	to:	647	176	1,796	--	2,619	42	2,661	162	821	0	3,644
IMPORTANT FARMLAND SUBTOTAL		684	180	1,801	14,013	16,678	104	16,782	1,043	3,181	0	21,006
Grazing Land (2)	to:	88	12	2,598	480	3,178	--	3,178	21	142	0	3,341
AGRICULTURAL LAND SUBTOTAL		772	192	4,399	14,493	19,856	104	19,960	1,064	3,323	0	24,347
Urban and Built-up Land	to:	10	12	35	34	91	0	91	--	36	0	127
Other Land	to:	141	8	16	198	363	12	375	463	--	0	838
Water Area	to:	0	0	0	0	0	0	0	0	0	--	0
TOTAL ACREAGE CONVERTED	to:	923	212	4,450	14,725	20,310	116	20,426	1,527	3,359	0	25,312

(1) Conversion to Farmland of Local Importance is primarily due to land left idle for three or more update cycles and the identification of nonirrigated grain areas throughout the county.
(2) Conversion to Unique Farmland is due to newly irrigated vineyards, orchards, and other crops; primarily in the eastern half of the County.
(3) Conversions to Other Land primarily due to delineation of low density housing, the addition of wetlands, aggregate mining, and land graded for development.

TABLE A-30
SAN JOAQUIN COUNTY
2012-2014 Land Use Conversion

CALIFORNIA DEPARTMENT OF CONSERVATION
Division of Land Resource Protection

Farmland Mapping and Monitoring Program

PART I
County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2012-14 ACREAGE CHANGES			
	2012	2014	ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
Prime Farmland	382,115	382,877	1,421	2,183	3,604	762
Farmland of Statewide Importance	82,160	82,271	378	489	867	111
Unique Farmland	72,053	76,415	309	4,671	4,980	4,362
Farmland of Local Importance	76,405	73,429	4,821	1,845	6,666	-2,976
IMPORTANT FARMLAND SUBTOTAL	612,733	614,992	6,929	9,188	16,117	2,259
Grazing Land	135,896	132,950	2,996	50	3,046	-2,946
AGRICULTURAL LAND SUBTOTAL	748,629	747,942	9,925	9,238	19,163	-687
Urban and Built-up Land	93,278	93,888	118	728	846	610
Other Land	58,925	59,002	483	560	1,043	77
Water Area	11,764	11,764	0	0	0	0
TOTAL AREA INVENTORIED	912,596	912,596	10,526	10,526	21,052	0

PART II
Land Committed to Nonagricultural Use

LAND USE CATEGORY	TOTAL ACREAGE 2014
Prime Farmland	DATA
Farmland of Statewide Importance	NOT
Unique Farmland	AVAILABLE
Farmland of Local Importance	
IMPORTANT FARMLAND SUBTOTAL	
Grazing Land	
AGRICULTURAL LAND SUBTOTAL	
Urban and Built-up Land	
Other Land	
Water Area	
TOTAL ACREAGE REPORTED	

PART III Land Use Conversion from 2012 to 2014

LAND USE CATEGORY		Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Subtotal Important Farmland	Grazing Land	Total Agricultural Land	Urban and Built-up Land	Other Land	Water Area	Total Converted To Another Use
Prime Farmland	to:	--	3	3	983	989	3	992	228	201	0	1,421
Farmland of Statewide Importance	to:	1	--	1	260	262	7	269	67	42	0	378
Unique Farmland	to:	26	0	--	191	217	12	229	41	39	0	309
Farmland of Local Importance (1)	to:	1,953	456	1,990	--	4,399	28	4,427	183	211	0	4,821
IMPORTANT FARMLAND SUBTOTAL		1,980	459	1,994	1,434	5,867	50	5,917	519	493	0	6,929
Grazing Land (1)	to:	107	0	2,506	324	2,937	--	2,937	0	59	0	2,996
AGRICULTURAL LAND SUBTOTAL		2,087	459	4,500	1,758	8,804	50	8,854	519	552	0	9,925
Urban and Built-up Land (2)	to:	6	4	83	17	110	0	110	--	8	0	118
Other Land	to:	90	26	88	70	274	0	274	209	--	0	483
Water Area	to:	0	0	0	0	0	0	0	0	0	--	0
TOTAL ACREAGE CONVERTED	to:	2,183	489	4,671	1,845	9,188	50	9,238	728	560	0	10,526

(1) Conversion to irrigated farmland categories is due to the addition of irrigated orchards and other crops. These conversions are primarily located on the east side of the county.
(2) Conversion from Urban and Built-up Land is primarily the result of a golf course south of Galt becoming a new vineyard and the use of detailed digital imagery to delineate more distinct urban boundaries.

Appendix C:
Existing and Future Transportation Data Technical Memorandum

FEHR PEERS

MEMORANDUM

Date: November 28, 2017

To: Tanya Sundberg, PlaceWorks

From: Kathrin Tellez

Subject: Stockton General Plan – Existing and General Plan Transportation Data

WC16-3309

The purpose of this memorandum is to compare base year transportation metrics to General Plan condition transportation metrics that will form the basis of the analysis for the Environmental Impact Report for the General Plan update as well as inform final policy direction. Data provided in this memorandum include:

- Base year morning and evening peak hour intersection turning movement volumes at 20-intersections
- Base year morning and evening peak hour intersection level of service results at 20-intersections
- Base year and General Plan daily roadway segment volumes for 166 locations throughout the General Plan planning area
- Base year and General Plan Person trips by mode of travel from the base year travel demand model
- Base year and General Plan Imported/exported person trips
- Base year and General Plan Vehicle miles of travel by speed

INTERSECTION OPERATIONS

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were collected at 20 intersections throughout the City of Stockton, as shown on **Figure 1**, including separate counts of pedestrians, bicyclists, and heavy trucks. The study intersections were selected for a variety of reasons and include intersection that were documented in the Congestion Management Program (CMP) as operating at deficient levels, intersections on major transit routes where poor intersection operations could degrade transit service, and intersections that serve as key gateways into the City.

All intersection data was collected on Thursday, June 1, 2017, a typical weekday with area schools in normal session. For the study intersections, the single hour with the highest traffic volumes during the count periods was identified. Peak hour intersection volumes are summarized on **Figure 2** along with the existing lane configuration and traffic control. The raw traffic counts for existing conditions are provided in **Appendix A**.

The operations of roadway facilities are typically described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free flow operating conditions) to LOS F (congested operating conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated LOS F. In Stockton, the maximum level of acceptable delay is associated with LOS D (around 55 seconds of delay) with exceptions at select locations, including Downtown Stockton and adjacent to constrained freeway ramps where LOS E or F may be permitted.

Peak hour operations of the intersections was evaluated using methodologies proposed by the Transportation Research Board (TRB), as documented in the 2010 *Highway Capacity Manual* (2010 HCM) for vehicles. The HCM 2010 methods calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. These delay estimates are considered meaningful indicators of driver discomfort and frustration, fuel consumption, and lost travel time. The relationship between LOS and control delay is summarized in **Table 1**. While the level of service calculations do consider pedestrian, bicycle and transit vehicle travel through the intersection, the results are not indicative of the experience a pedestrian, bicyclist or transit rider might experience.

Existing operations were evaluated using the methods described above, as summarized in **Table 2**. The analysis was based on the volumes, lane configurations, and traffic control presented on Figure 2. Observed peak hour factors[1] were used at all intersections for the existing analysis.

[1] The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: PHF = Hourly volume / (4 x (volume during the peak 15 minutes of flow)). The analysis level of served is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.

Pedestrian and bicycle activity, as well as heavy trucks, were factored into the analysis. Detailed intersection LOS calculation worksheets are presented in **Appendix B**.

TABLE 1
SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2010 *Highway Capacity Manual*.

TABLE 2
EXISTING CONDITIONS – PEAK HOUR INTERSECTION LOS

Intersection		Control	Peak Hour	Existing Conditions	
				Delay	LOS
1	Trinity Parkway & Eight Mile Road	Signalized	AM PM	19.0 54.5	B D
2	West Lane & Eight Mile Road	Signalized	AM PM	54.2 **60.9**	D **E**
3	West Lane & Hammer Lane	Signalized	AM PM	46.9 **63.2**	D **E**
4	Holman Road & Hammer Lane	Signalized	AM PM	33.8 **63.5**	C **E**
5	Pacific Avenue/Thornton Road & Rivara Road/Lower Sacramento Road	Signalized	AM PM	38.4 40.6	D D
6	Feather River Drive & March Lane	Signalized	AM PM	**85.8** 54.4	**F** D
7	Pacific Avenue & March Lane	Signalized	AM PM	36.0 **68.4**	D **E**
8	Pershing Avenue & County Club Boulevard	Signalized	AM PM	21.8 24.3	C C
9	El Dorado Street & Alpine Avenue	Signalized	AM PM	41.1 48.9	D D
10	Pacific Avenue & Harding Way	Signalized	AM PM	21.8 25.1	C C
11	Airport Way/West Lane & Harding Way	Signalized	AM PM	42.9 41.4	D D
12	Fresno Avenue & Charter Way	Signalized	AM PM	42.9 35.9	D D
13	Airport Way & Dr. Martin Luther King Jr. Boulevard	Signalized	AM PM	26.7 34.2	C C
14	Mariposa Road/Diamond Street & Dr. Martin Luther King Jr. Boulevard	Signalized	AM PM	17.8 22.2	B C
15	Mariposa Road & Stagecoach Road	Signalized	AM PM	8.9 8.4	A A
16	McDougald Boulevard & Carolyn Weston Boulevard	Signalized	AM PM	10.1 10.9	B B

TABLE 2
EXISTING CONDITIONS – PEAK HOUR INTERSECTION LOS

Intersection		Control	Peak Hour	Existing Conditions	
				Delay	LOS
17	Airport Way & Ralph Avenue	Signalized	AM PM	10.6 17.8	B B
18	Airport Way & Sperry Road/Arch Airport Road	Signalized	AM PM	32.9 42.8	C C
19	Newcastle Road & Arch Road	Signalized	AM PM	7.8 12.7	A A
20	Airport Way & French Camp Road	Signalized	AM PM	26.2 35.5	C D

Notes:
1. Analysis results present delay (seconds per vehicle) and LOS (level of service). LOS is based on delay thresholds published in the Highway Capacity Manual (Transportation Research Board, 2010).
2. **Bold text** indicates potentially deficient intersection operations.

Source: Fehr & Peers, July 2017.

ROADWAY SEGMENT OPERATIONS

The analysis of the daily roadway segment operations of the city's streets and highways was conducted using the method outlined in the 2035 General Plan Environmental Impact Report with the LOS thresholds used in this analysis provided in **Table 3**. Thresholds for arterials and collectors were based on Highway Capacity Manual calculations and were developed in conjunction with City staff at the time the current General Plan analysis was prepared. The arterial thresholds distinguish between roads in the existing urbanized area and those in new development areas; because arterials in new development areas can be designed to higher standards, with medians, exclusive turn lanes, and controlled access from adjacent uses, the capacities are higher than those in previously-developed areas. Thresholds for freeways were based on Highway Capacity Manual procedures relating levels of service to vehicle density ranges.

TABLE 3
ROADWAY SEGMENT LEVEL OF SERVICE THRESHOLDS (BI-DIRECTIONAL)

Facility Class	Lanes	Area Type	LOS A	LOS B	LOS C	LOS D	LOS E
Freeway	4	All Areas	27,600	45,200	63,600	77,400	86,400
	6	All Areas	41,400	67,800	95,400	116,100	129,600
	8	All Areas	55,200	90,400	127,200	154,800	172,800
	10	All Areas	69,000	113,000	159,000	193,500	216,000
Arterial	2	Existing	8,400	9,300	11,800	14,700	17,300
	2	New	10,000	11,100	14,000	17,500	20,600
	4	Existing	18,600	20,600	26,000	32,500	38,200
	4	New	23,300	25,800	32,600	40,700	47,900
	6	Existing	28,800	32,000	40,300	50,400	59,300
	6	New	33,300	37,000	46,600	58,300	68,600
	8	Existing	38,100	42,300	53,300	66,600	78,400
	8	New	41,100	45,700	57,600	72,000	84,700
Collector	2	Existing	6,400	7,100	9,000	11,300	13,200
	2	New	6,400	7,100	9,000	11,300	13,200
	4	Existing	17,600	19,600	24,700	30,900	36,300
	4	New	21,100	23,500	29,600	37,000	43,500

The "Existing" Area is generally located between I-5 and SR 99, and between Eight Mile Road and French Camp Road.
Note: Eight Mile Road is considered a "New" arterial due to lack of existing development in the area.
Source: *Highway Capacity Manual*, Transportation Research Board, 2000; Fehr & Peers, 2005.

Daily operations of roadway segments were evaluated by comparing the traffic volume on a roadway facility to the functional capacity of the roadway for 166 roadway segments within the Planning Area. Existing count data was collected from a variety of sources, including Caltrans, the City of Stockton, and 48-hour roadway counts collected by Fehr & Peers in 2016. The existing conditions data presented below was used as the basis for validating the base year travel forecasting model. Some data was not collected in the model base year of 2016 and adjustments were made to approximate 2016 conditions, which including the application of a growth rate based on data collected in the similar area at multiple time periods. Forecasted General Plan conditions

were developed using the City of Stockton General Plan model. The process which was undertaken to develop the model is detailed in a separate memorandum. To account for model error, the difference between the base year model forecast and General Plan model forecast was added to the existing traffic count for the analysis segments.

Based on the General Plan model (model development details provided as part of a separate memorandum), preliminary General Plan daily roadway segment volumes were forecast based on the General Plan land use map, and the current General Plan circulation element with some preliminary modifications, including:

- No roadway improvements north of Eight Mile Road
- State Route 99 is improved to provide 4 travel lanes per direction (as opposed to the 5-lanes per direction between Farmington Road and Gateway Boulevard in the current General Plan)
- No extension of Trinity Parkway south of Hammer Lane

Preliminary analysis results indicated that there were opportunities to reduce the planned cross sections of a number of roadways. An iterative process was undertaken to identify the roadway network that was used as the basis of analysis, with details presented in **Table 4.** Based on the final roadway network, daily roadway segment forecasts with the proposed General Plan were developed, as shown in **Table 5**.

TABLE 4
TRANSPORTATION NETWORK ASSUMPTIONS

Travel Mode	Initial Working Draft Preferred GP	Refinement 1	Refinement 2
Roadways	Pivot from 2035 GP; eliminates roadway improvements north of Eight Mile Road, extension of Trinity Parkway south of Sanctuary Development, Expressway System north of Main Street; assumes widening of SR 99 to eight lanes (as opposed to 10)	All upgraded surface streets capped at a six lane cross-section: Eight Mile Road Hammer Lane March Lane French Camp Road Sperry Road/Arch Road Mathews Road West Lane Airport Way Other modifications include: Eighth Street: I-5 to El Dorado, maintain existing 4 lanes (instead of planned 6 lanes), no connection over railroad tracks, no Otto Drive interchange	Further lane reductions including: French Camp Road from Wolfe Road to SR 99 – reduce to 4 lanes Mathews Road/Howard Road from El Dorado Street to Wolfe Road –no improvements from existing Sperry Road – from French Camp to Airport Way, reduce to 4 lanes Airport Way from Arch/Airport to French Camp – reduce to 4 lanes El Dorado from 4th Street to French Camp Road – reduce to 4 lanes Arch Road from Frontier to Newcastle – reduce to 4 lanes Mariposa Road from Austin to Carpenter – reduce to 4 lanes Hammer Lane from Lower Sacramento to Maranatha Drive – reduce to 6 lanes Holman Road – from March Lane to Eight Might Road, reduce to 4 lanes Morada Lane from West lane to SR 99, reduce to 4 lanes Lower Sacramento from Hammer Lane to Eight Mile Road, reduce to 4 lanes Thornton Road from Hammer Lane to Eight Mile Road, reduce to 4 lanes Eight Mile Road, west of Trinity Parkway, reduce to 4 lanes Eight Mile Road from Thornton Road to West Lane, reduce to 4 lanes Wilson Way from Charter Way to SR 99, reduce to 4 lanes March Lane – reduce existing 8-lane cross section to 6-lanes Eighth Street: Provide two lane connection over railroad.

TABLE 4
TRANSPORTATION NETWORK ASSUMPTIONS

Travel Mode	Initial Working Draft Preferred GP	Refinement 1	Refinement 2
Bicycle	No Changes from Existing	Adds off-street bicycle network identified in BMP; assumes lane reductions to provide bicycle facilities: California Street: Alpine to Oak reduce from 4 lane to 2 lane Alpine Avenue: Ryde Avenue to California Street reduce from 4 lane to 2 lane	No change from refinement 1.
Transit	No Changes from Existing	Add BRT Routes from SRTP with stops at major intersections and 10 minute headways during core service hours (matching existing BRT routes) : Eight Mile Road West Lane Pacific Corridor Airport Corridor March Lane Downtown MLK Arch/Sperry	No change from refinement 2.

Source: Fehr & Peers in consultation with City of Stockton Staff.

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
1	I-5	North of Eight Mile Road		65,000	6	Freeway	B	87,700	8	Freeway	B	22,700	2
2	I-5	Eight Mile Road	Hammer Lane	78,000	6	Freeway	C	106,200	10	Freeway	B	28,200	4
3	I-5	Hammer Lane	Ben Holt Drive	106,000	8	Freeway	C	148,000	10	Freeway	C	42,000	2
4	I-5	Ben Holt Drive	March Lane	120,000	8	Freeway	C	163,700	10	Freeway	D	43,700	2
5	I-5	March Lane	Country Club Boulevard	121,000	8	Freeway	C	174,800	10	Freeway	D	53,800	2
6	I-5	Country Club Boulevard	Monte Diablo Avenue	134,730	8	Freeway	D	189,800	10	Freeway	D	55,070	2
7	I-5	Monte Diablo Avenue	Pershing Avenue	137,170	8	Freeway	D	190,100	10	Freeway	D	52,930	2
8	I-5	Pershing Avenue	Crosstown Freeway	108,580	8	Freeway	C	164,100	10	Freeway	D	55,520	2
9	I-5	Crosstown Freeway	Charter Way	143,310	8	Freeway	D	199,800	10	Freeway	**E**	56,490	2
10	I-5	Charter Way	8th Street	151,800	6	Freeway	**F**	223,000	10	Freeway	**F**	71,200	4
11	I-5	8th Street	Downing Avenue	113,640	6	Freeway	D	178,200	8	Freeway	**F**	64,560	2
12	I-5	Downing Avenue	French Camp Road	120,000	6	Freeway	**E**	145,600	8	Freeway	D	25,600	2
13	I-5	French Camp Road	Mathews Road	115,500	6	Freeway	D	142,100	8	Freeway	D	26,600	2
14	SR 99	North of Eight Mile Road	0	85,910	6	Freeway	C	116,300	8	Freeway	C	30,390	2
15	SR 99	Eight Mile Road	Morada Lane	81,000	6	Freeway	C	124,900	8	Freeway	C	43,900	2
16	SR 99	Morada Lane	Hammer Lane	86,000	6	Freeway	C	146,800	8	Freeway	D	60,800	2
17	SR 99	Hammer Lane	Wilson Way	105,000	6	Freeway	D	174,300	8	Freeway	**F**	69,300	2
18	SR 99	Wilson Way	Cherokee Road	98,120	6	Freeway	D	167,400	8	Freeway	**E**	69,280	2
19	SR 99	Cherokee Road	Waterloo Road	107,260	6	Freeway	D	213,700	8	Freeway	**F**	106,440	2
20	SR 99	Waterloo Road	Fremont Street	115,390	6	Freeway	D	222,600	8	Freeway	**F**	107,210	2
21	SR 99	Fremont Street	Crosstown Freeway	114,000	6	Freeway	D	220,700	8	Freeway	**F**	106,700	2

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
22	SR 99	Crosstown Freeway	Martin Luther King Jr Blvd	103,400	6	Freeway	D	192,300	8	Freeway	F	88,900	2
23	SR 99	Martin Luther King Jr Blvd	Farmington Rd	95,700	6	Freeway	D	184,600	8	Freeway	F	88,900	2
24	SR 99	Farmington Rd	Mariposa Rd	80,300	6	Freeway	C	169,200	8	Freeway	E	88,900	2
25	SR 99	Mariposa Road	Arch Road	78,000	6	Freeway	C	127,800	8	Freeway	D	49,800	2
26	SR 99	Arch Road	French Camp Road	74,000	6	Freeway	C	89,200	8	Freeway	B	15,200	2
27	SR 99	French Camp Road	Lathrop Road	74,000	6	Freeway	C	92,800	8	Freeway	C	18,800	2
28	SR 4	West of I-5	West of I-5	18,150	4	Freeway	A	39,400	4	Freeway	B	21,250	0
29	SR 4	I-5	El Dorado St	85,000	8	Freeway	B	114,900	8	Freeway	C	29,900	0
30	SR 4	El Dorado Street	Stanislaus Street	115,140	8	Freeway	C	152,100	8	Freeway	D	36,960	0
31	SR 4	Stanislaus Street	Wilson Way	105,000	6	Freeway	D	143,000	8	Freeway	D	38,000	2
32	Eight Mile Rd	Mokelume Drive	Trinity Parkway	9,010	2	Arterial	B	24,200	4	Arterial	B	15,190	2
33	Eight Mile Rd	Trinity Parkway	I-5	31,480	8	Arterial	A	31,600	8	Arterial	A	120	0
34	Eight Mile Rd	Thornton Rd	Davis Rd	15,460	4	Arterial	A	21,900	4	Arterial	A	6,440	0
35	Eight Mile Rd	Davis Rd	Lower Sacramento	16,930	2	Arterial	E	26,600	4	Arterial	C	9,670	2
36	Eight Mile Rd	Lower Sacramento	West Lane	20,420	2	Arterial	F	36,500	4	Arterial	D	16,080	2
37	Eight Mile Rd	West Lane	SPRR	13,170	2	Arterial	D	29,500	6	Arterial	A	16,330	4
38	Eight Mile Rd	West of Bear Creek	Rt 99	11,810	2	Arterial	D	29,900	6	Arterial	A	18,090	4
39	Morada Lane	Lower Sacramento Rd	West Lane	0	0	Arterial	A	8,600	4	Arterial	A	8,600	4
40	Morada Lane	Cherbourg	West	14,290	4	Arterial	A	18,500	4	Arterial	A	4,210	0
41	Morada Lane	Cherbourg	Fox Creek	15,430	4	Arterial	A	18,300	4	Arterial	A	2,870	0
42	Morada Lane	Holman	Hwy 99	18,010	6	Arterial	A	18,900	4	Arterial	A	890	-2

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
43	Morada Lane	Mosher Creek	Holman	16,160	6	Collector	A	17,900	4	Collector	A	1,740	-2
44	Hammer Lane	Mariners Dr	I-5	17,010	6	Arterial	A	23,200	6	Arterial	A	6,190	0
45	Hammer Lane	Westland	Richland	31,960	6	Arterial	B	35,300	6	Arterial	B	3,340	0
46	Hammer Lane	Pershing Ave	Valencia	28,610	4	Arterial	D	29,600	6	Arterial	A	990	2
47	Hammer Lane	Lower Sacramento Rd	El Dorado St	41,780	8	Arterial	B	31,300	6	Arterial	A	-10,480	-2
48	Hammer Lane	At WPRR	0	48,730	8	Arterial	C	31,600	6	Arterial	A	-17,130	-2
49	Hammer Lane	SPRR	Holman Rd	42,060	8	Arterial	B	29,200	6	Arterial	A	-12,860	-2
50	Hammer Lane	Holman Rd	Rt 99	40,360	8	Arterial	B	32,500	6	Arterial	A	-7,860	-2
51	Benjamin Holt Drive	Plymouth	Belmont	22,630	2	Arterial	**F**	21,500	2	Arterial	**F**	-1,130	0
52	Benjamin Holt Drive	Vicksburg	Gettysburg	16,380	2	Arterial	**E**	15,200	2	Arterial	D	-1,180	0
53	Swain Rd	Pylmouth Road	Morgan	10,690	2	Local	A	10,700	2	Local	A	10	0
54	Swain Rd	Pershing Avenue	Vicksburg Place	9,670	2	Local	A	9,500	2	Local	A	-170	0
55	March Lane	Brookside Rd	Morningside Dr	6,950	6	Arterial	A	8,800	6	Arterial	A	1,850	0
56	March Lane	Feather River Drive	I-5	40,100	6	Arterial	C	43,800	6	Arterial	C	3,700	0
57	March Lane	Quail Lakes	Grouse Run	43,050	6	Arterial	D	42,400	6	Arterial	C	-650	0
58	March Lane	Pershing Ave	Pacific Ave	42,910	6	Arterial	D	41,100	6	Arterial	C	-1,810	0
59	March Lane	Pacific Ave	Claremont	33,060	6	Arterial	C	41,100	6	Arterial	C	8,040	0
60	March Lane	At UPRR	0	38,800	6	Arterial	C	58,300	6	Arterial	**E**	19,500	0
61	March Lane	West Lane	Bianchi	28,720	8	Arterial	A	72,700	6	Arterial	**F**	43,980	-2
62	Alpine Avenue	Pershing	Grange	9,140	4	Local	A	8,900	2	Local	A	-240	-2

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
63	Alpine Avenue	Dwight	Kensington	7,820	4	Local	A	7,800	2	Local	A	-20	-2
64	Alpine Avenue	Center	Commerce	14,490	4	Arterial	A	8,600	2	Arterial	A	-5,890	-2
65	Alpine Avenue	Sutter	San Joaquin	20,460	4	Arterial	B	11,800	2	Arterial	C	-8,660	-2
66	Country Club Drive	Grange Avenue	Pershing Avenue	8,910	2	Arterial	B	8,700	2	Arterial	A	-210	0
67	Monte Diablo Avenue	San Juan	Buena Vista	3,540	2	Arterial	A	3,700	2	Arterial	A	160	0
68	Harding Way	Pershing	Columbia	3,810	2	Arterial	A	3,600	2	Arterial	A	-210	0
69	Harding Way	Baker	Stockton	11,330	2	Arterial	C	11,400	2	Arterial	C	70	0
70	Harding Way	Commerce	Madison	24,300	4	Arterial	C	23,300	4	Arterial	B	-1,000	0
71	Harding Way	El Dorado	Center	25,910	4	Arterial	C	27,300	4	Arterial	C	1,390	0
72	Harding Way	California	San Joaquin	21,470	4	Arterial	C	27,800	4	Arterial	C	6,330	0
73	Harding Way	At UPRR	0	19,550	4	Arterial	B	18,300	4	Arterial	A	-1,250	0
74	Harding Way	Wilson	Sierra Nevada	22,040	4	Arterial	C	16,600	4	Arterial	A	-5,440	0
75	Fremont St	Watts	Laurel	14,610	2	Arterial	D	11,200	4	Arterial	A	-3,410	2
76	Fremont St	Broadway	Golden Gate	10,960	2	Arterial	C	14,900	4	Arterial	A	3,940	2
77	Miner Ave	El Dorado Street	Center Street	7,160	4	Arterial	A	12,500	4	Arterial	A	5,340	0
78	Miner Ave	California	San Joaquin	8,770	4	Arterial	A	11,300	4	Arterial	A	2,530	0
79	Main St	California	Sutter	3,210	2	Arterial	A	3,700	2	Arterial	A	490	0
80	Main St	Court	Ash	9,890	4	Arterial	A	14,500	4	Arterial	A	4,610	0
81	Main St	Netherton	Golden Gate	15,020	4	Arterial	A	24,000	4	Arterial	B	8,980	0

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
82	Charter Way	W of Roberts	W of Roberts	13,650	2	Expressway	A	17,500	4	Expressway	A	3,850	2
83	Charter Way	Tillie Lewis Drive	Fresno Avenue	12,480	2	Arterial	D	5,230	2	Arterial	A	-7,250	0
84	Charter Way	Navy	Fresno	17,420	2	Arterial	**F**	7,420	2	Arterial	A	-10,000	0
85	Charter Way	I-5	Navy	31,980	2	Arterial	**F**	18,300	2	Arterial	**E**	-13,680	0
86	Martin Luther King Jr. Blvd	I-5	Lincoln	34,420	4	Arterial	**E**	48,800	4	Arterial	**F**	14,380	0
87	Martin Luther King Jr. Blvd	California	Airport Way	30,000	4	Arterial	D	42,400	4	Arterial	**E**	12,400	0
88	Martin Luther King Jr. Blvd	Airport Way	Wilson Way	28,550	4	Arterial	D	43,100	6	Arterial	C	14,550	2
89	Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	15,220	2	Arterial	**E**	17,300	4	Arterial	A	2,080	2
90	Navy Dr	San Joaquin River	Washington	4,560	2	Arterial	A	4,600	2	Arterial	A	40	0
91	Navy Dr	BN&SF RR	Tillie Lewis	5,090	2	Arterial	A	5,700	4	Arterial	A	610	2
92	Navy Dr	Josephine	Fresno	3,970	2	Arterial	A	5,000	2	Arterial	A	1,030	0
93	Washington St	Agribusiness	Ventura	7,940	2	Collector	C	7,300	2	Collector	C	-640	0
94	8th Street	Argonaut	Fresno	12,030	4	Collector	A	10,500	4	Collector	A	-1,530	0
95	8th Street	Monroe	Lincoln	7,890	4	Local	A	13,000	4	Local	A	5,110	0
96	8th Street	Pock	D	8,190	2	Collector	C	12,500	2	Collector	**E**	4,310	0
97	Carolyn Weston Boulevard	Manthey	McDougald	27,660	4	Arterial	D	29,700	4	Arterial	C	2,040	0
98	French Camp Rd	McDougald	E.W.S.Wood	10,280	2	Arterial	C	30,300	4	Arterial	C	20,020	2
99	Sperry Road	Airport	McKinley	10,560	4	Arterial	A	30,700	4	Arterial	C	20,140	0

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
100	Arch-Airport Rd	Airport	Pock	16,680	2	Arterial	**E**	41,200	6	Arterial	C	24,520	4
101	Arch-Airport Rd	HW 99	Quantas	27,070	4	Arterial	D	61,700	6	Arterial	**E**	34,630	2
102	Arch Rd	Frontier	HW 99 Frontage	14,010	2	Arterial	D	39,600	6	Arterial	C	25,590	4
103	Arch Rd	Newcastle	Frontier	12,340	2	Arterial	D	36,900	4	Arterial	D	24,560	2
104	Trinity Parkway	Scott Creek	8 Mile	14,260	6	Arterial	A	15,700	6	Arterial	A	1,440	0
105	Trinity Parkway	Cosumnes	McAuliffe	8,030	6	Arterial	A	7,700	6	Arterial	A	-330	0
106	Thornton Rd	Bear Creek	Estate	21,140	4	Arterial	C	19,900	4	Arterial	A	-1,240	0
107	Thornton Rd	Waudman	Davis	25,070	2	Arterial	**F**	22,400	4	Arterial	A	-2,670	2
108	Thornton Rd	Aberdeen	Cortez	37,460	2	Arterial	**F**	34,400	4	Arterial	D	-3,060	2
109	Thornton Rd	Hammer	Rivera	22,650	4	Arterial	C	23,100	6	Arterial	A	450	2
110	Davis Rd	Chaparral	Laramie	11,480	2	Arterial	C	13,200	4	Arterial	A	1,720	2
111	Davis Rd	North of Bear Creek	0	9,170	2	Arterial	B	8,900	4	Arterial	A	-270	2
112	Davis Rd	Ponce De Leon	Thornton	15,400	2	Arterial	**E**	17,500	4	Arterial	A	2,100	2
113	Lower Sacramento	Armor	Royal Oaks	17,620	4	Arterial	A	24,100	4	Arterial	B	6,480	0
114	Lower Sacramento	Bear Creek	Eight Mile	16,340	2	Arterial	**E**	22,300	4	Arterial	A	5,960	2
115	Lower Sacramento	Hammer	Rivera	17,610	4	Arterial	A	17,200	4	Arterial	A	-410	0
116	West Lane	8 Mile	Morada	17,180	4	Arterial	A	23,100	6	Arterial	A	5,920	2
117	West Lane	Dalewood	Westmora	25,010	6	Arterial	A	30,700	6	Arterial	A	5,690	0
118	West Lane	Hammer	Hammertown	31,760	8	Arterial	A	25,900	6	Arterial	A	-5,860	-2

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
119	West Lane	Swain	March	37,470	4	Arterial	**E**	46,900	6	Arterial	D	9,430	2
120	West Lane	Bradford	Walnut	24,320	4	Arterial	C	31,100	6	Arterial	A	6,780	2
121	Wilson Way	McAllen	Alpine	16,290	4	Arterial	A	20,400	4	Arterial	A	4,110	0
122	Wilson Way	Main	Market	26,040	4	Arterial	D	29,800	4	Arterial	C	3,760	0
123	Wilson Way	Market	Washington	26,340	4	Arterial	D	30,700	4	Arterial	C	4,360	0
124	Pershing Ave	Venetian	Burke-Bradley	24,740	4	Arterial	C	26,000	4	Arterial	C	1,260	0
125	Pershing Ave	At Calaveras River	0	35,990	4	Arterial	**E**	32,600	4	Arterial	D	-3,390	0
126	Pershing Ave	Magnolia	Acacia	20,440	4	Arterial	B	21,200	4	Arterial	A	760	0
127	Pacific Ave	Douglas	Porter	39,970	6	Arterial	C	43,200	6	Arterial	C	3,230	0
128	Pacific Ave	Yokuts	March	33,730	6	Arterial	C	39,000	6	Arterial	C	5,270	0
129	Pacific Ave	At Calaveras River	0	33,150	4	Arterial	**E**	29,300	4	Arterial	C	-3,850	0
130	Pacific Ave	Cleveland	Wyandotte	20,160	4	Arterial	B	20,400	4	Arterial	A	240	0
131	Fresno Ave	Washington St	Navy Dr	11,850	2	Collector	**E**	2,370	2	Collector	A	-9,480	0
132	Fresno Ave	Navy Dr	Charter Way	10,320	2	Collector	D	5,110	2	Collector	A	-5,210	0
133	Fresno Ave	Charter Way	8th Street	8,090	2	Collector	C	7,720	2	Collector	C	-370	0
134	El Dorado St	Lincoln	Loretta	17,820	4	Arterial	A	17,800	4	Arterial	A	-20	0
135	El Dorado St	Mayfair	Robinhood	29,200	4	Arterial	D	32,100	4	Arterial	C	2,900	0
136	El Dorado St	At Calaveras River	0	29,050	4	Arterial	D	21,800	4	Arterial	A	-7,250	0
137	El Dorado St	Pine	Cleveland	23,940	6	Arterial	A	21,800	6	Arterial	A	-2,140	0
138	El Dorado St	Lindsay	Miner	20,590	3	Arterial	D	22,600	3	Arterial	C	2,010	0
139	El Dorado St	At AT & SF Overpass	0	15,410	3	Arterial	C	17,700	3	Arterial	B	2,290	0

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
140	El Dorado St	MLK Blvd	First	12,270	3	Arterial	A	13,600	3	Arterial	A	1,330	0
141	El Dorado St	Eighth	Ninth	13,910	4	Arterial	A	18,900	4	Arterial	A	4,990	0
142	California St	Alpine	Harding	18,070	4	Arterial	A	19,100	2	Arterial	**E**	1,030	-2
143	California St	Harding	Park	11,530	4	Arterial	A	21,700	2	Arterial	**F**	10,170	-2
144	California St	Park	Weber	8,050	4	Arterial	A	19,100	4	Arterial	A	11,050	0
145	California St	Weber	Crosstown Freeway	5,460	4	Arterial	A	16,300	4	Arterial	A	10,840	0
146	Center St	Poplar	Flora	16,180	3	Arterial	C	14,400	3	Arterial	A	-1,780	0
147	Center St	At AT & SF Overpass	0	15,690	3	Arterial	C	18,800	3	Arterial	C	3,110	0
148	Holman Rd	8 Mile	Morada	9,530	6	Arterial	A	10,200	4	Arterial	A	670	-2
149	Holman Rd	Morada Lane	Hammer	17,850	6	Arterial	A	18,200	4	Arterial	A	350	-2
150	Holman Rd	Auto Center	Auto Center	18,230	6	Arterial	A	18,100	4	Arterial	A	-130	-2
151	Holman Rd	Wind Flower	March	15,500	2	Local	A	6,100	2	Local	A	-9,400	0
152	Cherokee Rd	Sierra	Sanguinetti	6,420	2	Arterial	A	12,600	2	Arterial	C	6,180	0
153	Waterloo Rd	E	Williams	13,890	4	Arterial	A	13,000	4	Arterial	A	-890	0
154	Airport Way	Pinchot	Roosevelt	19,900	4	Arterial	B	34,000	6	Arterial	B	14,100	2
155	Airport Way	Fremont	Lindsay	20,430	4	Arterial	B	35,000	6	Arterial	B	14,570	2
156	Airport Way	Main	Market	16,720	4	Arterial	A	33,600	6	Arterial	B	16,880	2
157	Airport Way	Ninth	Tenth	21,760	4	Arterial	C	49,400	6	Arterial	D	27,640	2
158	Airport Way	Sperry	Industrial	16,630	4	Arterial	A	31,400	6	Arterial	A	14,770	2
159	Airport Way	Sperry	CE Dixon St	14,330	4	Arterial	A	37,400	4	Arterial	D	23,070	0
160	Mariposa Rd	Stagecoach	SR 99	11,300	6	Arterial	A	53,600	6	Arterial	D	42,300	0

TABLE 5
STOCKTON GENERAL PLAN - ROADWAY OPERATIONS

Segment ID	Roadway	Between		Base Year				2040 Plus Project				Change: Base to Future	
				ADT[1]	Lanes[2]	Classification	LOS	ADT[1]	Lanes[2]	Classification	LOS	ADT	Lanes
161	Mariposa Rd	Farmington	SR 99	12,290	2	Arterial	D	23,700	6	Arterial	A	11,410	4
162	Mariposa Rd	MLK Blvd	Farmington	14,260	2	Arterial	D	26,300	6	Arterial	A	12,040	4
163	B St	Charter Way	Fourth	13,530	2	Collector	F	14,400	2	Collector	F	870	0
164	B St	Ralph Ave	Arch Airport	4,540	2	Local	A	11,400	2	Local	A	6,860	0
165	Pock Lane	Mariposa	Sixth	3,720	2	Collector	A	5,600	2	Collector	A	1,880	0
166	Pock Lane	Togninali	Carpenter	5,170	2	Local	A	7,800	2	Local	A	2,630	0

Source: Data compiled by Fehr & Peers in 2017 based on numerous data sources reflecting traffic counts collected in 2012, 2014 and 2016, all normalized to 2016.
Notes: 1. Represents total traffic volume on the roadway segment.
2. Represents number of lanes per direction.

MODEL DATA

Fehr & Peers used the updated City of Stockton General Plan model to estimate a number of transportation metrics, including mode share and vehicle miles of travel for both the existing condition and updated General Plan condition. Metrics were created for two geographies. The first is the current incorporated City of Stockton boundary. The second includes the City of Stockton, the proposed Sphere of Influence (SOI), and other unincorporated areas within the immediate vicinity of Stockton, including the incorporated County pockets surrounded by the incorporated city limits (Planning Area).

Demographic Data

A summary of the number of households, population, and employment used in the travel modeling is summarized in **Table 6** for both the incorporated City of Stockton as well as the larger planning area. Population and employment growth is expected to occur at a faster rate in areas outside the current City of Stockton city limits. Much of this growth is projected to occur in areas were development has been approved, such as Mariposa Lakes, but the land has not yet been annexed into the City of Stockton.

TABLE 6
DEMOGRAPHIC SUMMARY

Demographic Factor	City of Stockton		Planning Area	
	Base Year	General Plan	Base Year	General Plan
Households	98,400	117,200	117,200	157,200
Population	305,900	357,000	357,000	484,100
Employment	110,100	148,700	148,700	187,700

Source: City of Stockton General Plan Model, Fehr & Peers, 2017, and PlaceWorks, 2017.

Mode Share

The mode of travel for trips with at least one end in Stockton, and the entire planning area were calculated based on the model, as presented in **Table 7**. On a daily basis, approximately 680,000 person trips are generated by the variety of land uses within the City of Stockton, with approximately 89 percent of these trips occurring via an auto-mode, 2 percent via transit, 7 percent via walking, and 1 percent via bicycling. Higher levels of walking, biking and transit use occur within

the City of Stockton boundaries as compared to the overall Planning Area. Under General Plan conditions, the walk, bike and transit mode shares are expected to increase within the City of Stockton limits from approximately 11 percent of all trips to almost 15 percent of all trips. Non-auto trips within the entire planning area are expected to increase slightly from the existing condition.

TABLE 7
BASE YEAR MODE SHARE - CITY OF STOCKTON
PERSON TRIPS, INCLUDES I-I, I-X, X-I

Mode	Base Year				General Plan			
	City of Stockton		Planning Area		City of Stockton		Planning Area	
	Person Trips	Percent	Person Trips	Percent	Person Trips	Percent	Person Trips	Percent
Drive Alone	242,800	35.6%	593,100	38.4%	296,400	32.7%	774,600	37.0%
Shared Ride 2	170,700	25.0%	383,800	24.9%	224,600	24.8%	523,100	25.0%
Shared Ride 3+	194,300	28.5%	436,400	28.3%	249,100	27.5%	576,800	27.6%
Transit	14,500	2.1%	24,900	1.6%	32,500	3.6%	53,100	2.5%
Walk	50,200	7.4%	87,800	5.7%	85,400	9.4%	134,400	6.4%
Bike	9,400	1.4%	17,900	1.2%	17,400	1.9%	30,400	1.5%
Total	681,900	100.0%	1,543,900	100.0%	905,400	100.0%	2,092,400	100.0%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

Internal/External Trips

The general origin/destination of person trips generated in the City of Stockton and the Planning area was also calculated with the percent that occur entirely within Stockton, or are imported/ exported trips is shown in **Table 8**. Approximately 73 percent of existing person trips have both trip ends within Stockton, while the remaining trips have either an origin or destination outside the City limits. This percentage is predicted to increase under General Plan conditions.

Within the overall planning area, the number of internal trips is slightly less than within the City limits, but the percentage is also projected to increase under General Plan conditions indicating that the land use mixture proposed under the General Plan has the potential to serve more daily needs within the planning area, reducing the demand for travel outside the area.

TABLE 8
IMPORT/EXPORT OF PERSON TRIPS ALL MODES

Trip Type	Base Year				General Plan			
	City of Stockton		Planning Area		City of Stockton		Planning Area	
	Person Trips	Percent	Person Trips	Percent	Person Trips	Percent	Person Trips	Percent
I-I (internal trips)	499,200	73.2%	1,039,600	67.3%	716,600	79.1%	1,495,400	71.5%
I-X (from Stockton to elsewhere)	126,700	18.6%	262,400	17.0%	98,500	10.9%	206,500	9.9%
X-I (from elsewhere to Stockton)	56,200	8.2%	241,900	15.7%	90,800	10.0%	390,500	18.7%
Total	682,100	100.0%	1,543,900	100.0%	905,900	100.0%	2,092,400	100.0%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

Vehicle Miles of Travel (VMT)

To assess the VMT generated by the project, two methods were used. The first method tracks all vehicular trips generated by the City of Stockton or Planning across the entire regional network. The second method captures only vehicle trips made within the City of Stockton or Planning boundaries, regardless of their origin or destination (boundary method). Each method is discussed in more detail below.

Boundary Method

A boundary based estimate captures all the VMT on a roadway network within a specified geographic area such as the city limits. A limitation of this method is that it does not capture trips that extend beyond a jurisdictions boundary and includes through traffic on regional roadway facilities. However, this information can use useful in estimating total greenhouse gas emissions

within a specified geographic area. The base year VMT on roadways within Stockton is shown in **Table 9** by vehicle speed. It should be noted that the model was not validated to speeds and the model does not contain local streets which may have lower traffic volumes. The model also assumes maximum travel speeds on roadways close to the posted speed limit.

TABLE 9
VMT BOUNDARY METHOD

Speed Bin	Base Year				General Plan			
	City of Stockton		Planning Area		City of Stockton		Planning Area	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0.00-7.50	2,000	0.0%	3,600	0.0%	4,700	0.1%	9,100	0.1%
7.51-12.50	5,900	0.1%	9,400	0.1%	15,700	0.2%	24,000	0.2%
12.51-17.50	10,800	0.2%	15,100	0.2%	16,500	0.3%	26,000	0.2%
17.51-22.50	41,800	0.9%	61,100	0.7%	71,500	1.1%	106,000	0.9%
22.51-27.50	320,300	6.5%	387,600	4.6%	454,900	7.2%	577,000	4.9%
27.51-32.50	451,600	9.2%	525,900	6.2%	653,300	10.4%	822,700	7.0%
32.51-37.50	650,100	13.2%	842,000	10.0%	744,100	11.8%	1,024,100	8.7%
37.51-42.50	986,000	20.1%	1,187,900	14.1%	1,092,400	17.3%	1,503,700	12.8%
42.51-47.60	429,800	8.8%	899,500	10.6%	466,800	7.4%	1,385,400	11.8%
47.61-52.50	63,800	1.3%	262,200	3.1%	122,900	2.0%	485,200	4.1%
52.51-57.50	53,800	1.1%	160,300	1.9%	91,900	1.5%	241,000	2.1%
57.51-62.50	201,800	4.1%	355,000	4.2%	271,900	4.3%	481,100	4.1%
62.51-67.50	1,693,900	34.5%	3,744,300	44.3%	2,289,700	36.4%	5,056,500	43.1%
67.51-72.50	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	4,911,600	100.0%	8,453,900	100.0%	6,296,300	100.0%	11,741,800	100.0%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

Origin-Destination Method – Total Accounting

An origin-destination (OD) method tracks all vehicular trips generated by the City of Stockton across the entire regional network. Four types of trips are isolated:

- Internal-Internal (II) trips: Include all trips that begin and end within the City of Stockton.
- Internal-External (IX) trips: Include all trips that begin in within city limits and end outside city limits.
- External-Internal (XI) trips: Include all trips that begin outside city limits and end inside city limits.
- External-External (XX) trips: Trips that begin and end outside the City of Stockton are not included. The City of Stockton assumes no responsibility for External-External trip type VMTs.

To estimate VMT per service population, trips are multiplied by the trip distance for all trip types to estimate VMT and then divided by the sum of residential and working population of the City of Stockton. As shown in **Table 10**, land uses within Stockton generate approximately 11,255,000 vehicle miles of travel on a daily basis.

TABLE 10
VMT ORIGIN-DESTINATION METHOD (ENTIRE LENGTH OF TRIP)

Speed Bin	Base Year				General Plan			
	City of Stockton		Planning Area		City of Stockton		Planning Area	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0.00-7.50	3,500	0.0%	3,600	0.0%	20,000	0.1%	23,000	0.1%
7.51-12.50	7,400	0.1%	7,700	0.1%	29,600	0.2%	33,400	0.2%
12.51-17.50	23,100	0.2%	24,800	0.2%	24,600	0.2%	27,400	0.2%
17.51-22.50	77,000	0.7%	83,100	0.7%	103,900	0.7%	116,000	0.7%
22.51-27.50	395,200	3.5%	416,400	3.3%	556,400	3.9%	604,200	3.7%
27.51-32.50	1,010,700	8.9%	1,071,300	8.6%	1,379,700	9.7%	1,501,800	9.3%
32.51-37.50	761,200	6.7%	810,800	6.5%	944,700	6.7%	1,033,800	6.4%
37.51-42.50	1,135,900	10.0%	1,189,200	9.5%	1,443,100	10.2%	1,558,400	9.6%
42.51-47.60	1,057,700	9.3%	1,169,100	9.4%	1,380,100	9.7%	1,600,500	9.9%
47.61-52.50	437,600	3.9%	490,800	3.9%	623,300	4.4%	735,700	4.5%
52.51-57.50	154,900	1.4%	171,400	1.4%	411,700	2.9%	487,100	3.0%
57.51-62.50	255,300	2.3%	276,500	2.2%	613,000	4.3%	705,400	4.3%
62.51-67.50	6,023,900	53.1%	6,758,700	54.2%	6,675,200	47.0%	7,806,900	48.1%
67.51-72.50	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	11,343,400	100.0%	12,473,400	100.0%	14,205,300	100.0%	16,233,600	100.0%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

To normalize vehicle miles of travel to other demographic factors, the VMT per service population was calculated as summarized below in **Table 11**.

TABLE 11
VEHICLE MILES OF TRAVEL BY SERVICE POPULATION

	Base Year		General Plan	
	City of Stockton	**Planning Area**	**City of Stockton**	**Planning Area**
VMT (O-D)	11,343,400	12,473,400	14,205,300	16,233,600
Population	305,900	363,300	357,000	484,100
Employment	110,100	123,400	148,700	187,700
Service Population (sum of population and employment)	416,000	486,700	505,700	671,800
VMT per Service Population	27.27	25.63	28.09	24.16
Percent Change from Base Year			3%	-6%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

The net change in vehicle miles of travel was also calculated to isolate the VMT associated with new development in combination with other City policies that could affect existing and future travel patterns. The results are presented in **Table 12**, which indicates that new development in Stockton is expected to generate approximately 20 percent less vehicle miles of travel than existing development when coupled with other changes to the transportation system. This indicates that many new development projects could achieve a 15 percent VMT reduction from baseline (requirement of SB 743), provided that other goals and policies of the General Plan are in place.

TABLE 12
NET CHANGE IN VMT FOR PLANNING AREA

	Base Year	Proposed Plan	
	Total	Total	Net Change
VMT (O-D)	12,473,400	16,233,600	3,866,900
Population	363,300	484,100	120,800
Employment	123,400	187,700	64,300
Service Population	486,700	671,800	185,100
VMT per Service Population	25.63	24.16	20.31
Net Change from Baseline		-6%	-21%

Source: City of Stockton General Plan Model, Fehr & Peers, 2017.

This completes our General Plan condition analysis for the Stockton General Plan. Please contact Kathrin at (925) 930-7100 with questions.

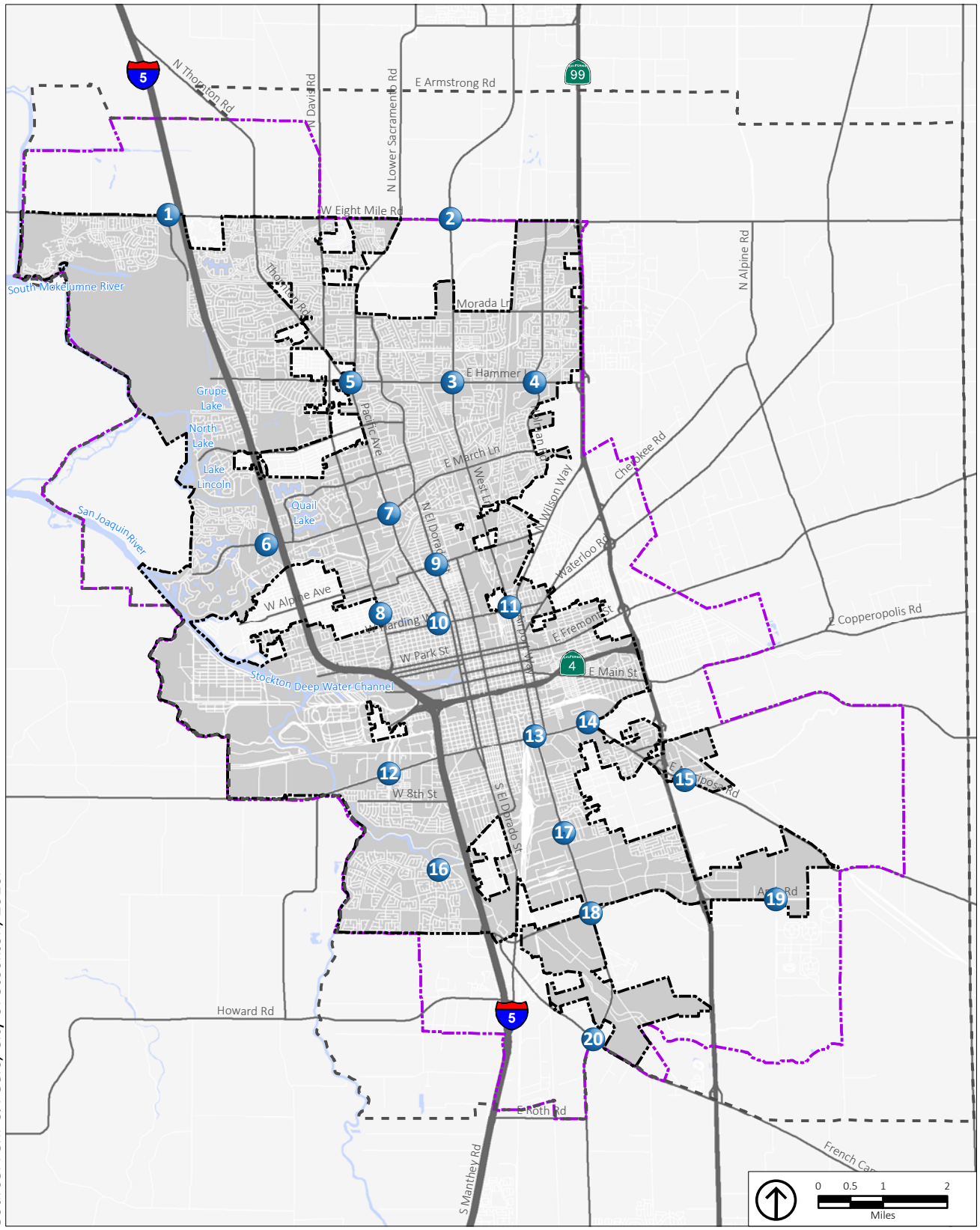
Attachments:

Figure 1 Peak Hour Intersection Study Locations

Figure 2 Peak Hour Intersection Turning Movement Data and Traffic Control

Attachment A Peak Hour Intersection Traffic Counts

Attachment B Peak Hour Intersection Level of Service Worksheets

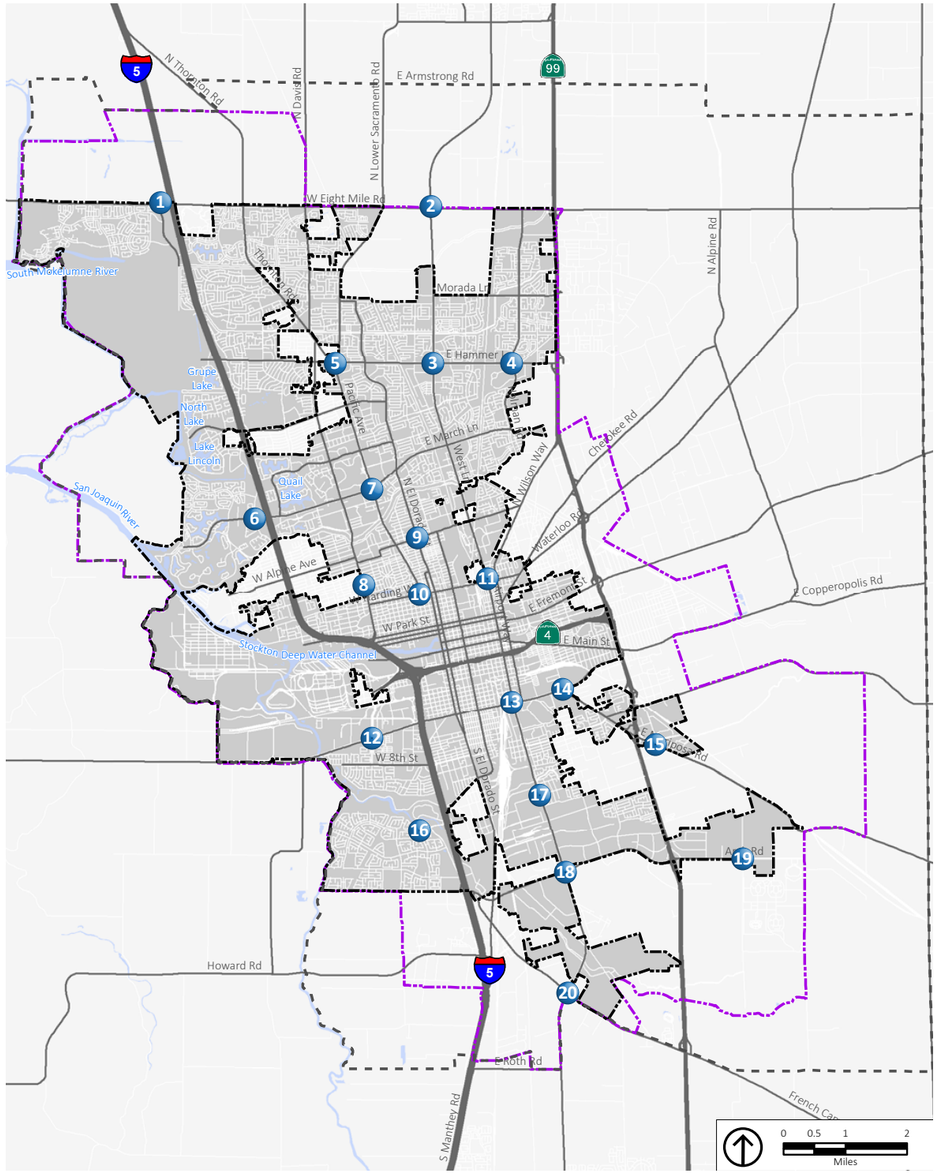


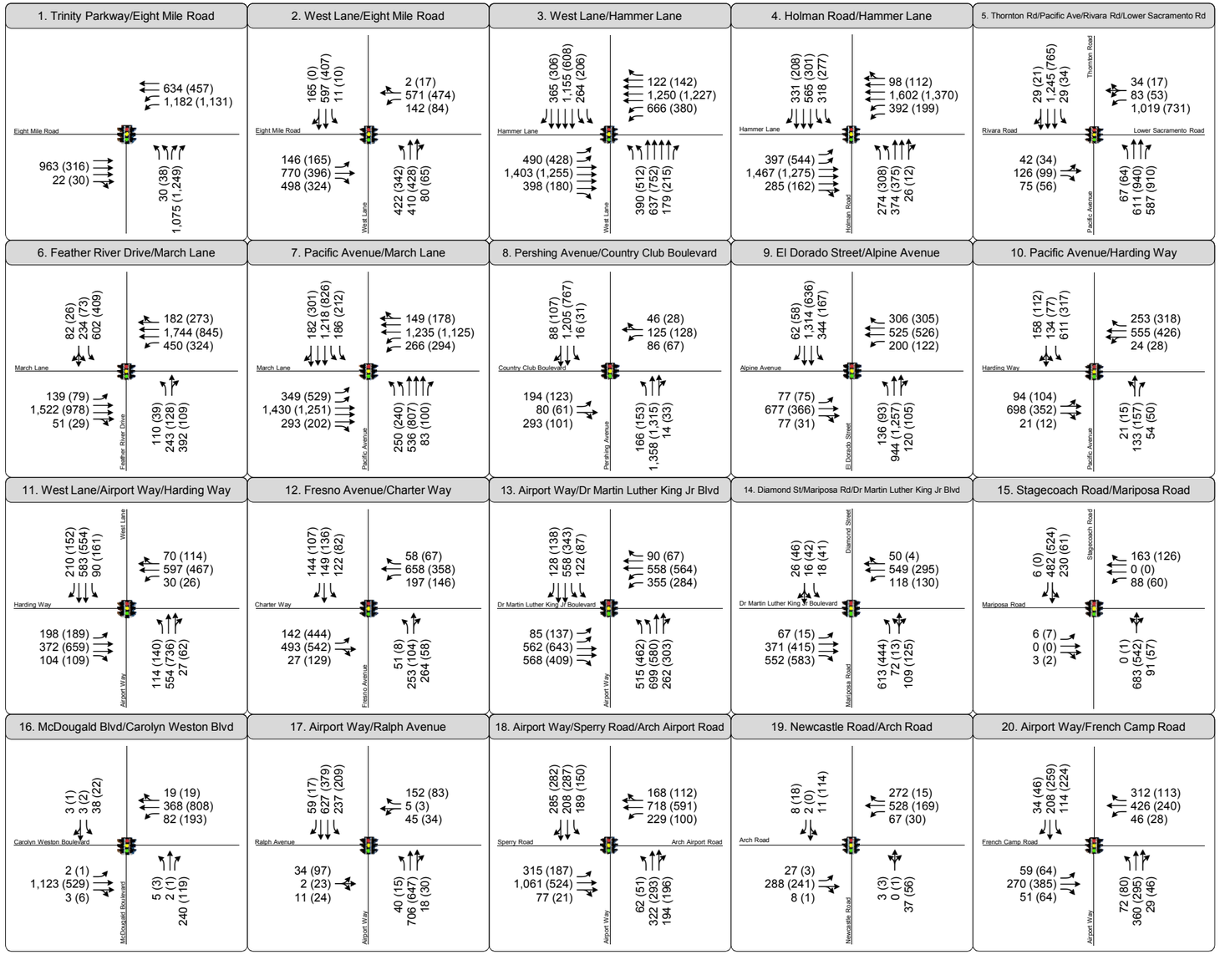
Source: Fehr & Peers, City of Stockton, 2016.

Study Intersection

General Plan Planning Area
City Limit
Sphere of Influence

Figure 1
Study Intersections





LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Study Intersection

Figure 2

Existing Peak Hour
Intersection Traffic Volumes, Lane Configurations and Traffic Controls

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 1. Trinity Pkwy -- Eight Mile Rd

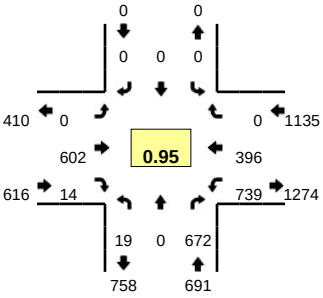
CITY/STATE: Stockton, CA

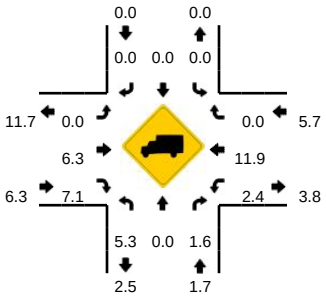
QC JOB #: 14437901

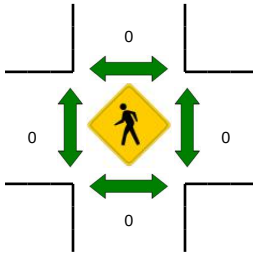
DATE: Thu, Jun 01 2017

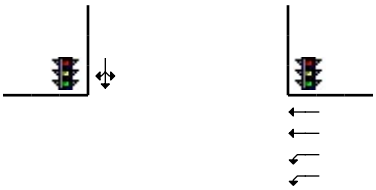
Peak-Hour: 7:35 AM -- 8:35 AM

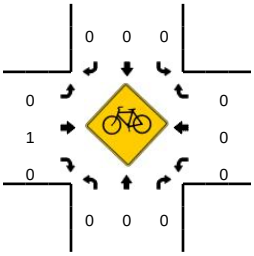
Peak 15-Min: 7:40 AM -- 7:55 AM

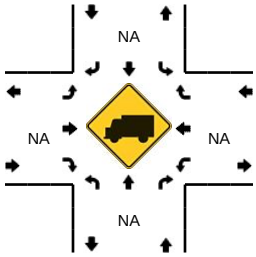


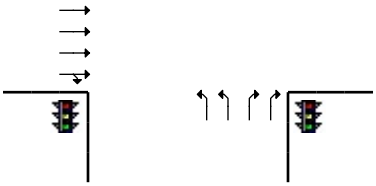


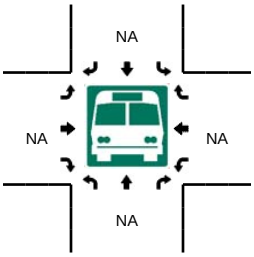












5-Min Count Period Beginning At	1. Trinity Pkwy (Northbound)				1. Trinity Pkwy (Southbound)				Eight Mile Rd (Eastbound)				Eight Mile Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	41	0	0	0	0	0	0	41	1	0	27	20	0	0	131	
7:05 AM	9	0	57	0	0	0	0	0	0	46	1	0	28	21	0	0	162	
7:10 AM	0	0	53	0	0	0	0	0	0	51	1	0	33	16	0	0	154	
7:15 AM	0	0	41	0	0	0	0	0	0	41	0	0	33	19	0	0	134	
7:20 AM	1	0	58	1	0	0	0	0	0	43	3	0	45	18	0	0	169	
7:25 AM	0	0	57	0	0	0	0	0	0	35	1	0	38	26	0	0	157	
7:30 AM	1	0	54	0	0	0	0	0	0	56	3	0	42	27	0	0	183	
7:35 AM	2	0	61	0	0	0	0	0	0	49	2	0	53	22	0	0	189	
7:40 AM	2	0	75	0	0	0	0	0	0	61	1	0	39	31	0	0	209	
7:45 AM	1	0	61	0	0	0	0	0	0	60	0	0	61	38	0	0	221	
7:50 AM	1	0	57	0	0	0	0	0	0	57	0	0	62	33	0	0	210	
7:55 AM	0	0	40	1	0	0	0	0	0	56	2	0	61	46	0	0	206	2125
8:00 AM	1	0	41	1	0	0	0	0	0	42	2	0	71	41	0	0	199	2193
8:05 AM	0	0	39	0	0	0	0	0	0	62	0	0	69	38	0	0	208	2239
8:10 AM	1	0	51	2	0	0	0	0	0	46	3	0	63	43	0	0	209	2294
8:15 AM	1	0	67	1	0	0	0	0	0	42	2	0	54	24	0	0	191	2351
8:20 AM	0	0	56	0	0	0	0	0	0	55	1	0	65	26	0	0	203	2385
8:25 AM	4	0	64	0	0	0	0	0	0	42	1	0	66	27	0	0	204	2432
8:30 AM	1	0	60	0	0	0	0	0	0	30	0	0	75	27	0	0	193	2442
8:35 AM	0	0	61	0	0	0	0	0	0	26	1	0	70	21	0	0	179	2432
8:40 AM	4	0	60	0	0	0	0	0	0	33	2	0	66	19	0	0	184	2407
8:45 AM	0	0	69	0	0	0	0	0	0	27	3	0	67	11	0	0	177	2363
8:50 AM	0	0	57	0	0	0	0	0	0	34	3	0	58	22	0	0	174	2327
8:55 AM	1	0	60	0	0	0	0	0	0	22	0	0	69	18	0	0	170	2291

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	772	0	0	0	0	0	0	712	4	0	648	408	0	0	2560
Heavy Trucks	0	0	16		0	0	0		0	20	0		16	40	0		92
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 1. Trinity Pkwy -- Eight Mile Rd

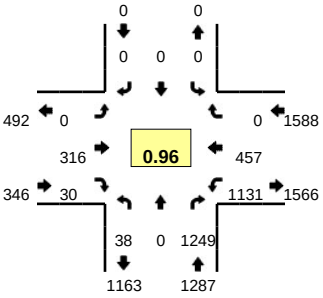
CITY/STATE: Stockton, CA

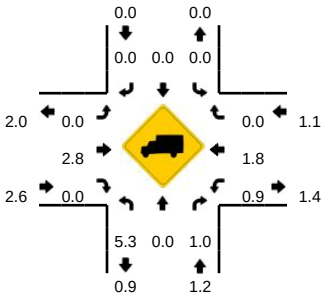
QC JOB #: 14437902

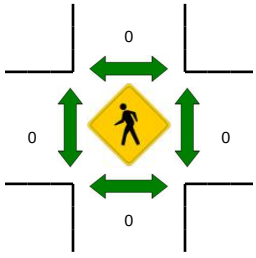
DATE: Thu, Jun 01 2017

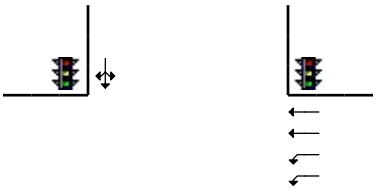
Peak-Hour: 4:40 PM -- 5:40 PM

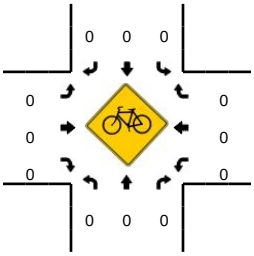
Peak 15-Min: 5:15 PM -- 5:30 PM

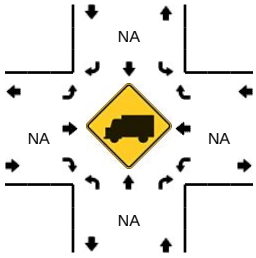


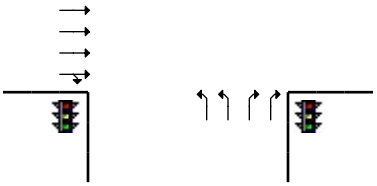


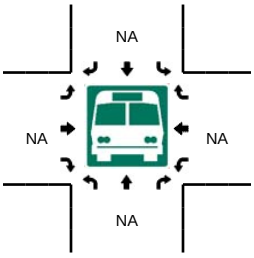












5-Min Count Period Beginning At	1. Trinity Pkwy (Northbound)				1. Trinity Pkwy (Southbound)				Eight Mile Rd (Eastbound)				Eight Mile Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	93	0	0	0	0	0	0	27	2	0	89	31	0	0	242	
4:05 PM	1	0	92	1	0	0	0	0	0	17	2	0	92	37	0	0	242	
4:10 PM	3	0	93	1	0	0	0	0	0	23	4	0	80	38	0	0	242	
4:15 PM	6	0	99	0	0	0	0	0	0	24	3	0	80	34	0	0	246	
4:20 PM	2	0	99	1	0	0	0	0	0	34	1	0	89	41	0	0	267	
4:25 PM	0	0	92	1	0	0	0	0	0	21	2	0	95	35	0	0	246	
4:30 PM	6	0	105	0	0	0	0	0	0	15	4	0	88	33	0	0	251	
4:35 PM	1	0	94	0	0	0	0	0	0	24	3	0	96	34	0	0	252	
4:40 PM	3	0	100	1	0	0	0	0	0	30	4	0	90	42	0	0	270	
4:45 PM	3	0	86	1	0	0	0	0	0	21	3	0	110	45	0	1	270	
4:50 PM	3	0	98	1	0	0	0	0	0	28	3	0	93	37	0	0	263	
4:55 PM	2	0	96	0	0	0	0	0	0	24	5	0	106	31	0	0	264	3055
5:00 PM	2	0	98	0	0	0	0	0	0	16	4	0	97	42	0	0	259	3072
5:05 PM	4	0	126	0	0	0	0	0	0	41	4	0	65	33	0	0	273	3103
5:10 PM	4	0	114	0	0	0	0	0	0	20	0	0	101	36	0	0	275	3136
5:15 PM	2	0	107	0	0	0	0	0	0	34	0	0	90	33	0	0	266	3156
5:20 PM	6	0	112	0	0	0	0	0	0	27	0	0	89	47	0	0	281	3170
5:25 PM	3	0	106	0	0	0	0	0	0	22	3	0	105	50	0	0	289	3213
5:30 PM	1	0	100	0	0	0	0	0	0	19	1	0	98	37	0	0	256	3218
5:35 PM	2	0	106	0	0	0	0	0	0	34	3	0	86	24	0	0	255	3221
5:40 PM	5	0	88	0	0	0	0	0	0	32	1	0	95	42	0	1	264	3215
5:45 PM	1	0	98	0	0	0	0	0	0	29	2	0	84	38	0	0	252	3197
5:50 PM	1	0	85	0	0	0	0	0	0	15	2	0	113	38	0	0	254	3188
5:55 PM	0	0	98	0	0	0	0	0	0	21	1	0	88	44	0	0	252	3176

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	0	1300	0	0	0	0	0	0	332	12	0	1136	520	0	0	3344
Heavy Trucks	4	0	12		0	0	0		0	8	0		8	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

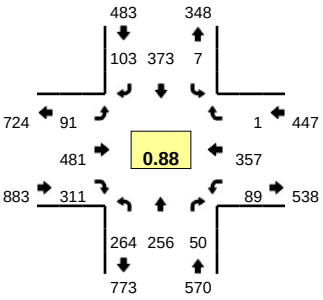
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

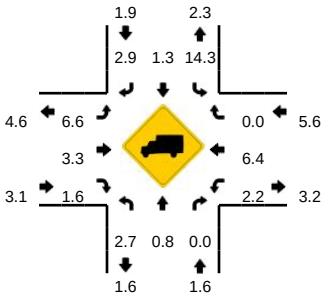
Method for determining peak hour: Total Entering Volume

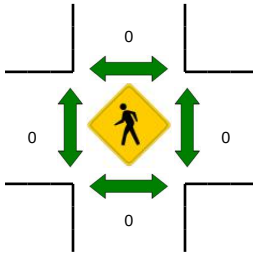
LOCATION: 2. West Ln -- Eight Mile Rd
CITY/STATE: Stockton, CA

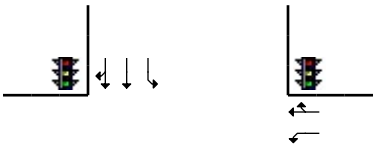
QC JOB #: 14437903
DATE: Thu, Jun 01 2017

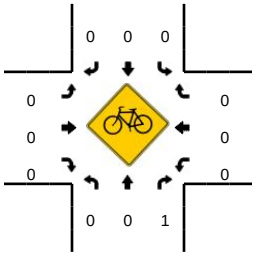


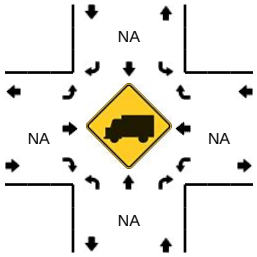
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

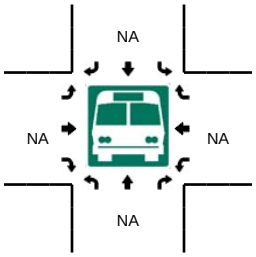












5-Min Count Period Beginning At	2. West Ln (Northbound)				2. West Ln (Southbound)				Eight Mile Rd (Eastbound)				Eight Mile Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	20	15	6	0	0	13	6	0	8	30	20	0	13	30	1	0	162	
7:05 AM	6	4	5	0	1	30	4	0	7	36	21	0	6	28	0	0	148	
7:10 AM	7	17	2	0	1	19	5	0	7	31	22	0	8	19	1	0	139	
7:15 AM	16	14	5	0	0	21	7	0	10	52	22	0	15	35	0	0	197	
7:20 AM	19	10	3	0	0	29	7	0	10	45	29	0	6	20	0	0	178	
7:25 AM	20	18	2	0	2	41	16	0	7	32	32	0	5	14	0	0	189	
7:30 AM	19	27	4	0	0	22	5	0	7	39	27	0	4	37	0	0	191	
7:35 AM	23	25	4	0	1	41	14	0	7	34	35	0	8	23	0	0	215	
7:40 AM	19	27	3	0	0	43	7	0	8	42	30	0	13	23	0	0	215	
7:45 AM	27	35	5	0	1	27	6	0	9	42	23	0	7	30	0	0	212	
7:50 AM	26	32	9	0	1	48	8	0	4	45	31	0	6	41	0	0	251	
7:55 AM	24	18	6	0	0	29	8	0	6	46	23	0	5	39	0	0	204	2301
8:00 AM	21	20	3	0	0	16	9	0	7	49	25	0	5	42	0	0	197	2336
8:05 AM	30	17	4	0	1	29	10	0	2	24	14	0	6	31	1	0	169	2357
8:10 AM	20	13	2	0	1	27	6	0	14	31	20	0	9	22	0	0	165	2383
8:15 AM	21	22	6	0	0	26	3	1	11	31	20	0	2	30	0	0	173	2359
8:20 AM	19	23	4	0	0	26	8	0	5	36	27	0	4	35	0	0	187	2368
8:25 AM	12	15	3	0	0	40	11	0	10	37	18	0	2	18	0	0	166	2345
8:30 AM	19	15	8	0	1	30	11	0	4	27	21	0	3	13	2	0	154	2308
8:35 AM	18	15	5	0	1	20	4	1	10	41	21	0	3	31	1	0	171	2264
8:40 AM	23	29	2	0	0	28	12	0	8	19	17	0	5	16	1	0	160	2209
8:45 AM	23	32	4	0	2	11	5	0	13	31	24	0	7	23	2	0	177	2174
8:50 AM	13	35	4	0	2	26	4	0	12	23	29	0	7	30	0	0	185	2108
8:55 AM	25	26	6	0	0	23	4	0	7	30	25	0	3	20	0	0	169	2073

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	288	376	68	0	8	472	84	0	84	516	336	0	104	376	0	0	2712
Heavy Trucks	4	4	0		0	4	0		8	16	4		0	16	0		56
Pedestrians		0				0				0				0			0
Bicycles	0	0	1		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

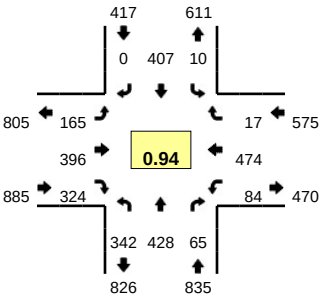
Method for determining peak hour: Total Entering Volume

LOCATION: 2.Eight Mile Road -- West Lane

CITY/STATE: Stockton, CA

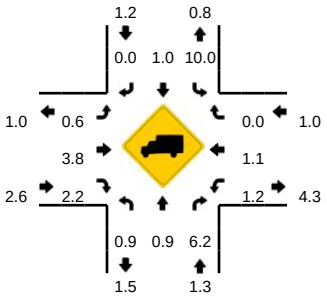
QC JOB #: 14437904

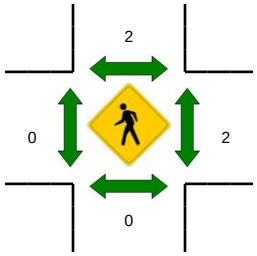
DATE: Thu, Jun 01 2017

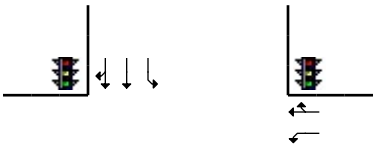


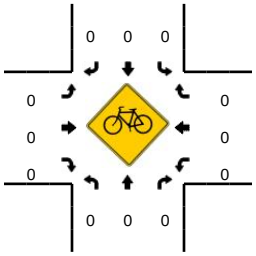
Peak-Hour: 5:00 PM -- 6:00 PM

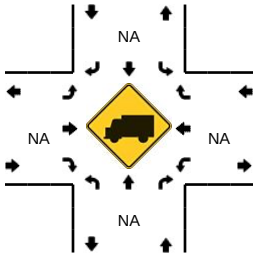
Peak 15-Min: 5:05 PM -- 5:20 PM

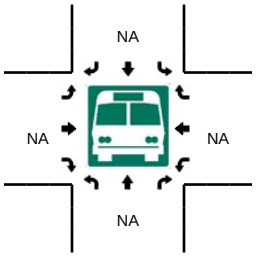












5-Min Count Period Beginning At	2.Eight Mile Road (Northbound)				2.Eight Mile Road (Southbound)				West Lane (Eastbound)				West Lane (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	18	21	4	0	0	11	0	0	18	34	25	0	10	28	1	0	170	
4:05 PM	20	36	7	0	0	27	0	0	9	19	17	0	2	31	0	0	168	
4:10 PM	21	26	6	1	1	24	0	0	12	35	23	0	6	45	1	0	201	
4:15 PM	29	34	6	0	2	20	0	2	10	31	30	0	2	41	0	0	207	
4:20 PM	21	39	7	0	0	31	1	1	10	24	28	0	4	25	0	0	191	
4:25 PM	25	30	3	0	0	27	0	1	15	24	25	0	7	38	0	0	195	
4:30 PM	30	26	0	0	1	27	0	0	13	33	23	0	7	40	1	0	201	
4:35 PM	30	38	8	0	0	21	0	0	17	34	25	0	8	36	1	0	218	
4:40 PM	32	43	6	0	0	44	0	0	8	50	19	0	3	38	3	0	246	
4:45 PM	28	31	5	0	1	35	0	0	12	31	30	0	3	37	9	0	222	
4:50 PM	21	34	2	0	1	20	0	1	12	36	25	0	2	38	3	0	195	
4:55 PM	17	24	6	0	1	27	0	0	4	30	28	0	4	46	1	0	188	2402
5:00 PM	39	45	12	0	1	30	0	0	10	23	19	0	9	20	2	0	210	2442
5:05 PM	28	24	1	0	1	30	0	0	8	44	29	0	11	54	0	0	230	2504
5:10 PM	33	45	8	0	0	36	0	0	17	29	34	0	7	36	4	0	249	2552
5:15 PM	31	33	7	1	2	55	0	0	14	38	24	0	4	31	0	0	240	2585
5:20 PM	31	32	1	0	1	21	0	0	9	27	28	0	9	49	4	0	212	2606
5:25 PM	17	34	5	0	0	35	0	0	19	39	32	0	10	52	1	0	244	2655
5:30 PM	26	36	11	1	0	36	0	1	15	30	20	0	8	26	0	0	210	2664
5:35 PM	32	32	4	0	0	39	0	0	16	38	28	0	0	28	1	0	218	2664
5:40 PM	18	50	8	2	2	40	0	0	10	20	28	0	3	47	2	0	230	2648
5:45 PM	27	35	3	4	1	23	0	0	15	30	28	0	5	47	2	0	220	2646
5:50 PM	22	22	4	2	1	26	0	0	19	32	28	0	9	46	1	0	212	2663
5:55 PM	27	40	1	1	0	36	0	0	13	46	26	0	9	38	0	0	237	2712

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	368	408	64	4	12	484	0	0	156	444	348	0	88	484	16	0	2876
Heavy Trucks	8	8	4		4	0	0		0	4	8		0	8	0		44
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

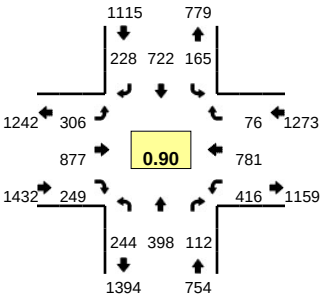
Type of peak hour being reported: Intersection Peak

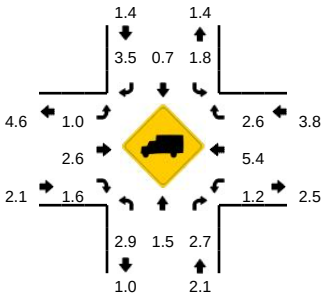
Method for determining peak hour: Total Entering Volume

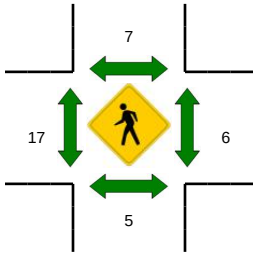
LOCATION: 3. West Ln -- Hammer Ln
CITY/STATE: Stockton, CA

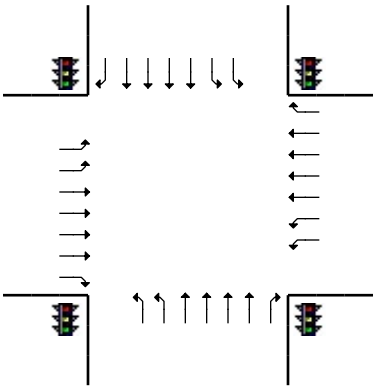
QC JOB #: 14437905
DATE: Thu, Jun 01 2017

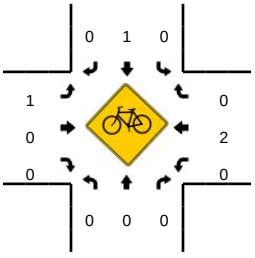
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

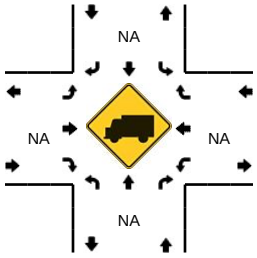


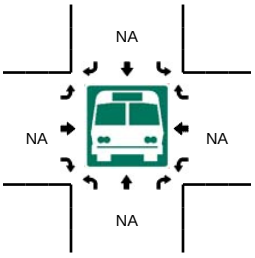












5-Min Count Period Beginning At	3. West Ln (Northbound)				3. West Ln (Southbound)				Hammer Ln (Eastbound)				Hammer Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	24	19	5	0	11	28	6	0	14	76	9	0	17	49	9	0	267	
7:05 AM	10	29	10	0	8	34	11	0	9	51	23	0	17	45	13	0	260	
7:10 AM	11	23	10	2	10	50	15	0	6	64	17	0	11	63	6	0	288	
7:15 AM	11	20	8	0	8	29	16	0	16	89	12	1	17	62	9	1	299	
7:20 AM	26	25	6	0	18	44	18	1	21	45	17	0	21	40	6	0	288	
7:25 AM	10	29	4	0	15	56	13	1	13	80	27	1	14	66	4	0	333	
7:30 AM	11	32	9	2	9	43	20	1	28	62	24	1	20	31	3	2	298	
7:35 AM	12	32	6	2	13	51	24	3	22	87	18	1	29	76	11	0	387	
7:40 AM	20	37	10	2	19	57	18	1	29	61	25	1	19	64	4	0	367	
7:45 AM	13	35	5	1	8	62	22	0	24	82	32	1	48	99	6	1	439	
7:50 AM	20	33	10	2	9	95	20	0	25	51	12	0	45	62	3	2	389	
7:55 AM	19	29	7	2	13	63	22	0	27	110	26	0	40	75	5	4	442	4057
8:00 AM	35	49	5	1	9	64	16	2	21	74	21	0	14	55	6	0	372	4162
8:05 AM	14	30	11	2	10	30	13	1	31	56	21	1	38	50	9	6	323	4225
8:10 AM	16	38	13	2	12	61	17	0	12	60	23	2	17	56	9	0	338	4275
8:15 AM	22	24	14	3	12	53	22	1	30	69	18	3	46	71	5	0	393	4369
8:20 AM	20	33	14	1	16	62	20	0	31	63	20	0	48	33	6	0	367	4448
8:25 AM	19	24	7	3	20	59	24	2	13	88	17	0	21	62	7	0	366	4481
8:30 AM	12	34	10	1	14	65	10	0	30	76	16	2	36	78	5	2	391	4574
8:35 AM	23	29	11	1	12	59	19	0	15	80	27	1	39	40	6	0	362	4549
8:40 AM	8	22	11	1	14	51	9	0	28	78	22	1	36	90	8	0	379	4561
8:45 AM	26	33	9	1	17	66	17	0	23	46	15	0	30	34	6	2	325	4447
8:50 AM	16	21	14	4	6	38	13	2	24	91	19	0	38	96	8	3	393	4451
8:55 AM	22	42	14	3	15	68	24	0	18	68	16	0	13	50	9	1	363	4372

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	208	388	88	20	120	880	256	0	304	972	280	4	532	944	56	28	5080
Heavy Trucks	12	4	0		0	8	4		0	24	8		0	52	0		112
Pedestrians		4				8				24				8			44
Bicycles	0	0	0		0	0	0		0	0	0		0	2	0		2
Railroad Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

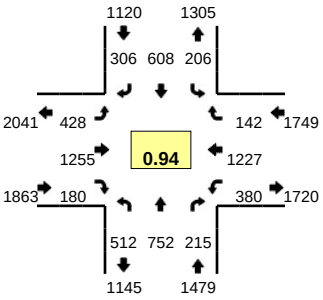
Type of peak hour being reported: Intersection Peak

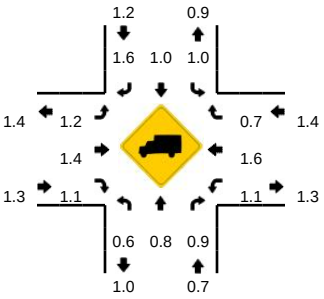
Method for determining peak hour: Total Entering Volume

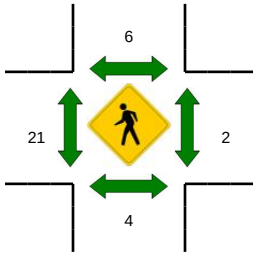
LOCATION: 3. West Ln -- Hammer Ln
CITY/STATE: Stockton, CA

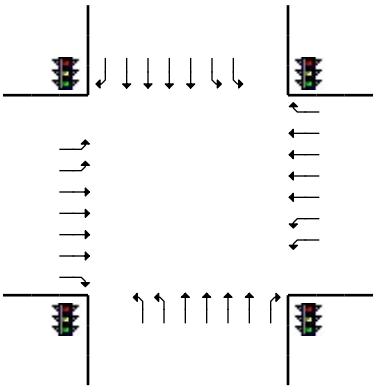
QC JOB #: 14437906
DATE: Thu, Jun 01 2017

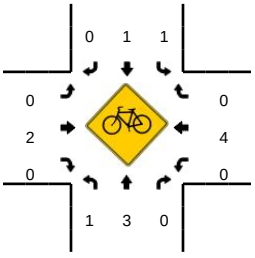
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

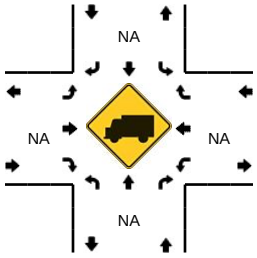


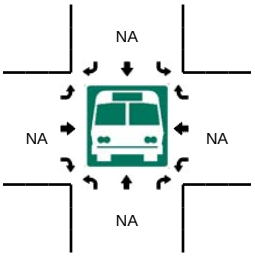












5-Min Count Period Beginning At	3. West Ln (Northbound)				3. West Ln (Southbound)				Hammer Ln (Eastbound)				Hammer Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	48	43	12	4	22	27	10	0	26	99	13	2	32	120	10	3	471	
4:05 PM	31	78	19	1	28	33	20	0	15	90	12	2	41	86	19	1	476	
4:10 PM	40	47	25	2	13	53	18	1	38	85	14	1	12	64	15	1	429	
4:15 PM	43	60	13	1	16	46	15	0	34	106	14	1	32	105	11	5	502	
4:20 PM	35	40	9	5	18	34	21	0	23	139	19	1	31	97	11	8	491	
4:25 PM	53	65	16	4	14	39	13	1	26	97	19	1	24	129	10	4	515	
4:30 PM	27	74	17	3	29	43	15	1	37	89	8	2	35	75	13	4	472	
4:35 PM	31	53	15	2	16	50	17	0	40	103	12	1	23	79	11	3	456	
4:40 PM	36	68	15	2	10	38	16	1	24	121	17	3	33	93	11	7	495	
4:45 PM	53	77	20	6	25	39	18	0	25	93	10	3	21	105	11	4	510	
4:50 PM	28	57	22	1	18	60	11	0	43	99	15	2	13	85	11	4	469	
4:55 PM	38	54	19	2	17	40	17	1	38	120	18	2	25	66	17	9	483	5769
5:00 PM	29	55	14	2	14	47	12	0	24	98	13	2	22	120	12	8	472	5770
5:05 PM	42	70	14	1	12	37	18	1	33	117	10	5	21	82	15	4	482	5776
5:10 PM	46	80	22	1	22	57	25	0	32	106	12	2	26	110	17	0	558	5905
5:15 PM	42	54	17	3	13	52	22	0	14	135	9	1	35	110	6	0	513	5916
5:20 PM	45	73	25	1	18	76	36	1	40	94	13	2	21	88	13	4	550	5975
5:25 PM	43	60	15	4	21	71	35	3	54	109	14	2	28	116	14	7	596	6056
5:30 PM	40	55	17	5	10	47	32	1	28	110	15	1	31	94	11	7	504	6088
5:35 PM	55	79	26	4	19	33	28	0	33	81	17	2	26	112	18	6	539	6171
5:40 PM	41	71	19	2	19	48	34	1	42	97	13	3	23	89	11	1	514	6190
5:45 PM	34	58	15	0	14	52	23	0	44	103	24	0	35	84	7	4	497	6177
5:50 PM	24	45	19	0	27	41	14	1	29	121	18	2	34	81	9	7	472	6180
5:55 PM	42	52	12	6	9	47	27	0	30	84	22	3	26	141	9	4	514	6211

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	520	748	228	32	208	796	372	16	432	1352	144	20	336	1256	132	44	6636
Heavy Trucks	4	4	0		0	12	12		8	16	4		8	8	0		76
Pedestrians		4				4				16				0			24
Bicycles	0	1	0		0	0	0		0	0	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 4. Hammer Lane -- Holman Road

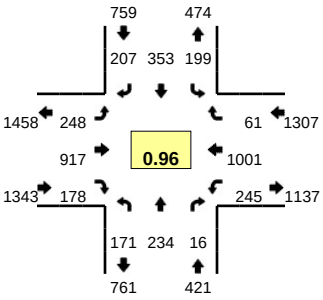
CITY/STATE: Stockton, CA

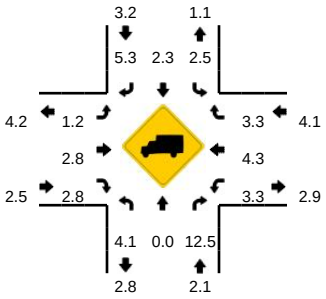
QC JOB #: 14437907

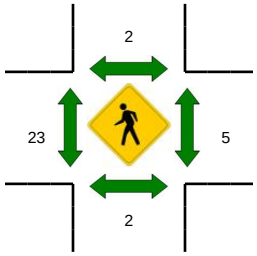
DATE: Thu, Jun 01 2017

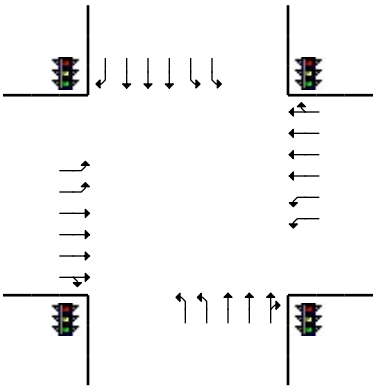
Peak-Hour: 7:30 AM -- 8:30 AM

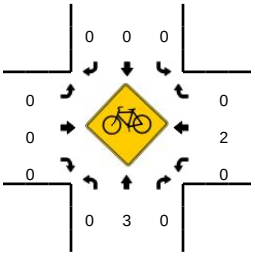
Peak 15-Min: 7:40 AM -- 7:55 AM

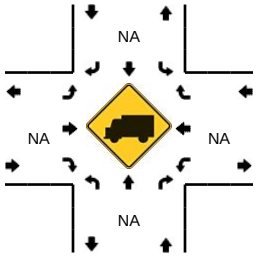


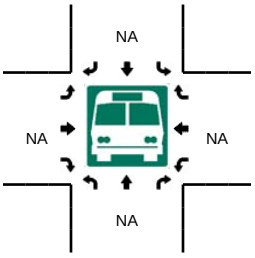












5-Min Count Period Beginning At	4. Hammer Lane (Northbound)				4. Hammer Lane (Southbound)				Holman Road (Eastbound)				Holman Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	18	9	3	0	15	26	12	2	4	51	36	4	18	39	2	0	239	
7:05 AM	30	9	1	0	12	22	12	0	10	67	22	7	15	51	5	1	264	
7:10 AM	28	13	1	0	13	18	15	0	4	60	34	2	13	42	6	0	249	
7:15 AM	19	14	1	1	9	12	10	1	10	74	31	7	20	65	4	0	278	
7:20 AM	22	13	1	0	8	25	9	0	7	73	21	8	14	70	2	1	274	
7:25 AM	18	23	4	1	14	33	6	0	17	57	25	10	22	51	9	1	291	
7:30 AM	15	21	0	0	13	23	12	0	10	75	13	5	16	82	13	0	298	
7:35 AM	13	20	1	0	16	23	11	1	10	104	18	5	18	95	2	0	337	
7:40 AM	10	18	2	1	11	28	32	4	13	80	13	6	24	87	6	5	340	
7:45 AM	19	19	0	1	16	31	27	1	9	62	6	7	20	69	1	3	291	
7:50 AM	12	15	1	1	24	30	18	2	10	99	22	7	17	102	3	2	365	
7:55 AM	9	26	1	1	10	37	16	0	20	72	22	4	23	90	3	4	338	3564
8:00 AM	14	11	1	0	13	22	18	1	14	56	19	6	17	63	4	2	261	3586
8:05 AM	13	21	1	1	17	33	11	2	12	81	13	6	24	98	3	1	337	3659
8:10 AM	11	18	3	1	11	27	20	1	12	80	17	8	20	107	8	1	345	3755
8:15 AM	14	24	2	0	17	30	14	0	14	63	13	11	18	61	4	0	285	3762
8:20 AM	15	23	3	0	20	39	14	1	24	70	13	8	16	48	7	2	303	3791
8:25 AM	20	18	1	0	15	30	14	3	15	75	9	12	11	99	7	1	330	3830
8:30 AM	12	16	3	0	11	21	19	1	12	65	10	16	20	81	6	3	296	3828
8:35 AM	22	21	0	0	23	30	17	0	14	74	12	14	17	83	1	7	335	3826
8:40 AM	19	10	0	0	13	32	18	2	19	60	14	9	27	55	7	0	285	3771
8:45 AM	21	15	1	1	9	24	16	0	12	73	18	8	18	87	5	1	309	3789
8:50 AM	11	25	4	0	14	23	12	0	14	47	11	11	17	73	6	2	270	3694
8:55 AM	24	21	1	1	22	18	14	0	6	47	14	6	17	50	3	1	245	3601

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	208	12	12	204	356	308	28	128	964	164	80	244	1032	40	40	3984
Heavy Trucks	12	0	0		8	16	24		0	36	0		4	24	4		128
Pedestrians		0				4				4				4			12
Bicycles	0	2	0		0	0	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

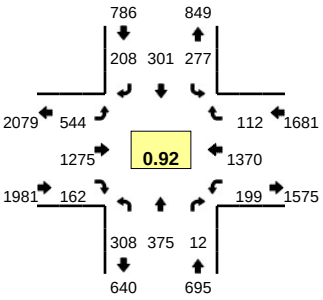
LOCATION: 4. Hammer Lane -- Holman Road

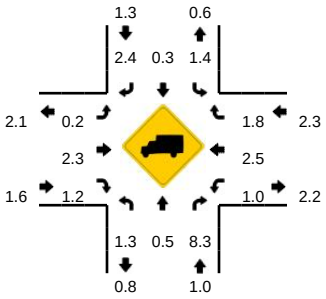
QC JOB #: 14437908

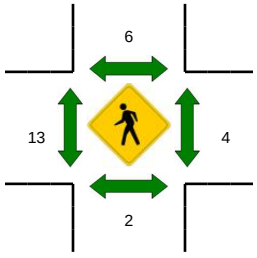
CITY/STATE: Stockton, CA

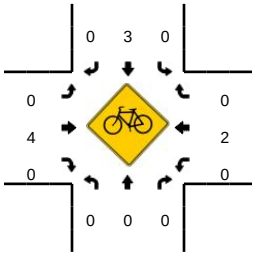
DATE: Thu, Jun 01 2017

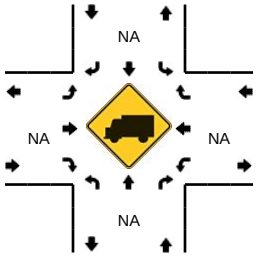
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

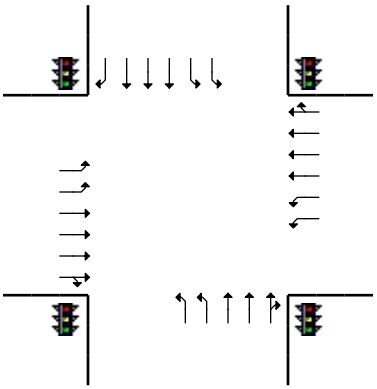


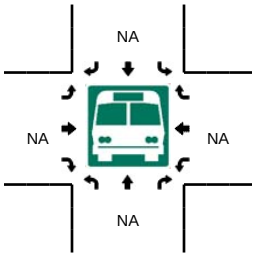












5-Min Count Period Beginning At	4. Hammer Lane (Northbound)				4. Hammer Lane (Southbound)				Holman Road (Eastbound)				Holman Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	14	0	0	31	24	13	1	37	90	17	15	18	85	3	1	364	
4:05 PM	29	43	3	1	17	27	11	1	21	96	16	12	17	87	11	0	392	
4:10 PM	17	28	0	2	17	35	23	5	25	118	16	11	11	107	7	2	424	
4:15 PM	37	41	1	1	20	16	15	1	19	99	16	15	21	140	16	1	459	
4:20 PM	25	26	5	0	27	21	17	3	22	99	20	18	10	117	7	2	419	
4:25 PM	27	36	4	1	18	18	17	0	42	95	17	11	19	98	9	1	413	
4:30 PM	30	21	2	0	19	20	13	5	26	118	13	11	7	76	10	2	373	
4:35 PM	24	32	1	0	20	18	14	2	24	83	12	20	20	109	13	2	394	
4:40 PM	21	36	3	1	26	26	16	0	25	128	20	10	13	97	5	1	428	
4:45 PM	38	22	0	0	16	15	10	3	23	62	13	20	10	120	6	1	359	
4:50 PM	24	25	3	0	24	32	24	0	28	121	14	18	7	68	7	0	395	
4:55 PM	26	45	0	1	12	26	17	0	24	112	10	18	14	133	14	2	454	4874
5:00 PM	24	22	0	1	24	24	15	2	23	107	14	11	14	92	7	2	382	4892
5:05 PM	27	44	0	0	15	30	9	4	24	106	18	15	14	117	10	7	440	4940
5:10 PM	22	37	0	1	30	35	17	2	17	93	9	14	11	116	10	2	416	4932
5:15 PM	32	37	1	2	21	22	10	3	39	132	8	23	19	131	10	1	491	4964
5:20 PM	16	28	2	0	35	26	28	1	39	142	20	21	18	106	3	1	486	5031
5:25 PM	38	43	1	0	18	19	13	1	40	68	12	14	15	114	12	4	412	5030
5:30 PM	22	15	3	0	22	20	8	2	31	114	13	11	17	116	12	3	409	5066
5:35 PM	22	31	2	1	20	21	17	1	26	109	15	14	9	120	10	2	420	5092
5:40 PM	23	19	2	0	21	38	28	0	32	111	18	23	17	95	9	2	438	5102
5:45 PM	27	31	1	0	15	17	24	0	19	83	10	14	9	129	9	2	390	5133
5:50 PM	23	23	0	0	27	23	22	1	31	98	15	21	14	101	6	0	405	5143
5:55 PM	36	40	4	1	14	20	14	2	28	85	10	12	10	113	13	1	403	5092

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	280	408	12	12	344	332	220	24	380	1468	148	232	192	1412	92	16	5572
Heavy Trucks	4	4	0		4	0	4		0	36	0		0	28	0		80
Pedestrians		4				8				24				4			40
Bicycles	0	0	0		0	3	0		0	3	0		0	2	0		8
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 5. Thorton Rd -- Lower Sacramento Rd

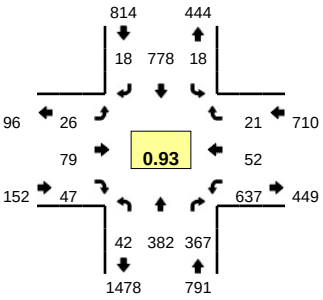
CITY/STATE: Stockton, CA

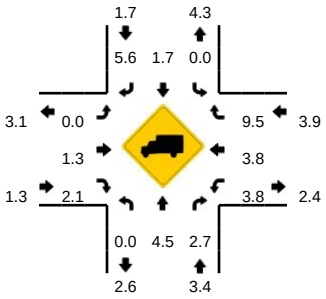
QC JOB #: 14437909

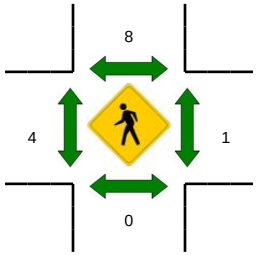
DATE: Thu, Jun 01 2017

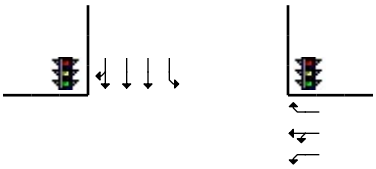
Peak-Hour: 7:45 AM -- 8:45 AM

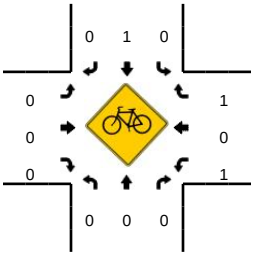
Peak 15-Min: 8:05 AM -- 8:20 AM

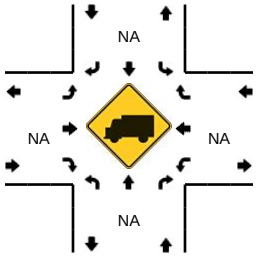


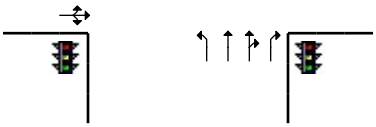


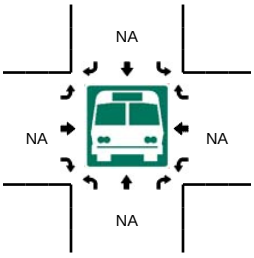












5-Min Count Period Beginning At	5. Thorton Rd (Northbound)				5. Thorton Rd (Southbound)				Lower Sacramento Rd (Eastbound)				Lower Sacramento Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	15	14	1	0	39	0	2	0	3	1	0	21	2	1	0	101	
7:05 AM	1	15	14	0	0	44	0	1	2	4	1	0	27	4	2	0	115	
7:10 AM	1	10	24	1	0	39	1	1	1	1	3	0	34	3	0	0	119	
7:15 AM	0	12	20	1	0	50	0	0	1	4	1	0	37	1	0	0	127	
7:20 AM	0	12	19	0	0	66	1	1	2	6	1	0	36	2	1	0	147	
7:25 AM	1	17	27	1	1	47	0	1	0	6	3	0	49	5	0	0	158	
7:30 AM	0	20	24	2	0	47	1	3	0	6	4	0	66	6	0	0	179	
7:35 AM	1	14	22	2	0	65	1	1	1	5	7	0	44	4	1	0	168	
7:40 AM	1	33	23	2	1	66	0	1	3	4	1	0	37	3	0	0	175	
7:45 AM	4	23	33	0	0	65	0	2	4	8	1	0	70	8	2	0	220	
7:50 AM	1	40	25	3	0	74	1	1	1	6	6	0	62	6	0	0	226	
7:55 AM	1	30	23	1	0	77	3	1	2	4	1	0	24	3	0	0	170	1905
8:00 AM	3	19	18	1	0	73	0	2	0	3	3	0	24	1	3	0	150	1954
8:05 AM	1	34	43	1	0	48	0	2	5	12	5	0	77	8	2	0	238	2077
8:10 AM	3	33	32	2	0	55	2	3	2	8	10	0	61	6	1	0	218	2176
8:15 AM	1	33	28	1	0	79	4	1	2	9	4	0	40	5	3	0	210	2259
8:20 AM	2	40	31	1	1	49	1	1	4	14	5	0	63	4	6	0	222	2334
8:25 AM	3	31	34	1	0	67	3	0	4	7	3	0	71	3	1	0	228	2404
8:30 AM	0	38	30	1	1	63	1	1	1	4	3	0	39	3	0	0	185	2410
8:35 AM	2	30	27	0	1	65	2	1	1	3	3	0	52	1	1	0	189	2431
8:40 AM	5	31	43	4	0	63	1	0	0	1	3	0	54	4	2	0	211	2467
8:45 AM	1	16	35	3	0	60	2	3	0	2	3	0	44	1	2	0	172	2419
8:50 AM	5	32	22	1	0	64	0	1	2	7	3	0	32	5	1	0	175	2368
8:55 AM	3	26	31	0	0	61	0	1	0	1	4	0	59	2	3	0	191	2389

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	400	412	16	0	728	24	24	36	116	76	0	712	76	24	0	2664
Heavy Trucks	0	20	4		0	20	4		0	0	0		24	8	0		80
Pedestrians		0				8				4				0			12
Bicycles	0	0	0		0	1	0		0	0	0		0	0	1		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 5. Thorton Rd -- Lower Sacramento Rd

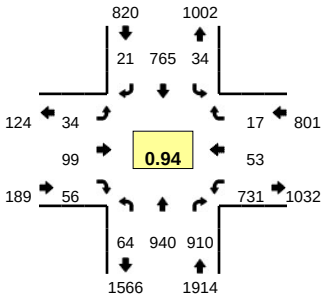
CITY/STATE: Stockton, CA

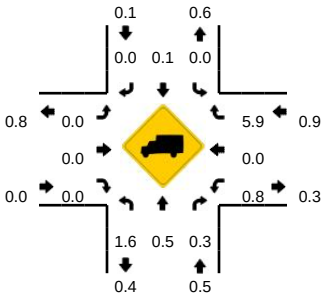
QC JOB #: 14437910

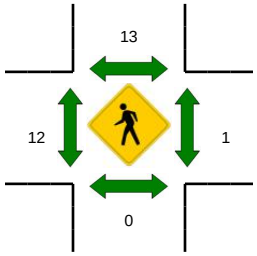
DATE: Thu, Jun 01 2017

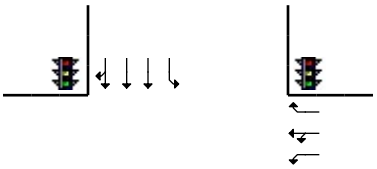
Peak-Hour: 4:50 PM -- 5:50 PM

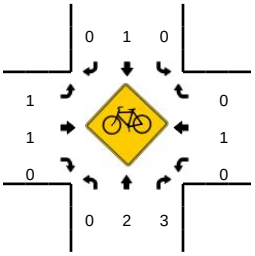
Peak 15-Min: 5:25 PM -- 5:40 PM

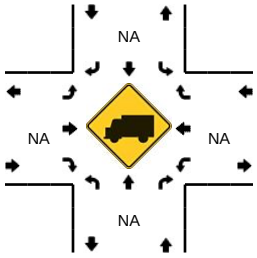


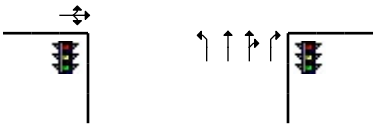


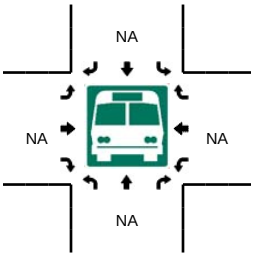












5-Min Count Period Beginning At	5. Thorton Rd (Northbound)				5. Thorton Rd (Southbound)				Lower Sacramento Rd (Eastbound)				Lower Sacramento Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	72	78	1	2	54	2	0	0	7	5	0	42	0	1	0	266	
4:05 PM	4	71	60	3	2	68	3	1	4	7	2	0	63	1	0	0	289	
4:10 PM	3	74	83	3	1	42	2	1	0	4	7	0	50	2	0	0	272	
4:15 PM	3	73	71	1	1	46	2	2	4	2	3	0	52	1	2	0	263	
4:20 PM	2	74	88	3	3	57	1	1	2	4	4	0	51	5	0	0	295	
4:25 PM	4	69	71	1	0	58	4	0	3	7	3	0	60	5	1	0	286	
4:30 PM	2	69	69	2	0	43	3	0	2	6	1	0	53	2	1	0	253	
4:35 PM	5	58	64	3	0	51	4	1	2	3	1	0	52	1	2	0	247	
4:40 PM	5	64	79	1	0	61	0	4	6	3	7	0	43	6	1	0	280	
4:45 PM	1	58	72	0	2	51	3	0	2	10	4	0	72	5	1	0	281	
4:50 PM	6	88	72	1	2	75	3	1	0	8	4	0	50	6	0	0	316	
4:55 PM	7	58	84	0	5	71	2	3	4	10	5	0	48	2	0	0	299	3347
5:00 PM	5	72	71	3	1	54	0	1	4	7	4	0	41	1	2	0	266	3347
5:05 PM	3	74	65	1	1	47	0	0	3	10	0	0	72	3	2	0	281	3339
5:10 PM	4	94	90	3	0	66	2	0	2	10	3	0	35	6	3	0	318	3385
5:15 PM	3	64	71	1	4	55	2	2	2	8	6	0	80	5	1	0	304	3426
5:20 PM	5	101	69	1	0	61	2	1	2	3	5	0	56	3	1	0	310	3441
5:25 PM	1	75	89	0	1	66	1	0	4	14	8	0	79	5	2	0	345	3500
5:30 PM	7	89	77	1	2	83	2	0	4	4	5	0	55	1	1	0	331	3578
5:35 PM	3	60	78	1	4	60	3	1	3	8	9	0	73	10	2	0	315	3646
5:40 PM	3	96	84	2	1	64	4	1	3	5	2	0	52	6	2	0	325	3691
5:45 PM	3	69	60	0	2	63	0	1	3	12	5	0	90	5	1	0	314	3724
5:50 PM	3	78	71	3	2	76	4	1	3	5	8	0	50	2	0	0	306	3714
5:55 PM	2	46	45	3	0	51	3	0	1	6	4	0	98	5	6	0	270	3685

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	896	976	8	28	836	24	4	44	104	88	0	828	64	20	0	3964
Heavy Trucks	0	4	4		0	0	0		0	0	0		8	0	0		16
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

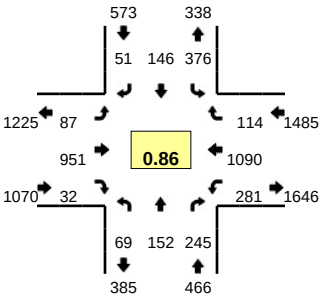
Type of peak hour being reported: Intersection Peak

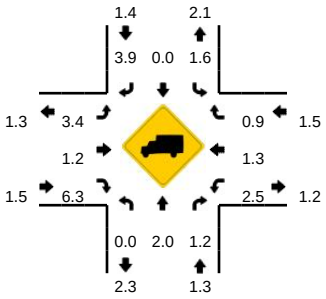
Method for determining peak hour: Total Entering Volume

LOCATION: 6. Feather River Dr -- March Ln
CITY/STATE: Stockton, CA

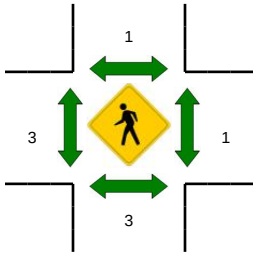
QC JOB #: 14437911
DATE: Thu, Jun 01 2017

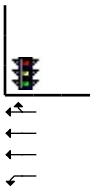
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

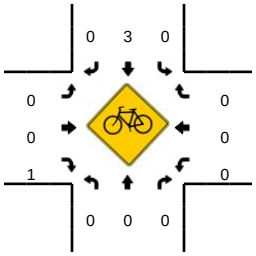


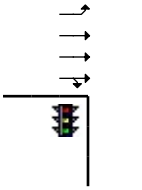


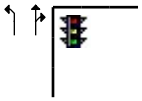
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

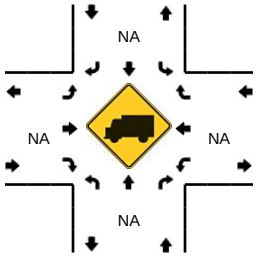


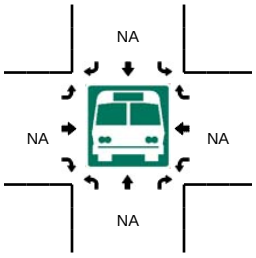












5-Min Count Period Beginning At	6. Feather River Dr (Northbound)				6. Feather River Dr (Southbound)				March Ln (Eastbound)				March Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	4	7	0	31	1	2	0	2	36	1	0	2	26	3	4	120	
7:05 AM	1	8	11	0	30	2	3	0	0	54	1	0	11	53	5	8	187	
7:10 AM	1	7	14	0	29	2	4	0	1	45	2	0	6	50	9	4	174	
7:15 AM	3	5	10	0	44	6	6	0	5	44	0	1	6	55	4	4	193	
7:20 AM	3	5	12	0	38	6	8	0	3	82	0	0	4	41	5	2	209	
7:25 AM	6	14	14	0	20	7	3	0	5	61	1	2	7	68	7	5	220	
7:30 AM	4	9	19	0	40	12	4	0	2	60	4	3	20	69	5	4	255	
7:35 AM	5	14	26	0	33	11	6	0	5	68	2	1	21	69	7	6	274	
7:40 AM	5	9	22	0	25	17	3	0	6	66	3	2	26	100	3	3	290	
7:45 AM	7	16	28	0	31	18	2	0	7	114	2	1	20	119	7	6	378	
7:50 AM	14	22	42	0	24	14	8	0	5	73	3	1	15	113	8	5	347	
7:55 AM	8	14	19	0	33	17	5	0	9	76	6	1	13	102	11	6	320	2967
8:00 AM	8	17	21	0	28	8	6	0	6	83	3	0	23	119	14	4	340	3187
8:05 AM	3	13	26	0	35	11	5	0	12	83	1	2	21	89	9	11	321	3321
8:10 AM	1	10	8	0	34	8	3	0	6	105	3	0	15	81	18	14	306	3453
8:15 AM	3	8	13	0	46	13	3	0	3	66	3	0	13	62	14	5	252	3512
8:20 AM	5	6	7	0	27	10	3	0	6	96	1	2	13	99	11	5	291	3594
8:25 AM	8	5	16	0	42	6	8	0	4	40	3	1	5	67	6	7	218	3592
8:30 AM	6	12	8	0	21	2	1	0	5	65	1	0	9	84	11	7	232	3569
8:35 AM	0	1	4	0	29	8	5	0	6	79	1	0	2	81	11	7	234	3529
8:40 AM	4	5	5	0	32	12	3	0	2	53	1	0	5	57	10	3	192	3431
8:45 AM	9	5	7	0	29	5	3	0	0	55	0	0	9	62	7	10	201	3254
8:50 AM	7	2	5	0	23	3	5	0	4	56	4	0	8	69	11	7	204	3111
8:55 AM	3	5	9	0	33	5	5	0	1	61	1	2	4	80	10	10	229	3020

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	116	208	356	0	352	196	60	0	84	1052	44	12	192	1336	104	68	4180
Heavy Trucks	0	8	4		0	0	0		0	4	0		12	8	0		36
Pedestrians		4				0				12				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

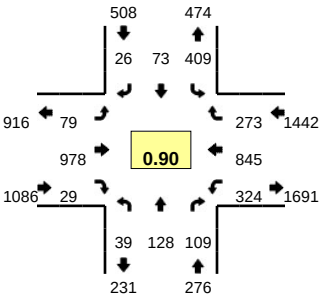
Method for determining peak hour: Total Entering Volume

LOCATION: 6. Feather River Dr -- March Ln

QC JOB #: 14437912

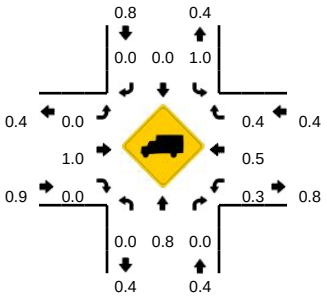
CITY/STATE: Stockton, CA

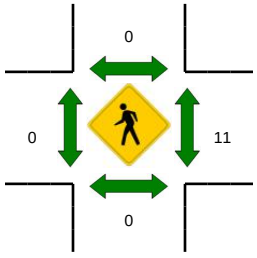
DATE: Thu, Jun 01 2017

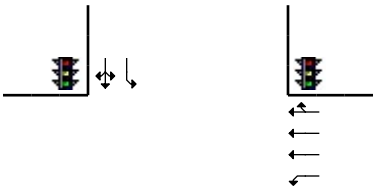


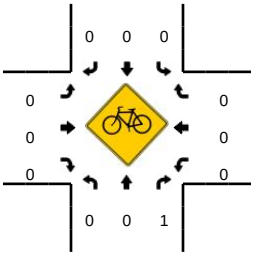
Peak-Hour: 4:45 PM -- 5:45 PM

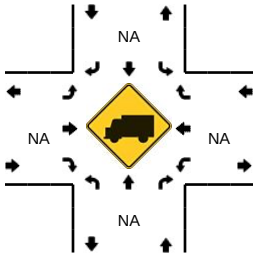
Peak 15-Min: 5:05 PM -- 5:20 PM

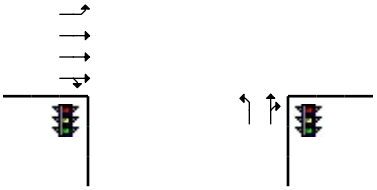


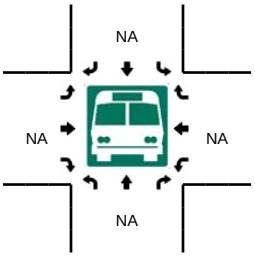












5-Min Count Period Beginning At	6. Feather River Dr (Northbound)				6. Feather River Dr (Southbound)				March Ln (Eastbound)				March Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	8	2	0	44	5	5	0	0	73	0	0	4	51	11	11	217	
4:05 PM	2	7	8	0	32	7	1	0	6	89	1	0	8	71	28	13	273	
4:10 PM	1	6	7	0	45	4	3	0	4	59	2	0	10	56	19	17	233	
4:15 PM	2	5	8	0	30	5	5	0	3	92	6	0	5	66	30	20	277	
4:20 PM	2	7	9	0	52	5	1	0	15	80	1	0	11	49	13	19	264	
4:25 PM	3	17	10	0	25	1	5	0	4	89	3	1	12	79	23	20	292	
4:30 PM	3	7	9	0	36	7	2	0	7	48	3	0	9	45	29	22	227	
4:35 PM	3	16	3	0	20	0	5	0	4	100	4	0	6	71	15	14	261	
4:40 PM	1	6	15	0	42	4	8	0	10	59	1	0	5	45	13	24	233	
4:45 PM	8	9	9	0	27	7	1	0	4	95	3	2	10	74	22	19	290	
4:50 PM	2	8	7	0	29	9	2	0	5	67	1	1	8	72	22	18	251	
4:55 PM	2	14	7	0	25	6	3	0	6	99	2	0	7	77	16	20	284	3102
5:00 PM	5	14	18	0	44	5	1	0	5	65	3	0	10	54	19	13	256	3141
5:05 PM	3	13	7	0	28	5	1	0	8	119	2	0	13	79	35	18	331	3199
5:10 PM	2	14	11	0	43	6	3	0	12	69	5	0	11	57	22	14	269	3235
5:15 PM	7	13	7	0	31	4	0	0	6	115	3	0	13	86	21	18	324	3282
5:20 PM	0	12	5	0	34	6	3	0	8	75	3	1	9	51	20	20	247	3265
5:25 PM	0	12	13	0	25	6	2	0	3	87	3	0	11	69	23	16	270	3243
5:30 PM	3	5	11	0	43	7	7	0	5	54	1	1	19	61	32	12	261	3277
5:35 PM	4	10	7	0	31	4	1	0	3	86	3	1	7	91	26	11	285	3301
5:40 PM	3	4	7	0	49	8	2	0	8	47	0	0	11	74	15	16	244	3312
5:45 PM	6	14	7	0	22	2	4	0	0	80	4	0	14	91	25	8	277	3299
5:50 PM	4	9	5	0	44	8	1	0	1	53	2	0	13	82	15	14	251	3299
5:55 PM	1	6	3	0	30	3	1	0	7	70	7	1	11	97	20	13	270	3285

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	160	100	0	408	60	16	0	104	1212	40	0	148	888	312	200	3696
Heavy Trucks	0	0	0		4	0	0		0	8	0		4	8	0		24
Pedestrians		0				0				0				24			24
Bicycles	0	0	1		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

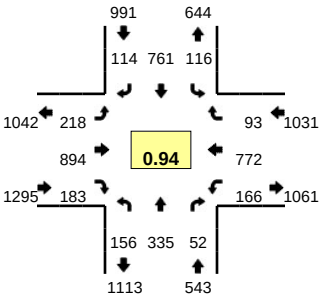
Type of peak hour being reported: Intersection Peak

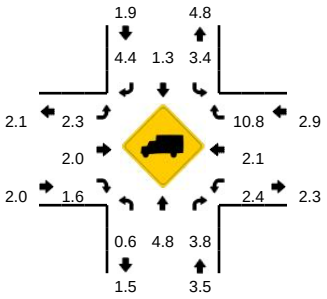
Method for determining peak hour: Total Entering Volume

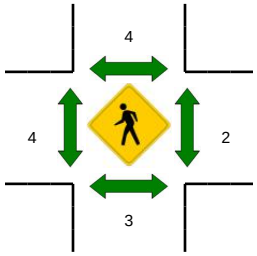
LOCATION: 7. Pacific Ave -- March Ln
CITY/STATE: San Joaquin, CA

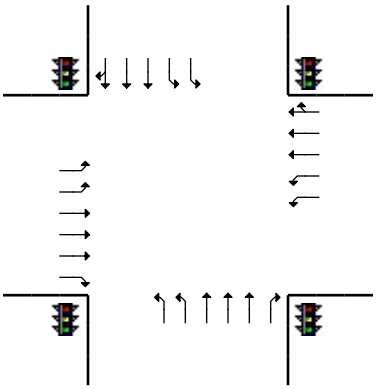
QC JOB #: 14437913
DATE: Thu, Jun 01 2017

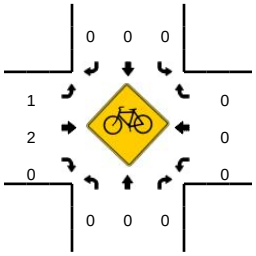
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

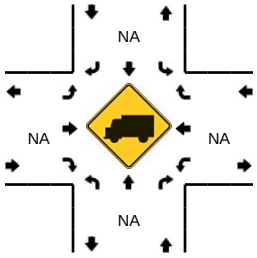


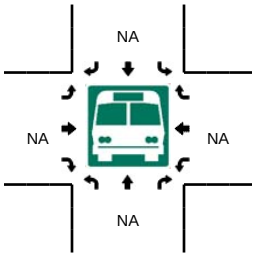












5-Min Count Period Beginning At	7. Pacific Ave (Northbound)				7. Pacific Ave (Southbound)				March Ln (Eastbound)				March Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	9	2	1	1	34	3	0	11	34	9	0	12	51	4	0	179	
7:05 AM	9	20	1	0	2	42	6	0	15	51	8	0	11	29	4	1	199	
7:10 AM	7	10	2	0	10	42	4	0	10	46	10	0	11	48	4	0	204	
7:15 AM	2	15	1	2	1	56	2	0	10	30	10	0	13	47	2	0	191	
7:20 AM	9	29	1	0	8	70	10	0	12	69	12	0	11	48	0	0	279	
7:25 AM	8	20	2	1	7	43	2	0	18	75	22	0	6	40	6	0	250	
7:30 AM	14	21	2	0	5	86	5	0	5	68	19	0	11	63	1	0	300	
7:35 AM	13	40	3	1	5	83	12	0	18	44	17	0	15	59	7	0	317	
7:40 AM	15	31	2	0	12	82	4	0	17	78	22	0	10	43	9	0	325	
7:45 AM	8	28	5	1	4	37	5	0	17	95	25	1	13	84	7	0	330	
7:50 AM	19	21	5	0	8	89	9	0	19	56	11	0	16	94	11	0	358	
7:55 AM	14	32	4	1	11	63	7	0	21	83	12	0	27	53	9	0	337	3269
8:00 AM	20	29	4	0	10	65	7	0	26	76	12	1	12	53	5	0	320	3410
8:05 AM	10	25	7	0	8	33	7	0	10	85	15	1	8	66	4	0	279	3490
8:10 AM	11	31	5	0	12	86	13	0	16	54	13	0	17	68	6	0	332	3618
8:15 AM	10	32	3	0	12	55	13	0	25	86	19	0	7	51	4	0	317	3744
8:20 AM	11	26	5	0	9	63	14	0	24	94	17	0	14	66	11	0	354	3819
8:25 AM	13	14	4	0	6	51	12	0	9	76	12	0	12	64	9	0	282	3851
8:30 AM	9	26	5	0	18	54	11	1	13	67	8	0	15	71	11	0	309	3860
8:35 AM	13	26	2	0	10	65	14	0	21	74	18	1	10	53	9	0	316	3859
8:40 AM	6	21	7	0	9	30	18	1	20	80	12	1	19	81	10	0	315	3849
8:45 AM	8	25	2	0	12	47	12	0	15	59	5	0	20	75	7	0	287	3806
8:50 AM	17	29	8	0	16	61	13	1	22	76	12	1	19	63	10	0	348	3796
8:55 AM	14	39	3	0	7	37	8	0	25	90	16	0	11	65	7	0	322	3781

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	324	56	8	92	756	84	0	228	936	192	4	224	924	108	0	4100
Heavy Trucks	0	16	0		4	12	4		0	16	0		0	16	8		76
Pedestrians		8				4				4				4			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

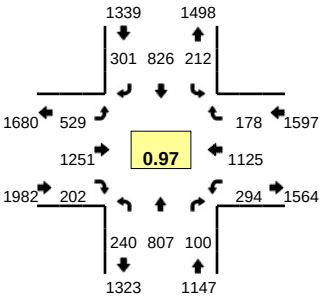
Type of peak hour being reported: Intersection Peak

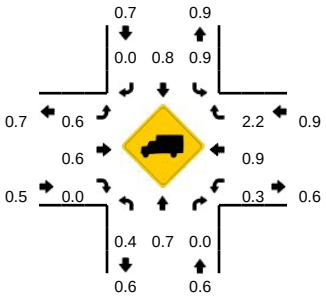
Method for determining peak hour: Total Entering Volume

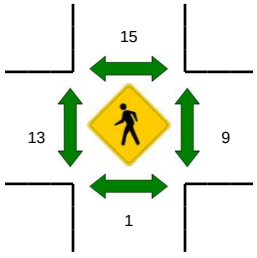
LOCATION: 7. Pacific Ave -- March Ln
CITY/STATE: San Joaquin, CA

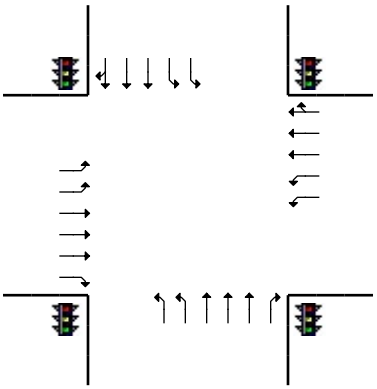
QC JOB #: 14437914
DATE: Thu, Jun 01 2017

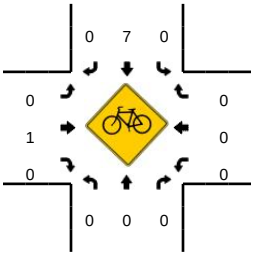
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

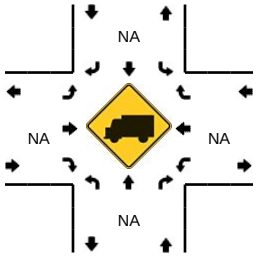


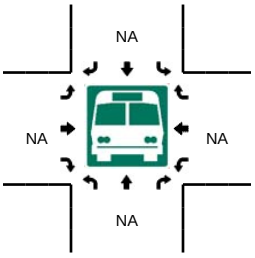












5-Min Count Period Beginning At	7. Pacific Ave (Northbound)				7. Pacific Ave (Southbound)				March Ln (Eastbound)				March Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	19	53	12	5	16	46	23	0	40	112	9	1	17	73	7	0	433	
4:05 PM	29	40	10	1	23	58	23	0	38	74	13	2	34	119	14	1	479	
4:10 PM	13	62	12	0	11	41	21	0	56	120	25	2	18	84	8	0	473	
4:15 PM	27	39	3	2	16	80	25	1	30	78	10	0	28	124	10	0	473	
4:20 PM	17	53	8	2	16	35	23	2	41	129	18	5	18	82	11	0	460	
4:25 PM	27	42	5	6	21	63	32	1	27	69	15	1	29	112	13	0	463	
4:30 PM	21	60	10	0	17	46	25	0	64	135	13	4	12	82	7	0	496	
4:35 PM	24	41	2	3	16	72	29	0	39	81	17	1	35	99	15	2	476	
4:40 PM	17	71	7	0	14	48	30	0	55	112	10	0	19	74	11	0	468	
4:45 PM	20	70	6	1	20	62	24	1	37	81	12	1	18	130	9	0	492	
4:50 PM	22	72	12	1	13	49	17	0	50	140	11	3	15	74	8	1	488	
4:55 PM	16	60	7	1	20	78	32	1	34	85	23	0	22	109	15	0	503	5704
5:00 PM	17	75	12	2	14	54	25	1	49	117	17	3	12	75	22	0	495	5766
5:05 PM	16	56	11	0	26	91	31	0	32	80	13	0	29	102	30	0	517	5804
5:10 PM	20	88	5	0	16	61	19	0	52	138	21	1	11	69	11	0	512	5843
5:15 PM	27	58	10	1	27	77	35	0	32	96	22	0	31	104	15	0	535	5905
5:20 PM	16	93	8	0	13	46	19	0	48	123	13	5	17	85	7	0	493	5938
5:25 PM	31	58	6	0	20	70	32	2	36	78	11	0	34	121	18	1	518	5993
5:30 PM	10	76	6	0	11	59	21	0	50	125	19	3	22	85	9	1	497	5994
5:35 PM	20	52	6	1	23	101	16	0	34	74	16	1	40	103	19	0	506	6024
5:40 PM	19	79	7	0	8	60	22	1	55	120	21	4	19	72	7	3	497	6053
5:45 PM	19	40	10	1	16	80	32	0	36	75	15	1	36	126	17	0	504	6065
5:50 PM	12	56	8	0	13	65	17	1	63	89	13	1	22	79	14	0	453	6030
5:55 PM	14	37	7	2	10	85	30	1	35	57	17	2	33	119	13	2	464	5991

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	252	808	104	4	276	916	340	0	464	1256	224	4	284	1100	224	0	6256
Heavy Trucks	0	4	0		4	12	0		0	4	0		4	8	4		40
Pedestrians		0				8				4				12			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 8. Pershing Ave -- Country Club Blvd

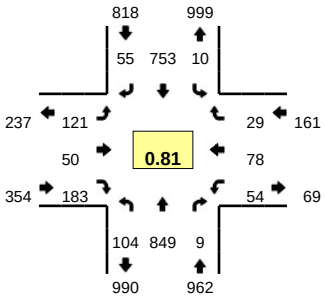
CITY/STATE: San Joaquin, CA

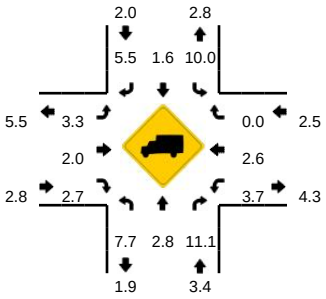
QC JOB #: 14437915

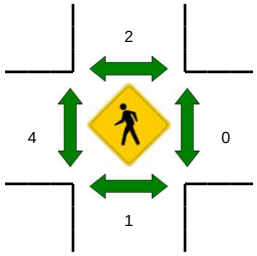
DATE: Thu, Jun 01 2017

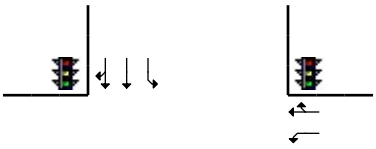
Peak-Hour: 7:15 AM -- 8:15 AM

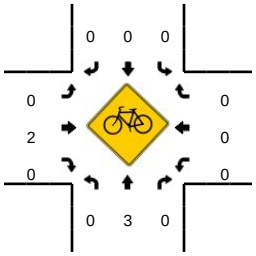
Peak 15-Min: 7:45 AM -- 8:00 AM

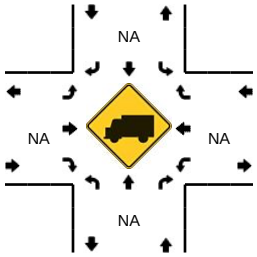


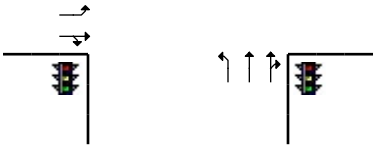


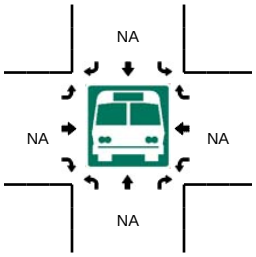












5-Min Count Period Beginning At	8. Pershing Ave (Northbound)				8. Pershing Ave (Southbound)				Country Club Blvd (Eastbound)				Country Club Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	60	1	0	0	34	1	0	10	5	9	0	4	3	2	0	130	
7:05 AM	2	48	0	0	0	49	2	0	9	1	9	0	3	4	1	0	128	
7:10 AM	8	75	0	0	1	47	5	0	13	2	5	0	2	3	1	0	162	
7:15 AM	6	72	0	0	1	61	4	0	13	1	9	0	1	4	1	0	173	
7:20 AM	6	51	0	0	0	54	5	0	9	1	10	0	7	6	1	0	150	
7:25 AM	12	64	0	0	1	54	3	0	7	2	11	0	6	5	0	0	165	
7:30 AM	13	66	2	0	1	52	5	0	6	5	16	0	4	4	3	0	177	
7:35 AM	5	68	1	0	1	74	2	0	12	3	9	0	3	6	3	0	187	
7:40 AM	12	81	1	0	0	59	4	0	12	6	24	0	4	8	7	0	218	
7:45 AM	9	79	1	0	0	87	5	0	10	8	23	0	9	4	6	0	241	
7:50 AM	10	97	1	0	0	72	7	0	12	4	20	0	4	13	3	0	243	
7:55 AM	7	77	1	0	1	81	7	0	9	5	22	0	4	6	2	0	222	2196
8:00 AM	11	57	1	0	3	55	2	0	9	6	16	0	2	11	2	0	175	2241
8:05 AM	7	62	1	0	1	48	5	0	14	6	12	0	7	8	1	0	172	2285
8:10 AM	6	75	0	0	1	56	6	0	8	3	11	0	3	3	0	0	172	2295
8:15 AM	5	56	0	0	0	47	1	0	12	9	7	0	7	6	2	0	152	2274
8:20 AM	2	69	0	0	2	58	6	0	8	5	8	0	2	6	0	0	166	2290
8:25 AM	12	67	2	0	1	51	3	0	2	3	13	0	0	2	2	0	158	2283
8:30 AM	5	53	0	0	4	53	8	0	9	0	10	0	3	7	2	0	154	2260
8:35 AM	6	70	3	0	3	47	3	0	13	8	13	0	3	3	2	0	174	2247
8:40 AM	9	71	2	0	1	50	5	0	7	5	10	0	3	4	1	0	168	2197
8:45 AM	8	69	2	0	2	37	3	0	8	3	10	0	1	2	2	0	147	2103
8:50 AM	9	58	0	0	1	30	5	0	9	5	15	0	2	6	0	0	140	2000
8:55 AM	8	59	1	0	2	26	8	0	7	8	8	0	3	3	1	0	134	1912

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	1012	12	0	4	960	76	0	124	68	260	0	68	92	44	0	2824
Heavy Trucks	12	44	4		0	12	8		8	0	8		4	8	0		108
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 8. Pershing Ave -- Country Club Blvd

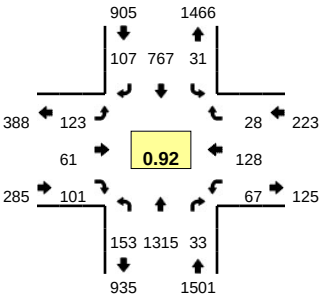
CITY/STATE: San Joaquin, CA

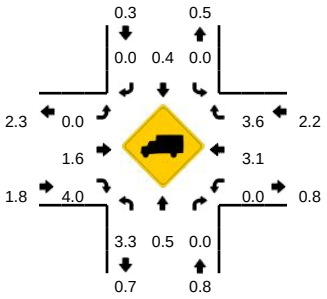
QC JOB #: 14437916

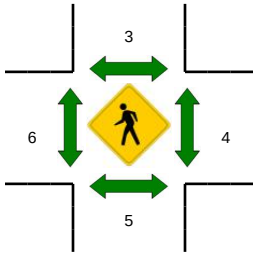
DATE: Thu, Jun 01 2017

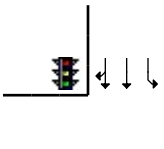
Peak-Hour: 5:00 PM -- 6:00 PM

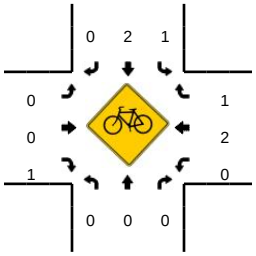
Peak 15-Min: 5:30 PM -- 5:45 PM

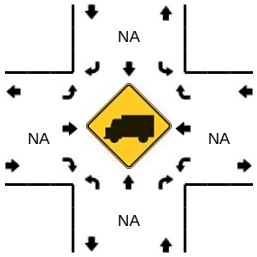


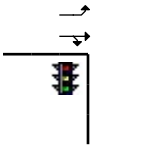


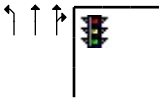


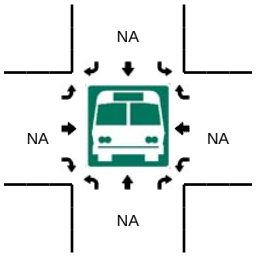












5-Min Count Period Beginning At	8. Pershing Ave (Northbound)				8. Pershing Ave (Southbound)				Country Club Blvd (Eastbound)				Country Club Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	94	3	0	3	68	18	0	13	4	8	0	0	6	1	0	225	
4:05 PM	16	85	4	0	4	47	4	0	5	6	11	0	7	12	1	0	202	
4:10 PM	10	110	2	0	1	78	8	0	6	5	6	0	4	8	2	0	240	
4:15 PM	15	87	2	0	4	53	4	0	10	2	13	0	5	14	3	0	212	
4:20 PM	9	98	4	0	1	80	15	0	8	5	12	0	3	2	5	0	242	
4:25 PM	14	67	1	0	3	36	3	0	12	9	11	0	6	10	2	0	174	
4:30 PM	12	89	2	0	0	74	14	0	6	2	14	0	0	4	0	0	217	
4:35 PM	10	73	0	0	5	48	9	0	12	9	7	0	7	9	4	0	193	
4:40 PM	13	110	3	0	1	83	10	0	6	4	14	0	2	9	0	0	255	
4:45 PM	10	95	2	0	2	45	6	0	15	5	8	0	9	12	3	0	212	
4:50 PM	8	111	3	0	3	58	7	0	2	4	10	0	8	9	2	0	225	
4:55 PM	8	66	0	0	3	54	5	0	15	4	15	0	8	14	5	0	197	2594
5:00 PM	9	106	2	0	2	69	8	0	5	2	8	0	3	4	3	0	221	2590
5:05 PM	12	83	2	0	3	64	14	0	11	2	8	0	8	13	1	0	221	2609
5:10 PM	11	133	3	0	2	74	10	0	11	6	2	0	1	6	3	0	262	2631
5:15 PM	13	96	1	0	0	71	8	0	10	6	13	0	8	17	1	0	244	2663
5:20 PM	14	112	6	0	1	75	12	0	5	4	7	0	6	15	2	0	259	2680
5:25 PM	14	95	4	0	4	39	7	0	13	8	8	0	8	16	2	0	218	2724
5:30 PM	17	126	2	0	2	91	9	0	10	7	8	0	7	11	5	0	295	2802
5:35 PM	11	103	0	0	6	51	5	0	17	6	13	0	7	12	1	0	232	2841
5:40 PM	8	146	4	0	2	65	7	0	5	5	6	0	4	8	2	0	262	2848
5:45 PM	14	98	2	0	3	65	6	0	14	7	8	0	9	12	2	0	240	2876
5:50 PM	15	127	2	0	0	53	14	0	9	4	10	0	1	7	1	0	243	2894
5:55 PM	15	90	5	0	6	50	7	0	13	4	10	0	5	7	5	0	217	2914

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	144	1500	24	0	40	828	84	0	128	72	108	0	72	124	32	0	3156
Heavy Trucks	0	12	0		0	4	0		0	4	0		0	4	0		24
Pedestrians		4				4				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

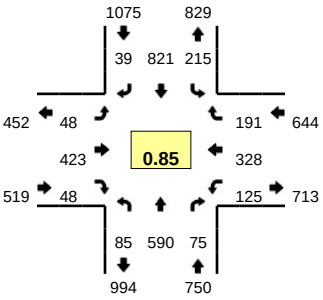
Method for determining peak hour: Total Entering Volume

LOCATION: 9. El Dorado St -- Alpine Ave

CITY/STATE: San Joaquin, CA

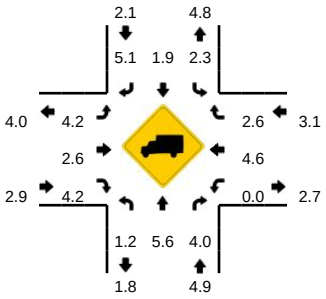
QC JOB #: 14437917

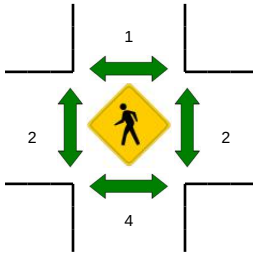
DATE: Thu, Jun 01 2017

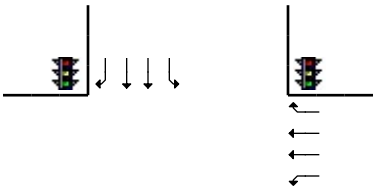


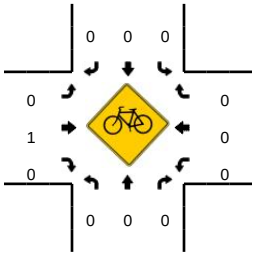
Peak-Hour: 7:25 AM -- 8:25 AM

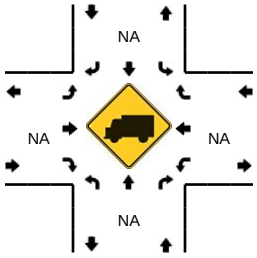
Peak 15-Min: 7:35 AM -- 7:50 AM

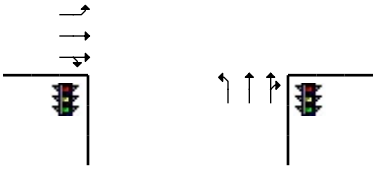


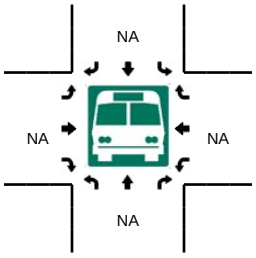












5-Min Count Period Beginning At	9. El Dorado St (Northbound)				9. El Dorado St (Southbound)				Alpine Ave (Eastbound)				Alpine Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	16	6	0	7	41	1	0	1	21	2	0	8	13	7	0	126	
7:05 AM	3	20	5	0	11	43	3	0	1	27	3	0	8	15	5	0	144	
7:10 AM	5	29	4	0	12	45	1	0	0	24	2	0	13	23	7	0	165	
7:15 AM	7	24	12	0	16	59	6	0	0	39	5	0	12	22	10	0	212	
7:20 AM	5	32	5	0	23	71	3	0	2	26	2	0	11	24	11	0	215	
7:25 AM	8	45	2	0	16	73	2	0	0	29	3	0	7	24	15	0	224	
7:30 AM	8	37	4	0	23	53	3	0	4	35	3	0	9	29	19	0	227	
7:35 AM	7	67	9	0	17	72	1	0	2	35	7	0	15	40	20	0	292	
7:40 AM	8	60	11	0	23	102	6	0	3	44	8	0	13	19	15	0	312	
7:45 AM	6	35	5	0	20	95	5	0	3	57	3	0	3	29	16	0	277	
7:50 AM	8	42	6	0	15	82	3	0	6	41	4	0	13	27	18	0	265	
7:55 AM	9	56	6	0	18	75	4	0	5	34	3	0	15	31	13	0	269	2728
8:00 AM	9	58	6	0	14	57	3	0	5	35	2	0	10	30	13	0	242	2844
8:05 AM	4	37	6	0	18	54	6	0	4	30	4	0	10	35	18	0	226	2926
8:10 AM	3	49	6	0	13	50	1	0	7	31	4	0	8	21	24	0	217	2978
8:15 AM	6	56	5	0	17	58	2	0	3	20	1	0	13	23	8	0	212	2978
8:20 AM	9	48	9	0	21	50	3	0	6	32	6	0	9	20	12	0	225	2988
8:25 AM	7	39	4	0	24	47	2	0	4	19	2	0	16	33	14	0	211	2975
8:30 AM	4	50	4	0	12	55	1	0	3	15	1	0	15	27	17	0	204	2952
8:35 AM	3	44	5	0	19	61	3	0	3	13	3	0	4	16	11	0	185	2845
8:40 AM	7	39	8	0	14	56	4	0	7	25	1	0	14	18	10	0	203	2736
8:45 AM	6	58	8	0	15	34	0	0	3	21	2	0	21	36	20	0	224	2683
8:50 AM	8	69	9	0	15	54	1	0	7	16	2	0	15	20	15	0	231	2649
8:55 AM	3	55	15	0	20	55	3	0	1	20	2	0	9	16	13	0	212	2592

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	648	100	0	240	1076	48	0	32	544	72	0	124	352	204	0	3524
Heavy Trucks	0	28	0		4	20	4		0	12	4		0	12	4		88
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

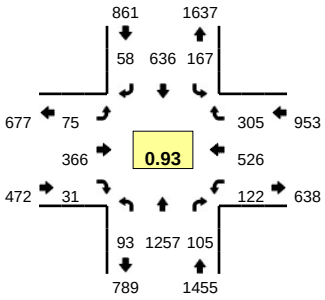
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

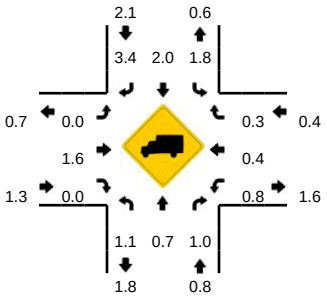
Method for determining peak hour: Total Entering Volume

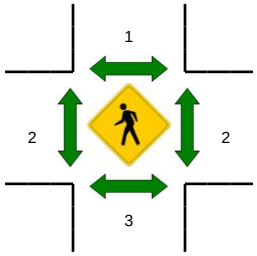
LOCATION: 9. El Dorado St -- Alpine Ave
CITY/STATE: San Joaquin, CA

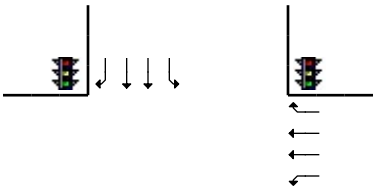
QC JOB #: 14437918
DATE: Thu, Jun 01 2017

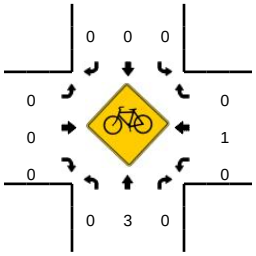


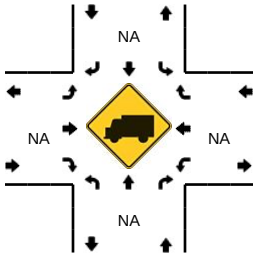
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

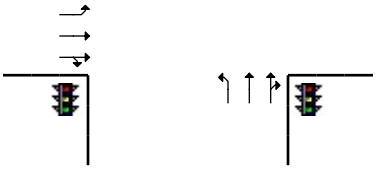


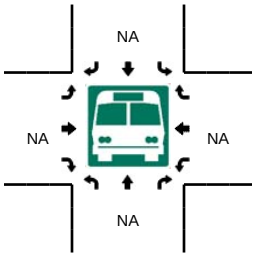












5-Min Count Period Beginning At	9. El Dorado St (Northbound)				9. El Dorado St (Southbound)				Alpine Ave (Eastbound)				Alpine Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	98	9	0	13	71	1	0	7	29	9	0	10	46	30	0	329	
4:05 PM	8	83	9	0	19	53	5	0	7	35	5	0	16	46	29	0	315	
4:10 PM	7	86	9	0	14	50	4	0	6	23	5	0	5	23	24	0	256	
4:15 PM	4	105	10	0	14	56	2	0	3	22	3	0	11	33	17	0	280	
4:20 PM	6	86	16	0	20	67	3	0	11	28	3	0	10	37	24	0	311	
4:25 PM	6	77	8	0	10	50	5	0	5	37	6	0	13	33	27	0	277	
4:30 PM	7	114	9	0	7	51	5	0	1	24	4	0	7	40	26	0	295	
4:35 PM	6	81	8	0	16	54	5	0	11	28	4	0	10	37	28	0	288	
4:40 PM	7	97	7	0	12	48	4	0	10	40	2	0	10	52	22	0	311	
4:45 PM	8	127	9	0	13	65	8	0	7	27	4	0	8	43	20	0	339	
4:50 PM	8	90	10	0	22	61	6	0	4	28	2	0	10	30	24	0	295	
4:55 PM	7	91	7	0	10	44	4	0	9	38	1	0	17	52	27	0	307	3603
5:00 PM	6	112	12	0	11	54	2	0	4	25	6	0	7	43	28	0	310	3584
5:05 PM	10	111	7	0	16	56	3	0	3	25	3	0	7	36	28	0	305	3574
5:10 PM	7	102	4	0	14	42	3	0	3	30	3	0	15	59	28	0	310	3628
5:15 PM	15	126	12	0	14	63	7	0	8	38	1	0	5	49	26	0	364	3712
5:20 PM	8	116	16	0	17	56	7	0	4	28	1	0	12	38	24	0	327	3728
5:25 PM	4	90	4	0	15	42	4	0	11	35	0	0	14	47	24	0	290	3741
5:30 PM	8	85	14	0	11	46	4	0	7	21	2	0	7	66	18	0	289	3735
5:35 PM	7	89	5	0	11	57	3	0	6	21	1	0	9	40	13	0	262	3709
5:40 PM	6	85	7	0	16	51	5	0	8	27	6	0	13	48	24	0	296	3694
5:45 PM	2	90	6	0	10	52	2	0	4	38	7	0	12	56	28	0	307	3662
5:50 PM	8	71	12	0	5	49	4	0	3	25	3	0	5	34	18	0	237	3604
5:55 PM	6	62	4	0	17	29	4	0	7	26	3	0	10	50	24	0	242	3539

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	120	1376	128	0	180	644	68	0	60	384	20	0	128	584	312	0	4004
Heavy Trucks	0	8	4		4	12	0		0	4	0		4	4	0		40
Pedestrians		8				0				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

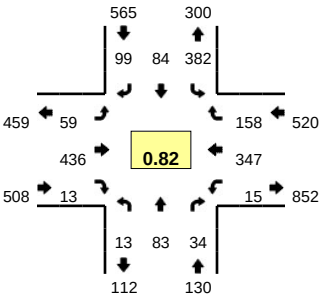
Type of peak hour being reported: Intersection Peak

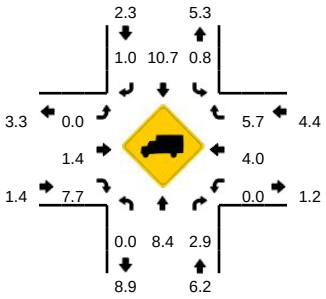
Method for determining peak hour: Total Entering Volume

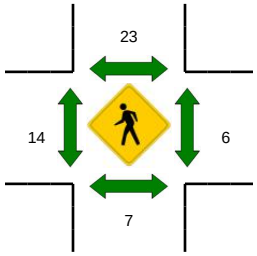
LOCATION: 10. Pacific Ave -- Harding Way
CITY/STATE: San Joaquin, CA

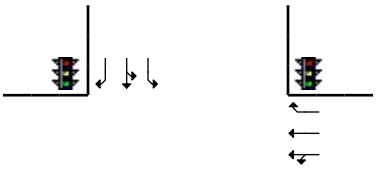
QC JOB #: 14437919
DATE: Thu, Jun 01 2017

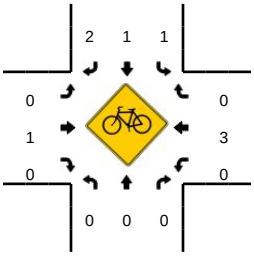
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

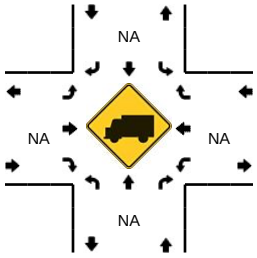


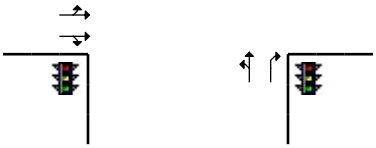


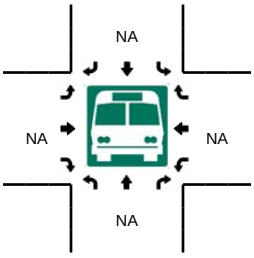












5-Min Count Period Beginning At	10. Pacific Ave (Northbound)				10. Pacific Ave (Southbound)				Harding Way (Eastbound)				Harding Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	5	3	0	26	7	3	0	1	20	0	0	1	10	4	0	80	
7:05 AM	3	6	5	0	17	3	6	0	5	17	0	0	0	10	8	0	80	
7:10 AM	0	9	4	0	25	4	6	0	2	24	2	0	1	30	10	0	117	
7:15 AM	1	7	7	0	29	6	8	0	5	26	0	0	0	16	9	0	114	
7:20 AM	0	2	2	0	31	8	5	0	3	21	2	0	2	31	4	0	111	
7:25 AM	0	2	2	0	28	8	7	0	3	38	0	0	0	20	9	0	117	
7:30 AM	0	5	1	0	32	4	8	0	5	27	1	0	1	33	6	0	123	
7:35 AM	1	5	4	0	35	5	6	0	6	36	0	0	1	16	10	0	125	
7:40 AM	1	4	2	0	38	7	5	0	3	40	1	0	2	39	15	0	157	
7:45 AM	2	9	4	0	44	7	11	0	6	39	1	0	3	42	16	0	184	
7:50 AM	0	13	6	0	33	7	8	0	3	59	2	0	1	35	14	0	181	
7:55 AM	2	9	4	0	33	6	7	0	4	50	1	0	1	26	16	0	159	1548
8:00 AM	2	10	2	0	24	8	11	0	3	32	0	0	3	37	19	0	151	1619
8:05 AM	0	5	1	0	30	8	9	0	7	33	2	0	1	26	17	0	139	1678
8:10 AM	0	8	1	0	24	9	11	0	3	35	0	0	1	26	19	0	137	1698
8:15 AM	3	1	0	0	23	5	5	0	6	43	3	0	1	30	14	0	134	1718
8:20 AM	0	8	6	0	34	5	6	0	6	20	1	0	0	17	8	0	111	1718
8:25 AM	2	6	3	0	32	13	12	0	7	22	1	0	0	20	4	0	122	1723
8:30 AM	1	6	1	0	23	6	8	0	10	25	1	0	0	30	7	0	118	1718
8:35 AM	1	7	2	0	24	6	5	0	2	27	1	0	3	33	8	0	119	1712
8:40 AM	3	12	4	0	30	4	5	0	5	32	2	0	1	26	12	0	136	1691
8:45 AM	1	7	8	0	17	5	6	0	6	35	1	0	1	35	10	0	132	1639
8:50 AM	1	4	4	0	27	1	13	0	7	23	1	0	0	30	16	0	127	1585
8:55 AM	1	6	2	0	30	6	10	0	3	28	1	0	3	25	19	0	134	1560

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	124	56	0	440	80	104	0	52	592	16	0	20	412	184	0	2096
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	8	12		28
Pedestrians		20				24				20				4			68
Bicycles	0	0	0		0	0	1		0	0	0		0	3	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 10. Pacific Ave -- Harding Way

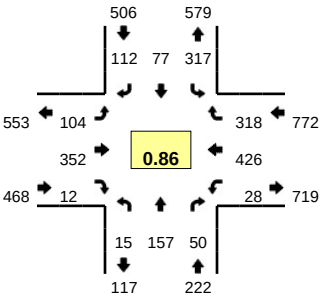
CITY/STATE: San Joaquin, CA

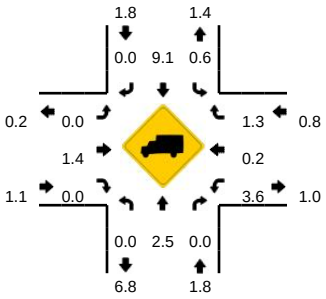
QC JOB #: 14437920

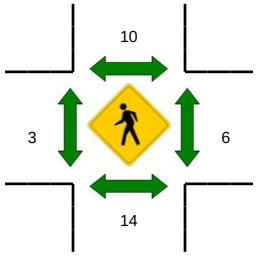
DATE: Thu, Jun 01 2017

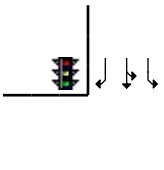
Peak-Hour: 4:25 PM -- 5:25 PM

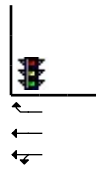
Peak 15-Min: 5:05 PM -- 5:20 PM

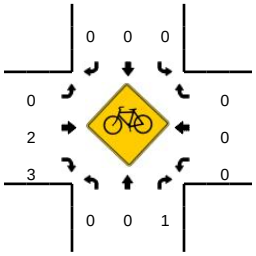


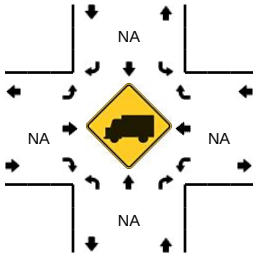


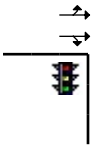


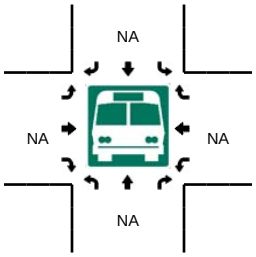












5-Min Count Period Beginning At	10. Pacific Ave (Northbound)				10. Pacific Ave (Southbound)				Harding Way (Eastbound)				Harding Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	8	5	0	30	6	12	0	3	34	2	0	2	28	22	0	154	
4:05 PM	2	11	2	0	18	5	12	0	3	25	1	0	1	30	33	0	143	
4:10 PM	3	9	2	0	22	12	6	0	10	35	1	0	1	32	27	0	160	
4:15 PM	1	6	5	0	21	7	6	0	9	28	5	0	3	34	34	0	159	
4:20 PM	0	9	3	0	34	4	14	0	6	22	1	1	1	32	27	0	154	
4:25 PM	1	6	4	0	24	5	5	0	10	28	2	0	1	40	29	0	155	
4:30 PM	1	10	6	0	21	11	10	0	5	31	1	0	3	18	26	0	143	
4:35 PM	1	25	7	0	18	6	11	0	5	33	1	0	1	37	20	0	165	
4:40 PM	4	12	7	0	27	5	4	0	4	25	1	0	3	36	28	0	156	
4:45 PM	0	9	2	0	24	6	10	0	12	35	0	0	1	27	27	0	153	
4:50 PM	1	8	4	0	27	3	8	0	10	22	1	0	1	39	29	0	153	
4:55 PM	0	10	6	0	34	8	11	0	11	32	2	0	1	37	18	0	170	1865
5:00 PM	1	19	3	0	14	3	11	0	13	31	1	0	2	25	20	0	143	1854
5:05 PM	2	16	3	0	35	5	14	0	11	33	0	0	5	45	28	0	197	1908
5:10 PM	1	18	3	0	47	12	8	0	9	29	1	0	1	40	36	0	205	1953
5:15 PM	2	18	3	0	28	3	11	0	5	28	1	0	5	37	30	0	171	1965
5:20 PM	1	6	2	0	18	10	9	0	9	25	1	0	4	45	27	0	157	1968
5:25 PM	2	10	1	0	20	8	14	0	8	27	1	0	2	33	29	0	155	1968
5:30 PM	1	12	2	0	18	6	16	0	2	31	1	0	0	26	26	0	141	1966
5:35 PM	1	9	4	0	24	9	8	0	10	20	3	0	1	36	23	0	148	1949
5:40 PM	3	13	0	0	33	7	11	0	5	28	2	0	3	30	30	0	165	1958
5:45 PM	0	6	2	0	29	8	18	0	9	27	0	0	3	36	19	0	157	1962
5:50 PM	0	12	4	0	21	9	9	0	10	27	0	0	0	33	10	0	135	1944
5:55 PM	2	13	2	0	23	7	14	0	3	15	0	0	0	23	20	0	122	1896

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	208	36	0	440	80	132	0	100	360	8	0	44	488	376	0	2292
Heavy Trucks	0	4	0		4	8	0		0	0	0		0	4	4		24
Pedestrians		4				16				8				4			32
Bicycles	0	0	0		0	0	0		0	0	2		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: West Ln & Harding Way
Date: 6/1/2017
Site Code: 14437921

	West Ln Southbound					Harding Way Westbound					Airport Way Northbound					Harding Way Eastbound					Berkeley Ave Southeastbound				
Start Time	Right to Berkeley Ave	Right	Thru	Left	U-Turns	Right	Right to Berkeley Ave	Thru	Left	U-Turns	Right	Thru	Left to Berkeley Ave	Left	U-Turns	Right	Thru	Left	Left to Berkeley Ave	U-Turns	Right to Harding Way	Right to Airport Way	Left to Harding Way	Left to West Ln	U-Turns
07:00 AM	0	6	24	3	0	2	0	26	3	0	0	12	0	4	0	8	23	2	0	0	0	1	0	0	0
07:05 AM	1	11	44	2	0	7	0	17	3	0	1	29	0	8	0	3	17	6	0	0	1	2	0	0	0
07:10 AM	0	6	39	2	0	4	0	31	0	0	0	15	0	4	0	5	26	8	0	0	2	0	0	0	1
07:15 AM	0	7	56	5	0	6	0	30	3	0	2	31	0	12	0	1	17	2	0	0	0	1	0	0	0
07:20 AM	0	10	39	10	0	5	0	38	1	0	1	34	0	3	0	2	21	10	0	0	1	0	0	0	0
07:25 AM	1	8	48	6	0	5	0	40	3	0	2	31	0	13	0	8	24	4	0	0	2	1	0	0	0
07:30 AM	0	9	36	7	0	4	0	51	2	0	0	25	0	6	0	10	34	16	1	0	3	0	0	0	0
07:35 AM	0	19	35	10	0	3	0	49	0	0	1	47	0	14	0	13	27	20	1	0	4	0	0	0	0
07:40 AM	0	27	86	4	0	4	0	64	4	0	3	56	0	8	0	9	33	11	0	0	2	1	0	0	0
07:45 AM	0	19	49	5	0	5	0	57	7	0	1	57	0	12	0	12	35	28	1	0	3	1	0	0	0
07:50 AM	0	12	35	4	0	6	0	91	3	0	3	41	0	7	0	12	48	19	0	0	4	0	0	0	0
07:55 AM	0	23	64	19	0	5	0	60	2	0	2	61	0	22	0	13	27	19	0	0	9	0	0	0	0
08:00 AM	0	25	78	9	0	4	0	32	3	0	1	70	0	4	0	5	29	20	2	0	1	0	0	0	0
08:05 AM	0	10	39	10	0	10	0	56	1	0	4	29	0	10	0	5	48	15	0	0	3	0	0	0	0
08:10 AM	1	11	39	9	0	8	0	30	4	0	2	47	0	6	0	5	28	11	1	0	2	0	0	0	0
08:15 AM	0	9	19	3	0	6	0	32	0	0	3	36	0	7	0	7	22	12	0	0	2	1	0	0	0
08:20 AM	0	2	36	4	0	10	0	37	1	0	4	47	0	9	0	8	13	8	0	0	1	1	0	0	0
08:25 AM	0	10	63	6	0	5	0	38	3	0	3	38	0	9	0	5	28	13	0	0	0	0	0	0	0
08:30 AM	0	10	45	7	0	6	0	46	2	0	3	28	0	7	0	5	24	5	0	0	0	0	0	0	0
08:35 AM	0	9	50	6	0	3	0	27	1	0	2	34	0	9	0	4	29	15	0	0	2	0	0	0	0
08:40 AM	1	5	33	3	1	4	0	45	3	0	0	36	0	10	0	10	31	6	0	0	2	0	0	0	0
08:45 AM	1	10	59	5	0	6	0	35	2	0	2	37	0	9	0	7	28	15	0	0	1	0	0	0	0
08:50 AM	1	8	38	16	0	10	0	43	0	0	1	18	0	13	0	7	30	7	1	0	1	1	0	0	0
08:55 AM	0	15	31	7	0	4	0	26	3	0	5	28	0	6	0	6	32	11	0	0	0	0	0	0	0
Total	**6**	**281**	**1085**	**162**	**1**	**132**	**0**	**1001**	**54**	**0**	**46**	**887**	**0**	**212**	**0**	**170**	**674**	**283**	**7**	**0**	**46**	**10**	**0**	**0**	**1**

Peak Hour: 7:30 AM - 8:30 AM
Peak 15: 7:45 AM - 8:00 AM
PHF: 0.816722

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: West Ln & Harding Way
Date: 6/1/2017
Site Code: 14437922

	West Ln Southbound					Harding Way Westbound					Airport Way Northbound					Harding Way Eastbound					Berkeley Ave Southeastbound				
Start Time	Right to Berkeley Ave	Right	Thru	Left	U-Turns	Right	Right to Berkeley Ave	Thru	Left	U-Turns	Right	Thru	Left to Berkeley Ave	Left	U-Turns	Right	Thru	Left	Left to Berkeley Ave	U-Turns	Right to Harding Way	Right to Airport Way	Left to Harding Way	Left to West Ln	U-Turns
04:00 PM	0	10	47	12	0	13	0	46	3	0	1	42	0	7	0	13	47	19	0	0	0	0	0	0	0
04:05 PM	0	11	59	11	0	10	0	33	5	0	5	69	0	15	0	10	47	18	0	0	1	0	0	0	0
04:10 PM	0	17	62	10	0	7	0	41	2	0	4	75	0	9	0	12	42	9	0	0	1	4	0	0	1
04:15 PM	0	12	47	15	0	14	0	52	2	0	3	54	0	4	0	9	49	25	0	0	2	2	0	0	0
04:20 PM	0	10	44	14	0	8	0	45	1	0	4	63	0	15	0	12	38	12	0	0	3	2	0	0	0
04:25 PM	0	7	42	23	0	9	0	34	2	0	9	51	0	17	0	17	49	12	0	0	2	1	0	0	0
04:30 PM	0	16	60	12	0	7	0	31	1	0	4	74	0	14	0	4	36	16	0	0	2	0	0	0	0
04:35 PM	1	7	31	8	0	11	0	46	4	0	8	53	0	12	0	7	84	19	1	0	0	0	0	1	0
04:40 PM	1	8	47	14	0	15	0	47	1	0	5	59	0	9	0	7	54	11	1	0	1	1	0	0	0
04:45 PM	0	6	51	12	0	6	0	37	2	0	3	59	0	11	0	8	36	14	0	0	3	0	0	0	0
04:50 PM	0	13	47	13	0	7	0	41	2	0	5	79	0	10	0	12	51	10	0	0	2	1	0	0	0
04:55 PM	0	13	31	1	0	8	0	36	3	0	5	43	0	10	0	8	40	17	0	0	2	2	0	0	0
05:00 PM	0	10	66	18	0	5	0	40	3	0	2	43	0	5	0	11	72	22	1	0	1	1	0	0	0
05:05 PM	0	8	19	8	0	12	0	47	2	0	9	59	0	10	0	5	70	20	0	0	2	0	0	0	1
05:10 PM	0	9	72	25	0	13	0	32	0	0	4	65	0	15	0	12	59	13	0	0	4	0	0	0	0
05:15 PM	0	7	45	15	0	9	0	39	4	0	4	74	0	13	0	12	58	17	0	0	3	0	0	0	0
05:20 PM	0	20	37	11	0	12	0	37	2	0	4	77	0	14	0	6	50	14	1	0	6	0	0	0	0
05:25 PM	0	8	52	13	0	9	0	33	1	0	4	51	0	10	0	7	41	11	0	0	3	0	0	0	0
05:30 PM	0	19	55	12	0	8	0	36	1	0	3	70	0	6	0	8	34	8	0	0	3	3	0	0	0
05:35 PM	0	8	31	11	0	12	0	37	1	0	4	38	0	8	0	9	44	10	0	0	1	0	0	0	0
05:40 PM	1	7	64	7	0	7	0	27	3	0	2	62	2	5	0	4	33	19	0	0	2	0	0	0	0
05:45 PM	0	5	19	7	0	8	1	45	5	0	1	45	0	7	0	12	71	8	0	0	2	0	0	1	0
05:50 PM	1	10	52	17	0	5	0	38	1	0	1	44	0	12	0	7	37	8	1	0	1	0	0	0	0
05:55 PM	0	11	45	15	0	9	0	30	1	0	5	67	1	8	0	2	26	9	1	0	3	0	0	0	0
Total	**4**	**252**	**1125**	**304**	**0**	**224**	**1**	**930**	**52**	**0**	**99**	**1416**	**3**	**246**	**0**	**214**	**1168**	**341**	**6**	**0**	**50**	**17**	**0**	**2**	**2**

Peak Hour: 4:25 PM - 5:25 PM
Peak 15: 5:10 PM - 5:25 PM
PHF: 0.922319

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

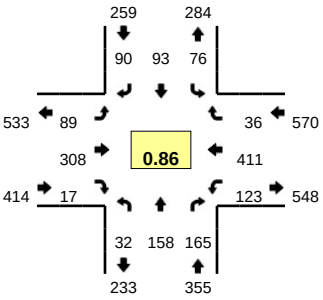
LOCATION: 12. Fresno Ave -- Charter Way

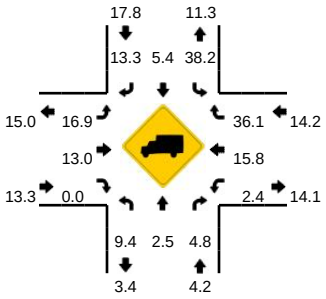
QC JOB #: 14437923

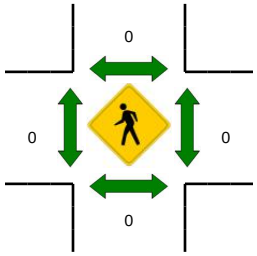
CITY/STATE: San Joaquin, CA

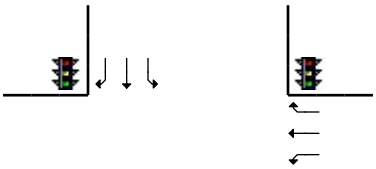
DATE: Thu, Jun 01 2017

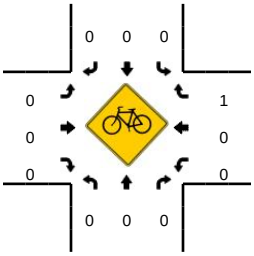
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

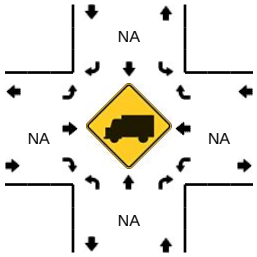


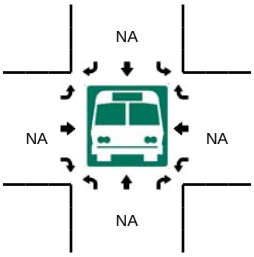












5-Min Count Period Beginning At	12. Fresno Ave (Northbound)				12. Fresno Ave (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	1	14	0	4	4	6	0	7	20	1	0	8	35	3	0	104	
7:05 AM	2	9	13	0	4	6	17	0	2	8	0	0	6	40	2	0	109	
7:10 AM	2	3	17	0	8	2	7	0	12	40	1	0	5	38	4	0	139	
7:15 AM	4	17	13	0	8	3	7	0	3	12	0	0	13	29	2	0	111	
7:20 AM	3	19	11	0	4	5	7	0	10	24	1	0	15	33	4	0	136	
7:25 AM	5	13	9	0	6	11	5	0	9	25	1	0	7	36	6	0	133	
7:30 AM	1	19	16	0	8	23	8	1	6	26	2	0	22	24	1	0	157	
7:35 AM	3	13	19	0	3	9	3	0	14	33	1	0	10	32	3	0	143	
7:40 AM	5	18	19	0	9	11	9	0	10	29	4	0	17	33	3	0	167	
7:45 AM	1	20	12	0	8	12	7	0	4	32	1	0	9	39	2	0	147	
7:50 AM	3	14	10	0	6	5	5	0	10	30	1	0	3	43	2	0	132	
7:55 AM	2	12	12	0	7	2	9	0	2	29	4	0	8	29	4	0	120	1598
8:00 AM	8	5	6	0	6	7	6	0	3	19	1	0	4	35	2	0	102	1596
8:05 AM	3	7	8	0	5	7	3	0	6	25	0	0	12	30	4	0	110	1597
8:10 AM	3	8	8	0	6	4	7	0	4	21	1	0	9	38	2	0	111	1569
8:15 AM	1	7	7	0	5	6	9	0	10	34	1	0	7	24	5	0	116	1574
8:20 AM	0	4	7	0	6	3	10	0	8	24	3	0	15	33	4	0	117	1555
8:25 AM	1	4	6	0	8	5	6	0	7	15	1	0	8	36	3	0	100	1522
8:30 AM	1	11	7	0	4	7	6	0	6	27	2	0	4	25	4	0	104	1469
8:35 AM	2	3	8	0	12	2	4	0	13	34	0	0	5	35	2	0	120	1446
8:40 AM	0	7	11	0	12	1	5	0	9	23	1	0	2	32	4	0	107	1386
8:45 AM	0	11	9	0	8	2	4	0	7	28	0	0	6	30	4	0	109	1348
8:50 AM	3	2	5	0	9	6	6	0	11	31	0	0	4	24	6	0	107	1323
8:55 AM	1	8	8	0	8	2	8	0	8	19	0	0	5	28	5	0	100	1303

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	200	216	0	80	172	80	4	120	352	28	0	196	356	28	0	1868
Heavy Trucks	4	4	12		32	8	8		4	20	0		4	60	12		168
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

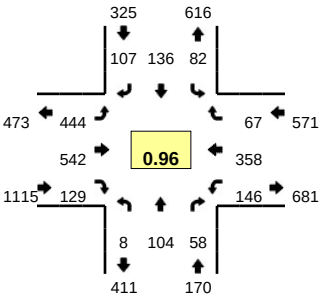
LOCATION: 12. Fresno Ave -- Charter Way

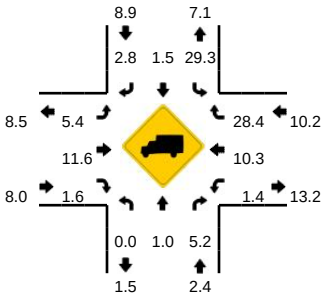
QC JOB #: 14437924

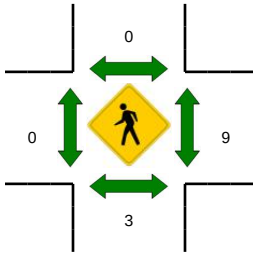
CITY/STATE: San Joaquin, CA

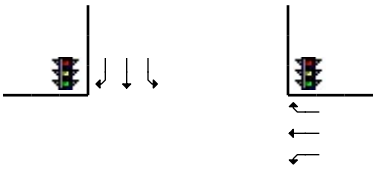
DATE: Thu, Jun 01 2017

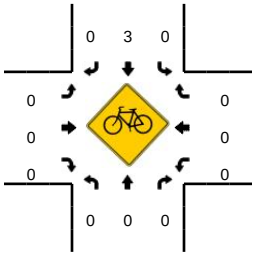
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

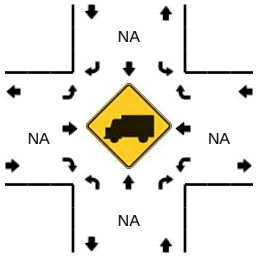


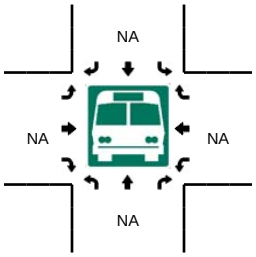












5-Min Count Period Beginning At	12. Fresno Ave (Northbound)				12. Fresno Ave (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	11	7	0	1	6	3	0	39	43	13	0	19	25	12	0	179	
4:05 PM	1	9	7	0	5	10	7	0	50	50	11	0	5	14	8	0	177	
4:10 PM	1	9	6	0	8	10	7	0	45	42	6	0	13	28	5	0	180	
4:15 PM	4	6	2	0	4	5	8	0	44	45	12	0	18	32	3	0	183	
4:20 PM	0	7	6	0	7	13	12	1	30	47	14	0	8	33	3	0	181	
4:25 PM	0	12	5	0	4	8	8	0	35	44	2	0	18	35	5	0	176	
4:30 PM	2	9	6	0	8	8	11	0	52	50	10	0	13	25	4	0	198	
4:35 PM	0	7	4	0	8	12	8	0	44	55	9	0	11	29	5	0	192	
4:40 PM	0	12	5	0	11	11	8	0	24	36	10	0	15	36	2	0	170	
4:45 PM	0	10	9	0	11	12	13	0	35	46	9	0	9	30	8	0	192	
4:50 PM	0	8	4	0	2	14	12	0	28	48	15	0	17	30	6	0	184	
4:55 PM	0	7	7	0	8	13	5	0	28	48	9	0	8	30	5	0	168	2180
5:00 PM	2	9	3	0	6	9	5	0	30	48	14	0	7	18	11	0	162	2163
5:05 PM	1	6	2	0	6	10	4	0	48	29	11	0	10	26	7	0	160	2146
5:10 PM	2	11	3	0	4	13	7	0	45	47	11	0	15	30	9	0	197	2163
5:15 PM	1	6	4	0	6	13	14	0	45	44	15	0	15	36	2	0	201	2181
5:20 PM	2	7	7	0	8	13	9	0	20	52	8	0	16	33	2	0	177	2177
5:25 PM	1	7	6	0	2	13	8	0	24	47	8	0	10	20	3	0	149	2150
5:30 PM	1	7	9	0	11	14	11	0	28	41	3	0	13	20	6	0	164	2116
5:35 PM	3	7	4	0	4	14	9	0	28	47	6	0	20	20	3	0	165	2089
5:40 PM	2	5	6	0	6	10	6	0	27	51	7	0	11	19	6	0	156	2075
5:45 PM	2	7	5	0	2	10	7	0	20	42	10	0	13	24	0	0	142	2025
5:50 PM	1	12	12	0	4	13	5	0	14	39	8	0	13	21	1	0	143	1984
5:55 PM	4	14	9	0	2	9	2	0	12	41	5	0	18	22	0	0	138	1954

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	112	60	0	80	112	108	0	524	596	84	0	168	356	56	0	2264
Heavy Trucks	0	0	4		24	0	4		44	56	0		0	32	16		180
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 13. Airport Way -- Charter Way

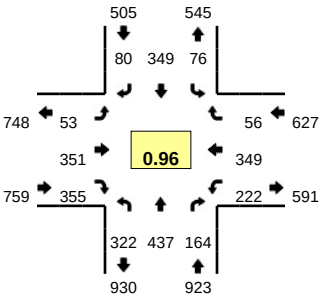
CITY/STATE: Stockton, CA

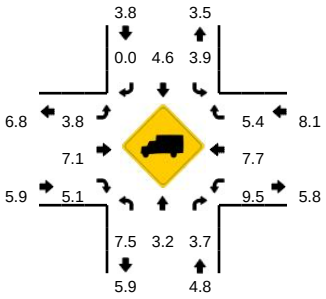
QC JOB #: 14437925

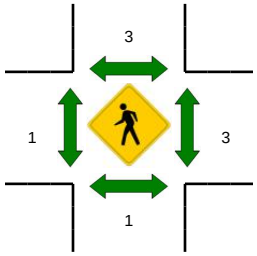
DATE: Thu, Jun 01 2017

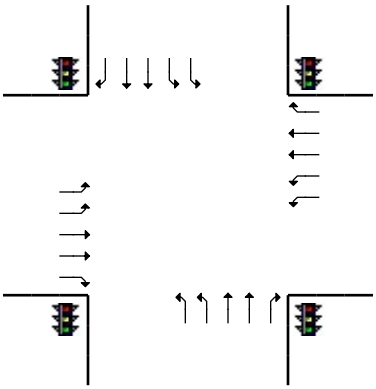
Peak-Hour: 7:15 AM -- 8:15 AM

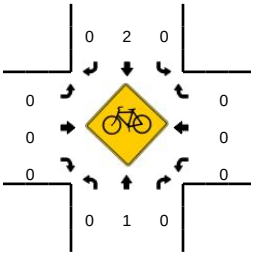
Peak 15-Min: 7:40 AM -- 7:55 AM

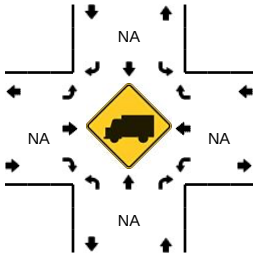


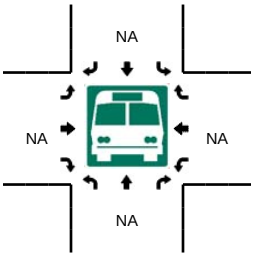












5-Min Count Period Beginning At	13. Airport Way (Northbound)				13. Airport Way (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	14	19	2	2	26	7	1	3	25	20	0	9	31	2	0	171	
7:05 AM	25	16	11	0	6	20	8	0	4	26	22	0	16	31	2	0	187	
7:10 AM	30	20	13	0	4	24	6	0	0	29	22	0	17	30	2	0	197	
7:15 AM	24	35	11	3	4	31	8	0	3	23	35	0	23	30	6	0	236	
7:20 AM	34	39	12	1	3	35	11	0	4	30	28	0	24	23	3	0	247	
7:25 AM	21	32	18	0	5	19	4	0	6	26	31	0	22	26	3	0	213	
7:30 AM	24	36	12	0	4	23	7	0	3	26	33	1	18	26	5	0	218	
7:35 AM	29	41	14	0	1	20	7	0	5	31	29	0	18	28	3	0	226	
7:40 AM	26	50	18	0	11	26	7	0	4	40	23	0	17	19	3	0	244	
7:45 AM	28	27	19	0	9	34	9	0	6	32	25	0	19	25	11	0	244	
7:50 AM	33	47	11	0	8	30	2	0	3	19	34	0	15	34	6	0	242	
7:55 AM	32	40	12	0	7	31	4	0	5	22	29	0	18	22	2	0	224	2649
8:00 AM	26	33	11	0	11	39	8	0	3	34	29	0	9	33	4	0	240	2718
8:05 AM	20	32	13	0	6	34	6	0	7	37	31	0	17	41	7	0	251	2782
8:10 AM	21	25	13	0	7	27	7	0	3	31	28	0	22	42	3	0	229	2814
8:15 AM	30	30	18	2	3	28	6	0	3	27	27	0	25	21	8	0	228	2806
8:20 AM	35	31	7	0	7	20	6	0	5	22	29	0	14	29	7	0	212	2771
8:25 AM	27	28	11	0	2	25	13	0	7	12	30	0	18	28	3	0	204	2762
8:30 AM	23	27	10	0	8	21	5	0	6	21	27	0	14	17	5	0	184	2728
8:35 AM	32	29	19	0	4	22	5	0	5	27	26	0	21	30	5	0	225	2727
8:40 AM	23	32	16	1	7	27	9	0	4	35	20	0	13	26	5	0	218	2701
8:45 AM	19	29	13	0	5	16	7	0	2	41	19	0	27	24	4	0	206	2663
8:50 AM	22	24	15	2	0	1	6	0	7	29	29	0	27	40	2	0	204	2625
8:55 AM	18	17	22	0	1	3	6	0	5	27	38	0	33	42	4	0	216	2617

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	348	496	192	0	112	360	72	0	52	364	328	0	204	312	80	0	2920
Heavy Trucks	36	8	8		4	4	0		0	32	20		20	24	0		156
Pedestrians		4				4				4				8			20
Bicycles	0	0	0		0	2	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

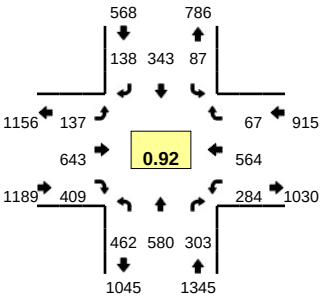
Method for determining peak hour: Total Entering Volume

LOCATION: 13. Airport Way -- Charter Way

QC JOB #: 14437926

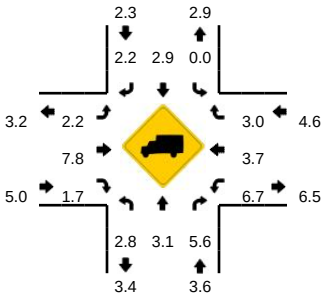
CITY/STATE: Stockton, CA

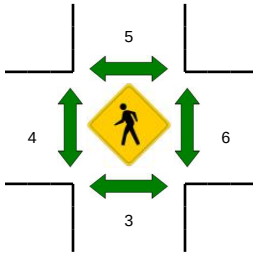
DATE: Thu, Jun 01 2017

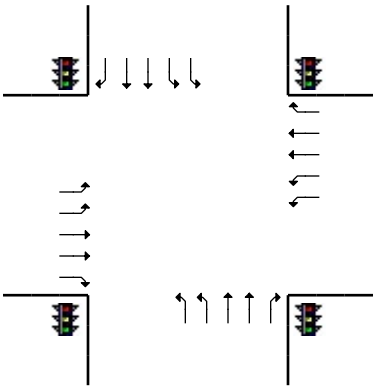


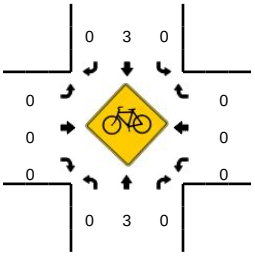
Peak-Hour: 4:00 PM -- 5:00 PM

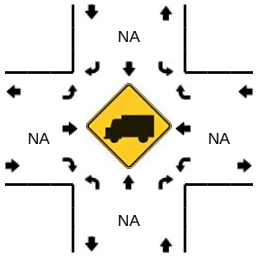
Peak 15-Min: 4:05 PM -- 4:20 PM

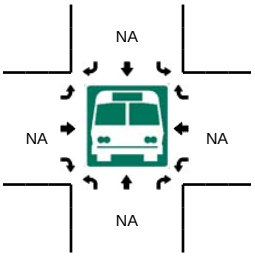












5-Min Count Period Beginning At	13. Airport Way (Northbound)				13. Airport Way (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	48	31	20	1	11	25	6	1	20	63	38	0	11	37	7	0	319	
4:05 PM	28	73	23	0	8	39	18	0	15	54	33	0	19	55	9	0	374	
4:10 PM	46	59	32	0	6	23	14	1	11	60	30	0	26	55	7	0	370	
4:15 PM	60	51	36	1	9	30	10	1	11	57	32	0	15	34	6	0	353	
4:20 PM	26	38	19	1	8	43	11	0	6	51	27	1	27	48	6	0	312	
4:25 PM	30	40	21	0	7	26	10	0	17	51	33	0	20	56	4	0	315	
4:30 PM	16	50	24	1	6	32	14	0	9	45	42	0	26	45	3	0	313	
4:35 PM	38	49	35	0	13	34	7	0	7	33	38	0	19	38	10	0	321	
4:40 PM	40	41	16	0	5	27	12	0	16	58	35	0	41	70	3	0	364	
4:45 PM	58	70	30	3	7	28	15	0	9	50	38	0	28	38	9	0	383	
4:50 PM	33	42	23	0	4	28	10	0	11	62	36	0	24	44	0	0	317	
4:55 PM	30	36	24	2	0	8	11	0	4	59	27	0	28	44	3	0	276	4017
5:00 PM	36	39	22	0	7	40	16	0	4	31	39	0	19	39	6	0	298	3996
5:05 PM	31	43	21	1	8	38	14	0	14	52	23	0	25	71	6	0	347	3969
5:10 PM	46	44	30	0	5	32	17	0	8	59	39	0	13	55	6	0	354	3953
5:15 PM	42	46	22	0	3	39	20	0	12	40	32	0	35	50	2	0	343	3943
5:20 PM	37	40	23	0	6	48	14	0	11	56	48	0	18	42	5	0	348	3979
5:25 PM	22	18	26	0	2	42	14	0	10	58	31	0	29	42	8	0	302	3966
5:30 PM	47	27	16	0	9	30	7	0	4	54	35	0	11	46	4	0	290	3943
5:35 PM	19	39	18	0	6	45	16	0	9	43	38	0	34	35	9	0	311	3933
5:40 PM	30	31	21	1	5	21	8	0	12	48	35	0	18	36	5	0	271	3840
5:45 PM	45	37	24	0	11	24	14	0	9	58	46	0	13	39	6	0	326	3783
5:50 PM	28	35	16	0	2	26	4	0	10	56	38	0	12	55	3	0	285	3751
5:55 PM	21	21	11	0	11	32	15	0	5	48	43	0	21	44	4	0	276	3751

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	536	732	364	4	92	368	168	8	148	684	380	0	240	576	88	0	4388
Heavy Trucks	12	16	28		0	4	12		4	76	8		16	24	8		208
Pedestrians		4				4				0				4			12
Bicycles	0	2	0		0	2	0		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 14. Mariposa Rd -- Charter Way

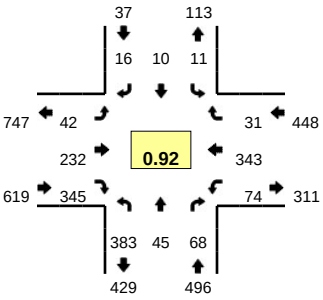
CITY/STATE: San Joaquin, CA

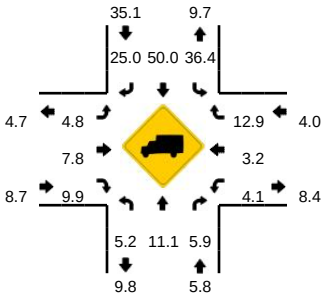
QC JOB #: 14437927

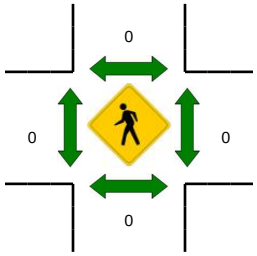
DATE: Thu, Jun 01 2017

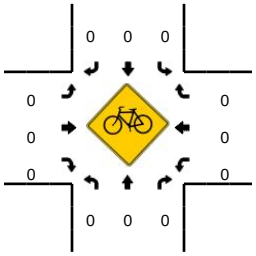
Peak-Hour: 7:20 AM -- 8:20 AM

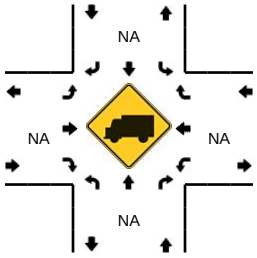
Peak 15-Min: 7:40 AM -- 7:55 AM

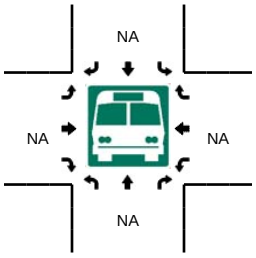












5-Min Count Period Beginning At	14. Mariposa Rd (Northbound)				14. Mariposa Rd (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	25	2	4	0	1	1	1	0	2	18	20	1	4	23	3	0	105	
7:05 AM	18	0	10	0	0	0	4	0	0	18	18	2	5	27	0	0	102	
7:10 AM	26	0	7	0	3	0	4	0	2	28	19	1	13	24	1	0	128	
7:15 AM	39	3	5	0	0	2	1	0	1	16	19	1	3	26	1	0	117	
7:20 AM	29	2	7	0	0	1	1	0	2	15	13	2	7	20	2	0	101	
7:25 AM	19	2	3	0	1	0	0	0	2	28	18	1	10	35	2	0	121	
7:30 AM	41	5	3	0	1	2	0	0	2	20	30	1	7	30	3	0	145	
7:35 AM	31	3	6	0	0	1	1	0	4	21	16	1	6	26	4	0	120	
7:40 AM	28	3	6	0	1	3	0	0	2	18	37	0	7	26	1	0	132	
7:45 AM	42	5	3	0	0	0	1	0	5	29	15	0	5	31	5	0	141	
7:50 AM	45	6	5	0	1	0	1	0	3	9	49	0	8	30	5	0	162	
7:55 AM	29	9	11	0	1	1	1	0	3	19	17	0	9	27	2	0	129	1503
8:00 AM	31	4	5	0	0	1	3	0	7	25	29	0	6	26	4	0	141	1539
8:05 AM	36	3	9	0	5	1	2	0	1	18	40	0	2	39	0	0	156	1593
8:10 AM	18	2	9	0	0	0	2	0	4	22	39	0	2	25	1	0	124	1589
8:15 AM	34	1	1	0	1	0	4	0	2	8	42	0	5	28	2	0	128	1600
8:20 AM	23	1	3	0	1	0	1	0	2	12	27	0	2	18	2	0	92	1591
8:25 AM	34	3	9	0	0	1	0	0	2	12	22	1	5	18	1	0	108	1578
8:30 AM	25	0	3	0	1	2	3	0	3	12	18	2	6	21	2	0	98	1531
8:35 AM	24	3	1	0	3	0	0	0	4	12	41	0	8	18	1	0	115	1526
8:40 AM	36	0	4	0	0	1	1	0	1	13	34	0	5	15	0	0	110	1504
8:45 AM	41	2	9	0	1	0	3	0	3	17	35	0	5	31	1	0	148	1511
8:50 AM	32	1	10	0	0	0	0	0	0	10	30	1	11	25	0	0	120	1469
8:55 AM	33	0	4	0	2	2	1	0	0	19	23	2	8	27	1	0	122	1462

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	460	56	56	0	8	12	8	0	40	224	404	0	80	348	44	0	1740
Heavy Trucks	16	0	12		0	4	0		4	24	36		4	16	0		116
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 14. Mariposa Rd -- Charter Way

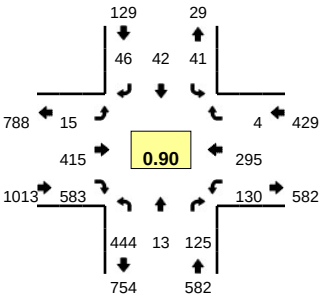
CITY/STATE: San Joaquin, CA

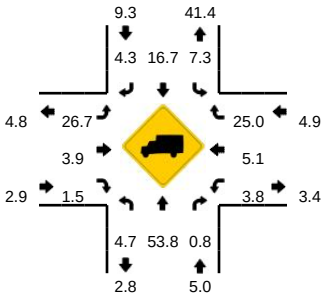
QC JOB #: 14437928

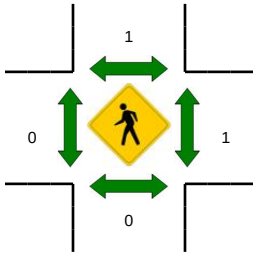
DATE: Thu, Jun 01 2017

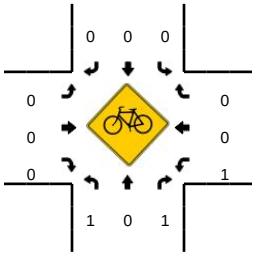
Peak-Hour: 4:15 PM -- 5:15 PM

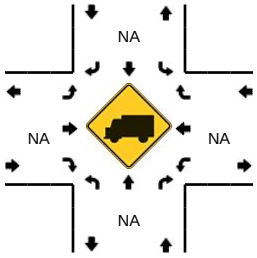
Peak 15-Min: 5:00 PM -- 5:15 PM

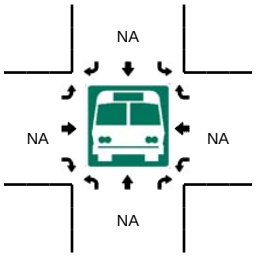


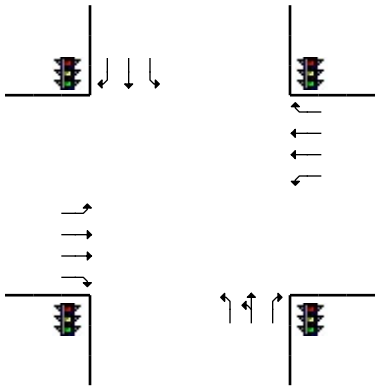












5-Min Count Period Beginning At	14. Mariposa Rd (Northbound)				14. Mariposa Rd (Southbound)				Charter Way (Eastbound)				Charter Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	38	0	15	0	2	2	3	0	1	48	35	0	9	24	2	0	179	
4:05 PM	35	0	14	0	3	4	0	0	6	35	57	0	3	24	0	0	181	
4:10 PM	44	3	7	0	1	2	1	0	2	47	46	1	9	19	0	0	182	
4:15 PM	32	3	18	0	2	0	3	0	2	36	27	0	20	28	0	0	171	
4:20 PM	35	1	10	0	2	4	6	0	2	22	56	0	12	22	0	0	172	
4:25 PM	38	1	3	0	2	0	2	0	0	24	51	0	10	24	0	0	155	
4:30 PM	29	3	5	0	3	2	4	0	0	38	47	0	10	24	0	0	165	
4:35 PM	42	0	10	0	7	9	10	0	0	39	56	0	11	25	0	0	209	
4:40 PM	42	1	7	0	7	2	1	0	0	33	52	0	9	19	0	0	173	
4:45 PM	36	1	11	0	2	1	2	0	0	43	49	0	13	21	2	0	181	
4:50 PM	32	0	10	0	0	3	3	0	3	32	52	3	9	19	2	1	169	
4:55 PM	28	2	6	0	5	3	2	0	1	32	45	0	6	28	0	0	158	2095
5:00 PM	39	0	20	0	5	1	4	0	1	29	48	0	11	23	0	0	181	2097
5:05 PM	50	0	16	0	1	7	4	0	2	50	62	0	8	23	0	0	223	2139
5:10 PM	41	1	9	0	5	10	5	0	1	37	38	0	10	39	0	0	196	2153
5:15 PM	24	0	5	0	3	3	2	0	3	31	55	0	8	23	0	0	157	2139
5:20 PM	25	1	12	0	2	1	4	0	0	34	52	1	7	27	0	0	166	2133
5:25 PM	34	0	7	0	1	0	2	0	1	40	51	0	10	23	0	0	169	2147
5:30 PM	23	0	7	0	2	0	1	0	3	29	36	0	7	21	0	1	130	2112
5:35 PM	29	0	8	0	0	2	2	0	0	34	47	0	10	16	0	0	148	2051
5:40 PM	28	1	11	0	1	1	0	0	0	40	34	0	10	15	0	0	141	2019
5:45 PM	36	1	7	0	0	0	1	0	2	34	51	0	6	20	3	0	161	1999
5:50 PM	28	1	6	0	0	1	2	0	1	20	32	1	7	19	0	1	119	1949
5:55 PM	25	1	8	0	4	3	1	0	0	25	41	1	6	27	0	1	143	1934

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	520	4	180	0	44	72	52	0	16	464	592	0	116	340	0	0	2400
Heavy Trucks	16	4	4		4	8	0		12	12	4		4	44	0		112
Pedestrians		0				4				0				4			8
Bicycles	1	0	0		0	0	0		0	0	0		1	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 15. Mariposa Rd -- Stagecoach Rd

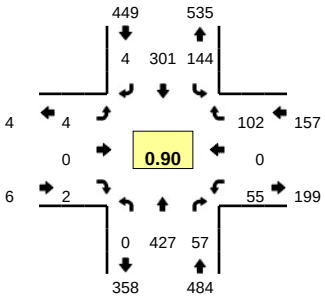
CITY/STATE: San Joaquin, CA

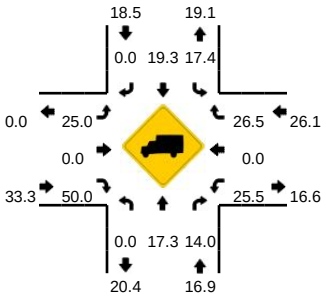
QC JOB #: 14437929

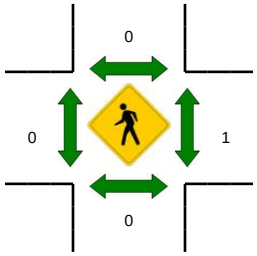
DATE: Thu, Jun 01 2017

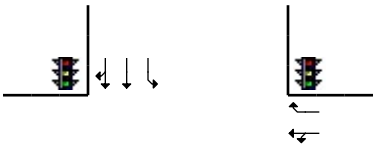
Peak-Hour: 7:15 AM -- 8:15 AM

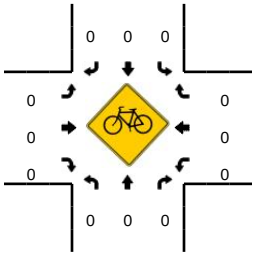
Peak 15-Min: 7:35 AM -- 7:50 AM

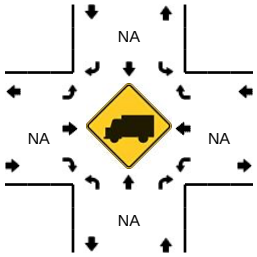


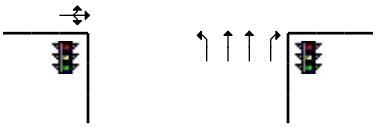


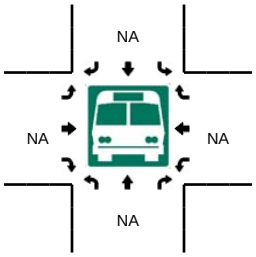












5-Min Count Period Beginning At	15. Mariposa Rd (Northbound)				15. Mariposa Rd (Southbound)				Stagecoach Rd (Eastbound)				Stagecoach Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	25	7	0	16	15	1	0	0	1	0	0	3	0	4	1	73	
7:05 AM	0	28	3	0	11	12	1	0	0	1	0	0	2	0	6	0	64	
7:10 AM	0	27	7	0	9	17	2	0	0	0	0	0	8	0	9	0	79	
7:15 AM	0	34	2	0	15	18	0	0	0	0	0	0	4	0	5	0	78	
7:20 AM	0	41	5	0	12	20	0	1	0	0	0	0	6	0	11	0	96	
7:25 AM	0	33	6	0	9	41	0	0	1	0	1	0	1	0	5	0	97	
7:30 AM	0	19	3	0	23	24	1	0	0	0	0	0	4	0	9	0	83	
7:35 AM	0	41	5	0	4	33	0	0	0	0	0	0	4	0	9	0	96	
7:40 AM	0	48	9	0	9	24	0	0	0	0	0	0	8	0	13	0	111	
7:45 AM	0	38	2	0	16	29	0	0	0	0	0	0	5	0	8	0	98	
7:50 AM	0	31	6	0	12	21	0	0	0	0	0	0	10	0	10	0	90	
7:55 AM	0	49	3	0	15	26	2	0	1	0	0	0	3	0	12	0	111	1076
8:00 AM	0	37	6	0	9	24	0	0	1	0	0	0	4	0	6	0	87	1090
8:05 AM	0	21	2	0	9	13	0	1	1	0	0	0	1	0	7	0	55	1081
8:10 AM	0	35	8	0	9	28	1	0	0	0	1	0	5	0	7	0	94	1096
8:15 AM	0	39	0	0	7	22	0	0	0	0	0	0	3	0	6	0	77	1095
8:20 AM	0	24	5	0	6	22	1	0	0	0	0	0	4	0	6	0	68	1067
8:25 AM	0	38	2	0	10	17	1	0	1	1	0	0	7	0	6	0	83	1053
8:30 AM	0	29	2	0	13	15	0	0	1	0	0	0	2	0	8	0	70	1040
8:35 AM	0	30	4	0	7	22	0	0	0	0	0	0	0	0	4	0	67	1011
8:40 AM	0	23	2	0	0	15	0	0	0	0	1	0	2	0	7	0	50	950
8:45 AM	0	33	2	0	4	34	0	0	0	0	1	0	2	0	5	0	81	933
8:50 AM	0	26	6	0	7	19	1	1	0	0	0	0	9	0	6	0	75	918
8:55 AM	0	34	3	0	11	22	0	0	1	0	0	0	2	0	7	0	80	887

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	508	64	0	116	344	0	0	0	0	0	0	68	0	120	0	1220
Heavy Trucks	0	72	16		20	40	0		0	0	0		20	0	40		208
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

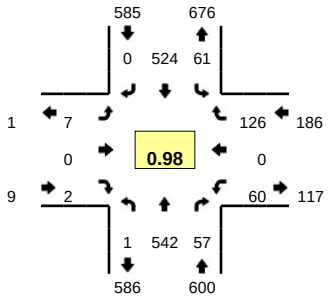
Method for determining peak hour: Total Entering Volume

LOCATION: 15. Mariposa Rd -- Stagecoach Rd

CITY/STATE: San Joaquin, CA

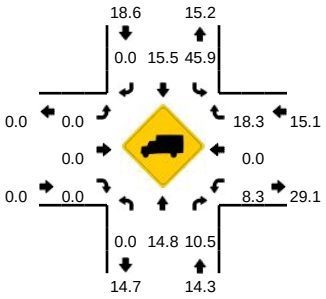
QC JOB #: 14437930

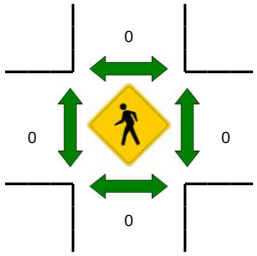
DATE: Thu, Jun 01 2017

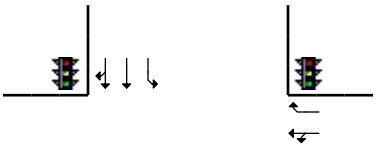


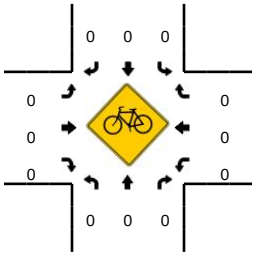
Peak-Hour: 4:10 PM -- 5:10 PM

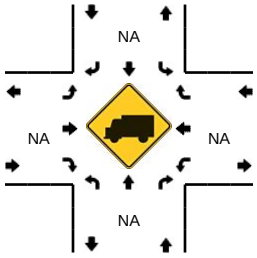
Peak 15-Min: 4:25 PM -- 4:40 PM

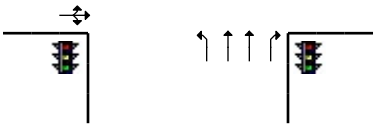


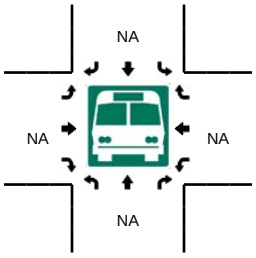












5-Min Count Period Beginning At	15. Mariposa Rd (Northbound)				15. Mariposa Rd (Southbound)				Stagecoach Rd (Eastbound)				Stagecoach Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	32	4	0	3	44	0	1	0	0	0	0	4	0	10	0	98	
4:05 PM	0	49	6	0	6	37	0	1	0	0	0	0	5	0	8	0	112	
4:10 PM	0	59	3	0	4	40	0	0	1	0	0	0	2	0	8	0	117	
4:15 PM	0	41	3	0	6	55	0	0	0	0	1	0	3	0	5	0	114	
4:20 PM	0	41	11	0	5	42	0	0	2	0	0	0	5	0	6	0	112	
4:25 PM	0	42	5	0	2	54	0	0	0	0	0	0	6	0	6	0	115	
4:30 PM	0	44	6	0	5	36	0	0	0	0	1	0	12	0	9	0	113	
4:35 PM	0	56	0	0	4	47	0	0	1	0	0	0	4	0	13	0	125	
4:40 PM	0	34	5	0	5	48	0	0	1	0	0	0	4	0	7	0	104	
4:45 PM	0	47	5	0	9	42	0	0	0	0	0	0	2	0	12	0	117	
4:50 PM	0	48	6	0	3	43	0	0	1	0	0	0	5	0	6	0	112	
4:55 PM	1	46	3	0	11	23	0	0	1	0	0	0	3	0	6	0	94	1333
5:00 PM	0	46	2	0	3	39	0	0	0	0	0	0	11	0	26	0	127	1362
5:05 PM	0	38	8	0	3	55	0	1	0	0	0	0	3	0	22	0	130	1380
5:10 PM	0	30	6	0	3	38	0	0	0	0	0	0	8	0	12	0	97	1360
5:15 PM	0	44	4	0	4	52	0	0	0	1	0	0	6	0	8	0	119	1365
5:20 PM	1	38	8	0	4	36	0	1	0	0	0	0	3	0	9	0	100	1353
5:25 PM	0	32	4	0	7	34	0	0	1	0	0	0	7	0	9	0	94	1332
5:30 PM	0	50	3	0	4	43	0	0	0	0	0	0	3	0	8	0	111	1330
5:35 PM	0	35	3	0	2	40	0	0	0	0	1	0	8	0	8	0	97	1302
5:40 PM	0	31	4	0	3	29	0	0	0	0	0	0	4	0	1	0	72	1270
5:45 PM	0	34	6	0	2	34	0	0	0	0	0	0	4	0	6	0	86	1239
5:50 PM	0	23	1	0	2	28	0	0	0	0	0	0	1	1	3	0	59	1186
5:55 PM	0	32	4	0	3	26	0	1	0	0	0	0	2	0	3	0	71	1163

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	568	44	0	44	548	0	0	4	0	4	0	88	0	112	0	1412
Heavy Trucks	0	92	4		20	104	0		0	0	0		4	0	16		240
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 16. McDougald Blvd -- Carolyn Weston Blvd

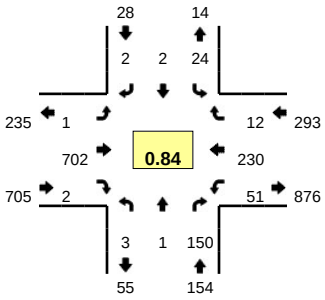
CITY/STATE: San Joaquin, CA

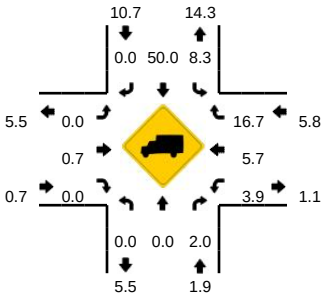
QC JOB #: 14437931

DATE: Thu, Jun 01 2017

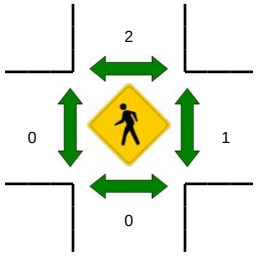
Peak-Hour: 7:10 AM -- 8:10 AM

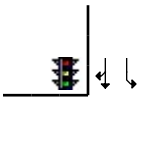
Peak 15-Min: 7:40 AM -- 7:55 AM

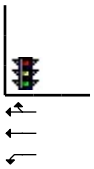


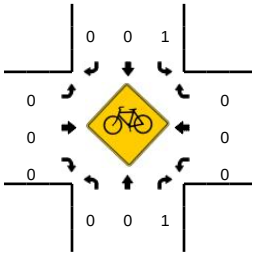


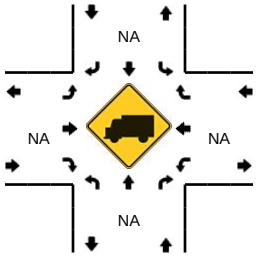
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

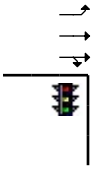


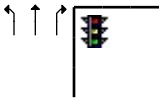


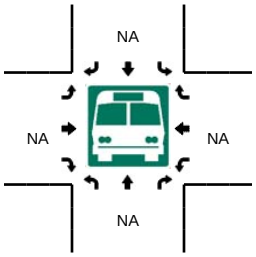












5-Min Count Period Beginning At	16. McDougald Blvd (Northbound)				16. McDougald Blvd (Southbound)				Carolyn Weston Blvd (Eastbound)				Carolyn Weston Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	9	0	1	0	0	0	0	53	0	0	2	11	0	0	76	
7:05 AM	0	0	12	0	2	0	0	0	0	43	0	0	3	12	0	0	72	
7:10 AM	0	0	7	0	1	0	0	0	0	56	0	0	2	24	2	0	92	
7:15 AM	0	0	11	0	2	0	0	0	0	54	0	0	3	10	2	0	82	
7:20 AM	1	0	13	0	3	0	0	0	0	60	0	0	3	17	0	0	97	
7:25 AM	0	1	11	0	1	0	0	0	0	44	1	0	2	20	0	0	80	
7:30 AM	0	0	10	0	1	1	0	0	0	55	0	0	4	18	2	0	91	
7:35 AM	0	0	20	0	3	0	0	0	0	64	0	0	8	20	0	0	115	
7:40 AM	0	0	12	0	3	0	1	0	0	76	0	0	4	15	1	0	112	
7:45 AM	0	0	18	0	3	0	0	0	0	79	0	0	4	16	0	0	120	
7:50 AM	0	0	20	0	1	1	0	0	0	67	1	0	6	25	0	0	121	
7:55 AM	2	0	9	0	0	0	0	0	0	47	0	0	2	21	1	0	82	1140
8:00 AM	0	0	9	0	2	0	0	0	1	54	0	0	7	22	3	0	98	1162
8:05 AM	0	0	10	0	4	0	1	0	0	46	0	0	6	22	1	0	90	1180
8:10 AM	0	0	10	0	3	0	0	0	0	39	0	0	6	30	0	0	88	1176
8:15 AM	0	0	10	0	1	0	1	0	0	41	0	0	7	23	1	0	84	1178
8:20 AM	0	0	8	0	0	1	0	0	0	38	0	0	5	26	1	0	79	1160
8:25 AM	0	0	13	0	0	0	0	0	0	47	0	0	3	20	0	0	83	1163
8:30 AM	0	0	7	0	2	0	0	0	0	54	0	0	6	24	1	0	94	1166
8:35 AM	1	0	7	0	0	0	0	0	0	47	0	0	5	25	1	0	86	1137
8:40 AM	1	0	17	0	1	0	0	0	0	37	0	0	6	23	0	0	85	1110
8:45 AM	0	0	9	0	2	0	0	0	0	70	0	0	6	19	2	0	108	1098
8:50 AM	0	0	9	0	2	1	0	0	0	55	0	0	2	21	2	0	92	1069
8:55 AM	0	0	9	0	1	0	0	0	0	45	2	0	9	17	0	0	83	1070

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	200	0	28	4	4	0	0	888	4	0	56	224	4	0	1412
Heavy Trucks	0	0	4		0	4	0		0	4	0		4	12	4		32
Pedestrians		0				4				0				4			8
Bicycles	0	0	1		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 1:59 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

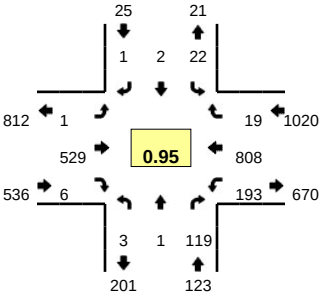
LOCATION: 16. McDougald Blvd -- Carolyn Weston Blvd

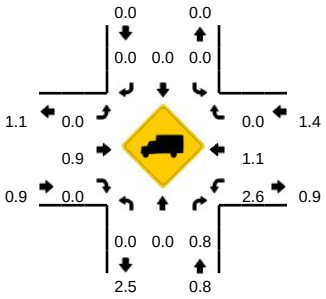
QC JOB #: 14437932

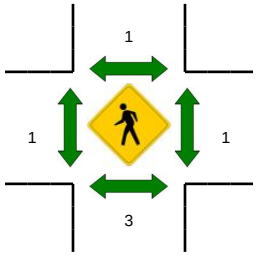
CITY/STATE: San Joaquin, CA

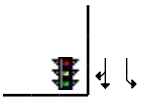
DATE: Thu, Jun 01 2017

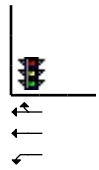
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

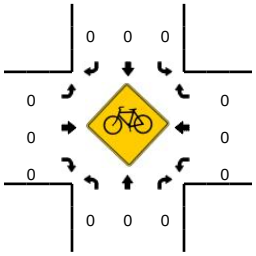


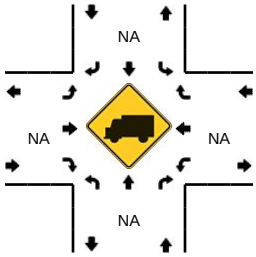


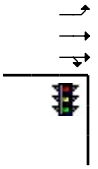


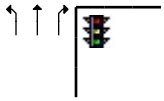


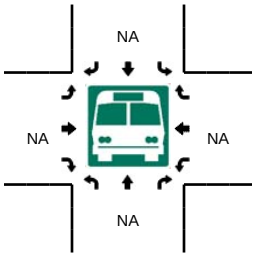












5-Min Count Period Beginning At	16. McDougald Blvd (Northbound)				16. McDougald Blvd (Southbound)				Carolyn Weston Blvd (Eastbound)				Carolyn Weston Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	2	6	0	1	1	0	0	0	42	1	0	12	63	6	0	135	
4:05 PM	1	0	10	0	3	0	1	0	0	49	0	0	17	40	3	0	124	
4:10 PM	1	0	8	0	1	0	0	0	0	35	1	0	13	66	1	0	126	
4:15 PM	0	0	8	0	1	0	0	0	0	32	0	0	13	66	3	0	123	
4:20 PM	1	0	5	0	2	0	0	0	0	28	0	0	18	67	1	0	122	
4:25 PM	0	0	4	0	1	0	1	0	0	33	0	0	15	51	3	0	108	
4:30 PM	0	0	13	0	3	0	0	0	0	40	0	0	15	54	3	0	128	
4:35 PM	0	1	11	0	0	0	0	0	0	55	1	0	10	48	2	0	128	
4:40 PM	1	0	12	0	3	0	0	0	0	54	1	0	21	67	3	0	162	
4:45 PM	0	0	9	0	0	0	0	0	0	39	0	0	11	59	2	0	120	
4:50 PM	1	0	4	0	2	0	0	0	1	56	1	0	9	73	1	0	148	
4:55 PM	1	0	5	0	2	0	0	0	0	32	0	0	14	71	2	0	127	1551
5:00 PM	0	1	6	0	3	0	0	0	0	45	1	0	10	59	0	0	125	1541
5:05 PM	0	0	10	0	4	0	0	0	0	43	0	0	18	71	1	0	147	1564
5:10 PM	0	0	6	0	0	0	0	0	1	44	3	0	11	77	3	0	145	1583
5:15 PM	0	0	14	0	1	0	0	0	0	38	0	0	18	69	1	0	141	1601
5:20 PM	0	0	10	0	4	1	0	0	0	37	1	0	23	70	0	0	146	1625
5:25 PM	1	0	9	0	1	1	0	0	0	45	0	0	15	63	1	0	136	1653
5:30 PM	1	0	7	0	2	0	0	0	0	50	0	0	12	66	0	0	138	1663
5:35 PM	1	0	6	0	3	0	1	0	0	52	0	0	16	80	4	0	163	1698
5:40 PM	0	0	10	0	2	0	0	0	0	45	0	0	15	56	1	0	129	1665
5:45 PM	0	0	11	0	0	0	0	0	0	42	1	0	25	75	2	0	156	1701
5:50 PM	0	0	13	0	1	0	0	0	0	46	0	0	15	62	1	0	138	1691
5:55 PM	0	0	17	0	1	0	0	0	0	42	0	0	15	60	5	0	140	1704

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	108	0	20	0	4	0	0	556	4	0	224	844	28	0	1792
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	12	0		20
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

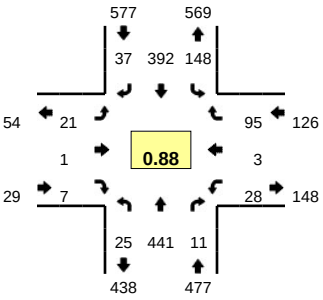
Type of peak hour being reported: Intersection Peak

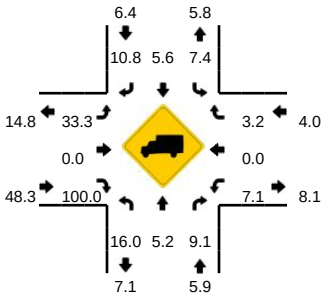
Method for determining peak hour: Total Entering Volume

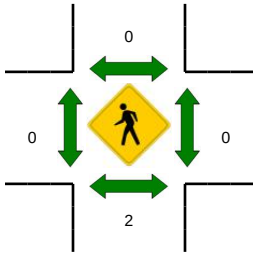
LOCATION: 17. Airport Way -- Ralph Rd
CITY/STATE: San Joaquin, CA

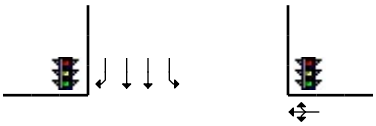
QC JOB #: 14437933
DATE: Thu, Jun 01 2017

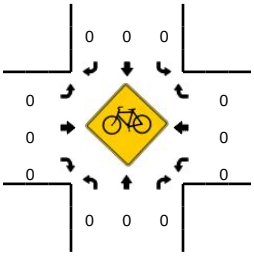
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

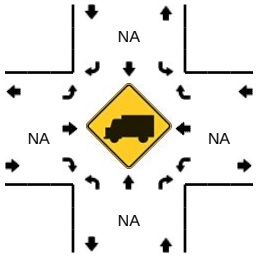


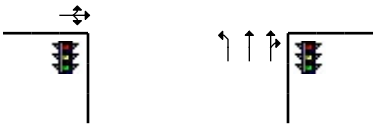


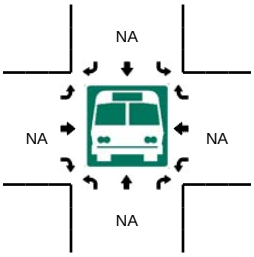












5-Min Count Period Beginning At	17. Airport Way (Northbound)				17. Airport Way (Southbound)				Ralph Rd (Eastbound)				Ralph Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	20	0	6	4	49	1	1	2	0	0	0	2	0	6	0	91	
7:05 AM	1	34	1	5	3	36	5	2	3	0	0	0	0	0	9	0	99	
7:10 AM	1	27	1	6	5	33	0	1	1	0	0	0	1	0	8	0	84	
7:15 AM	0	36	1	9	6	30	1	1	0	0	1	0	4	0	5	0	94	
7:20 AM	0	32	2	4	4	39	4	2	1	0	0	0	2	1	6	0	97	
7:25 AM	0	28	2	1	11	43	3	0	3	0	1	0	7	0	10	0	109	
7:30 AM	1	35	0	1	11	25	2	1	1	0	3	0	1	0	9	0	90	
7:35 AM	2	45	0	0	9	35	3	1	2	0	0	0	0	0	5	0	102	
7:40 AM	3	27	1	0	6	25	6	0	0	0	0	0	4	0	5	0	77	
7:45 AM	1	42	1	0	12	43	3	1	1	0	0	0	1	1	13	0	119	
7:50 AM	0	44	1	2	17	36	3	1	1	0	1	0	6	0	11	0	123	
7:55 AM	2	36	0	0	15	34	1	1	1	1	0	0	2	0	8	0	101	1186
8:00 AM	0	42	2	2	6	25	3	0	2	0	0	0	1	0	3	0	86	1181
8:05 AM	5	44	1	0	14	30	3	1	4	0	0	0	1	0	8	0	111	1193
8:10 AM	0	30	0	0	17	27	3	1	2	0	1	0	1	1	7	0	90	1199
8:15 AM	0	36	1	1	14	30	3	3	3	0	1	0	2	0	10	0	104	1209
8:20 AM	1	21	0	0	13	32	7	2	2	0	3	0	4	0	3	0	88	1200
8:25 AM	0	24	2	0	7	12	7	2	5	1	0	0	1	1	8	0	70	1161
8:30 AM	1	30	1	0	8	27	3	2	3	0	0	0	3	0	7	0	85	1156
8:35 AM	1	23	1	2	9	22	4	1	3	0	5	0	4	1	6	0	82	1136
8:40 AM	1	24	2	1	5	12	3	1	0	0	0	0	1	0	2	0	52	1111
8:45 AM	1	23	0	1	7	15	5	0	5	0	0	0	2	0	3	0	62	1054
8:50 AM	4	27	1	0	6	20	5	0	1	0	1	0	1	1	7	0	74	1005
8:55 AM	2	17	0	1	2	20	8	0	0	0	0	0	2	1	3	0	56	960

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	488	8	8	176	452	28	12	12	4	4	0	36	4	128	0	1372
Heavy Trucks	4	20	0		16	20	0		8	0	4		4	0	0		76
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

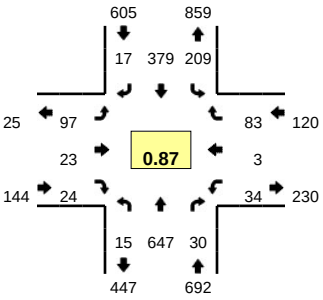
LOCATION: 17. Airport Way -- Ralph Rd

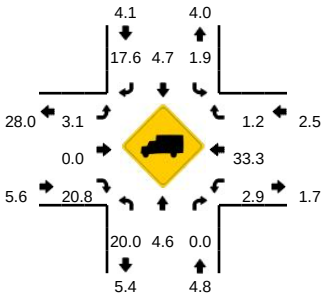
QC JOB #: 14437934

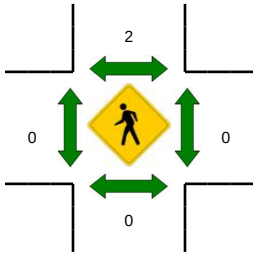
CITY/STATE: San Joaquin, CA

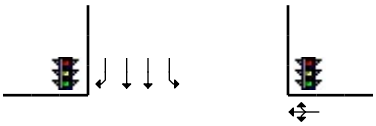
DATE: Thu, Jun 01 2017

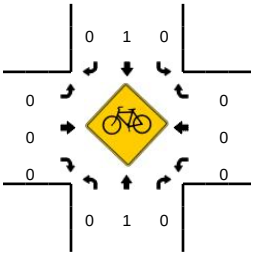
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

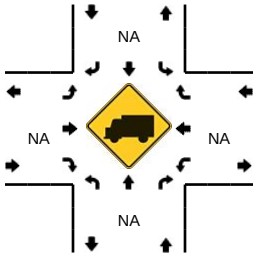


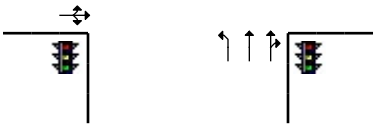


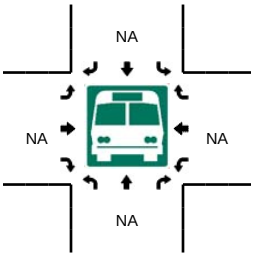












5-Min Count Period Beginning At	17. Airport Way (Northbound)				17. Airport Way (Southbound)				Ralph Rd (Eastbound)				Ralph Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	53	0	1	10	27	1	2	17	3	3	0	2	0	2	0	121	
4:05 PM	1	76	1	2	13	29	1	2	28	8	3	0	3	1	6	0	174	
4:10 PM	2	63	1	0	16	27	2	1	10	3	2	0	3	0	9	0	139	
4:15 PM	0	55	1	3	18	38	1	3	6	1	2	0	3	1	5	0	137	
4:20 PM	1	52	2	0	16	24	1	1	3	1	2	0	1	0	6	0	110	
4:25 PM	1	38	2	0	22	31	4	5	1	1	2	0	8	0	8	0	123	
4:30 PM	0	51	4	0	12	34	1	3	8	1	2	0	2	0	6	0	124	
4:35 PM	0	71	3	2	17	24	0	1	15	2	3	0	3	0	9	0	150	
4:40 PM	0	66	5	1	9	48	2	4	5	0	1	0	2	0	10	0	153	
4:45 PM	0	37	0	0	19	41	0	5	0	0	0	0	3	1	10	0	116	
4:50 PM	0	46	8	1	15	28	2	2	2	2	3	0	1	0	5	0	115	
4:55 PM	0	39	3	0	10	28	2	3	2	1	1	0	3	0	7	0	99	1561
5:00 PM	0	46	4	1	11	36	0	1	4	0	0	0	3	1	6	0	113	1553
5:05 PM	0	59	7	0	10	24	1	1	5	0	0	0	0	0	9	0	116	1495
5:10 PM	0	64	2	2	16	44	0	4	4	0	0	0	5	0	6	0	147	1503
5:15 PM	0	50	8	0	15	30	1	0	3	0	2	0	2	0	3	0	114	1480
5:20 PM	1	25	1	1	19	36	3	2	2	0	0	0	1	0	2	0	93	1463
5:25 PM	0	41	0	1	13	35	1	0	1	0	0	0	3	0	6	0	101	1441
5:30 PM	0	27	2	0	24	31	1	4	4	1	3	0	2	1	5	0	105	1422
5:35 PM	1	34	2	0	17	29	0	3	3	1	2	0	4	0	9	0	105	1377
5:40 PM	0	22	1	1	17	30	2	0	3	0	1	0	1	1	9	0	88	1312
5:45 PM	0	33	1	0	13	27	1	3	4	0	0	0	1	0	1	0	84	1280
5:50 PM	1	32	1	0	13	29	1	1	2	0	1	0	2	1	2	0	86	1251
5:55 PM	2	37	1	1	13	20	0	4	1	0	0	0	0	0	4	0	83	1235

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	776	12	20	188	376	16	24	176	48	28	0	36	8	80	0	1800
Heavy Trucks	8	20	0		4	28	0		4	0	8		0	4	0		76
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

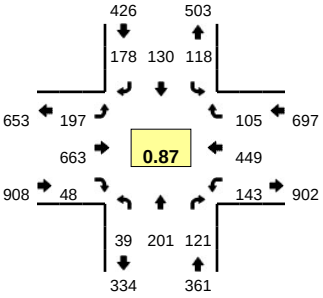
Method for determining peak hour: Total Entering Volume

LOCATION: 18. Airport way -- Arch Airport Road/Sperry Road

QC JOB #: 14437935

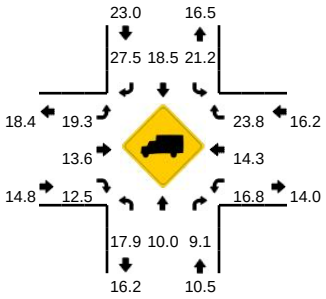
CITY/STATE: San Joaquin, CA

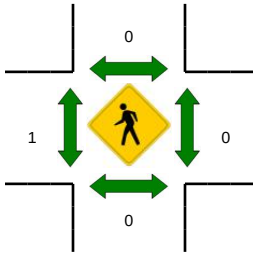
DATE: Thu, Jun 01 2017

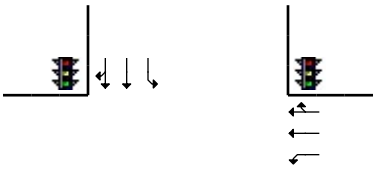


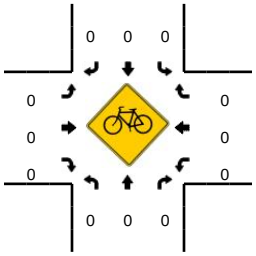
Peak-Hour: 7:25 AM -- 8:25 AM

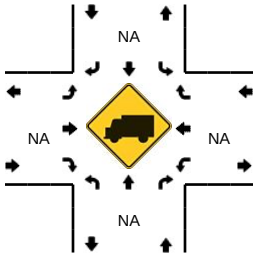
Peak 15-Min: 7:45 AM -- 8:00 AM

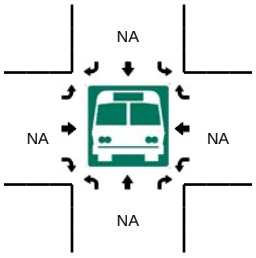












5-Min Count Period Beginning At	18. Airport way (Northbound)				18. Airport way (Southbound)				Arch Airport Road/Sperry Road (Eastbound)				Arch Airport Road/Sperry Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	8	7	0	3	9	12	0	10	42	0	0	5	43	11	0	150	
7:05 AM	0	19	5	1	9	8	7	0	12	36	3	0	6	28	5	0	139	
7:10 AM	4	15	8	0	5	6	8	0	19	50	5	0	6	32	10	0	168	
7:15 AM	0	24	11	1	5	11	13	0	22	29	2	0	7	24	13	0	162	
7:20 AM	1	17	9	1	4	6	11	1	13	39	0	0	4	36	12	0	154	
7:25 AM	2	22	3	0	4	14	16	0	17	54	8	0	11	25	9	0	185	
7:30 AM	3	7	7	0	7	17	21	0	17	63	2	0	13	37	9	0	203	
7:35 AM	2	19	11	0	5	12	15	0	18	57	2	0	8	44	6	0	199	
7:40 AM	3	15	9	0	16	13	12	0	18	72	6	0	6	47	14	0	231	
7:45 AM	1	26	20	3	7	4	16	0	13	73	3	0	16	40	9	0	231	
7:50 AM	4	22	19	0	10	11	21	0	16	51	5	0	7	38	11	0	215	
7:55 AM	1	7	10	3	11	10	13	0	16	86	6	0	13	53	10	0	239	2276
8:00 AM	2	27	4	3	18	11	15	0	19	37	5	0	18	25	6	0	190	2316
8:05 AM	1	13	13	0	9	13	14	0	24	40	1	0	13	31	9	0	181	2358
8:10 AM	4	16	10	4	6	8	8	0	11	44	1	0	15	31	7	0	165	2355
8:15 AM	1	10	5	0	13	8	13	0	18	44	4	0	10	41	9	0	176	2369
8:20 AM	2	17	10	0	12	9	14	0	10	42	5	0	13	37	6	0	177	2392
8:25 AM	1	18	8	0	11	14	14	0	12	32	4	0	17	27	10	0	168	2375
8:30 AM	1	15	9	0	9	11	10	1	15	26	4	0	7	26	11	0	145	2317
8:35 AM	2	19	6	0	5	11	18	2	13	36	1	0	8	13	6	0	140	2258
8:40 AM	6	16	5	0	9	11	10	0	9	29	2	0	4	27	4	0	132	2159
8:45 AM	0	14	7	2	7	6	9	0	16	35	5	0	11	20	3	0	135	2063
8:50 AM	4	14	11	0	7	13	15	0	6	20	2	0	8	30	5	0	135	1983
8:55 AM	4	9	8	0	13	8	7	0	13	26	2	0	6	28	9	1	134	1878

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	220	196	24	112	100	200	0	180	840	56	0	144	524	120	0	2740
Heavy Trucks	0	32	20		24	20	44		36	76	8		16	72	24		372
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

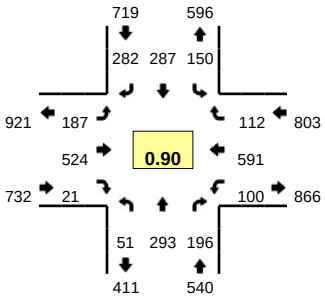
Method for determining peak hour: Total Entering Volume

LOCATION: 18. Airport way -- Arch Airport Road/Sperry Road

QC JOB #: 14437936

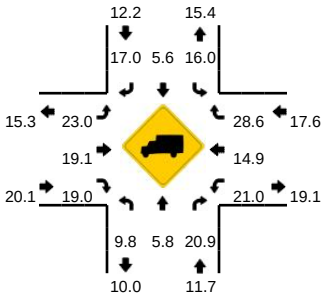
CITY/STATE: San Joaquin, CA

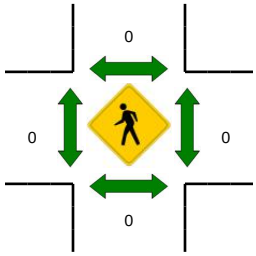
DATE: Thu, Jun 01 2017

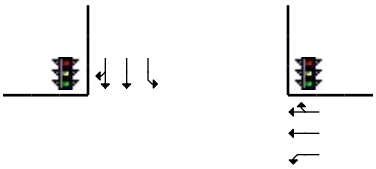


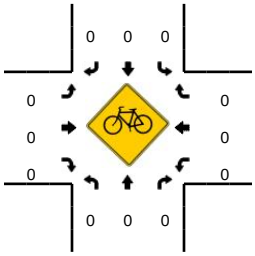
Peak-Hour: 4:00 PM -- 5:00 PM

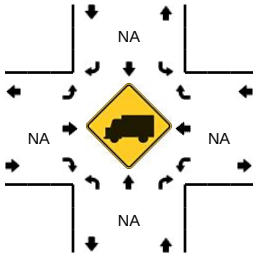
Peak 15-Min: 4:35 PM -- 4:50 PM

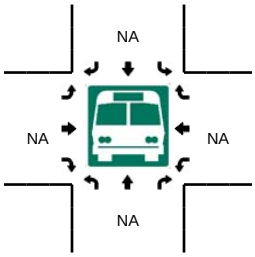












5-Min Count Period Beginning At	18. Airport way (Northbound)				18. Airport way (Southbound)				Arch Airport Road/Sperry Road (Eastbound)				Arch Airport Road/Sperry Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	26	17	0	9	18	29	0	13	31	3	0	8	39	16	0	214	
4:05 PM	5	19	16	0	13	29	25	1	18	67	2	0	8	54	10	0	267	
4:10 PM	8	25	25	0	19	18	32	0	14	41	2	0	6	45	10	0	245	
4:15 PM	1	31	26	0	12	22	18	0	20	42	1	0	6	35	6	0	220	
4:20 PM	7	31	14	1	9	23	23	0	4	41	3	0	4	55	7	0	222	
4:25 PM	5	19	13	0	9	26	26	0	14	41	2	0	8	41	5	0	209	
4:30 PM	3	21	7	0	15	22	24	0	19	45	1	0	16	44	12	0	229	
4:35 PM	5	37	19	0	20	19	24	1	16	42	1	0	9	68	9	0	270	
4:40 PM	3	14	13	0	12	31	26	0	15	44	2	0	8	77	11	0	256	
4:45 PM	5	24	23	2	18	42	26	0	9	30	1	0	12	50	11	0	253	
4:50 PM	1	21	12	0	3	16	17	0	21	61	2	0	7	47	7	0	215	
4:55 PM	0	25	11	0	7	21	12	2	24	39	1	0	8	36	8	0	194	2794
5:00 PM	2	22	14	0	12	18	18	1	12	48	0	0	1	41	5	0	194	2774
5:05 PM	2	29	13	0	7	32	19	1	21	37	3	0	19	68	6	0	257	2764
5:10 PM	4	22	9	0	6	16	18	0	14	60	2	0	5	64	5	0	225	2744
5:15 PM	8	26	17	0	19	29	24	0	18	42	3	0	4	27	4	0	221	2745
5:20 PM	6	16	11	1	8	14	24	0	11	39	2	0	11	35	7	0	185	2708
5:25 PM	5	12	13	0	6	19	10	0	16	45	2	0	9	47	9	0	193	2692
5:30 PM	2	18	6	0	13	20	25	0	8	37	0	0	10	39	6	0	184	2647
5:35 PM	2	15	9	0	17	17	18	0	11	28	2	0	7	51	6	0	183	2560
5:40 PM	1	13	11	0	6	21	13	0	9	46	2	0	7	36	3	0	168	2472
5:45 PM	4	16	14	0	9	16	14	0	9	35	0	0	9	34	4	0	164	2383
5:50 PM	0	17	10	0	9	12	11	0	22	35	1	0	9	17	8	0	151	2319
5:55 PM	2	22	11	1	7	10	9	0	9	34	1	0	3	31	5	0	145	2270

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	300	220	8	200	368	304	4	160	464	16	0	116	780	124	0	3116
Heavy Trucks	4	24	36		28	8	48		32	80	8		28	108	24		428
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 19. Newcastle Rd -- Arch Rd

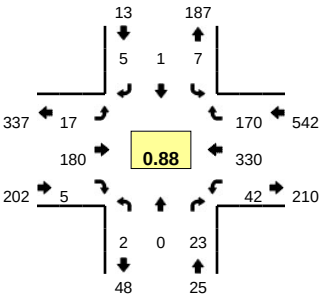
CITY/STATE: San Joaquin, CA

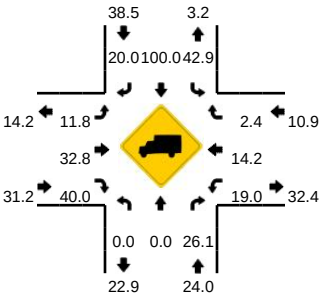
QC JOB #: 14437937

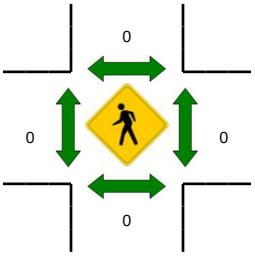
DATE: Thu, Jun 01 2017

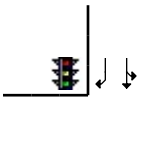
Peak-Hour: 7:05 AM -- 8:05 AM

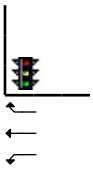
Peak 15-Min: 7:35 AM -- 7:50 AM

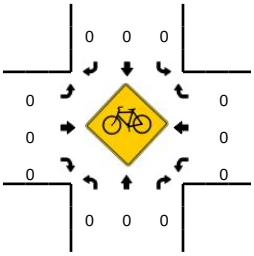


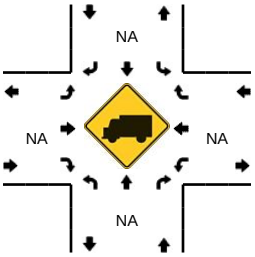


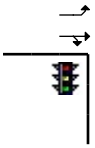


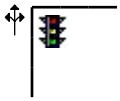


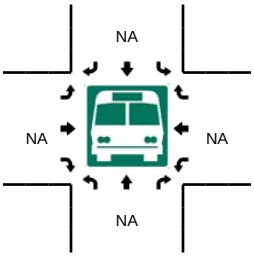












5-Min Count Period Beginning At	19. Newcastle Rd (Northbound)				19. Newcastle Rd (Southbound)				Arch Rd (Eastbound)				Arch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	0	0	0	0	0	0	0	3	0	0	1	7	3	0	15	
7:05 AM	1	0	2	0	0	0	0	0	1	17	1	0	3	33	9	0	67	
7:10 AM	0	0	2	0	1	0	0	0	0	16	0	0	4	28	8	0	59	
7:15 AM	0	0	3	0	0	0	0	0	0	17	1	0	4	24	14	0	63	
7:20 AM	0	0	1	0	1	0	0	0	4	20	1	0	2	17	14	0	60	
7:25 AM	0	0	3	0	1	0	1	0	3	8	0	0	5	36	16	0	73	
7:30 AM	0	0	4	0	1	0	0	0	2	15	0	0	1	12	13	0	48	
7:35 AM	0	0	2	0	1	0	0	0	1	14	0	0	4	32	17	0	71	
7:40 AM	0	0	2	0	0	0	2	0	0	14	1	0	3	32	20	0	74	
7:45 AM	0	0	2	0	0	0	1	0	1	15	0	0	5	32	22	0	78	
7:50 AM	0	0	0	0	1	1	0	0	2	18	0	0	5	25	10	0	62	
7:55 AM	0	0	2	0	1	0	0	0	3	12	1	0	2	31	17	0	69	739
8:00 AM	1	0	0	0	0	0	1	0	0	14	0	0	4	28	10	0	58	782
8:05 AM	0	1	3	0	2	0	0	0	0	9	0	0	0	13	5	0	33	748
8:10 AM	0	0	3	0	1	1	0	0	2	12	0	0	3	22	8	0	52	741
8:15 AM	0	0	4	0	5	0	1	0	1	13	0	0	5	19	6	0	54	732
8:20 AM	0	0	2	0	2	0	0	0	0	7	0	0	0	9	7	0	27	699
8:25 AM	0	0	1	0	3	0	1	1	0	7	2	0	2	13	5	0	35	661
8:30 AM	0	0	4	0	1	0	0	0	1	7	0	0	2	10	7	0	32	645
8:35 AM	0	0	1	0	1	1	0	0	1	13	1	0	7	7	3	0	35	609
8:40 AM	0	0	1	0	2	0	1	0	0	6	0	0	5	9	6	0	30	565
8:45 AM	0	0	2	0	2	0	3	0	0	13	0	0	6	13	1	0	40	527
8:50 AM	0	0	8	0	0	0	1	0	0	9	0	0	12	11	8	0	49	514
8:55 AM	0	0	4	0	2	0	0	0	0	5	0	0	11	8	5	0	35	480

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	24	0	4	0	12	0	8	172	4	0	48	384	236	0	892
Heavy Trucks	0	0	8		4	0	0		0	52	0		12	56	4		136
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

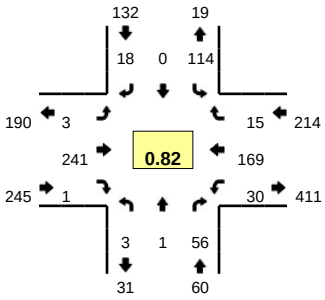
Type of peak hour being reported: Intersection Peak

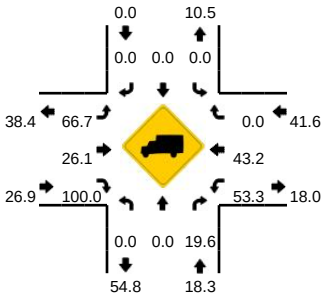
Method for determining peak hour: Total Entering Volume

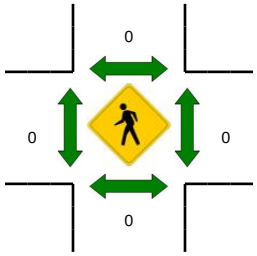
LOCATION: 19. Newcastle Rd -- Arch Rd
CITY/STATE: San Joaquin, CA

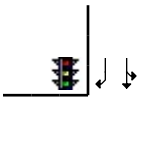
QC JOB #: 14437938
DATE: Thu, Jun 01 2017

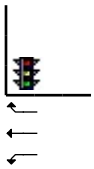
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

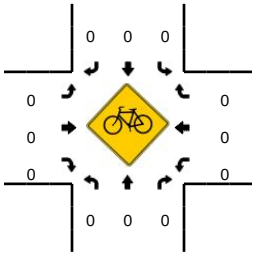


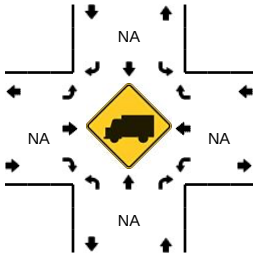


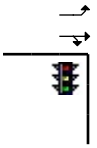


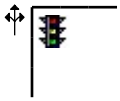


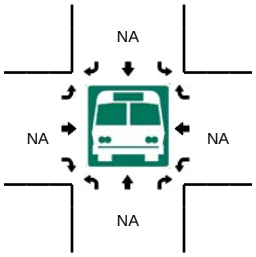












5-Min Count Period Beginning At	19. Newcastle Rd (Northbound)				19. Newcastle Rd (Southbound)				Arch Rd (Eastbound)				Arch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	5	0	15	0	4	0	0	25	0	0	1	13	1	0	65	
4:05 PM	1	1	3	0	29	0	4	0	0	18	0	0	1	16	0	0	73	
4:10 PM	0	0	6	0	8	0	1	0	0	31	0	0	1	12	2	0	61	
4:15 PM	0	0	2	0	8	0	1	0	0	20	1	0	5	14	2	0	53	
4:20 PM	0	0	0	0	7	0	1	0	0	17	0	0	4	17	2	0	48	
4:25 PM	0	0	5	0	10	0	0	0	1	26	0	0	4	13	2	0	61	
4:30 PM	0	0	5	0	5	0	1	0	0	26	0	0	3	17	1	0	58	
4:35 PM	0	0	7	0	10	0	1	0	0	22	0	0	2	9	0	0	51	
4:40 PM	0	0	8	0	6	0	4	0	0	20	0	0	1	15	3	0	57	
4:45 PM	1	0	4	0	2	0	1	0	2	14	0	0	3	17	1	0	45	
4:50 PM	0	0	2	0	8	0	0	0	0	9	0	0	2	13	0	0	34	
4:55 PM	0	0	9	0	6	0	0	0	0	13	0	0	3	13	1	0	45	651
5:00 PM	0	1	6	0	10	0	1	0	1	13	0	0	1	7	1	0	41	627
5:05 PM	1	0	7	0	10	0	1	0	0	31	0	0	3	19	1	0	73	627
5:10 PM	0	0	3	0	4	0	0	0	0	26	0	0	1	16	0	0	50	616
5:15 PM	0	0	2	0	0	0	1	0	0	17	0	0	1	10	0	0	31	594
5:20 PM	3	0	8	0	6	0	1	0	1	12	1	0	2	17	1	0	52	598
5:25 PM	0	0	3	0	6	0	0	0	2	10	1	0	2	14	0	0	38	575
5:30 PM	1	0	4	0	2	0	0	0	0	16	0	0	0	12	2	0	37	554
5:35 PM	1	0	0	0	4	0	1	0	0	16	0	0	1	11	2	0	36	539
5:40 PM	0	0	3	0	1	0	0	0	0	13	0	0	1	11	1	0	30	512
5:45 PM	0	0	0	0	3	0	0	0	0	8	1	0	0	8	1	0	21	488
5:50 PM	0	0	2	0	2	0	0	0	0	15	0	0	3	8	0	0	30	484
5:55 PM	0	0	2	0	1	0	0	0	0	9	0	0	3	14	0	0	29	468

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	4	56	0	208	0	36	0	0	296	0	0	12	164	12	0	796
Heavy Trucks	0	0	8		0	0	0		0	64	0		8	76	0		156
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

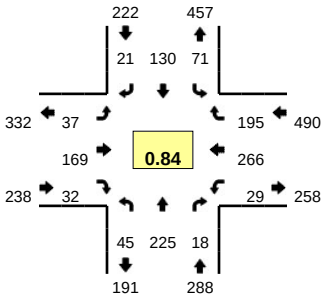
Method for determining peak hour: Total Entering Volume

LOCATION: 20. French Camp Rd -- French Camp Rd

CITY/STATE: Manteca, CA

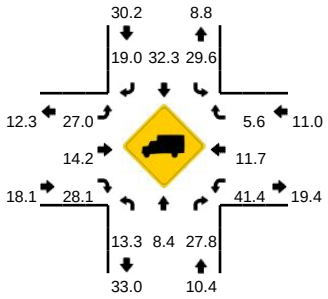
QC JOB #: 14437939

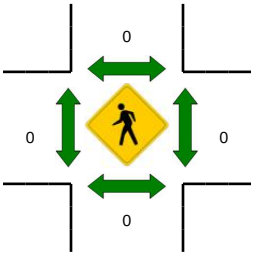
DATE: Thu, Jun 01 2017

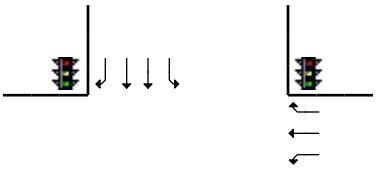


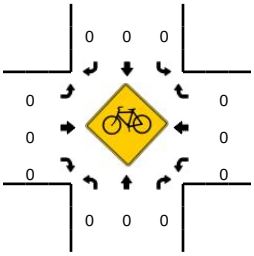
Peak-Hour: 7:20 AM -- 8:20 AM

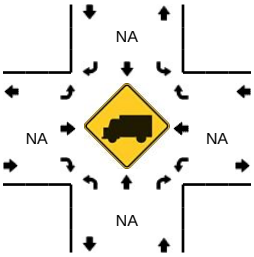
Peak 15-Min: 7:40 AM -- 7:55 AM

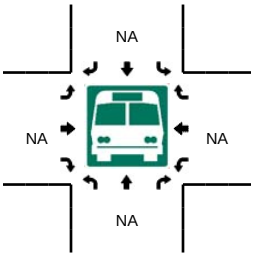












5-Min Count Period Beginning At	20. French Camp Rd (Northbound)				20. French Camp Rd (Southbound)				French Camp Rd (Eastbound)				French Camp Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	1	10	1	0	2	3	1	0	0	2	3	0	1	14	6	0	44	
7:20 AM	4	15	1	0	4	10	3	0	1	12	3	0	2	26	16	0	97	
7:25 AM	3	19	1	0	7	8	0	0	4	15	6	0	3	18	12	0	96	
7:30 AM	4	16	2	0	6	19	1	0	4	16	0	0	2	15	15	0	100	
7:35 AM	5	12	2	0	8	6	0	0	3	17	2	0	5	25	7	0	92	
7:40 AM	7	32	2	0	6	13	1	0	4	14	6	0	0	24	28	0	137	
7:45 AM	2	27	1	0	5	8	1	0	3	17	0	0	3	27	27	0	121	
7:50 AM	2	19	0	0	6	9	3	0	3	14	5	0	2	30	19	0	112	
7:55 AM	3	17	4	0	6	7	2	0	3	11	2	0	1	21	19	0	96	895
8:00 AM	4	17	1	0	5	9	4	0	2	12	0	0	4	22	17	0	97	992
8:05 AM	4	13	0	0	13	17	3	0	5	18	2	0	3	16	10	0	104	1096
8:10 AM	4	23	4	0	1	9	1	0	1	14	3	0	2	22	18	0	102	1198
8:15 AM	3	15	0	0	4	15	2	0	4	9	3	0	2	20	7	0	84	1238
8:20 AM	0	18	3	0	7	8	5	0	4	20	4	0	2	13	13	0	97	1238
8:25 AM	1	15	2	0	4	8	3	0	3	14	1	0	2	9	12	0	74	1216
8:30 AM	2	9	1	0	6	13	2	0	3	14	1	0	2	10	14	0	77	1193
8:35 AM	3	13	0	0	5	9	1	0	2	9	4	0	2	19	10	0	77	1178
8:40 AM	8	10	0	0	2	4	3	0	2	15	4	0	2	17	10	0	77	1118
8:45 AM	3	17	0	0	5	10	4	0	4	20	1	0	1	21	8	0	94	1091
8:50 AM	2	3	0	0	4	12	2	0	5	19	2	0	0	17	12	0	78	1057
8:55 AM	4	12	2	0	2	10	0	0	4	15	4	0	2	11	14	0	80	1041

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	312	12	0	68	120	20	0	40	180	44	0	20	324	296	0	1480
Heavy Trucks	4	28	4		32	44	0		20	36	12		16	16	16		228
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

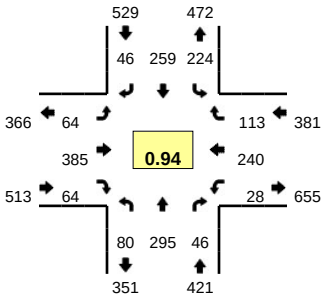
Method for determining peak hour: Total Entering Volume

LOCATION: 20. French Camp Rd -- French Camp Rd

QC JOB #: 14437940

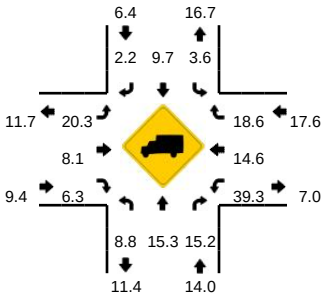
CITY/STATE: Manteca, CA

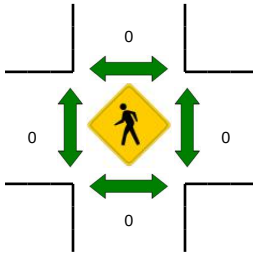
DATE: Thu, Jun 01 2017

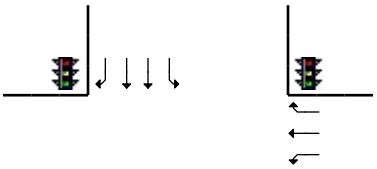


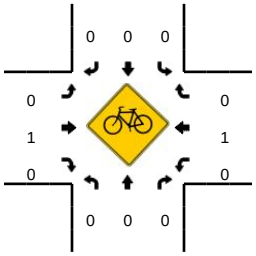
Peak-Hour: 4:00 PM -- 5:00 PM

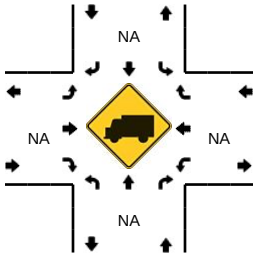
Peak 15-Min: 4:05 PM -- 4:20 PM

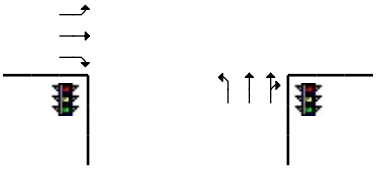


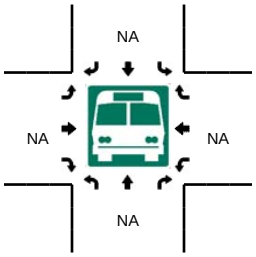












5-Min Count Period Beginning At	20. French Camp Rd (Northbound)				20. French Camp Rd (Southbound)				French Camp Rd (Eastbound)				French Camp Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	18	2	0	23	26	7	0	8	30	6	0	3	12	11	0	150	
4:05 PM	9	30	2	0	17	20	8	0	7	37	11	0	2	14	8	0	165	
4:10 PM	4	36	7	0	21	26	1	0	7	28	4	0	3	20	8	0	165	
4:15 PM	10	33	6	0	22	12	1	0	6	26	9	0	6	20	12	0	163	
4:20 PM	3	18	3	0	7	20	6	0	5	44	13	0	0	25	10	0	154	
4:25 PM	8	20	5	0	19	13	2	0	3	22	1	0	2	28	8	0	131	
4:30 PM	6	33	7	0	17	29	4	0	2	29	3	0	1	14	14	0	159	
4:35 PM	6	21	2	0	21	16	2	0	7	35	6	0	2	19	4	0	141	
4:40 PM	8	21	4	0	25	26	4	0	9	29	4	0	2	30	12	0	174	
4:45 PM	8	23	5	0	23	26	6	0	2	34	3	0	5	21	12	0	168	
4:50 PM	7	25	0	0	21	28	3	0	3	35	3	0	2	18	6	0	151	
4:55 PM	7	17	3	0	8	17	2	0	5	36	1	0	0	19	8	0	123	1844
5:00 PM	4	20	3	0	16	17	4	0	4	33	3	0	1	22	9	0	136	1830
5:05 PM	3	23	1	0	8	17	2	0	2	24	6	0	1	19	7	0	113	1778
5:10 PM	10	22	2	0	30	32	7	0	5	34	10	0	1	13	9	0	175	1788
5:15 PM	8	18	3	0	19	23	2	0	6	52	4	0	0	21	9	0	165	1790
5:20 PM	13	12	2	0	15	19	0	0	10	36	9	0	1	14	7	0	138	1774
5:25 PM	5	14	0	0	13	22	1	0	2	29	3	0	1	15	11	0	116	1759
5:30 PM	14	14	3	0	4	22	2	0	1	34	1	0	2	23	9	0	129	1729
5:35 PM	7	9	6	0	22	16	1	0	3	31	4	0	2	13	6	0	120	1708
5:40 PM	6	26	11	0	9	24	2	0	4	11	1	0	2	22	6	0	124	1658
5:45 PM	5	14	0	0	13	18	4	0	4	38	8	0	2	15	6	0	127	1617
5:50 PM	3	16	1	0	8	14	2	0	8	29	4	0	0	28	9	0	122	1588
5:55 PM	3	10	4	0	11	12	3	0	1	31	4	0	2	22	7	0	110	1575

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	396	60	0	240	232	40	0	80	364	96	0	44	216	112	0	1972
Heavy Trucks	12	56	12		8	8	4		16	32	4		32	40	24		248
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/19/2017 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	602	14	739	396	19	672
Future Volume (veh/h)	602	14	739	396	19	672
Number	2	12	1	6	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1900	1845	1696	1810	1845
Adj Flow Rate, veh/h	634	11	778	417	20	641
Adj No. of Lanes	4	0	2	2	2	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	3	12	5	3
Cap, veh/h	1576	27	1058	2069	656	1234
Arrive On Green	0.25	0.25	0.31	0.64	0.20	0.20
Sat Flow, veh/h	6536	109	3408	3308	3343	2760
Grp Volume(v), veh/h	466	179	778	417	20	641
Grp Sat Flow(s),veh/h/ln	1541	1770	1704	1612	1672	1380
Q Serve(g_s), s	6.2	6.3	15.1	3.9	0.4	12.4
Cycle Q Clear(g_c), s	6.2	6.3	15.1	3.9	0.4	12.4
Prop In Lane		0.06	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1159	444	1058	2069	656	1234
V/C Ratio(X)	0.40	0.40	0.74	0.20	0.03	0.52
Avail Cap(c_a), veh/h	2182	835	1608	2069	676	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	23.2	22.9	5.5	24.1	14.8
Incr Delay (d2), s/veh	0.8	2.1	2.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.3	7.4	1.8	0.2	6.5
LnGrp Delay(d),s/veh	24.0	25.3	25.0	5.6	24.1	14.9
LnGrp LOS	C	C	C	A	C	B
Approach Vol, veh/h	645			1195	661	
Approach Delay, s/veh	24.3			18.2	15.2	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	29.0	25.6		19.6		54.6		
Change Period (Y+Rc), s	6.0	7.0		5.0		7.0		
Max Green Setting (Gmax), s	35.0	35.0		15.0		40.0		
Max Q Clear Time (g_c+I1), s	17.1	8.3		14.4		5.9		
Green Ext Time (p_c), s	5.9	10.3		0.1		17.7		

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	481	311	89	357	1	264	256	50	7	373	103
Future Volume (veh/h)	91	481	311	89	357	1	264	256	50	7	373	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1845	1845	1845	1793	1900	1845	1845	1900	1667	1845	1900
Adj Flow Rate, veh/h	103	547	228	101	406	1	300	291	50	8	424	102
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	7	3	3	3	6	6	3	3	3	14	3	3
Cap, veh/h	130	599	509	129	574	1	328	1292	219	15	713	170
Arrive On Green	0.08	0.32	0.32	0.07	0.32	0.32	0.19	0.43	0.43	0.01	0.25	0.25
Sat Flow, veh/h	1691	1845	1568	1757	1787	4	1757	2998	509	1587	2809	670
Grp Volume(v), veh/h	103	547	228	101	0	407	300	169	172	8	263	263
Grp Sat Flow(s),veh/h/ln	1691	1845	1568	1757	0	1792	1757	1752	1755	1587	1752	1726
Q Serve(g_s), s	8.2	38.8	15.7	7.7	0.0	27.2	22.8	8.3	8.5	0.7	18.0	18.3
Cycle Q Clear(g_c), s	8.2	38.8	15.7	7.7	0.0	27.2	22.8	8.3	8.5	0.7	18.0	18.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.29	1.00		0.39
Lane Grp Cap(c), veh/h	130	599	509	129	0	576	328	755	756	15	445	438
V/C Ratio(X)	0.79	0.91	0.45	0.78	0.00	0.71	0.91	0.22	0.23	0.53	0.59	0.60
Avail Cap(c_a), veh/h	372	609	517	386	0	591	386	771	772	349	771	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	44.2	36.4	62.1	0.0	40.6	54.4	24.4	24.5	67.2	44.7	44.8
Incr Delay (d2), s/veh	20.3	20.0	2.2	19.5	0.0	6.2	24.7	0.5	0.6	34.7	4.5	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	23.1	7.1	4.5	0.0	14.5	13.3	4.1	4.2	0.4	9.3	9.3
LnGrp Delay(d),s/veh	82.2	64.2	38.6	81.7	0.0	46.9	79.1	25.0	25.0	102.0	49.2	49.5
LnGrp LOS	F	E	D	F		D	E	C	C	F	D	D
Approach Vol, veh/h		878			508			641			534	
Approach Delay, s/veh		59.7			53.8			50.3			50.1	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	50.3	30.5	40.6	15.5	49.8	6.3	64.8
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	60.0	30.0	45.0	30.0	60.0
Max Q Clear Time (g_c+I1), s	9.7	40.8	24.8	20.3	10.2	29.2	2.7	10.5
Green Ext Time (p_c), s	0.5	3.5	0.6	14.4	0.5	11.3	0.0	15.4

Intersection Summary	
HCM 2010 Ctrl Delay	54.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	877	249	416	781	76	244	398	112	165	722	228
Future Volume (veh/h)	306	877	249	416	781	76	244	398	112	165	722	228
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1810	1845	1845	1845	1845	1845	1845	1827
Adj Flow Rate, veh/h	340	974	111	462	868	30	271	442	35	183	802	65
Adj No. of Lanes	2	4	1	2	4	1	2	4	1	2	4	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	5	3	3	3	3	3	3	4
Cap, veh/h	392	2195	540	508	2365	585	320	1820	447	233	1657	393
Arrive On Green	0.11	0.35	0.35	0.15	0.38	0.38	0.09	0.29	0.29	0.07	0.26	0.26
Sat Flow, veh/h	3408	6346	1561	3408	6225	1539	3408	6346	1558	3408	6346	1503
Grp Volume(v), veh/h	340	974	111	462	868	30	271	442	35	183	802	65
Grp Sat Flow(s),veh/h/ln	1704	1586	1561	1704	1556	1539	1704	1586	1558	1704	1586	1503
Q Serve(g_s), s	13.7	16.6	7.0	18.7	14.1	1.7	11.0	7.5	2.3	7.4	15.0	4.7
Cycle Q Clear(g_c), s	13.7	16.6	7.0	18.7	14.1	1.7	11.0	7.5	2.3	7.4	15.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	2195	540	508	2365	585	320	1820	447	233	1657	393
V/C Ratio(X)	0.87	0.44	0.21	0.91	0.37	0.05	0.85	0.24	0.08	0.79	0.48	0.17
Avail Cap(c_a), veh/h	536	2195	540	536	2365	585	414	1904	467	414	1904	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	35.4	32.2	58.7	31.3	27.5	62.4	38.3	36.4	64.2	43.7	39.9
Incr Delay (d2), s/veh	8.6	0.7	0.9	18.5	0.4	0.2	9.9	0.2	0.3	2.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	7.4	3.1	10.1	6.1	0.8	5.6	3.3	1.0	3.6	6.7	2.0
LnGrp Delay(d),s/veh	69.5	36.0	33.1	77.1	31.7	27.6	72.3	38.5	36.7	66.4	44.5	40.7
LnGrp LOS	E	D	C	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1425			1360			748			1050	
Approach Delay, s/veh		43.8			47.0			50.7			48.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	46.1	25.8	53.4	18.2	42.6	21.1	58.2
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0
Max Green Setting (Gmax), s	17.0	42.0	22.0	38.0	17.0	42.0	22.0	38.0
Max Q Clear Time (g_c+I1), s	9.4	9.5	20.7	18.6	13.0	17.0	15.7	16.1
Green Ext Time (p_c), s	0.2	22.1	0.2	17.9	0.2	18.2	0.4	20.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	917	178	245	1001	61	171	234	16	199	353	207
Future Volume (veh/h)	248	917	178	245	1001	61	171	234	16	199	353	207
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1828	1900	1827	1833	1900	1845	1845	1810
Adj Flow Rate, veh/h	258	955	159	255	1043	57	178	244	10	207	368	40
Adj No. of Lanes	2	4	0	2	4	0	2	3	0	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	4	4	4	3	3	3	3	5
Cap, veh/h	926	2751	452	316	1899	103	238	691	28	269	749	218
Arrive On Green	0.27	0.50	0.50	0.09	0.31	0.31	0.07	0.14	0.14	0.08	0.15	0.15
Sat Flow, veh/h	3408	5534	909	3408	6145	334	3375	4928	200	3408	5036	1467
Grp Volume(v), veh/h	258	819	295	255	799	301	178	164	90	207	368	40
Grp Sat Flow(s),veh/h/ln	1704	1586	1683	1704	1572	1763	1688	1668	1791	1704	1679	1467
Q Serve(g_s), s	6.6	11.5	11.7	8.1	15.5	15.6	5.7	4.9	5.0	6.6	7.4	2.6
Cycle Q Clear(g_c), s	6.6	11.5	11.7	8.1	15.5	15.6	5.7	4.9	5.0	6.6	7.4	2.6
Prop In Lane	1.00		0.54	1.00		0.19	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	926	2366	837	316	1458	545	238	468	251	269	749	218
V/C Ratio(X)	0.28	0.35	0.35	0.81	0.55	0.55	0.75	0.35	0.36	0.77	0.49	0.18
Avail Cap(c_a), veh/h	926	2366	837	403	1458	545	338	758	407	403	1236	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	16.8	16.9	48.9	31.6	31.7	50.2	42.8	42.8	49.7	43.0	41.0
Incr Delay (d2), s/veh	0.1	0.4	1.2	7.1	1.5	4.0	2.9	0.2	0.3	2.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	5.1	5.7	4.1	6.9	8.2	2.7	2.3	2.5	3.2	3.5	1.1
LnGrp Delay(d),s/veh	31.6	17.2	18.0	56.0	33.1	35.6	53.0	42.9	43.1	52.0	43.2	41.1
LnGrp LOS	C	B	B	E	C	D	D	D	D	D	D	D
Approach Vol, veh/h		1372			1355			432			615	
Approach Delay, s/veh		20.1			38.0			47.1			46.0	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	60.7	13.7	20.4	35.9	40.0	12.7	21.3
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	6.0	* 6	5.0	5.0
Max Green Setting (Gmax), s	13.0	38.0	13.0	25.0	17.0	* 34	11.0	27.0
Max Q Clear Time (g_c+I1), s	10.1	13.7	8.6	7.0	8.6	17.6	7.7	9.4
Green Ext Time (p_c), s	0.1	16.0	0.1	2.4	5.0	11.6	0.1	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	79	47	637	52	21	42	382	367	18	778	18
Future Volume (veh/h)	26	79	47	637	52	21	42	382	367	18	778	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1821	1900	1845	1827	1845	1845	1843	1900
Adj Flow Rate, veh/h	28	85	5	725	0	0	45	411	0	19	837	17
Adj No. of Lanes	0	1	1	2	1	0	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	4	4	4	3	4	3	3	3	3
Cap, veh/h	35	106	122	838	438	0	415	1679	759	28	1338	27
Arrive On Green	0.08	0.08	0.08	0.24	0.00	0.00	0.24	0.48	0.00	0.02	0.26	0.26
Sat Flow, veh/h	451	1371	1568	3480	1821	0	1757	3471	1568	1757	5074	103
Grp Volume(v), veh/h	113	0	5	725	0	0	45	411	0	19	553	301
Grp Sat Flow(s),veh/h/ln	1822	0	1568	1740	1821	0	1757	1736	1568	1757	1678	1822
Q Serve(g_s), s	6.7	0.0	0.3	22.0	0.0	0.0	2.2	7.6	0.0	1.2	16.0	16.0
Cycle Q Clear(g_c), s	6.7	0.0	0.3	22.0	0.0	0.0	2.2	7.6	0.0	1.2	16.0	16.0
Prop In Lane	0.25		1.00	1.00		0.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	141	0	122	838	438	0	415	1679	759	28	885	480
V/C Ratio(X)	0.80	0.00	0.04	0.87	0.00	0.00	0.11	0.24	0.00	0.68	0.63	0.63
Avail Cap(c_a), veh/h	182	0	157	1265	662	0	415	1679	759	128	885	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	0.0	46.9	40.1	0.0	0.0	32.9	16.6	0.0	53.8	35.7	35.7
Incr Delay (d2), s/veh	13.3	0.0	0.1	4.3	0.0	0.0	0.0	0.3	0.0	10.0	3.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.1	11.1	0.0	0.0	1.1	3.7	0.0	0.7	7.8	8.8
LnGrp Delay(d),s/veh	63.2	0.0	47.0	44.3	0.0	0.0	33.0	17.0	0.0	63.8	39.0	41.8
LnGrp LOS	E		D	D			C	B		E	D	D
Approach Vol, veh/h		118			725			456			873	
Approach Delay, s/veh		62.5			44.3			18.5			40.5	
Approach LOS		E			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	58.2		13.5	31.0	34.0		31.5
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	8.0	31.0		11.0	10.0	29.0		40.0
Max Q Clear Time (g_c+I1), s	3.2	9.6		8.7	4.2	18.0		24.0
Green Ext Time (p_c), s	0.0	5.7		0.1	1.3	7.1		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	951	32	281	1090	114	69	152	245	376	146	51
Future Volume (veh/h)	87	951	32	281	1090	114	69	152	245	376	146	51
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1843	1900	1845	1845	1900	1845	1845	1900	1845	1842	1900
Adj Flow Rate, veh/h	101	1106	34	327	1267	123	80	177	232	329	321	51
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	1324	41	319	1745	169	240	99	130	415	365	58
Arrive On Green	0.07	0.26	0.26	0.18	0.37	0.37	0.14	0.14	0.14	0.24	0.24	0.24
Sat Flow, veh/h	1740	5015	154	1757	4668	453	1757	725	950	1757	1547	246
Grp Volume(v), veh/h	101	740	400	327	911	479	80	0	409	329	0	372
Grp Sat Flow(s),veh/h/ln	1740	1677	1815	1757	1679	1764	1757	0	1675	1757	0	1793
Q Serve(g_s), s	6.3	22.9	22.9	20.0	25.7	25.7	4.5	0.0	15.0	19.4	0.0	22.0
Cycle Q Clear(g_c), s	6.3	22.9	22.9	20.0	25.7	25.7	4.5	0.0	15.0	19.4	0.0	22.0
Prop In Lane	1.00		0.08	1.00		0.26	1.00		0.57	1.00		0.14
Lane Grp Cap(c), veh/h	126	886	479	319	1255	659	240	0	228	415	0	423
V/C Ratio(X)	0.80	0.84	0.84	1.02	0.73	0.73	0.33	0.00	1.79	0.79	0.00	0.88
Avail Cap(c_a), veh/h	174	886	479	319	1255	659	240	0	228	479	0	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	38.2	38.2	45.0	29.6	29.6	43.0	0.0	47.5	39.5	0.0	40.5
Incr Delay (d2), s/veh	11.9	9.2	15.8	56.6	3.7	6.9	0.3	0.0	373.0	7.8	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	11.7	13.6	14.7	12.5	13.8	2.2	0.0	30.6	10.3	0.0	12.6
LnGrp Delay(d),s/veh	62.1	47.4	54.0	101.6	33.3	36.5	43.3	0.0	420.5	47.3	0.0	55.7
LnGrp LOS	E	D	D	F	C	D	D		F	D		E
Approach Vol, veh/h		1241			1717			489			701	
Approach Delay, s/veh		50.7			47.2			358.8			51.8	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	34.0		20.0	12.9	46.1		31.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	20.0	25.0		15.0	11.0	34.0		30.0
Max Q Clear Time (g_c+I1), s	22.0	24.9		17.0	8.3	27.7		24.0
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	6.3		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	85.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	894	183	166	772	93	156	335	52	116	761	114
Future Volume (veh/h)	218	894	183	166	772	93	156	335	52	116	761	114
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1829	1900	1845	1810	1827	1845	1842	1900
Adj Flow Rate, veh/h	232	951	91	177	821	86	166	356	15	123	810	103
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	5	4	3	3	3
Cap, veh/h	683	2212	678	239	1420	148	246	1261	396	182	1069	135
Arrive On Green	0.20	0.44	0.44	0.07	0.31	0.31	0.07	0.26	0.26	0.05	0.24	0.24
Sat Flow, veh/h	3408	5036	1544	3408	4593	479	3408	4940	1549	3408	4520	571
Grp Volume(v), veh/h	232	951	91	177	594	313	166	356	15	123	600	313
Grp Sat Flow(s),veh/h/ln	1704	1679	1544	1704	1665	1743	1704	1647	1549	1704	1677	1738
Q Serve(g_s), s	6.4	14.4	2.7	5.6	16.5	16.6	5.2	6.4	0.8	3.9	18.3	18.5
Cycle Q Clear(g_c), s	6.4	14.4	2.7	5.6	16.5	16.6	5.2	6.4	0.8	3.9	18.3	18.5
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	683	2212	678	239	1029	539	246	1261	396	182	793	411
V/C Ratio(X)	0.34	0.43	0.13	0.74	0.58	0.58	0.67	0.28	0.04	0.68	0.76	0.76
Avail Cap(c_a), veh/h	683	2212	678	434	1029	539	434	1261	396	465	854	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	21.3	9.2	50.2	32.0	32.0	49.8	32.9	30.8	51.1	39.0	39.1
Incr Delay (d2), s/veh	0.1	0.6	0.4	1.7	2.4	4.5	1.2	0.4	0.1	1.6	5.8	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.7	1.2	2.7	7.9	8.7	2.5	3.0	0.4	1.9	9.1	10.1
LnGrp Delay(d),s/veh	37.8	21.9	9.7	51.8	34.3	36.5	51.0	33.3	30.9	52.8	44.9	50.2
LnGrp LOS	D	C	A	D	C	D	D	C	C	D	D	D
Approach Vol, veh/h		1274			1084			537			1036	
Approach Delay, s/veh		24.0			37.8			38.7			47.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	53.3	12.9	31.0	27.0	39.0	10.9	33.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	14.0	34.0	14.0	28.0	14.0	34.0	15.0	27.0
Max Q Clear Time (g_c+I1), s	7.6	16.4	7.2	20.5	8.4	18.6	5.9	8.4
Green Ext Time (p_c), s	0.2	12.0	0.8	5.4	0.8	9.6	0.1	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	50	183	54	78	29	104	849	9	10	753	55
Future Volume (veh/h)	121	50	183	54	78	29	104	849	9	10	753	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1845	1900	1759	1843	1900	1727	1842	1900
Adj Flow Rate, veh/h	149	62	96	67	96	22	128	1048	11	12	930	63
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	4	3	3	8	3	3	10	3	3
Cap, veh/h	241	127	197	200	286	66	249	2326	24	18	1724	117
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.15	0.66	0.66	0.01	0.52	0.52
Sat Flow, veh/h	1254	646	1001	1198	1452	333	1675	3549	37	1645	3326	225
Grp Volume(v), veh/h	149	0	158	67	0	118	128	517	542	12	489	504
Grp Sat Flow(s),veh/h/ln	1254	0	1647	1198	0	1785	1675	1751	1836	1645	1750	1801
Q Serve(g_s), s	12.8	0.0	9.4	5.8	0.0	6.3	7.7	15.9	15.9	0.8	20.6	20.6
Cycle Q Clear(g_c), s	19.0	0.0	9.4	15.2	0.0	6.3	7.7	15.9	15.9	0.8	20.6	20.6
Prop In Lane	1.00		0.61	1.00		0.19	1.00		0.02	1.00		0.13
Lane Grp Cap(c), veh/h	241	0	325	200	0	352	249	1148	1203	18	907	933
V/C Ratio(X)	0.62	0.00	0.49	0.34	0.00	0.34	0.51	0.45	0.45	0.65	0.54	0.54
Avail Cap(c_a), veh/h	279	0	374	236	0	406	249	1148	1203	194	907	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	39.2	45.9	0.0	38.0	43.2	9.3	9.3	54.2	17.7	17.7
Incr Delay (d2), s/veh	1.7	0.0	0.4	0.4	0.0	0.2	0.8	1.3	1.2	13.6	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.3	1.9	0.0	3.1	3.6	8.0	8.4	0.4	10.5	10.8
LnGrp Delay(d),s/veh	47.8	0.0	39.6	46.3	0.0	38.2	44.0	10.5	10.5	67.8	20.0	20.0
LnGrp LOS	D		D	D		D	D	B	B	E	C	B
Approach Vol, veh/h		307			185			1187			1005	
Approach Delay, s/veh		43.6			41.1			14.1			20.6	
Approach LOS		D			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	77.1		26.7	21.3	62.0		26.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	13.0	57.0		25.0	13.0	57.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	17.9		21.0	9.7	22.6		17.2
Green Ext Time (p_c), s	0.0	21.8		0.7	0.3	18.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	423	48	125	328	191	85	590	75	215	821	39
Future Volume (veh/h)	48	423	48	125	328	191	85	590	75	215	821	39
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1843	1900	1845	1810	1845	1845	1796	1900	1845	1845	1810
Adj Flow Rate, veh/h	56	498	48	147	386	54	100	694	79	253	966	19
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	3	3	3	5	3	3	6	6	3	3	5
Cap, veh/h	72	572	55	175	812	370	125	1207	137	263	1646	721
Arrive On Green	0.04	0.18	0.18	0.10	0.24	0.24	0.07	0.39	0.39	0.15	0.47	0.47
Sat Flow, veh/h	1740	3222	309	1757	3438	1566	1757	3089	351	1757	3505	1536
Grp Volume(v), veh/h	56	270	276	147	386	54	100	383	390	253	966	19
Grp Sat Flow(s),veh/h/ln	1740	1751	1781	1757	1719	1566	1757	1706	1734	1757	1752	1536
Q Serve(g_s), s	3.5	16.5	16.6	9.0	10.6	3.0	6.2	19.4	19.4	15.7	22.2	0.7
Cycle Q Clear(g_c), s	3.5	16.5	16.6	9.0	10.6	3.0	6.2	19.4	19.4	15.7	22.2	0.7
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	72	311	316	175	812	370	125	667	678	263	1646	721
V/C Ratio(X)	0.78	0.87	0.87	0.84	0.48	0.15	0.80	0.57	0.58	0.96	0.59	0.03
Avail Cap(c_a), veh/h	237	350	356	240	812	370	240	667	678	263	1646	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	44.0	44.0	48.6	36.2	33.2	50.3	26.3	26.3	46.4	21.4	15.7
Incr Delay (d2), s/veh	6.7	17.1	17.7	13.0	0.2	0.1	4.4	3.6	3.5	44.1	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	9.4	9.7	5.0	5.1	1.3	3.2	9.8	10.0	10.9	11.1	0.3
LnGrp Delay(d),s/veh	58.9	61.1	61.7	61.7	36.3	33.3	54.7	29.9	29.9	90.6	22.9	15.7
LnGrp LOS	E	E	E	E	D	C	D	C	C	F	C	B
Approach Vol, veh/h		602			587			873			1238	
Approach Delay, s/veh		61.2			42.4			32.7			36.6	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	56.7	16.0	24.5	21.5	48.0	9.5	31.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	38.0	15.0	22.0	10.0	43.0	15.0	22.0
Max Q Clear Time (g_c+I1), s	8.2	24.2	11.0	18.6	17.7	21.4	5.5	12.6
Green Ext Time (p_c), s	0.1	9.9	0.1	0.8	0.0	10.7	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	436	13	15	347	158	13	83	34	382	84	99
Future Volume (veh/h)	59	436	13	15	347	158	13	83	34	382	84	99
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1842	1900	1900	1828	1792	1900	1770	1845	1845	1803	1900
Adj Flow Rate, veh/h	72	532	16	18	423	80	16	101	4	539	0	0
Adj No. of Lanes	0	2	0	0	2	1	0	1	1	2	1	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	4	4	6	8	8	3	3	11	11
Cap, veh/h	191	1334	40	81	1648	737	24	151	153	764	392	0
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.10	0.10	0.10	0.22	0.00	0.00
Sat Flow, veh/h	275	2635	79	70	3254	1456	240	1518	1540	3514	1803	0
Grp Volume(v), veh/h	324	0	296	233	208	80	117	0	4	539	0	0
Grp Sat Flow(s),veh/h/ln	1538	0	1451	1744	1580	1456	1758	0	1540	1757	1803	0
Q Serve(g_s), s	2.6	0.0	10.7	0.0	6.4	2.4	5.5	0.0	0.2	12.1	0.0	0.0
Cycle Q Clear(g_c), s	9.6	0.0	10.7	6.1	6.4	2.4	5.5	0.0	0.2	12.1	0.0	0.0
Prop In Lane	0.22		0.05	0.08		1.00	0.14		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	831	0	735	929	800	737	175	0	153	764	392	0
V/C Ratio(X)	0.39	0.00	0.40	0.25	0.26	0.11	0.67	0.00	0.03	0.71	0.00	0.00
Avail Cap(c_a), veh/h	831	0	735	929	800	737	455	0	398	1033	530	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	13.0	11.9	11.9	11.0	36.9	0.0	34.5	30.7	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.6	0.6	0.8	0.3	4.3	0.0	0.1	4.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	4.6	3.2	3.0	1.0	2.8	0.0	0.1	6.3	0.0	0.0
LnGrp Delay(d),s/veh	14.0	0.0	14.6	12.5	12.7	11.3	41.2	0.0	34.6	35.1	0.0	0.0
LnGrp LOS	B		B	B	B	B	D		C	D		
Approach Vol, veh/h		620			521			121			539	
Approach Delay, s/veh		14.3			12.4			41.0			35.1	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		23.5		48.0		13.5
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		23.0		25.0		23.0		22.0
Max Q Clear Time (g_c+I1), s		12.7		14.1		8.4		7.5
Green Ext Time (p_c), s		3.6		4.0		4.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	372	104	30	597	70	114	554	27	90	583	210
Future Volume (veh/h)	198	372	104	30	597	70	114	554	27	90	583	210
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1808	1900	1827	1841	1900	1792	1845	1845
Adj Flow Rate, veh/h	241	454	59	37	728	80	139	676	31	110	711	154
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	5	5	4	3	3	6	3	3
Cap, veh/h	271	1397	622	47	844	93	167	1103	51	135	1077	472
Arrive On Green	0.15	0.40	0.40	0.03	0.27	0.27	0.10	0.32	0.32	0.08	0.31	0.31
Sat Flow, veh/h	1757	3505	1560	1757	3113	342	1740	3404	156	1707	3505	1538
Grp Volume(v), veh/h	241	454	59	37	401	407	139	347	360	110	711	154
Grp Sat Flow(s),veh/h/ln	1757	1752	1560	1757	1717	1738	1740	1749	1811	1707	1752	1538
Q Serve(g_s), s	15.7	10.4	2.8	2.4	25.9	26.0	9.2	19.5	19.5	7.4	20.6	9.0
Cycle Q Clear(g_c), s	15.7	10.4	2.8	2.4	25.9	26.0	9.2	19.5	19.5	7.4	20.6	9.0
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	271	1397	622	47	465	471	167	567	587	135	1077	472
V/C Ratio(X)	0.89	0.32	0.09	0.79	0.86	0.86	0.83	0.61	0.61	0.81	0.66	0.33
Avail Cap(c_a), veh/h	603	1503	669	241	471	477	522	570	590	351	1142	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	24.2	21.9	56.4	40.4	40.4	51.8	33.2	33.2	52.9	35.1	31.1
Incr Delay (d2), s/veh	4.0	0.5	0.2	10.4	17.6	17.6	4.1	4.1	4.0	4.4	2.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	5.1	1.2	1.3	14.5	14.7	4.6	10.1	10.4	3.7	10.4	4.0
LnGrp Delay(d),s/veh	52.3	24.7	22.2	66.8	58.1	58.0	55.9	37.3	37.2	57.3	37.8	32.5
LnGrp LOS	D	C	C	E	E	E	E	D	D	E	D	C
Approach Vol, veh/h		754			845			846			975	
Approach Delay, s/veh		33.3			58.4			40.3			39.2	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	42.8	23.0	36.6	16.2	40.8	8.1	51.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	24.0	38.0	40.0	32.0	35.0	38.0	16.0	50.0
Max Q Clear Time (g_c+I1), s	9.4	21.5	17.7	28.0	11.2	22.6	4.4	12.4
Green Ext Time (p_c), s	0.1	14.0	0.3	3.6	0.2	13.3	0.0	24.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	308	17	123	411	36	32	158	165	76	93	90
Future Volume (veh/h)	89	308	17	123	411	36	32	158	165	76	93	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1624	1689	1900	1845	1638	1397	1743	1827	1900	1377	1810	1681
Adj Flow Rate, veh/h	103	358	0	143	478	14	37	184	166	88	108	27
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	17	13	13	3	16	36	9	3	3	38	5	13
Cap, veh/h	214	611	0	200	518	375	120	188	170	150	460	364
Arrive On Green	0.14	0.36	0.00	0.11	0.32	0.32	0.07	0.21	0.21	0.11	0.25	0.25
Sat Flow, veh/h	1547	1689	0	1757	1638	1188	1660	886	799	1311	1810	1429
Grp Volume(v), veh/h	103	358	0	143	478	14	37	0	350	88	108	27
Grp Sat Flow(s),veh/h/ln	1547	1689	0	1757	1638	1188	1660	0	1685	1311	1810	1429
Q Serve(g_s), s	5.8	16.2	0.0	7.4	26.6	0.5	2.0	0.0	19.5	6.0	4.5	0.9
Cycle Q Clear(g_c), s	5.8	16.2	0.0	7.4	26.6	0.5	2.0	0.0	19.5	6.0	4.5	0.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	214	611	0	200	518	375	120	0	358	150	460	364
V/C Ratio(X)	0.48	0.59	0.00	0.71	0.92	0.04	0.31	0.00	0.98	0.59	0.23	0.07
Avail Cap(c_a), veh/h	492	1165	0	373	869	630	264	0	358	209	460	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.4	0.0	40.3	31.1	10.2	41.5	0.0	36.9	39.6	27.9	11.7
Incr Delay (d2), s/veh	1.2	0.3	0.0	3.5	6.1	0.0	1.1	0.0	41.7	2.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.6	0.0	3.8	12.8	0.2	1.0	0.0	13.2	2.3	2.3	0.5
LnGrp Delay(d),s/veh	38.7	24.7	0.0	43.8	37.3	10.2	42.5	0.0	78.6	42.3	28.2	11.9
LnGrp LOS	D	C		D	D	B	D		E	D	C	B
Approach Vol, veh/h		461			635			387			223	
Approach Delay, s/veh		27.8			38.1			75.2			31.8	
Approach LOS		C			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	40.1	10.8	28.6	19.1	35.8	14.8	24.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.6	6.0	* 6	4.0	4.6
Max Green Setting (Gmax), s	20.0	65.0	15.0	20.0	30.0	* 50	15.0	20.0
Max Q Clear Time (g_c+I1), s	9.4	18.2	4.0	6.5	7.8	28.6	8.0	21.5
Green Ext Time (p_c), s	0.2	1.4	0.0	2.8	1.4	1.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	351	355	222	349	56	322	437	164	76	349	80
Future Volume (veh/h)	53	351	355	222	349	56	322	437	164	76	349	80
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1776	1810	1743	1759	1810	1776	1840	1900	1827	1810	1845
Adj Flow Rate, veh/h	55	366	101	231	364	21	335	455	0	79	364	19
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	7	5	9	8	5	7	3	3	4	5	3
Cap, veh/h	120	970	442	317	1171	538	430	1121	0	140	795	357
Arrive On Green	0.04	0.29	0.29	0.10	0.35	0.35	0.13	0.32	0.00	0.04	0.23	0.23
Sat Flow, veh/h	3375	3374	1536	3221	3343	1534	3281	3588	0	3375	3438	1544
Grp Volume(v), veh/h	55	366	101	231	364	21	335	455	0	79	364	19
Grp Sat Flow(s),veh/h/ln	1688	1687	1536	1610	1671	1534	1640	1748	0	1688	1719	1544
Q Serve(g_s), s	1.3	6.9	4.0	5.5	6.3	0.7	7.8	8.1	0.0	1.8	7.2	0.8
Cycle Q Clear(g_c), s	1.3	6.9	4.0	5.5	6.3	0.7	7.8	8.1	0.0	1.8	7.2	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	970	442	317	1171	538	430	1121	0	140	795	357
V/C Ratio(X)	0.46	0.38	0.23	0.73	0.31	0.04	0.78	0.41	0.00	0.56	0.46	0.05
Avail Cap(c_a), veh/h	850	1700	774	811	1263	580	1240	1321	0	850	1083	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	22.6	21.6	34.8	18.8	17.0	33.4	21.1	0.0	37.3	26.2	23.8
Incr Delay (d2), s/veh	1.0	0.9	0.9	1.2	0.5	0.1	1.2	0.9	0.0	1.3	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.3	1.8	2.5	3.0	0.3	3.6	4.0	0.0	0.9	3.6	0.3
LnGrp Delay(d),s/veh	38.6	23.5	22.5	36.0	19.3	17.1	34.6	21.9	0.0	38.7	27.7	24.0
LnGrp LOS	D	C	C	D	B	B	C	C		D	C	C
Approach Vol, veh/h		522			616			790			462	
Approach Delay, s/veh		24.9			25.5			27.3			29.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	27.8	8.3	30.5	7.8	32.8	15.4	23.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	30.0	30.0	25.0
Max Q Clear Time (g_c+I1), s	7.5	8.9	3.8	10.1	3.3	8.3	9.8	9.2
Green Ext Time (p_c), s	0.3	13.8	0.1	10.6	0.1	11.2	0.6	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	232	345	74	343	31	383	45	68	11	10	16
Future Volume (veh/h)	42	232	345	74	343	31	383	45	68	11	10	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1759	1727	1827	1830	1900	1810	1786	1900	1397	1409	1900
Adj Flow Rate, veh/h	46	252	0	80	373	0	451	0	0	12	12	0
Adj No. of Lanes	1	2	1	1	2	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	8	10	4	3	3	5	11	11	36	50	50
Cap, veh/h	65	1006	442	101	1118	0	618	320	0	30	32	0
Arrive On Green	0.04	0.30	0.00	0.06	0.32	0.00	0.18	0.00	0.00	0.02	0.02	0.00
Sat Flow, veh/h	1723	3343	1468	1740	3568	0	3447	1786	0	1331	1409	0
Grp Volume(v), veh/h	46	252	0	80	373	0	451	0	0	12	12	0
Grp Sat Flow(s),veh/h/ln	1723	1671	1468	1740	1738	0	1723	1786	0	1331	1409	0
Q Serve(g_s), s	1.3	2.9	0.0	2.3	4.1	0.0	6.2	0.0	0.0	0.4	0.4	0.0
Cycle Q Clear(g_c), s	1.3	2.9	0.0	2.3	4.1	0.0	6.2	0.0	0.0	0.4	0.4	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	65	1006	442	101	1118	0	618	320	0	30	32	0
V/C Ratio(X)	0.71	0.25	0.00	0.79	0.33	0.00	0.73	0.00	0.00	0.40	0.38	0.00
Avail Cap(c_a), veh/h	825	2667	1171	868	2774	0	2062	1068	0	663	702	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.9	13.2	0.0	23.3	12.9	0.0	19.4	0.0	0.0	24.2	24.2	0.0
Incr Delay (d2), s/veh	5.2	0.5	0.0	5.1	0.6	0.0	0.6	0.0	0.0	3.1	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	0.0	1.2	2.1	0.0	3.0	0.0	0.0	0.2	0.2	0.0
LnGrp Delay(d),s/veh	29.0	13.7	0.0	28.4	13.6	0.0	20.1	0.0	0.0	27.3	26.8	0.0
LnGrp LOS	C	B		C	B		C			C	C	
Approach Vol, veh/h		298			453			451			24	
Approach Delay, s/veh		16.1			16.2			20.1			27.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	21.1		6.1	6.9	22.1		15.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	25.0	40.0		25.0	24.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	4.3	4.9		2.4	3.3	6.1		8.2
Green Ext Time (p_c), s	0.1	10.3		0.0	0.0	10.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	2	55	0	102	0	427	57	144	301	4
Future Volume (veh/h)	4	0	2	55	0	102	0	427	57	144	301	4
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1520	1267	1900	1520	1845	1508	1900	1629	1900	1900	1605	1845
Adj Flow Rate, veh/h	4	0	0	61	0	21	0	474	61	160	334	2
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	25	3	3	25	3	26	17	17	17	19	19	3
Cap, veh/h	16	4	0	160	262	96	0	907	117	261	486	1005
Arrive On Green	0.01	0.00	0.00	0.11	0.00	0.07	0.00	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1448	2470	0	1448	3505	1282	0	1415	182	272	758	1567
Grp Volume(v), veh/h	4	0	0	61	0	21	0	0	535	494	0	2
Grp Sat Flow(s),veh/h/ln	1448	1203	0	1448	1752	1282	0	0	1597	1030	0	1567
Q Serve(g_s), s	0.2	0.0	0.0	2.2	0.0	0.8	0.0	0.0	9.9	11.8	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.0	2.2	0.0	0.8	0.0	0.0	9.9	21.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.11	0.32		1.00
Lane Grp Cap(c), veh/h	16	4	0	160	262	96	0	0	1024	747	0	1005
V/C Ratio(X)	0.26	0.00	0.00	0.38	0.00	0.22	0.00	0.00	0.52	0.66	0.00	0.00
Avail Cap(c_a), veh/h	791	2191	0	791	3190	1167	0	0	1453	1062	0	1427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	22.7	0.0	23.9	0.0	0.0	5.3	7.8	0.0	3.5
Incr Delay (d2), s/veh	11.8	0.0	0.0	2.1	0.0	2.4	0.0	0.0	0.6	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.0	0.0	0.4	0.0	0.0	4.5	5.8	0.0	0.0
LnGrp Delay(d),s/veh	38.8	0.0	0.0	24.8	0.0	26.3	0.0	0.0	5.9	9.2	0.0	3.5
LnGrp LOS	D			C		C			A	A		A
Approach Vol, veh/h		4			82			535			496	
Approach Delay, s/veh		38.8			25.2			5.9			9.2	
Approach LOS		D			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	3.6		40.2	5.6	9.1		40.2
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	30.0	50.0		50.0	30.0	50.0		50.0
Max Q Clear Time (g_c+I1), s	4.2	0.0		23.7	2.2	2.8		11.9
Green Ext Time (p_c), s	0.2	0.0		11.5	0.0	0.1		13.5

Intersection Summary		
HCM 2010 Ctrl Delay	8.9	
HCM 2010 LOS	A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	702	2	51	230	12	3	1	150	24	2	2
Future Volume (veh/h)	1	702	2	51	230	12	3	1	150	24	2	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1783	1900	1845	1845	1845	1759	1502	1900
Adj Flow Rate, veh/h	1	836	2	61	274	13	4	1	19	29	2	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	4	6	6	3	3	3	8	50	50
Cap, veh/h	3	1963	5	76	1944	92	8	41	34	44	66	0
Arrive On Green	0.00	0.55	0.55	0.04	0.59	0.59	0.00	0.02	0.02	0.03	0.04	0.00
Sat Flow, veh/h	1757	3587	9	1740	3294	156	1757	1845	1561	1675	1502	0
Grp Volume(v), veh/h	1	408	430	61	140	147	4	1	19	29	2	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1843	1740	1694	1756	1757	1845	1561	1675	1502	0
Q Serve(g_s), s	0.0	7.6	7.6	1.9	2.1	2.1	0.1	0.0	0.7	1.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	7.6	7.6	1.9	2.1	2.1	0.1	0.0	0.7	1.0	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	959	1008	76	1000	1036	8	41	34	44	66	0
V/C Ratio(X)	0.32	0.43	0.43	0.80	0.14	0.14	0.53	0.02	0.55	0.67	0.03	0.00
Avail Cap(c_a), veh/h	951	1518	1596	942	1467	1520	951	998	845	907	813	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	7.4	7.4	26.3	5.1	5.1	27.5	26.5	26.8	26.8	25.4	0.0
Incr Delay (d2), s/veh	19.7	1.1	1.0	6.9	0.2	0.2	19.6	0.1	5.0	6.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	4.1	1.1	1.0	1.0	0.1	0.0	0.3	0.5	0.0	0.0
LnGrp Delay(d),s/veh	47.4	8.5	8.4	33.2	5.3	5.3	47.1	26.6	31.8	33.1	25.4	0.0
LnGrp LOS	D	A	A	C	A	A	D	C	C	C	C	
Approach Vol, veh/h		839			348			24			31	
Approach Delay, s/veh		8.5			10.2			34.2			32.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	35.3	5.2	7.4	5.1	37.7	6.4	6.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	30.0	48.0	30.0	30.0	30.0	48.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	3.9	9.6	2.1	2.1	2.0	4.1	3.0	2.7
Green Ext Time (p_c), s	0.1	20.7	0.0	0.0	0.0	22.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1	7	28	3	95	25	441	11	148	392	37
Future Volume (veh/h)	21	1	7	28	3	95	25	441	11	148	392	37
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1281	1900	1900	1781	1845	1638	1808	1900	1776	1792	1712
Adj Flow Rate, veh/h	24	1	1	32	3	15	28	501	10	168	445	24
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	16	5	5	7	6	11
Cap, veh/h	182	6	2	234	11	105	40	1668	33	214	1992	851
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.03	0.48	0.48	0.13	0.58	0.58
Sat Flow, veh/h	629	86	29	1414	157	1556	1560	3444	69	1691	3406	1455
Grp Volume(v), veh/h	26	0	0	35	0	15	28	250	261	168	445	24
Grp Sat Flow(s),veh/h/ln	744	0	0	1571	0	1556	1560	1717	1796	1691	1703	1455
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.5	0.9	4.4	4.4	4.8	3.1	0.3
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.0	0.0	0.5	0.9	4.4	4.4	4.8	3.1	0.3
Prop In Lane	0.92		0.04	0.91		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	189	0	0	244	0	105	40	832	870	214	1992	851
V/C Ratio(X)	0.14	0.00	0.00	0.14	0.00	0.14	0.70	0.30	0.30	0.79	0.22	0.03
Avail Cap(c_a), veh/h	589	0	0	813	0	752	753	1659	1734	817	3289	1405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	0.0	22.1	0.0	21.8	24.0	7.7	7.7	21.1	4.9	4.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.2	7.8	0.7	0.7	2.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.5	0.0	0.2	0.5	2.2	2.3	2.4	1.5	0.2
LnGrp Delay(d),s/veh	22.9	0.0	0.0	22.2	0.0	22.1	31.8	8.5	8.4	23.5	5.1	4.4
LnGrp LOS	C			C		C	C	A	A	C	A	A
Approach Vol, veh/h		26			50			539			637	
Approach Delay, s/veh		22.9			22.1			9.7			9.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	30.1		8.3	6.3	35.1		8.3
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	24.0	48.0		24.0	24.0	48.0		24.0
Max Q Clear Time (g_c+I1), s	6.8	6.4		3.0	2.9	5.1		4.1
Green Ext Time (p_c), s	0.2	17.7		0.2	0.0	17.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	663	48	143	449	105	39	201	121	118	130	178
Future Volume (veh/h)	197	663	48	143	449	105	39	201	121	118	130	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1597	1668	1900	1624	1639	1900	1610	1733	1900	1570	1535	1900
Adj Flow Rate, veh/h	226	762	52	164	516	108	45	231	76	136	149	54
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	19	14	14	17	14	14	18	10	10	21	18	18
Cap, veh/h	260	944	64	196	692	144	53	461	148	164	558	195
Arrive On Green	0.17	0.31	0.31	0.13	0.27	0.27	0.03	0.19	0.19	0.11	0.26	0.26
Sat Flow, veh/h	1521	3010	205	1547	2567	535	1533	2454	787	1495	2121	740
Grp Volume(v), veh/h	226	401	413	164	312	312	45	153	154	136	101	102
Grp Sat Flow(s),veh/h/ln	1521	1584	1631	1547	1557	1545	1533	1647	1594	1495	1458	1403
Q Serve(g_s), s	12.2	19.5	19.5	8.7	15.4	15.5	2.5	7.0	7.3	7.5	4.6	4.9
Cycle Q Clear(g_c), s	12.2	19.5	19.5	8.7	15.4	15.5	2.5	7.0	7.3	7.5	4.6	4.9
Prop In Lane	1.00		0.13	1.00		0.35	1.00		0.49	1.00		0.53
Lane Grp Cap(c), veh/h	260	497	512	196	420	417	53	309	299	164	383	369
V/C Ratio(X)	0.87	0.81	0.81	0.84	0.74	0.75	0.85	0.49	0.51	0.83	0.26	0.28
Avail Cap(c_a), veh/h	507	604	622	516	649	644	456	627	607	534	556	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	26.5	26.5	35.8	28.0	28.1	40.3	30.5	30.7	36.6	24.5	24.6
Incr Delay (d2), s/veh	3.5	5.4	5.3	3.6	1.0	1.0	12.6	4.4	4.9	4.0	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	9.2	9.5	3.9	6.7	6.7	1.2	3.6	3.6	3.3	2.0	2.0
LnGrp Delay(d),s/veh	37.4	31.9	31.8	39.4	29.0	29.1	52.9	34.9	35.6	40.6	25.8	26.1
LnGrp LOS	D	C	C	D	C	C	D	C	D	D	C	C
Approach Vol, veh/h		1040			788			352			339	
Approach Delay, s/veh		33.1			31.2			37.5			31.8	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	21.8	15.6	32.3	7.9	28.1	19.3	28.6
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	32.0	28.0	32.0	25.0	32.0	28.0	35.0
Max Q Clear Time (g_c+I1), s	9.5	9.3	10.7	21.5	4.5	6.9	14.2	17.5
Green Ext Time (p_c), s	0.2	6.5	0.2	4.1	0.0	6.8	0.3	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	180	5	42	330	170	2	0	23	7	1	5
Future Volume (veh/h)	17	180	5	42	330	170	2	0	23	7	1	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1426	1900	1597	1667	1845	1900	1528	1900	1900	1272	1583
Adj Flow Rate, veh/h	19	205	5	48	375	102	2	0	0	8	1	0
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	0	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	12	33	33	19	14	3	3	3	3	100	100	20
Cap, veh/h	31	684	17	65	860	809	220	0	0	203	1	16
Arrive On Green	0.02	0.49	0.49	0.04	0.52	0.52	0.01	0.00	0.00	0.01	0.01	0.00
Sat Flow, veh/h	1616	1387	34	1521	1667	1568	1382	0	0	905	113	1346
Grp Volume(v), veh/h	19	0	210	48	375	102	2	0	0	9	0	0
Grp Sat Flow(s),veh/h/ln	1616	0	1420	1521	1667	1568	1382	0	0	1018	0	1346
Q Serve(g_s), s	0.4	0.0	3.1	1.1	5.0	1.2	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	3.1	1.1	5.0	1.2	0.0	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.00	0.89		1.00
Lane Grp Cap(c), veh/h	31	0	700	65	860	809	220	0	0	204	0	16
V/C Ratio(X)	0.61	0.00	0.30	0.74	0.44	0.13	0.01	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	1464	0	1930	775	2265	2131	993	0	0	866	0	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	0.0	5.3	16.7	5.3	4.4	17.3	0.0	0.0	17.4	0.0	0.0
Incr Delay (d2), s/veh	7.0	0.0	0.9	6.1	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.3	0.6	2.5	0.6	0.0	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	24.2	0.0	6.2	22.8	6.6	4.7	17.3	0.0	0.0	17.4	0.0	0.0
LnGrp LOS	C		A	C	A	A	B			B		
Approach Vol, veh/h		229			525			2			9	
Approach Delay, s/veh		7.7			7.7			17.3			17.4	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	23.4		5.4	5.7	24.2		5.4
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	18.0	48.0		24.0	32.0	48.0		24.0
Max Q Clear Time (g_c+I1), s	3.1	5.1		2.3	2.4	7.0		2.0
Green Ext Time (p_c), s	0.0	11.6		0.0	0.0	11.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	169	32	29	266	195	45	225	18	71	130	21
Future Volume (veh/h)	37	169	32	29	266	195	45	225	18	71	130	21
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1496	1667	1484	1348	1696	1792	1681	1736	1900	1462	1439	1597
Adj Flow Rate, veh/h	44	201	13	35	317	0	54	268	17	85	155	15
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	27	14	28	41	12	6	13	8	8	30	32	19
Cap, veh/h	73	546	413	56	543	488	94	723	46	108	358	337
Arrive On Green	0.05	0.33	0.33	0.04	0.32	0.00	0.06	0.23	0.23	0.08	0.25	0.25
Sat Flow, veh/h	1425	1667	1262	1283	1696	1524	1601	3151	199	1392	1439	1357
Grp Volume(v), veh/h	44	201	13	35	317	0	54	140	145	85	155	15
Grp Sat Flow(s),veh/h/ln	1425	1667	1262	1283	1696	1524	1601	1649	1701	1392	1439	1357
Q Serve(g_s), s	1.9	5.7	0.4	1.7	9.7	0.0	2.0	4.4	4.5	3.7	5.6	0.5
Cycle Q Clear(g_c), s	1.9	5.7	0.4	1.7	9.7	0.0	2.0	4.4	4.5	3.7	5.6	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	73	546	413	56	543	488	94	379	390	108	358	337
V/C Ratio(X)	0.60	0.37	0.03	0.62	0.58	0.00	0.58	0.37	0.37	0.79	0.43	0.04
Avail Cap(c_a), veh/h	642	911	690	578	928	833	979	902	930	851	856	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	16.0	14.2	29.2	17.7	0.0	28.5	20.2	20.2	28.2	19.7	17.8
Incr Delay (d2), s/veh	15.8	1.9	0.1	21.7	4.5	0.0	11.4	2.8	2.7	23.2	3.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.9	0.2	0.9	5.2	0.0	1.2	2.3	2.4	2.1	2.6	0.2
LnGrp Delay(d),s/veh	44.6	17.9	14.3	50.9	22.2	0.0	39.9	22.9	22.9	51.4	23.5	18.0
LnGrp LOS	D	B	B	D	C		D	C	C	D	C	B
Approach Vol, veh/h		258			352			339			255	
Approach Delay, s/veh		22.3			25.1			25.6			32.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	24.9	9.8	19.3	7.7	25.4	8.6	20.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	28.0	34.0	38.0	34.0	28.0	34.0	38.0	37.0
Max Q Clear Time (g_c+I1), s	3.9	11.7	5.7	6.5	3.7	7.7	4.0	7.6
Green Ext Time (p_c), s	0.2	8.2	0.5	7.6	0.1	8.9	0.3	7.8

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	316	30	1131	457	38	1249
Future Volume (veh/h)	316	30	1131	457	38	1249
Number	2	12	1	6	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1810	1845
Adj Flow Rate, veh/h	329	13	1178	476	40	1123
Adj No. of Lanes	4	0	2	2	2	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	5	3
Cap, veh/h	902	35	1421	2242	669	946
Arrive On Green	0.14	0.14	0.42	0.64	0.20	0.20
Sat Flow, veh/h	6572	246	3408	3597	3343	2760
Grp Volume(v), veh/h	247	95	1178	476	40	1123
Grp Sat Flow(s),veh/h/ln	1586	1801	1704	1752	1672	1380
Q Serve(g_s), s	3.5	3.6	23.1	4.2	0.7	15.0
Cycle Q Clear(g_c), s	3.5	3.6	23.1	4.2	0.7	15.0
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	680	257	1421	2242	669	946
V/C Ratio(X)	0.36	0.37	0.83	0.21	0.06	1.19
Avail Cap(c_a), veh/h	2223	841	1592	2242	669	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	29.1	19.5	5.6	24.3	21.1
Incr Delay (d2), s/veh	1.2	3.2	4.2	0.2	0.0	94.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.0	11.6	2.1	0.3	22.2
LnGrp Delay(d),s/veh	30.2	32.3	23.7	5.8	24.3	115.8
LnGrp LOS	C	C	C	A	C	F
Approach Vol, veh/h	342			1654	1163	
Approach Delay, s/veh	30.8			18.5	112.7	
Approach LOS	C			B	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	37.2	17.7		20.0		54.9		
Change Period (Y+Rc), s	6.0	7.0		5.0		7.0		
Max Green Setting (Gmax), s	35.0	35.0		15.0		40.0		
Max Q Clear Time (g_c+I1), s	25.1	5.6		17.0		6.2		
Green Ext Time (p_c), s	6.2	5.1		0.0		13.3		

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	396	324	84	474	17	342	428	65	10	407	0
Future Volume (veh/h)	165	396	324	84	474	17	342	428	65	10	407	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1827	1845	1845	1845	1900	1845	1838	1900	1727	1845	1900
Adj Flow Rate, veh/h	176	421	196	89	504	17	364	455	63	11	433	0
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	4	3	3	3	3	3	3	3	10	3	3
Cap, veh/h	207	642	551	114	530	18	361	1297	179	20	796	0
Arrive On Green	0.12	0.35	0.35	0.06	0.30	0.30	0.21	0.42	0.42	0.01	0.23	0.00
Sat Flow, veh/h	1757	1827	1568	1757	1774	60	1757	3083	425	1645	3597	0
Grp Volume(v), veh/h	176	421	196	89	0	521	364	257	261	11	433	0
Grp Sat Flow(s),veh/h/ln	1757	1827	1568	1757	0	1834	1757	1746	1761	1645	1752	0
Q Serve(g_s), s	14.3	28.3	13.5	7.3	0.0	40.6	30.0	14.6	14.7	1.0	15.9	0.0
Cycle Q Clear(g_c), s	14.3	28.3	13.5	7.3	0.0	40.6	30.0	14.6	14.7	1.0	15.9	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.24	1.00		0.00
Lane Grp Cap(c), veh/h	207	642	551	114	0	548	361	734	741	20	796	0
V/C Ratio(X)	0.85	0.66	0.36	0.78	0.00	0.95	1.01	0.35	0.35	0.54	0.54	0.00
Avail Cap(c_a), veh/h	361	642	551	361	0	566	361	734	741	338	1442	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.1	39.9	35.1	67.2	0.0	50.1	57.9	28.7	28.7	71.6	49.7	0.0
Incr Delay (d2), s/veh	18.2	4.4	1.4	21.5	0.0	27.5	49.1	1.0	1.0	28.5	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	15.1	6.1	4.2	0.0	24.7	19.5	7.2	7.4	0.6	7.9	0.0
LnGrp Delay(d),s/veh	81.3	44.3	36.5	88.6	0.0	77.6	107.0	29.7	29.8	100.1	51.8	0.0
LnGrp LOS	F	D	D	F		E	F	C	C	F	D	
Approach Vol, veh/h		793			610			882			444	
Approach Delay, s/veh		50.6			79.2			61.6			53.0	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	57.2	35.0	39.1	22.1	49.5	6.8	67.3
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	60.0	30.0	45.0	30.0	60.0
Max Q Clear Time (g_c+I1), s	9.3	30.3	32.0	17.9	16.3	42.6	3.0	16.7
Green Ext Time (p_c), s	0.4	10.4	0.0	15.2	0.8	1.0	0.0	17.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	428	1255	180	380	1227	142	512	752	215	206	608	306
Future Volume (veh/h)	428	1255	180	380	1227	142	512	752	215	206	608	306
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	455	1335	65	404	1305	57	545	800	63	219	647	91
Adj No. of Lanes	2	4	1	2	4	1	2	4	1	2	4	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	501	2114	514	454	2026	490	414	1934	470	269	1664	396
Arrive On Green	0.15	0.33	0.33	0.13	0.32	0.32	0.12	0.30	0.30	0.08	0.26	0.26
Sat Flow, veh/h	3408	6346	1542	3408	6346	1536	3408	6346	1543	3408	6346	1511
Grp Volume(v), veh/h	455	1335	65	404	1305	57	545	800	63	219	647	91
Grp Sat Flow(s),veh/h/ln	1704	1586	1542	1704	1586	1536	1704	1586	1543	1704	1586	1511
Q Serve(g_s), s	18.4	24.9	4.1	16.3	24.7	3.7	17.0	14.0	4.1	8.9	11.7	6.6
Cycle Q Clear(g_c), s	18.4	24.9	4.1	16.3	24.7	3.7	17.0	14.0	4.1	8.9	11.7	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	2114	514	454	2026	490	414	1934	470	269	1664	396
V/C Ratio(X)	0.91	0.63	0.13	0.89	0.64	0.12	1.32	0.41	0.13	0.81	0.39	0.23
Avail Cap(c_a), veh/h	536	2114	514	536	2026	490	414	1934	470	414	1904	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	39.4	32.5	59.7	40.8	33.7	61.5	38.7	35.3	63.5	42.4	40.5
Incr Delay (d2), s/veh	17.9	1.4	0.5	13.8	1.6	0.5	158.8	0.5	0.5	3.7	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	11.2	1.8	8.6	11.0	1.6	17.1	6.2	1.8	4.3	5.2	2.9
LnGrp Delay(d),s/veh	76.6	40.9	33.0	73.5	42.4	34.2	220.3	39.2	35.7	67.2	43.0	41.6
LnGrp LOS	E	D	C	E	D	C	F	D	D	E	D	D
Approach Vol, veh/h		1855			1766			1408			957	
Approach Delay, s/veh		49.4			49.3			109.2			48.4	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	48.7	23.6	51.6	22.0	42.7	25.6	49.7
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0
Max Green Setting (Gmax), s	17.0	42.0	22.0	38.0	17.0	42.0	22.0	38.0
Max Q Clear Time (g_c+I1), s	10.9	16.0	18.3	26.9	19.0	13.7	20.4	26.7
Green Ext Time (p_c), s	0.2	20.9	0.3	11.0	0.0	21.7	0.2	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	63.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	544	1275	162	199	1370	112	308	375	12	277	301	208
Future Volume (veh/h)	544	1275	162	199	1370	112	308	375	12	277	301	208
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1842	1900	1845	1845	1845
Adj Flow Rate, veh/h	591	1386	160	216	1489	112	335	408	10	301	327	35
Adj No. of Lanes	2	4	0	2	4	0	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1216	2915	336	272	1312	99	389	699	17	357	650	193
Arrive On Green	0.36	0.50	0.50	0.08	0.22	0.22	0.11	0.14	0.14	0.10	0.13	0.13
Sat Flow, veh/h	3408	5805	669	3408	6056	455	3408	5048	123	3408	5036	1495
Grp Volume(v), veh/h	591	1136	410	216	1170	431	335	270	148	301	327	35
Grp Sat Flow(s),veh/h/ln	1704	1586	1715	1704	1586	1752	1704	1676	1819	1704	1679	1495
Q Serve(g_s), s	16.2	18.7	18.8	7.5	26.0	26.0	11.6	9.1	9.1	10.4	7.3	2.5
Cycle Q Clear(g_c), s	16.2	18.7	18.8	7.5	26.0	26.0	11.6	9.1	9.1	10.4	7.3	2.5
Prop In Lane	1.00		0.39	1.00		0.26	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	1216	2390	861	272	1031	380	389	464	252	357	650	193
V/C Ratio(X)	0.49	0.48	0.48	0.80	1.13	1.14	0.86	0.58	0.59	0.84	0.50	0.18
Avail Cap(c_a), veh/h	1216	2390	861	341	1031	380	426	810	440	426	1217	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	19.5	19.6	54.3	47.0	47.0	52.2	48.4	48.5	52.7	48.7	46.6
Incr Delay (d2), s/veh	0.1	0.7	1.9	7.7	72.7	88.6	14.2	0.4	0.8	10.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	8.4	9.3	3.8	18.3	21.9	6.2	4.2	4.6	5.4	3.4	1.0
LnGrp Delay(d),s/veh	30.1	20.2	21.4	62.0	119.7	135.6	66.4	48.9	49.3	63.6	48.9	46.8
LnGrp LOS	C	C	C	E	F	F	E	D	D	E	D	D
Approach Vol, veh/h		2137			1817			753			663	
Approach Delay, s/veh		23.2			116.6			56.8			55.4	
Approach LOS		C			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	66.3	17.6	21.6	48.8	32.0	18.7	20.5
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	6.0	* 6	5.0	5.0
Max Green Setting (Gmax), s	12.0	43.0	15.0	29.0	29.0	* 26	15.0	29.0
Max Q Clear Time (g_c+I1), s	9.5	20.8	12.4	11.1	18.2	28.0	13.6	9.3
Green Ext Time (p_c), s	0.1	19.0	0.2	2.8	8.1	0.0	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	63.5
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	99	56	731	53	17	64	940	910	34	765	21
Future Volume (veh/h)	34	99	56	731	53	17	64	940	910	34	765	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1842	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	36	105	5	818	0	0	68	1000	0	36	814	20
Adj No. of Lanes	0	1	1	2	1	0	1	2	1	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	43	124	142	921	483	0	345	1589	711	46	1431	35
Arrive On Green	0.09	0.09	0.09	0.26	0.00	0.00	0.20	0.45	0.00	0.03	0.28	0.28
Sat Flow, veh/h	465	1356	1545	3514	1842	0	1757	3505	1568	1757	5050	124
Grp Volume(v), veh/h	141	0	5	818	0	0	68	1000	0	36	541	293
Grp Sat Flow(s),veh/h/ln	1821	0	1545	1757	1842	0	1757	1752	1568	1757	1679	1816
Q Serve(g_s), s	9.1	0.0	0.4	26.9	0.0	0.0	3.9	26.2	0.0	2.4	16.5	16.6
Cycle Q Clear(g_c), s	9.1	0.0	0.4	26.9	0.0	0.0	3.9	26.2	0.0	2.4	16.5	16.6
Prop In Lane	0.26		1.00	1.00		0.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	167	0	142	921	483	0	345	1589	711	46	951	515
V/C Ratio(X)	0.84	0.00	0.04	0.89	0.00	0.00	0.20	0.63	0.00	0.79	0.57	0.57
Avail Cap(c_a), veh/h	167	0	142	1200	629	0	345	1589	711	161	951	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	0.0	49.7	42.6	0.0	0.0	40.3	25.1	0.0	58.1	36.7	36.8
Incr Delay (d2), s/veh	29.4	0.0	0.0	6.8	0.0	0.0	0.1	1.9	0.0	10.7	2.5	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.2	13.9	0.0	0.0	1.9	13.1	0.0	1.3	8.0	9.0
LnGrp Delay(d),s/veh	83.1	0.0	49.7	49.4	0.0	0.0	40.4	27.0	0.0	68.8	39.2	41.3
LnGrp LOS	F		D	D			D	C		E	D	D
Approach Vol, veh/h		146			818			1068			870	
Approach Delay, s/veh		81.9			49.4			27.8			41.1	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	59.4		16.0	28.5	39.0		36.5
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	11.0	37.0		11.0	14.0	34.0		41.0
Max Q Clear Time (g_c+I1), s	4.4	28.2		11.1	5.9	18.6		28.9
Green Ext Time (p_c), s	0.0	6.8		0.0	1.8	9.1		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.6
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	978	29	324	845	273	39	128	109	409	73	26
Future Volume (veh/h)	79	978	29	324	845	273	39	128	109	409	73	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	88	1087	30	360	939	255	43	142	95	280	324	26
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	1416	39	385	1578	427	249	145	97	337	323	26
Arrive On Green	0.10	0.28	0.28	0.22	0.40	0.40	0.14	0.14	0.14	0.19	0.19	0.19
Sat Flow, veh/h	1757	5038	139	1757	3945	1068	1757	1021	683	1757	1686	135
Grp Volume(v), veh/h	88	724	393	360	799	395	43	0	237	280	0	350
Grp Sat Flow(s),veh/h/ln	1757	1679	1820	1757	1679	1656	1757	0	1705	1757	0	1821
Q Serve(g_s), s	5.7	23.7	23.8	24.2	22.5	22.6	2.6	0.0	16.6	18.4	0.0	23.0
Cycle Q Clear(g_c), s	5.7	23.7	23.8	24.2	22.5	22.6	2.6	0.0	16.6	18.4	0.0	23.0
Prop In Lane	1.00		0.08	1.00		0.65	1.00		0.40	1.00		0.07
Lane Grp Cap(c), veh/h	176	943	511	385	1343	662	249	0	242	337	0	349
V/C Ratio(X)	0.50	0.77	0.77	0.94	0.59	0.60	0.17	0.00	0.98	0.83	0.00	1.00
Avail Cap(c_a), veh/h	176	943	511	410	1343	662	249	0	242	337	0	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	39.5	39.6	46.0	28.3	28.4	45.3	0.0	51.3	46.6	0.0	48.5
Incr Delay (d2), s/veh	9.9	6.0	10.6	27.2	1.9	3.9	0.1	0.0	52.3	16.0	0.0	48.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	11.7	13.4	14.6	10.8	11.0	1.3	0.0	11.3	10.4	0.0	16.3
LnGrp Delay(d),s/veh	61.0	45.5	50.1	73.2	30.3	32.3	45.4	0.0	103.7	62.7	0.0	97.4
LnGrp LOS	E	D	D	E	C	C	D		F	E		F
Approach Vol, veh/h		1205			1554			280			630	
Approach Delay, s/veh		48.2			40.8			94.7			82.0	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	31.3	38.7		22.0	17.0	53.0		28.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	28.0	32.0		17.0	12.0	48.0		23.0
Max Q Clear Time (g_c+I1), s	26.2	25.8		18.6	7.7	24.6		25.0
Green Ext Time (p_c), s	0.1	6.1		0.0	0.0	22.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	529	1251	202	294	1125	178	240	807	100	212	826	301
Future Volume (veh/h)	529	1251	202	294	1125	178	240	807	100	212	826	301
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	545	1290	106	303	1160	168	247	832	29	219	852	255
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	369	1469	451	555	1536	222	445	1497	462	278	949	282
Arrive On Green	0.11	0.29	0.29	0.16	0.35	0.35	0.13	0.30	0.30	0.08	0.25	0.25
Sat Flow, veh/h	3408	5036	1546	3408	4436	642	3408	5036	1554	3408	3820	1135
Grp Volume(v), veh/h	545	1290	106	303	878	450	247	832	29	219	748	359
Grp Sat Flow(s),veh/h/ln	1704	1679	1546	1704	1679	1721	1704	1679	1554	1704	1679	1598
Q Serve(g_s), s	13.0	29.3	6.3	9.8	27.8	27.8	8.2	16.7	1.0	7.6	25.9	26.1
Cycle Q Clear(g_c), s	13.0	29.3	6.3	9.8	27.8	27.8	8.2	16.7	1.0	7.6	25.9	26.1
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	369	1469	451	555	1162	596	445	1497	462	278	834	397
V/C Ratio(X)	1.48	0.88	0.24	0.55	0.76	0.76	0.56	0.56	0.06	0.79	0.90	0.90
Avail Cap(c_a), veh/h	369	1469	451	555	1162	596	625	1497	462	483	839	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	40.5	32.3	46.2	34.7	34.7	48.9	35.5	12.7	54.1	43.6	43.7
Incr Delay (d2), s/veh	228.4	7.7	1.2	0.6	4.6	8.7	0.4	1.2	0.2	1.9	13.8	25.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	14.6	2.8	4.7	13.5	14.6	3.9	7.9	0.5	3.6	13.6	14.4
LnGrp Delay(d),s/veh	281.9	48.2	33.5	46.8	39.3	43.4	49.3	36.7	13.0	56.0	57.5	69.4
LnGrp LOS	F	D	C	D	D	D	D	D	B	E	E	E
Approach Vol, veh/h		1941			1631			1108			1326	
Approach Delay, s/veh		113.0			41.8			38.9			60.5	
Approach LOS		F			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	40.0	20.7	34.8	18.0	46.5	14.8	40.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	35.0	22.0	30.0	13.0	35.0	17.0	35.0
Max Q Clear Time (g_c+I1), s	11.8	31.3	10.2	28.1	15.0	29.8	9.6	18.7
Green Ext Time (p_c), s	1.1	3.4	5.5	1.6	0.0	4.7	0.2	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	61	101	67	128	28	153	1315	33	31	767	107
Future Volume (veh/h)	123	61	101	67	128	28	153	1315	33	31	767	107
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1834	1900	1845	1841	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	134	66	53	73	139	23	166	1429	35	34	834	109
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	219	198	159	249	324	54	193	2236	55	43	1721	225
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.11	0.64	0.64	0.02	0.55	0.55
Sat Flow, veh/h	1203	940	754	1250	1536	254	1757	3496	86	1757	3106	406
Grp Volume(v), veh/h	134	0	119	73	0	162	166	716	748	34	470	473
Grp Sat Flow(s),veh/h/ln	1203	0	1694	1250	0	1790	1757	1752	1829	1757	1752	1760
Q Serve(g_s), s	13.0	0.0	7.2	6.3	0.0	9.4	11.1	29.8	29.9	2.3	19.6	19.6
Cycle Q Clear(g_c), s	22.5	0.0	7.2	13.5	0.0	9.4	11.1	29.8	29.9	2.3	19.6	19.6
Prop In Lane	1.00		0.45	1.00		0.14	1.00		0.05	1.00		0.23
Lane Grp Cap(c), veh/h	219	0	357	249	0	378	193	1121	1170	43	971	975
V/C Ratio(X)	0.61	0.00	0.33	0.29	0.00	0.43	0.86	0.64	0.64	0.79	0.48	0.48
Avail Cap(c_a), veh/h	266	0	424	298	0	448	278	1121	1170	220	971	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	40.2	45.9	0.0	41.1	52.5	13.2	13.2	58.2	16.3	16.3
Incr Delay (d2), s/veh	1.1	0.0	0.2	0.2	0.0	0.3	12.3	2.8	2.7	11.4	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	3.4	2.2	0.0	4.7	6.1	15.2	15.8	1.3	9.9	9.9
LnGrp Delay(d),s/veh	51.9	0.0	40.4	46.1	0.0	41.4	64.8	16.0	15.9	69.6	18.0	18.0
LnGrp LOS	D		D	D		D	E	B	B	E	B	B
Approach Vol, veh/h		253			235			1630			977	
Approach Delay, s/veh		46.5			42.8			20.9			19.8	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	81.8		30.3	18.2	71.5		30.3
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	15.0	60.0		30.0	19.0	56.0		30.0
Max Q Clear Time (g_c+I1), s	4.3	31.9		24.5	13.1	21.6		15.5
Green Ext Time (p_c), s	0.0	27.2		0.8	0.1	33.1		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	366	31	122	526	305	93	1257	105	167	636	58
Future Volume (veh/h)	75	366	31	122	526	305	93	1257	105	167	636	58
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	81	394	28	131	566	131	100	1352	108	180	684	30
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	102	557	39	122	628	277	273	1647	131	189	1591	711
Arrive On Green	0.06	0.17	0.17	0.07	0.18	0.18	0.16	0.50	0.50	0.11	0.45	0.45
Sat Flow, veh/h	1757	3319	235	1757	3505	1545	1757	3285	261	1757	3505	1566
Grp Volume(v), veh/h	81	207	215	131	566	131	100	719	741	180	684	30
Grp Sat Flow(s),veh/h/ln	1757	1752	1802	1757	1752	1545	1757	1752	1794	1757	1752	1566
Q Serve(g_s), s	5.9	14.5	14.6	9.0	20.5	7.1	6.6	45.1	45.6	13.2	17.2	1.0
Cycle Q Clear(g_c), s	5.9	14.5	14.6	9.0	20.5	7.1	6.6	45.1	45.6	13.2	17.2	1.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	102	294	303	122	628	277	273	878	899	189	1591	711
V/C Ratio(X)	0.80	0.70	0.71	1.08	0.90	0.47	0.37	0.82	0.82	0.95	0.43	0.04
Avail Cap(c_a), veh/h	176	377	388	122	647	285	273	878	899	189	1591	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	51.0	51.1	60.5	52.2	24.6	49.2	27.4	27.5	57.7	24.1	10.6
Incr Delay (d2), s/veh	5.3	2.4	2.5	103.8	15.0	0.5	0.3	8.4	8.5	50.9	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.2	7.5	7.9	11.3	3.0	3.2	23.8	24.6	9.1	8.5	0.5
LnGrp Delay(d),s/veh	65.7	53.5	53.6	164.3	67.2	25.1	49.5	35.8	36.0	108.6	24.9	10.7
LnGrp LOS	E	D	D	F	E	C	D	D	D	F	C	B
Approach Vol, veh/h		503			828			1560			894	
Approach Delay, s/veh		55.5			75.9			36.8			41.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	64.0	14.0	26.8	19.0	70.2	12.5	28.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	14.0	59.0	9.0	28.0	14.0	59.0	13.0	24.0
Max Q Clear Time (g_c+I1), s	8.6	19.2	11.0	16.6	15.2	47.6	7.9	22.5
Green Ext Time (p_c), s	5.0	13.6	0.0	3.5	0.0	10.3	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	352	12	28	426	318	15	157	50	317	77	112
Future Volume (veh/h)	104	352	12	28	426	318	15	157	50	317	77	112
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1900	1844	1845	1900	1845	1845	1845	1812	1900
Adj Flow Rate, veh/h	121	409	14	33	495	140	17	183	10	230	285	0
Adj No. of Lanes	0	2	0	0	2	1	0	1	1	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	9	9
Cap, veh/h	253	893	32	107	1465	710	23	244	224	384	396	0
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.14	0.14	0.14	0.22	0.22	0.00
Sat Flow, veh/h	415	1942	70	130	3185	1544	156	1681	1548	1757	1812	0
Grp Volume(v), veh/h	253	0	291	276	252	140	200	0	10	230	285	0
Grp Sat Flow(s),veh/h/ln	972	0	1455	1721	1594	1544	1837	0	1548	1757	1812	0
Q Serve(g_s), s	11.3	0.0	11.5	0.0	8.6	4.6	8.9	0.0	0.5	10.0	12.4	0.0
Cycle Q Clear(g_c), s	20.0	0.0	11.5	8.1	8.6	4.6	8.9	0.0	0.5	10.0	12.4	0.0
Prop In Lane	0.48		0.05	0.12		1.00	0.08		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	510	0	669	839	733	710	266	0	224	384	396	0
V/C Ratio(X)	0.50	0.00	0.43	0.33	0.34	0.20	0.75	0.00	0.04	0.60	0.72	0.00
Avail Cap(c_a), veh/h	510	0	669	839	733	710	475	0	401	517	533	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.7	0.0	15.5	14.6	14.7	13.6	34.9	0.0	31.3	29.8	30.8	0.0
Incr Delay (d2), s/veh	3.4	0.0	2.1	1.0	1.3	0.6	4.3	0.0	0.1	5.3	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	5.0	4.3	4.0	2.1	4.8	0.0	0.2	5.4	7.1	0.0
LnGrp Delay(d),s/veh	22.1	0.0	17.6	15.6	16.0	14.3	39.1	0.0	31.4	35.2	39.5	0.0
LnGrp LOS	C		B	B	B	B	D		C	D	D	
Approach Vol, veh/h		544			668			210			515	
Approach Delay, s/veh		19.7			15.5			38.8			37.6	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.1		23.6		44.1		17.3
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		23.0		25.0		23.0		22.0
Max Q Clear Time (g_c+I1), s		22.0		14.4		10.6		10.9
Green Ext Time (p_c), s		0.6		4.1		4.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	659	109	26	467	114	140	736	62	160	554	152
Future Volume (veh/h)	189	659	109	26	467	114	140	736	62	160	554	152
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1806	1900	1827	1839	1900	1792	1845	1845
Adj Flow Rate, veh/h	205	716	50	28	508	112	152	800	63	174	602	64
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	5	5	4	3	3	6	3	3
Cap, veh/h	235	1326	581	36	734	161	180	1025	81	202	1146	506
Arrive On Green	0.13	0.38	0.38	0.02	0.27	0.27	0.10	0.31	0.31	0.12	0.33	0.33
Sat Flow, veh/h	1757	3505	1535	1757	2770	607	1740	3278	258	1707	3505	1547
Grp Volume(v), veh/h	205	716	50	28	313	307	152	426	437	174	602	64
Grp Sat Flow(s),veh/h/ln	1757	1752	1535	1757	1716	1660	1740	1747	1789	1707	1752	1547
Q Serve(g_s), s	13.4	18.7	2.5	1.9	19.3	19.5	10.1	26.0	26.0	11.7	16.4	3.4
Cycle Q Clear(g_c), s	13.4	18.7	2.5	1.9	19.3	19.5	10.1	26.0	26.0	11.7	16.4	3.4
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	235	1326	581	36	455	440	180	546	559	202	1146	506
V/C Ratio(X)	0.87	0.54	0.09	0.78	0.69	0.70	0.84	0.78	0.78	0.86	0.53	0.13
Avail Cap(c_a), veh/h	599	1495	655	240	468	453	519	566	580	350	1146	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	28.5	23.4	57.2	38.7	38.8	51.6	36.6	36.6	50.8	32.1	27.7
Incr Delay (d2), s/veh	4.0	1.2	0.2	12.7	7.2	7.7	4.0	9.6	9.4	4.2	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.3	1.1	1.0	10.0	9.9	5.1	14.0	14.3	5.8	8.2	1.5
LnGrp Delay(d),s/veh	53.8	29.7	23.6	69.9	45.9	46.5	55.6	46.2	46.0	55.0	33.4	28.1
LnGrp LOS	D	C	C	E	D	D	E	D	D	D	C	C
Approach Vol, veh/h		971			648			1015			840	
Approach Delay, s/veh		34.5			47.2			47.5			37.5	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	41.6	20.7	36.1	17.2	43.3	7.4	49.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	24.0	38.0	40.0	32.0	35.0	38.0	16.0	50.0
Max Q Clear Time (g_c+I1), s	13.7	28.0	15.4	21.5	12.1	18.4	3.9	20.7
Green Ext Time (p_c), s	0.2	8.6	0.3	9.0	0.2	16.3	0.0	21.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	444	542	129	146	358	67	8	104	58	82	136	107
Future Volume (veh/h)	444	542	129	146	358	67	8	104	58	82	136	107
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1723	1900	1845	1727	1484	1845	1832	1900	1473	1845	1845
Adj Flow Rate, veh/h	462	565	0	152	373	18	8	108	46	85	142	28
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	12	12	3	10	28	3	3	3	29	3	3
Cap, veh/h	508	760	0	203	415	304	39	155	66	161	408	338
Arrive On Green	0.29	0.44	0.00	0.12	0.24	0.24	0.02	0.13	0.13	0.11	0.22	0.22
Sat Flow, veh/h	1723	1723	0	1757	1727	1262	1757	1206	514	1403	1845	1529
Grp Volume(v), veh/h	462	565	0	152	373	18	8	0	154	85	142	28
Grp Sat Flow(s),veh/h/ln	1723	1723	0	1757	1727	1262	1757	0	1719	1403	1845	1529
Q Serve(g_s), s	24.1	25.4	0.0	7.8	19.5	0.7	0.4	0.0	8.0	5.3	6.0	0.6
Cycle Q Clear(g_c), s	24.1	25.4	0.0	7.8	19.5	0.7	0.4	0.0	8.0	5.3	6.0	0.6
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	508	760	0	203	415	304	39	0	222	161	408	338
V/C Ratio(X)	0.91	0.74	0.00	0.75	0.90	0.06	0.21	0.00	0.69	0.53	0.35	0.08
Avail Cap(c_a), veh/h	555	1202	0	377	927	677	283	0	369	226	408	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	21.6	0.0	39.9	34.3	13.7	44.8	0.0	38.8	38.9	30.6	6.5
Incr Delay (d2), s/veh	17.8	0.5	0.0	4.1	2.9	0.0	1.9	0.0	4.8	2.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	12.2	0.0	4.0	9.7	0.3	0.2	0.0	4.1	2.1	3.1	0.6
LnGrp Delay(d),s/veh	49.4	22.2	0.0	43.9	37.1	13.7	46.7	0.0	43.6	40.9	31.2	6.6
LnGrp LOS	D	C		D	D	B	D		D	D	C	A
Approach Vol, veh/h		1027			543			162			255	
Approach Delay, s/veh		34.4			38.3			43.8			31.7	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	47.1	6.1	25.2	33.5	28.4	14.7	16.6
Change Period (Y+Rc), s	4.0	6.0	4.0	4.6	6.0	* 6	4.0	4.6
Max Green Setting (Gmax), s	20.0	65.0	15.0	20.0	30.0	* 50	15.0	20.0
Max Q Clear Time (g_c+I1), s	9.8	27.4	2.4	8.0	26.1	21.5	7.3	10.0
Green Ext Time (p_c), s	0.2	3.3	0.0	1.6	1.4	0.9	0.1	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	643	409	284	564	67	462	580	303	87	343	138
Future Volume (veh/h)	137	643	409	284	564	67	462	580	303	87	343	138
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1759	1845	1776	1827	1845	1845	1826	1900	1845	1845	1845
Adj Flow Rate, veh/h	149	699	227	309	613	27	502	630	0	95	373	30
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	8	3	7	4	3	3	3	3	3	3	3
Cap, veh/h	218	1072	501	381	1295	582	585	1099	0	154	667	292
Arrive On Green	0.06	0.32	0.32	0.12	0.37	0.37	0.17	0.32	0.00	0.05	0.19	0.19
Sat Flow, veh/h	3408	3343	1564	3281	3471	1562	3408	3562	0	3408	3505	1534
Grp Volume(v), veh/h	149	699	227	309	613	27	502	630	0	95	373	30
Grp Sat Flow(s),veh/h/ln	1704	1671	1564	1640	1736	1562	1704	1735	0	1704	1752	1534
Q Serve(g_s), s	4.2	17.8	11.5	9.1	13.4	1.1	14.2	15.1	0.0	2.7	9.6	1.6
Cycle Q Clear(g_c), s	4.2	17.8	11.5	9.1	13.4	1.1	14.2	15.1	0.0	2.7	9.6	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	1072	501	381	1295	582	585	1099	0	154	667	292
V/C Ratio(X)	0.68	0.65	0.45	0.81	0.47	0.05	0.86	0.57	0.00	0.62	0.56	0.10
Avail Cap(c_a), veh/h	687	1347	630	661	1295	582	1030	1099	0	687	883	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	29.0	26.8	42.8	23.7	19.9	40.0	28.3	0.0	46.6	36.4	33.2
Incr Delay (d2), s/veh	1.4	2.5	2.3	1.6	1.0	0.1	1.5	1.8	0.0	1.5	2.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	8.6	5.3	4.2	6.6	0.5	6.8	7.4	0.0	1.3	4.9	0.7
LnGrp Delay(d),s/veh	46.9	31.4	29.1	44.4	24.7	20.0	41.4	30.1	0.0	48.1	39.1	33.8
LnGrp LOS	D	C	C	D	C	B	D	C		D	D	C
Approach Vol, veh/h		1075			949			1132			498	
Approach Delay, s/veh		33.1			31.0			35.1			40.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	36.8	9.5	36.4	11.3	42.0	22.0	23.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	30.0	30.0	25.0
Max Q Clear Time (g_c+I1), s	11.1	19.8	4.7	17.1	6.2	15.4	16.2	11.6
Green Ext Time (p_c), s	0.4	12.0	0.1	9.1	0.2	12.7	0.8	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	415	583	130	295	4	444	13	125	41	42	46
Future Volume (veh/h)	15	415	583	130	295	4	444	13	125	41	42	46
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1496	1827	1845	1827	1805	1900	1810	1788	1900	1776	1726	1900
Adj Flow Rate, veh/h	17	461	0	144	328	0	503	0	0	46	47	0
Adj No. of Lanes	1	2	1	1	2	0	2	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	27	4	3	4	5	5	5	54	54	7	17	17
Cap, veh/h	23	1132	511	183	1424	0	640	332	0	84	86	0
Arrive On Green	0.02	0.33	0.00	0.11	0.42	0.00	0.19	0.00	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1425	3471	1568	1740	3520	0	3447	1788	0	1691	1726	0
Grp Volume(v), veh/h	17	461	0	144	328	0	503	0	0	46	47	0
Grp Sat Flow(s),veh/h/ln	1425	1736	1568	1740	1715	0	1723	1788	0	1691	1726	0
Q Serve(g_s), s	0.8	6.8	0.0	5.3	4.1	0.0	9.2	0.0	0.0	1.8	1.8	0.0
Cycle Q Clear(g_c), s	0.8	6.8	0.0	5.3	4.1	0.0	9.2	0.0	0.0	1.8	1.8	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	23	1132	511	183	1424	0	640	332	0	84	86	0
V/C Ratio(X)	0.74	0.41	0.00	0.79	0.23	0.00	0.79	0.00	0.00	0.55	0.55	0.00
Avail Cap(c_a), veh/h	518	2105	951	659	2080	0	1567	813	0	641	654	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.3	17.3	0.0	28.8	12.5	0.0	25.6	0.0	0.0	30.6	30.6	0.0
Incr Delay (d2), s/veh	15.4	0.9	0.0	2.8	0.3	0.0	0.8	0.0	0.0	2.1	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.4	0.0	2.7	2.0	0.0	4.4	0.0	0.0	0.9	0.9	0.0
LnGrp Delay(d),s/veh	47.7	18.1	0.0	31.6	12.8	0.0	26.4	0.0	0.0	32.7	32.7	0.0
LnGrp LOS	D	B		C	B		C			C	C	
Approach Vol, veh/h		478			472			503			93	
Approach Delay, s/veh		19.2			18.5			26.4			32.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	27.5		8.3	6.1	33.4		18.2
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	25.0	40.0		25.0	24.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	7.3	8.8		3.8	2.8	6.1		11.2
Green Ext Time (p_c), s	0.1	12.7		0.2	0.0	13.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	2	60	0	126	1	542	57	61	524	0
Future Volume (veh/h)	7	0	2	60	0	126	1	542	57	61	524	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1845	1610	1900	1658	1900	1900	1607	1845
Adj Flow Rate, veh/h	7	0	0	61	0	24	1	553	56	62	535	0
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	8	3	18	15	15	15	15	15	3
Cap, veh/h	33	7	0	192	298	116	72	882	89	134	836	934
Arrive On Green	0.02	0.00	0.00	0.11	0.00	0.09	0.60	0.60	0.60	0.60	0.60	0.00
Sat Flow, veh/h	1757	3597	0	1675	3505	1369	0	1481	150	91	1402	1568
Grp Volume(v), veh/h	7	0	0	61	0	24	610	0	0	597	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1675	1752	1369	1631	0	0	1493	0	1568
Q Serve(g_s), s	0.2	0.0	0.0	1.7	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.0	1.7	0.0	0.8	12.0	0.0	0.0	11.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.09	0.10		1.00
Lane Grp Cap(c), veh/h	33	7	0	192	298	116	1044	0	0	969	0	934
V/C Ratio(X)	0.22	0.00	0.00	0.32	0.00	0.21	0.58	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1056	3512	0	1007	3512	1371	1706	0	0	1544	0	1571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	20.3	0.0	21.3	6.5	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	4.6	0.0	0.0	1.3	0.0	1.8	0.7	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.8	0.0	0.4	5.5	0.0	0.0	5.4	0.0	0.0
LnGrp Delay(d),s/veh	28.7	0.0	0.0	21.7	0.0	23.1	7.3	0.0	0.0	7.4	0.0	0.0
LnGrp LOS	C			C		C	A			A		
Approach Vol, veh/h		7			85			610			597	
Approach Delay, s/veh		28.7			22.1			7.3			7.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	4.5		34.7	5.9	9.2		34.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	30.0	50.0		50.0	30.0	50.0		50.0
Max Q Clear Time (g_c+I1), s	3.7	0.0		13.9	2.2	2.8		14.0
Green Ext Time (p_c), s	0.2	0.0		15.7	0.0	0.1		15.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	529	6	193	808	19	3	1	119	22	2	1
Future Volume (veh/h)	1	529	6	193	808	19	3	1	119	22	2	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	1	557	5	203	851	20	3	1	13	23	2	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	3	1859	17	250	2322	55	6	31	26	37	63	0
Arrive On Green	0.00	0.52	0.52	0.14	0.66	0.66	0.00	0.02	0.02	0.02	0.03	0.00
Sat Flow, veh/h	1757	3559	32	1757	3500	82	1757	1845	1560	1757	1845	0
Grp Volume(v), veh/h	1	274	288	203	426	445	3	1	13	23	2	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1839	1757	1752	1830	1757	1845	1560	1757	1845	0
Q Serve(g_s), s	0.0	5.9	5.9	7.5	7.3	7.3	0.1	0.0	0.6	0.9	0.1	0.0
Cycle Q Clear(g_c), s	0.0	5.9	5.9	7.5	7.3	7.3	0.1	0.0	0.6	0.9	0.1	0.0
Prop In Lane	1.00		0.02	1.00		0.04	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	915	960	250	1162	1214	6	31	26	37	63	0
V/C Ratio(X)	0.38	0.30	0.30	0.81	0.37	0.37	0.53	0.03	0.50	0.63	0.03	0.00
Avail Cap(c_a), veh/h	786	1254	1316	786	1254	1310	786	825	698	786	825	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	9.1	9.1	27.9	5.0	5.0	33.4	32.4	32.7	32.6	31.3	0.0
Incr Delay (d2), s/veh	30.7	0.7	0.6	2.4	0.7	0.7	25.2	0.2	5.4	6.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	3.1	3.8	3.7	3.8	0.1	0.0	0.3	0.5	0.0	0.0
LnGrp Delay(d),s/veh	64.1	9.7	9.7	30.3	5.7	5.7	58.6	32.6	38.1	39.1	31.4	0.0
LnGrp LOS	E	A	A	C	A	A	E	C	D	D	C	
Approach Vol, veh/h		563			1074			17			25	
Approach Delay, s/veh		9.8			10.4			41.4			38.4	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.0	5.2	7.3	5.1	49.5	6.4	6.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	30.0	48.0	30.0	30.0	30.0	48.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	9.5	7.9	2.1	2.1	2.0	9.3	2.9	2.6
Green Ext Time (p_c), s	0.2	27.1	0.0	0.0	0.0	26.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	23	24	34	3	83	15	647	30	209	379	17
Future Volume (veh/h)	97	23	24	34	3	83	15	647	30	209	379	17
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1900	1900	1807	1845	1583	1811	1900	1845	1810	1610
Adj Flow Rate, veh/h	111	26	22	39	3	19	17	744	31	240	436	12
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	33	33	3	20	5	5	3	5	18
Cap, veh/h	216	48	29	293	19	252	24	1550	65	284	2086	813
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.46	0.46	0.16	0.61	0.61
Sat Flow, veh/h	826	296	180	1238	119	1562	1508	3363	140	1757	3438	1340
Grp Volume(v), veh/h	159	0	0	42	0	19	17	380	395	240	436	12
Grp Sat Flow(s),veh/h/ln	1301	0	0	1357	0	1562	1508	1720	1783	1757	1719	1340
Q Serve(g_s), s	7.0	0.0	0.0	0.0	0.0	0.8	0.8	11.3	11.3	9.8	4.2	0.3
Cycle Q Clear(g_c), s	8.9	0.0	0.0	1.9	0.0	0.8	0.8	11.3	11.3	9.8	4.2	0.3
Prop In Lane	0.70		0.14	0.93		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	292	0	0	312	0	252	24	793	822	284	2086	813
V/C Ratio(X)	0.54	0.00	0.00	0.13	0.00	0.08	0.71	0.48	0.48	0.84	0.21	0.01
Avail Cap(c_a), veh/h	522	0	0	530	0	506	489	1115	1156	569	2229	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	0.0	26.8	0.0	26.4	36.3	13.8	13.8	30.1	6.6	5.8
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	13.2	1.6	1.6	2.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.8	0.0	0.3	0.4	5.8	5.9	4.9	2.1	0.1
LnGrp Delay(d),s/veh	30.7	0.0	0.0	26.9	0.0	26.4	49.5	15.4	15.4	32.8	6.7	5.8
LnGrp LOS	C			C		C	D	B	B	C	A	A
Approach Vol, veh/h		159			61			792			688	
Approach Delay, s/veh		30.7			26.8			16.2			15.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.0	40.1		16.9	6.2	50.9		16.9
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	24.0	48.0		24.0	24.0	48.0		24.0
Max Q Clear Time (g_c+I1), s	11.8	13.3		3.9	2.8	6.2		10.9
Green Ext Time (p_c), s	0.3	20.8		0.7	0.0	23.3		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	524	21	100	591	112	51	293	196	150	287	282
Future Volume (veh/h)	187	524	21	100	591	112	51	293	196	150	287	282
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1545	1597	1900	1570	1621	1900	1727	1696	1900	1638	1705	1900
Adj Flow Rate, veh/h	208	582	21	111	657	114	57	326	141	167	319	201
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	23	19	19	21	15	15	10	6	6	16	6	6
Cap, veh/h	234	1036	37	134	728	126	72	513	218	194	604	372
Arrive On Green	0.16	0.35	0.35	0.09	0.28	0.28	0.04	0.23	0.23	0.12	0.31	0.31
Sat Flow, veh/h	1471	2987	108	1495	2625	455	1645	2207	936	1560	1928	1187
Grp Volume(v), veh/h	208	295	308	111	385	386	57	236	231	167	267	253
Grp Sat Flow(s),veh/h/ln	1471	1517	1578	1495	1540	1541	1645	1611	1531	1560	1620	1495
Q Serve(g_s), s	14.7	16.8	16.8	7.8	25.6	25.7	3.7	14.0	14.5	11.2	14.4	14.9
Cycle Q Clear(g_c), s	14.7	16.8	16.8	7.8	25.6	25.7	3.7	14.0	14.5	11.2	14.4	14.9
Prop In Lane	1.00		0.07	1.00		0.30	1.00		0.61	1.00		0.79
Lane Grp Cap(c), veh/h	234	526	547	134	427	427	72	375	356	194	508	469
V/C Ratio(X)	0.89	0.56	0.56	0.83	0.90	0.90	0.79	0.63	0.65	0.86	0.53	0.54
Avail Cap(c_a), veh/h	387	526	547	394	506	507	386	485	460	440	508	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	28.2	28.2	47.7	37.1	37.1	50.4	36.7	36.9	45.7	30.0	30.2
Incr Delay (d2), s/veh	8.0	0.8	0.8	5.0	15.9	16.2	7.2	6.2	7.0	4.3	3.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	7.2	7.5	3.4	12.8	12.9	1.8	6.9	6.8	5.1	6.9	6.6
LnGrp Delay(d),s/veh	51.8	29.0	29.0	52.6	53.0	53.3	57.6	43.0	43.9	49.9	33.1	33.8
LnGrp LOS	D	C	C	D	D	D	E	D	D	D	C	C
Approach Vol, veh/h		811			882			524			687	
Approach Delay, s/veh		34.9			53.0			45.0			37.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	30.7	14.5	42.9	9.6	39.4	21.9	35.5
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	32.0	28.0	32.0	25.0	32.0	28.0	35.0
Max Q Clear Time (g_c+I1), s	13.2	16.5	9.8	18.8	5.7	16.9	16.7	27.7
Green Ext Time (p_c), s	0.2	8.3	0.1	4.4	0.0	9.6	0.2	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	241	1	30	169	15	3	1	56	114	0	18
Future Volume (veh/h)	3	241	1	30	169	15	3	1	56	114	0	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1138	1509	1900	1242	1329	1845	1900	1599	1900	1900	1845	1845
Adj Flow Rate, veh/h	4	294	1	37	206	8	4	1	13	139	0	4
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	0	1	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	67	26	26	53	43	3	3	3	3	3	3	3
Cap, veh/h	5	614	2	41	583	688	133	22	88	387	0	182
Arrive On Green	0.00	0.41	0.41	0.03	0.44	0.44	0.12	0.12	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1084	1503	5	1183	1329	1568	102	189	757	1629	0	1568
Grp Volume(v), veh/h	4	0	295	37	206	8	18	0	0	139	0	4
Grp Sat Flow(s),veh/h/ln	1084	0	1508	1183	1329	1568	1048	0	0	1629	0	1568
Q Serve(g_s), s	0.1	0.0	5.2	1.1	3.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	0.0	5.2	1.1	3.7	0.1	2.8	0.0	0.0	2.8	0.0	0.1
Prop In Lane	1.00		0.00	1.00		1.00	0.22		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	5	0	616	41	583	688	243	0	0	387	0	182
V/C Ratio(X)	0.85	0.00	0.48	0.91	0.35	0.01	0.07	0.00	0.00	0.36	0.00	0.02
Avail Cap(c_a), veh/h	956	0	1996	587	1759	2076	971	0	0	1141	0	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	7.9	17.5	6.8	5.7	14.4	0.0	0.0	15.4	0.0	14.2
Incr Delay (d2), s/veh	79.0	0.0	2.1	23.2	1.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.5	0.6	1.5	0.0	0.2	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	97.1	0.0	10.0	40.6	8.1	5.8	14.4	0.0	0.0	15.6	0.0	14.2
LnGrp LOS	F		A	D	A	A	B			B		B
Approach Vol, veh/h		299			251			18			143	
Approach Delay, s/veh		11.1			12.8			14.4			15.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	20.8		9.2	5.2	21.9		9.2
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	18.0	48.0		24.0	32.0	48.0		24.0
Max Q Clear Time (g_c+I1), s	3.1	7.2		4.8	2.1	5.7		4.8
Green Ext Time (p_c), s	0.0	8.4		0.5	0.0	8.5		0.5

Intersection Summary		
HCM 2010 Ctrl Delay	12.7	
HCM 2010 LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	385	64	28	240	113	80	295	46	224	259	46
Future Volume (veh/h)	64	385	64	28	240	113	80	295	46	224	259	46
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1583	1759	1792	1367	1652	1597	1743	1652	1900	1827	1727	1845
Adj Flow Rate, veh/h	68	410	23	30	255	0	85	314	40	238	276	16
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	20	8	6	39	15	19	9	15	15	4	10	3
Cap, veh/h	87	565	479	46	495	406	114	670	85	300	591	537
Arrive On Green	0.06	0.32	0.32	0.04	0.30	0.00	0.07	0.24	0.24	0.17	0.34	0.34
Sat Flow, veh/h	1508	1759	1491	1302	1652	1357	1660	2805	354	1740	1727	1568
Grp Volume(v), veh/h	68	410	23	30	255	0	85	175	179	238	276	16
Grp Sat Flow(s),veh/h/ln	1508	1759	1491	1302	1652	1357	1660	1570	1590	1740	1727	1568
Q Serve(g_s), s	3.8	17.8	0.9	2.0	11.0	0.0	4.3	8.2	8.3	11.3	10.8	0.6
Cycle Q Clear(g_c), s	3.8	17.8	0.9	2.0	11.0	0.0	4.3	8.2	8.3	11.3	10.8	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	87	565	479	46	495	406	114	375	380	300	591	537
V/C Ratio(X)	0.79	0.73	0.05	0.65	0.52	0.00	0.74	0.47	0.47	0.79	0.47	0.03
Avail Cap(c_a), veh/h	490	694	588	423	652	536	732	619	627	767	742	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	25.9	20.2	41.0	25.0	0.0	39.4	28.1	28.1	34.2	22.2	18.8
Incr Delay (d2), s/veh	27.4	7.9	0.2	27.8	3.8	0.0	18.2	4.1	4.2	9.7	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.9	0.4	1.1	5.6	0.0	2.6	4.0	4.1	6.2	5.6	0.3
LnGrp Delay(d),s/veh	67.5	33.8	20.4	68.9	28.8	0.0	57.5	32.2	32.3	43.8	24.8	18.9
LnGrp LOS	E	C	C	E	C		E	C	C	D	C	B
Approach Vol, veh/h		501			285			439			530	
Approach Delay, s/veh		37.8			33.0			37.2			33.2	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	30.8	19.9	25.6	8.1	32.7	10.9	34.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	28.0	34.0	38.0	34.0	28.0	34.0	38.0	37.0
Max Q Clear Time (g_c+I1), s	5.8	13.0	13.3	10.3	4.0	19.8	6.3	12.8
Green Ext Time (p_c), s	0.3	10.3	1.6	10.2	0.1	7.9	0.5	10.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

APPENDIX D: NOISE

Noise Appendix – Stockton General Plan Update EIR

Stockton Municipal Code Noise Ordinance
Title 16 Development Code; Division 3. Site Planning and General Development Regulations

Chapter 8.20 NOISE REGULATIONS

8.20.010 Findings.

The Council of the City of Stockton hereby finds and declares that:

A. Inadequately controlled noise presents a growing danger to the health and welfare of the residents of the City;

B. The making and creating of disturbing, excessive, or offensive noises within the jurisdictional limits of the City is a condition which has persisted, and the level and frequency of occurrences of such noise continues to increase as the City grows and as the availability and use of motor vehicle and sound equipment and power tools increase;

C. The making, creation or continuance of such excessive noises which are prolonged or unusual in their place, time, and use, affect and are a detriment to the public peace, health, comfort, convenience, safety and welfare of the residents of the City;

D. Every person is entitled to an environment in which the noise is not detrimental to his or her life, health or enjoyment of property; and

E. The necessity, and the public interest for the provisions and prohibitions hereinafter contained and enacted is declared to be a matter of legislative determination and public policy and it is further declared that the provisions and prohibitions hereinafter contained are enacted and in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare, prosperity, peace and quiet of the City and its inhabitants. (Prior code § 5-700)

8.20.020 Definitions.

"Average sound level" means a sound level typical of the sound levels at a certain place during a given period of time, averaged by the general rule of combination for sound levels, said general rule being set forth in the American National Standard Specifications for Sound Level Meters, S1.4-1971. Average sound level is also called equivalent continuous sound level.

"Clearly audible" means can be heard by any person of average or normal hearing capability.

"Construction equipment" means any tools, machinery or equipment used in connection with construction operations, regardless of whether such construction site be located on highway or off highway.

"Decibel (dB)" means a unit of measure of sound (noise) level.

"Emergency work" means work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from imminent exposure to danger or damage, or work by public or private utilities when restoring utility service.

"Motor vehicles" means any and all self-propelled vehicles as defined in the California Vehicle Code, specifically including, but not limited to, minibikes and go-carts.

"Noise level" means the same as sound level. The terms may be used interchangeably herein.

"Sound level" means in decibels, that quantity measured with a sound level meter as defined herein, by use of the "A" frequency, weighting and "fast" time averaging unless some other time averaging is specified.

"Sound level meter" means an instrument of the measurement of sound including a microphone, amplifier, an attenuator, networks for at least the standardized "A" frequency weighting, and an indicating instrument having at least the standardized dynamic characteristic "fast," as specified in the American National Standards Institute Specifications for Sound Level Meters, S1.4-1971. (Prior code § 5-701)

8.20.030 Public nuisance noise.

The following special noise restrictions are hereby established without regard to their sound level impact and may be enforced without the prerequisite of a sound level measurement.

A. General Noise Regulations.

1. Notwithstanding any other provisions of this chapter, and in addition thereto, it is unlawful for any person to willfully make or continue or permit or cause to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

2. The standards which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

a. The volume of the noise;

b. The intensity of the noise;

c. Whether the nature of the noise is usual or unusual;

d. Whether the origin of the noise is natural or unnatural;

e. The volume and intensity of the background noise, if any;

f. The proximity of the noise to residential sleeping facilities;

g. The nature and zoning of the area within which the noise emanates;

h. The density of the inhabitation of the area within which the noise emanates;

i. The time of the day or night the noise occurs;

j. The duration of the noise;

k. Whether the noise is produced by a commercial or noncommercial activity.

3. This section shall be inapplicable to emergency work.

B. Disturbing, Excessive or Offensive Noise. The following activities are declared to cause disturbing, excessive or offensive noise in violation of this section, but said enumeration shall not be deemed exclusive:

1. It is unlawful for any person to sound a horn or other signaling device on any vehicle except as an emergency or danger warning signal.

a. This provision shall be inapplicable to the sounding of any horn, bell, whistle, siren or other audible warning device which is operated in compliance with Section 7604 of the California Public Utilities Code, or other State or Federal laws governing railroad operations.

b. The sounding of burglar alarms shall not constitute a violation of this section except after 20 minutes of continuous activation. Further, on or after one (1) year from the effective date of the ordinance codified in this chapter, no owner of a motor vehicle, dwelling or commercial property shall have in operation an audible burglar alarm therein unless such burglar alarm shall be capable of terminating its operation within 20 minutes of its being activated.

2. It is unlawful to operate any radio, phonograph, loud speaker, sound amplifier, or similar device upon the public streets, rights-of-way or parks for the purpose of attracting the attention of the public in any manner without a special event permit.

3. It is unlawful for any person to use any drum or musical instrument clearly audible for a distance in excess of 50 feet, upon public streets, rights-of-way or parks without a special event permit.

4. It is unlawful to operate any radio, television set, musical instrument, phonograph, stereo or audio system, whether or not said noise source is inside a building or motor vehicle, so as to cause an unreasonable annoyance to others located or living nearby, or so as to disturb the peace and quiet of any neighborhood, unless an exception is granted by a special event permit. It is hereby found and declared as a matter of legislative policy that the operation of the aforesaid equipment or instruments on the public streets and rights-of-way adjacent to public parks during the hours from 10:00 p.m. to 7:00 a.m., in such a manner as to be clearly audible for a distance in

excess of 25 feet constitutes prima facie evidence of a violation of this section. This section shall be inapplicable to radio systems operated by FCC licensees in the regular course of business.

5. It is unlawful to operate any radio, stereo, tape player or other audio equipment on public streets and rights-of-way at a volume or sound level which endangers the safety of any person using the public streets and rights-of-way. It is hereby found and declared, as a matter of legislative policy, that any such audio equipment, either in or on a motor vehicle or a bicycle, which is clearly audible at 50 feet distance, endangers the public safety and welfare by interference with the normal human capability for hearing nearby traffic movement and warning signals. Violation of this section shall be an infraction. This section shall be inapplicable to radio systems operated by FCC licensees in the regular course of business.

6. It is unlawful for any passenger to operate any radio, phonograph or tape player or similar device on a public transit bus in such manner that it is clearly audible to any other person in the bus.

7. It is unlawful to operate or to permit the noncommercial operation of any mechanically powered saw, drill, sander, grinder, lawn or garden tool, or similar device, in residential areas during the hours from 9:00 p.m. to 8:00 a.m. so as to cause a noise disturbance across a residential real property boundary. (Ord. 007-07 C.S. § 4; prior code § 5-702)

8.20.040 Animal noise.

A. Notwithstanding any other provision of this code, it is unlawful for any person to keep or maintain, or to permit the keeping or maintenance upon any premises owned, occupied or controlled by him or her, any animal or animals which by any frequent or long continued noise shall disturb or cause discomfort to any reasonable person of normal sensitiveness residing in the vicinity.

B. The noise of any such animal or animals that disturbs two (2) or more residents who are in general agreement as to the times and duration of the noise, and who reside in separate residences (including apartments and condominiums) located on property adjacent at any point to the property on which the subject animal or animals are kept or maintained, or within 300 feet thereof, shall be prima facie evidence of a violation of this section, which shall be a misdemeanor.

C. Exception. This section shall not apply to a legally operated kennel or cattery. (Prior code § 5-703)

8.20.050 Violations.

A. Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor, unless otherwise specified, and upon conviction thereof shall be subject to a fine not exceeding $500.00, or imprisonment for a period not exceeding six (6) months, or by both such fine and imprisonment. Each violation shall constitute a separate offense and shall be punishable as such.

B. As an additional remedy, the operation or maintenance of any device, instrument or machinery as set forth in Section 8.20.030(B), supra, in violation of any provision of this chapter, which operation or maintenance causes discomfort or annoyance to reasonable persons of normal sensitiveness or which endangers the comfort, health or peace of residents in the area, shall be deemed and is hereby declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction. (Prior code § 5-704)

Chapter 16.60 NOISE STANDARDS

16.60.010 Purpose.

The purpose of this chapter is to:

A. Establish standards to protect the health, safety, and welfare of those living and working in the City;

B. Implement goals and policies of the General Plan Noise Element;

C. Facilitate compliance with the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC);

D. Provide community noise control regulations and standards which are consistent with, or exceed, the guidelines of the State Office of Noise Control and the standards adopted by the Federal Highway Administration (FHWA), California Department of Transportation (CalTrans), or other government or regulatory agencies; and

E. Consolidate and/or reference all applicable City noise regulations. (Prior code § 16-340.010)

16.60.020 Activities exempt from noise regulations.

The following activities shall be exempt from the provisions of this chapter:

A. **Emergency Exemption.** The emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work. Does not include permanently-installed emergency generators.

B. **Warning Device.** Warning devices necessary for the protection of public safety, (e.g., police, fire and ambulance sirens, properly operating home and car burglar alarms, and train horns).

C. **Outdoor Play/School Ground Activities.** Activities conducted on parks and playgrounds and school grounds, between 7:00 a.m. and 10:00 p.m., except for additional hours that may be granted by the City Manager. Otherwise, outdoor activities shall meet standards in Table 3-7.

D. **Railroad Activities.** The operation of locomotives, rail cars, and facilities by a railroad that is regulated by the State Public Utilities Commission.

E. **State or Federal Pre-Exempted Activities.** Any activity, to the extent the regulation of it has been preempted by State or Federal law.

F. **Public Health and Safety Activities.** All transportation, flood control, and utility company maintenance and construction operations at any time on public rights-of-way, and those situations that may occur on private property deemed necessary to serve the best interest of the public and to protect the public's health and well being, including, debris and limb removal, removal of damaged poles and vehicles, removal of downed wires, repairing traffic signals, repair of water hydrants and mains, gas lines, oil lines, and sewers, restoring electrical service, street sweeping, unplugging sewers, vacuuming catch basins, etc. The regular testing of motorized equipment and pumps shall not be exempt.

G. **Maintenance of Residential Real Property.** Noise sources associated with the minor maintenance of residential real property, provided the activities take place between the hours of 7:00 a.m. and 10:00 p.m. (Prior code § 16-340.020)

16.60.030 Activities deemed violations of this chapter.

The following acts are a violation of this chapter and are therefore prohibited.

A. **Construction Noise.** Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

B. **Loading and Unloading Operations.** Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 p.m. and 7:00 a.m. in a manner to cause a noise disturbance.

C. **Public Nuisance Noise.** Public nuisance noise is noise that is generally not associated with a particular land use but creates a nuisance situation by reason of its being disturbing, excessive, or offensive. Examples would include excessively loud noise from alarms, animals, horns, musical instruments, stereos, tape players, televisions, vehicle or motorboat repairs and testing, and similar noise as required by Chapter 8.20 and Sections 9.40.040 and 9.40.050 of the Municipal Code.

D. **Stationary Nonemergency Signaling Devices.** Sounding or allowing the sounding of an electronically amplified signal from a stationary bell, chime, siren, whistle, or similar device intended primarily for nonemergency purposes, from private property for more than 10 consecutive seconds in any hourly period as required by Section 8.20.030(B) of the Municipal Code.

E. **Refuse Collection Vehicles.**

1. Operating or allowing the operation of the compacting mechanism of any motor vehicle that compacts refuse and that creates, during the compacting cycle, a sound level in excess of 85 dBA when measured at 50 feet from any point of the vehicle.

2. Collecting refuse, or operating or allowing the operation of the compacting mechanism of any motor vehicle that compacts refuse in a residential zoning district between the hours of 5:00 p.m. and 5:00 a.m. the following day.

F. **Sweepers and Associated Equipment.** Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 p.m. and 7:00 a.m. the following day in, or adjacent to, a residential zoning district.

G. **Vehicle or Motorboat Repairs and Testing.** Modifying, rebuilding, repairing, or testing any motor vehicle, motorcycle, or motorboat in a manner as to cause a noise disturbance across the property line of a noise-sensitive use greater than the noise level standards in Table 3-7, below. (Prior code § 16-340.030)

16.60.040 Standards.

The following provisions shall apply to all uses and properties, as described below, and shall establish the City's standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses and transportation-related sources:

A. **Standards For Proposed Noise-Sensitive Land Uses on Noise-Impacted Sites (Except Infill Areas).** Excluding proposed noise-sensitive land uses on infill sites, which shall comply with subsection C of this section:

1. **Existing Transportation-Related Noise Sources.** Proposed noise sensitive land uses that will be impacted by existing or projected transportation noise sources shall be required to mitigate the noise levels from these transportation noise sources so that the resulting noise levels on the proposed noise-sensitive land use(s) do not exceed the standards in Table 3-7, Part I.

2. **Existing Land Use-Related Noise Sources.** Proposed noise sensitive land uses that will be impacted by existing land use-related noise sources shall be required to mitigate the noise levels from those noise sources so that the resulting noise levels on the proposed noise-sensitive land use(s) do not exceed the standards in Table 3-7, Part II.

B. **Standards for Proposed Noise-Generating Land Uses and Transportation-Related Sources.**Excluding noise-generating projects on infill sites, which shall comply with subsection C of this section, the following shall apply:

1. **Transportation-Related Noise Sources (Except Infill Sites).** Transportation-related projects that include the development of new transportation facilities or the expansion of existing transportation facilities shall be required to mitigate their noise levels so that the resulting noise:

   a. Does not adversely impact noise-sensitive land uses; and

   b. Does not exceed the standards in Table 3-7, Part I.

Noise levels shall be measured at the property line of the nearest site, which is occupied by, and/or zoned or designated to allow the development of, noise-sensitive land uses.

TABLE 3-7

MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NOISE-SENSITIVE LAND USES

PART I: Transportation-Related Noise Standards		
	Maximum Allowable Noise Exposure (L_{dn}dB)	
Noise-Sensitive Land Use Type	**Outdoor Activity Areas**	**Indoor Spaces**
Residential (all types)	65	45
Child care	—	45
Educational facilities	—	45
Libraries and museums	—	45
Live-work facilities	65	45
Lodging	65	45
Medical services	—	45
Multi-use (with residential)	65	45
PART II: Land Use-Related Noise Standard		
	Outdoor Activity Areas	
Noise Level Descriptor	**Day (7:00 a.m. to 10:00 p.m.)**	**Night (10:00 p.m. to 7:00 a.m.)**
Hourly equivalent sound level (L_{eq}), dB	55	45
Maximum sound level (L_{max}), dB	75	65

Notes:

(1) The noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

(2) Each of the noise level standards specified shall be decreased by five (5) for impulse noise, simple tone noise, or noise consisting primarily of speech or music.

2. **Commercial, Industrial, and Other Land Use-Related Noise Sources (Except Infill Sites).**

a. **New and Expanded Noise Sources.** Land use-related projects that will create new noise sources or expand existing noise sources shall be required to mitigate their noise levels so that the resulting noise:

i. Does not adversely impact noise-sensitive land uses; and

ii. Does not exceed the standards specified in Table 3-7, Part II.

Noise levels shall be measured at the property line of the nearest site which is occupied by, zoned for, and/or designated on the City's General Plan Diagram to allow the development of, noise-sensitive land uses.

b. **Maximum Sound Level.**

i. **Commercial.**

(A) The maximum sound level (L_{max}) produced by commercial land uses or by other permitted noise-generating activities on any retail commercial zoning district (i.e., CO, CN, CG, CD, CL, or CA districts) shall not exceed 75 dB; and

(B) The hourly equivalent sound level (L_{eq}) from these land uses shall not exceed 65 dB during daytime or nighttime hours as measured at the property line of any other adjoining retail commercial zoning district (CO, CN, CG, CD, CL, or CA districts).

ii. **Industrial.**

(A) The maximum sound level (L_{max}) produced by industrial land uses or by other permitted noise-generating activities on any industrial (IL, IG, or PT) or public facilities (PF) zoning district shall not exceed 80 dB; and

(B) The hourly equivalent sound level (L_{eq}) from these land uses shall not exceed 70 dB during daytime or nighttime hours as measured at the property line of any other adjoining IL, IG, PT, or PF district.

(C) Where industrial or public facilities uses abut a retail commercial use or zone, the maximum noise levels shall not exceed the above-listed standards for commercial uses and zones (i.e., L_{max} = 75 dB and L_{eq} = 65 dB).

c. **Adjacent to Other Uses.** If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential (RE, RL, RM, or RH) or open space (OS) zoning districts, these uses shall comply with the performance standards contained in Table 3-7, Part II.

C. **Standards for Infill Sites.**

1. **Noise-Sensitive Land Uses on Noise-Impacted Infill Sites.** Noise-sensitive land uses which are approved for development or expansion on noise-impacted infill sites shall only be required to mitigate the existing and projected noise levels from those sources so that the resulting noise levels within the interior of the noise-sensitive land uses do not exceed the indoor space standards in Table 3-7, Part II.

2. **Noise-Generating Land Uses Impacting Noise-Sensitive Infill Sites.** Noise generating land uses and transportation-related projects, which are approved for development or expansion in the vicinity of existing noise-sensitive infill sites, shall be required to mitigate:

a. Exterior noise levels (measured at the property line nearest the noise source) so that the ambient noise levels at the time of development and the maximum exterior noise standards for commercially and industrially-zoned properties are not exceeded; and

b. Interior noise levels (measured at least four (4) feet from the interior side of the wall nearest the noise source) so that the resulting noise levels within the interior of any impacted noise-sensitive land uses do not exceed the interior space standards in Table 3-7. (Ord. 023-07 C.S. § 41; prior code § 16-340.040)

16.60.050 Acoustical study.

The Director or other Review Authority, as applicable, shall require the preparation of an acoustical study in instances where it has been determined that a project may expose existing or proposed noise-sensitive land uses to noise levels exceeding the noise standards specified above and in Table 3-7. This determination shall be based on the existing and future 65 dB L_{dn} transportation-related noise contours contained in the noise section of the City's General Plan Background Document, the proximity of new noise-sensitive land uses to known noise sources, and/or the knowledge that a potential for adverse noise impacts exists (e.g., as determined in an environmental document prepared in compliance with the California Environmental Quality Act). The study shall be paid for by the project applicant and shall be prepared by a qualified acoustical consultant, as determined by, and under the supervision of, the applicable City Review Authority. At a minimum, the acoustical study shall include the following:

A. **Project and Site Description.** A general description of the project's physical and operational characteristics and of the site's location, physical features, and land use setting (including appropriately scaled maps);

B. **Identification of Noise Sources.** Identification of the noise sources from the project and from the area surrounding the site;

C. **Description of Noise Assessment Methodology.** A description of the methodology that will be used to assess noise impacts, including a listing of all assumptions and data used in any computer models:

1. Computer models that will be used for noise predictions shall be standard versions approved by the Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), California Department of Transportation (CalTrans), or other government agencies;
2. For traffic noise studies, the computer models, SOUND32 or other proprietary models based on the 1978 "FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108)," as amended, shall be used. The FHWA's new "Traffic Noise Model" (TNM) shall be used after its phase-in period. For aircraft noise studies, the latest version of the FAA's "Integrated Noise Model" (INM) shall be used;
3. If standard government approved models do not exist (e.g., railroad and industrial noise sources), a description of the model shall be provided;

D. **Existing and Projected Noise Levels.** A description of existing and future (20 years minimum) noise levels together with a comparison of these noise levels to the noise level standards specified above and in Table 3-7;

E. **Impacts of or Impacts on the Project.** Discussion of the noise impacts generated by the project and/or the impacts of existing and future noise levels on the project, including anticipated quantifiable changes in the noise environment, shall be presented; and

F. **Noise Attenuation/Mitigation Measures.** Recommended noise attenuation/mitigation measures to achieve compliance with the standards specified above and in Table 3-7 (e.g., noise barriers/walls, site design, setbacks, enclosure of noise-generating uses and equipment, equipment modification and muffling, structure soundproofing), or a detailed explanation stating why mitigation is infeasible. (Ord. 023-07 C.S. § 42; prior code § 16-340.050)

16.60.060 Evaluation of proposed projects.

Applicants for projects requiring discretionary approval shall be required by the Review Authority to submit evidence to determine whether the proposed project complies or will comply with the provisions of this chapter. Failure to submit the requested information within a specified time period may render the application incomplete.

A. **Information.** Required information may include the following:

1. **Construction Plans.** Plans of construction and development;
2. **Production Plans.** A description of the machinery, processes, or products to be used or produced on the premises;
3. **Operational Characteristics.** A description of the project's operational characteristics (e.g., hours of operation, work shifts, number of truck, rail, or other deliveries, etc.);
4. **Noise Emission Levels.** Estimation of the expected noise levels produced by the proposed project; and
5. **Noise Emission Mitigation.** Description of the methods to be used in restricting the emission of noise from the premises.

B. **Noise Thresholds of Significance.** The threshold for determining the potential significance of a noise impact under CEQA shall be:

1. An incremental increase of three (3) dB L_{dn} or greater to exterior or interior noise levels; or

2. Any exceedence of existing maximum noise standards, which may constitute a significant cumulative noise impact. (Prior code § 16-340.060)

16.60.070 Noise attenuation/mitigation measures.

If the existing noise levels affecting a project are greater than those allowed, the developer shall mitigate the noise as follows:

A. **Infill Projects.** For infill projects, site planning and construction techniques shall be used to reduce sound levels to allowed maximum interior sound levels or below. Examples of noise reducing techniques include orienting building openings away from the noise source, appropriate subdivision design for noise avoidance, landscape setbacks and berms, use of acoustical barriers and walls, enclosure of noise-generating uses and equipment, and use of appropriate building construction technology and materials to reduce interior noise levels.

B. **Other Projects.** For other projects, a noise attenuation barrier shall be constructed and/or noise attenuation measures described above shall be applied to the structures, as applicable, to bring sound levels down to allowed maximum interior and exterior sound levels or below. (Prior code § 16-340.070)

16.60.080 Enforcement of regulations.

A Code Enforcement Officer or Police Officer, as applicable, shall have responsibility for the enforcement of the noise regulations identified in this chapter in compliance with Chapter 16.224 (Enforcement). Unless otherwise specified, the Code Enforcement Officer shall make all noise-level measurements required for the enforcement of this chapter. (Prior code § 16-340.080)

The following discussion and contour maps are from the existing General Plan (2007), and were referenced in the General Plan Update EIR Noise Section

Airport noise comes from the Stockton Metropolitan Airport.

Airport Noise

Aircraft noise affecting the Study Area is produced by operations occurring at the existing Stockton Metropolitan Airport. At the present time, the airport includes an 8,650 foot air carrier certified runway and a 3,050 foot general aviation runway. The greatest potential for noise intrusion occurs when aircraft land, take off, or run their engines while on the ground. There are three primary sources of noise in a jet engine: the exhaust, the turbomachinery, and the fan. The noise associated with general aviation propeller aircraft (piston and turbo-prop) is produced primarily by the propellers and secondarily from the engine and exhaust.

Aircraft Activity Levels

Information contained in the tower counts for 2005 indicated that the total number of operations were approximately 82,432. This number was then adjusted to account for the hours the Tower is closed. To ascertain the number

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[VI] *Environmental Noise Analysis, Blossom Ranch Community Bollard and Brennan Inc Project # 2001-084*

[VII] *Environmental Noise Analysis, Elkhorn Point Development Brown-Buntin Associates, Inc. Project # 02-272A*

[VIII] *Environmental Noise Asssessment, Podesta - Sperry Residential Development, Bollard and Brennan Inc. Project # 2004-023*

[IX] *Environmental Noise Asssessment, Mariposa Lakes EIR Technical Noise Analysis. J.C. Brennan and Associates Project # 2005-075*

[X] *Noise and Vibration Impact Assessment for Southcreek Subdivision, Charles M Salter and Associates Inc Project # 04-0259*

of operations during those hours the Tower is closed, it was assumed that an additional 20 percent of operations occurred during those hours. This total number was then adjusted based on the information gathered in the data collection meeting to reach the total number of operations. Based on these adjustments, the total number of operations modeled for 2005 was 98,059, which is approximately 269 annual-average day operations. The 2005 aircraft operations used are summarized by category in Table 11-6.

Table 11-6 Summary of Average Daily Operations, 2005

Category	Average Daily Operations
Air Carrier	3
Air Taxi	6
General Aviation	244
Military	8
Helicopter	8
Total	**269**

For 2035, the aircraft activity level was determined from several sources, including information gathered at the data collection meeting on what the stakeholders anticipated the Airport operational conditions to be in the future, as well as national forecasting numbers for the overall growth of the aviation business. Overall, the assumptions used for the 2035 forecast operations were based on an aggressive future marketing strategy for the Airport and a number of assumptions outlined below:

- Cargo operations by existing SCK operators will continue to grow in the future utilizing aircraft of similar size as today;
- Existing and planned cargo facilities would attract other cargo carriers;
- Aero Mexico would continue to operate at the Airport with a minimum of six flights a week;
- Mexicana Airlines will fly to the Airport and continue to operate two flights per night;
- Horizon Airlines will operate at the Airport with five daily flights;
- Allegiant Airlines, or a similar operator, will operate a minimum of one flight per day;
- The Airport will attract a low cost carrier that would operate a minimum of ten daily flights;
- The Air Cargo and Business Park will be constructed and attract new carriers; and
- The U.S. economic recovery will continue with moderate economic growth.

All projections for air taxi, commuter, general aviation, and military were developed using the FAA Terminal Area Forecast (TAF) total operation growth rates for 2006-2025. The 2025 growth rate was used through 2035 to project activity beyond the FAA TAF. All assumptions used in developing the TAF were

assumed in the projections as well. Based on these assumptions, the total number of operations modeled for 2035 was 132,860, which is approximately 364 annual-average day operations. The 2035 aircraft operations used are summarized by category in Table 11-7.

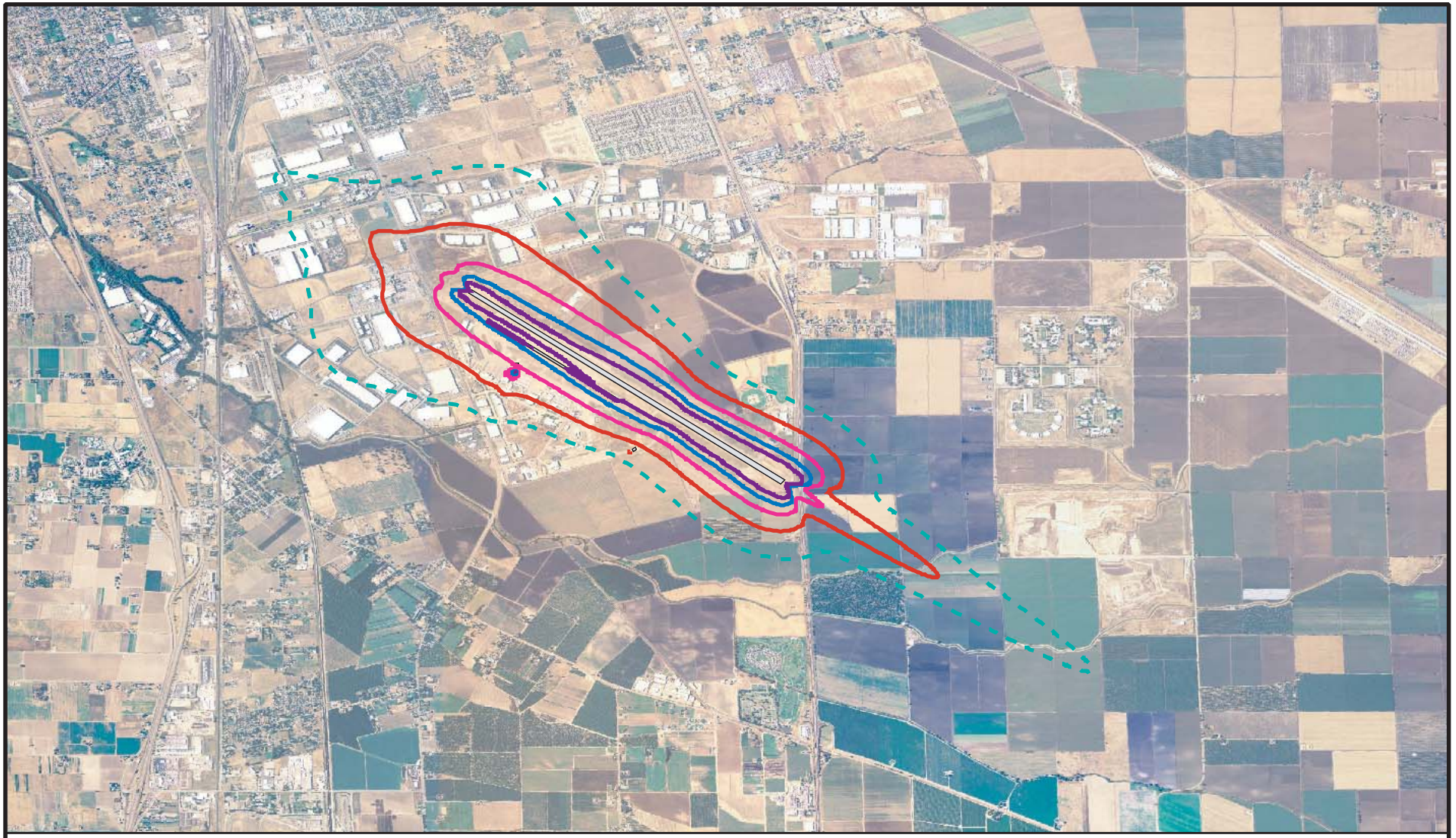
Table 11-7 Summary of Projected Average Daily Operations, 2035

Category	Average Daily Operations
Air Carrier	41
Air Taxi	7
General Aviation	296
Military	10
Helicopter	10
Total	**364**

Noise Contour Modeling Results

Noise exposure contours were developed using cumulative noise levels quantified in terms of the CNEL. For CNEL, the 24-hours in a day are divided into three periods: Day (7:00 a.m. to 7:00 p.m.), Evening (7:00 p.m. to 10:00 p.m.), and Night (10:00 p.m. to 7:00 a.m.). For those noise events occurring during the evening and nighttime periods, a penalty is added to better address the increased sensitivity to noise during those time periods by residents. For the evening period, a 5 dB penalty is added to all noise events. For the night events, a 10 dB penalty is added. A higher penalty is added to the night period compared to the evening period because the ambient levels during the night period are lower than during the evening period, therefore increasing a resident's sensitivity to noise.

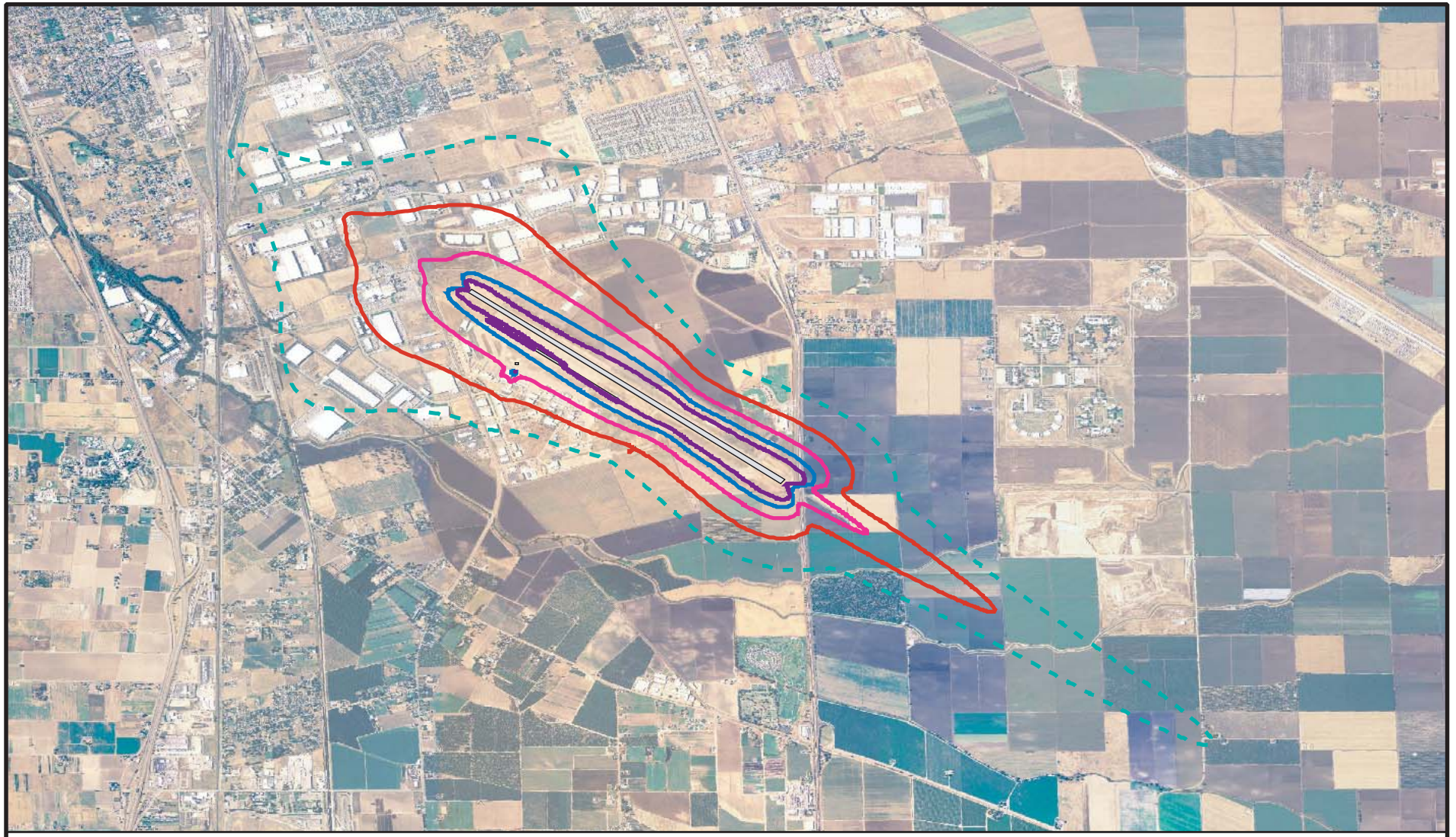
The 2005 annual CNEL contours for Stockton Metropolitan Airport are presented in Figure 11-3. Figure 11-4 depicts the contours representing the 2035 annual CNEL contours. Each figure depicts the 60, 65, 70, 75, and 80 CNEL contours.



Source: ESA, 2005

Figure 11-3 2005 CNEL Contours over Aerial

CITY OF STOCKTON



Source: ESA, 2005

Figure 11-4 2035 CNEL Contours over Aerial

CITY OF STOCKTON

Traffic Noise Analysis

Stockton General Plan Roadway Noise Calculations

				Existing		Future + P		Future + P - AP		Future + P - Base		Future + P -AP - Base		Approved Projects	
ID	Roadway	Segment	Segment	ADT	CNEL	ADT	CNEL	ADT	CNEL	ADT D	CNEL D	ADT D	CNEL D	ADT D	CNEL D
1	I-5	North of Eight Mile Road		65000	80.7	87700	82.0	85600	81.9	22700	1.3	20600	1.2	2100	-0.1
2	I-5	Eight Mile Road	Hammer Lane	78000	81.5	106200	82.8	101800	82.6	28200	1.3	23800	1.2	4400	-0.2
3	I-5	Hammer Lane	Ben Holt Drive	106000	82.8	148000	84.3	135600	83.9	42000	1.4	29600	1.1	12400	-0.4
4	I-5	Ben Holt Drive	March Lane	120000	83.3	163700	84.7	149600	84.3	43700	1.3	29600	1.0	14100	-0.4
5	I-5	March Lane	Country Club Boulevard	121000	83.4	174800	85.0	155500	84.5	53800	1.6	34500	1.1	19300	-0.5
6	I-5	Country Club Boulevard	Monte Diablo Avenue	134730	83.8	189800	85.3	170000	84.9	55070	1.5	35270	1.0	19800	-0.5
7	I-5	Monte Diablo Avenue	Pershing Avenue	137170	83.9	190100	85.3	169300	84.8	52930	1.4	32130	0.9	20800	-0.5
8	I-5	Pershing Avenue	Crosstown Freeway	108580	82.9	164100	84.7	140200	84.0	55520	1.8	31620	1.1	23900	-0.7
9	I-5	Crosstown Freeway	Charter Way	143310	84.1	199800	85.6	173300	84.9	56490	1.4	29990	0.8	26500	-0.6
10	I-5	Charter Way	8th Street	151800	84.4	223000	86.0	195600	85.5	71200	1.7	43800	1.1	27400	-0.6
11	I-5	8th Street	Downing Avenue	113640	83.1	178200	85.1	148000	84.3	64560	2.0	34360	1.1	30200	-0.8
12	I-5	Downing Avenue	French Camp Road	120000	83.3	145600	84.2	145500	84.2	25600	0.8	25500	0.8	100	0.0
13	I-5	French Camp Road	Mathews Road	115500	83.2	142100	84.1	143300	84.1	26600	0.9	27800	0.9	-1200	0.0
14	SR 99	North of Eight Mile Road		85910	81.8	116300	83.1	112000	83.0	30390	1.3	26090	1.2	4300	-0.2
15	SR 99	Eight Mile Road	Morada Lane	81000	81.6	124900	83.5	108500	82.8	43900	1.9	27500	1.3	16400	-0.6
16	SR 99	Morada Lane	Hammer Lane	86000	81.8	146800	84.2	114300	83.1	60800	2.3	28300	1.2	32500	-1.1
17	SR 99	Hammer Lane	Wilson Way	105000	82.7	174300	84.9	140000	83.9	69300	2.2	35000	1.2	34300	-1.0
18	SR 99	Wilson Way	Cherokee Road	98120	82.4	167400	84.7	133100	83.7	69280	2.3	34980	1.3	34300	-1.0
19	SR 99	Cherokee Road	Waterloo Road	107260	82.8	213700	85.8	175200	84.9	106440	3.0	67940	2.1	38500	-0.9
20	SR 99	Waterloo Road	Fremont Street	115390	83.1	222600	86.0	184900	85.2	107210	2.9	69510	2.0	37700	-0.8
21	SR 99	Fremont Street	Crosstown Freeway	114000	83.1	220700	85.9	179800	85.0	106700	2.9	65800	2.0	40900	-0.9
22	SR 99	Crosstown Freeway	Martin Luther King Jr Blvd	103400	82.6	192300	85.3	141400	84.0	88900	2.7	38000	1.4	50900	-1.3
23	SR 99	Martin Luther King Jr Blvd	Farmington Rd	95700	82.3	184600	85.1	133700	83.7	88900	2.9	38000	1.5	50900	-1.4
24	SR 99	Farmington Rd	Mariposa Rd	80300	81.5	169200	84.8	118300	83.2	88900	3.2	38000	1.7	50900	-1.6
25	SR 99	Mariposa Road	Arch Road	78000	81.4	127800	83.6	97600	82.4	49800	2.1	19600	1.0	30200	-1.2
26	SR 99	Arch Road	French Camp Road	74000	81.2	89200	82.0	89700	82.0	15200	0.8	15700	0.8	-500	0.0
27	SR 99	French Camp Road	Lathrop Road	74000	81.2	92800	82.2	91600	82.1	18800	1.0	17600	0.9	1200	-0.1
28	SR 4	West of I-5	West of I-5	18150	75.0	39400	78.3	40000	78.4	21250	3.4	21850	3.4	-600	0.1
29	SR 4	I-5	El Dorado St	85000	81.7	114900	83.0	101800	82.5	29900	1.3	16800	0.8	13100	-0.5
30	SR 4	El Dorado Street	Stanislaus Street	115140	83.0	152100	84.2	135300	83.7	36960	1.2	20160	0.7	16800	-0.5
31	SR 4	Stanislaus Street	Wilson Way	105000	82.6	143000	83.9	124500	83.3	38000	1.3	19500	0.7	18500	-0.6
32	Eight Mile Rd	Mokelume Drive	Trinity Parkway	9010	66.3	24200	70.6	24400	70.7	15190	4.3	15390	4.3	-200	0.0
33	Eight Mile Rd	Trinity Parkway	I-5	31480	73.4	31600	73.4	31800	73.4	120	0.0	320	0.0	-200	0.0
34	Eight Mile Rd	Thornton Rd	Davis Rd	15460	70.1	21900	71.6	20200	71.3	6440	1.5	4740	1.2	1700	-0.4
35	Eight Mile Rd	Davis Rd	Lower Sacramento	16930	69.1	26600	71.0	23700	70.5	9670	2.0	6770	1.5	2900	-0.5
36	Eight Mile Rd	Lower Sacramento	West Lane	20420	69.9	36500	72.4	29400	71.5	16080	2.5	8980	1.6	7100	-0.9
37	Eight Mile Rd	West Lane	SPRR	13170	68.0	29500	71.5	18700	69.5	16330	3.5	5530	1.5	10800	-2.0
38	Eight Mile Rd	West of Bear Creek	Rt 99	11810	67.5	29900	71.5	18000	69.3	18090	4.0	6190	1.8	11900	-2.2
39	Morada Lane	Lower Sacramento Rd	West Lane	0	0.0	8600	67.6	7800	67.2	8600		7800	n/a	800	-0.4
40	Morada Lane	Cherbourg	West	14290	69.8	18500	70.9	17200	70.6	4210	1.1	2910	0.8	1300	-0.3
41	Morada Lane	Cherbourg	Fox Creek	15430	70.1	18300	70.9	17100	70.6	2870	0.7	1670	0.4	1200	-0.3
42	Morada Lane	Holman	Hwy 99	18010	70.9	18900	71.1	18200	70.9	890	0.2	190	0.0	700	-0.2
43	Morada Lane	Mosher Creek	Holman	16160	70.4	17900	70.9	17200	70.7	1740	0.4	1040	0.3	700	-0.2
44	Hammer Lane	Mariners Dr	I-5	17010	70.6	23200	72.0	16800	70.6	6190	1.3	-210	-0.1	6400	-1.4
45	Hammer Lane	Westland	Richland	31960	73.4	35300	73.8	33500	73.6	3340	0.4	1540	0.2	1800	-0.2
46	Hammer Lane	Pershing Ave	Valencia	28610	72.8	29600	73.0	28500	72.8	990	0.1	-110	0.0	1100	-0.2
47	Hammer Lane	Lower Sacramento Rd	El Dorado St	41780	74.6	31300	73.3	31200	73.3	-10480	-1.3	-10580	-1.3	100	0.0
48	Hammer Lane	At WPRR	0	48730	75.3	31600	73.4	29900	73.1	-17130	-1.9	-18830	-2.1	1700	-0.2
49	Hammer Lane	SPRR	Holman Rd	42060	74.6	29200	73.0	27100	72.7	-12860	-1.6	-14960	-1.9	2100	-0.3
50	Hammer Lane	Holman Rd	Rt 99	40360	74.4	32500	73.5	28800	73.0	-7860	-0.9	-11560	-1.5	3700	-0.5
51	Benjamin Holt Drive	Plymouth	Belmont	22630	70.3	21500	70.1	20700	69.9	-1130	-0.2	-1930	-0.4	800	-0.2
52	Benjamin Holt Drive	Vicksburg	Gettysburg	16380	68.9	15200	68.6	14700	68.5	-1180	-0.3	-1680	-0.5	500	-0.1
53	Swain Rd	Pylmouth Road	Morgan	10690	67.1	10700	67.1	10700	67.1	10	0.0	10	0.0	0	0.0
54	Swain Rd	Pershing Avenue	Vicksburg Place	9670	66.6	9500	66.6	9600	66.6	-170	-0.1	-70	0.0	-100	0.0
55	March Lane	Brookside Rd	Morningside Dr	6950	66.7	8800	67.8	8800	67.8	1850	1.0	1850	1.0	0	0.0
56	March Lane	Feather River Drive	I-5	40100	74.4	43800	74.7	43300	74.7	3700	0.4	3200	0.3	500	0.0
57	March Lane	Quail Lakes	Grouse Run	43050	74.7	42400	74.6	42100	74.6	-650	-0.1	-950	-0.1	300	0.0
58	March Lane	Pershing Ave	Pacific Ave	42910	74.7	41100	74.5	42100	74.6	-1810	-0.2	-810	-0.1	-1000	0.1
59	March Lane	Pacific Ave	Claremont	33060	73.5	41100	74.5	41200	74.5	8040	0.9	8140	1.0	-100	0.0
60	March Lane	At UPRR	0	38800	74.2	58300	76.0	57600	75.9	19500	1.8	18800	1.7	700	-0.1
61	March Lane	West Lane	Bianchi	28720	73.0	72700	77.0	68800	76.7	43980	4.0	40080	3.8	3900	-0.2
62	Alpine Avenue	Pershing	Grange	9140	67.8	8900	67.7	8800	67.7	-240	-0.1	-340	-0.2	100	0.0
63	Alpine Avenue	Dwight	Kensington	7820	67.2	7800	67.2	7700	67.1	-20	0.0	-120	-0.1	100	-0.1
64	Alpine Avenue	Center	Commerce	14490	69.8	8600	67.6	8800	67.7	-5890	-2.3	-5690	-2.2	-200	0.1
65	Alpine Avenue	Sutter	San Joaquin	20460	71.3	11800	69.0	11500	68.8	-8660	-2.4	-8960	-2.5	300	-0.1
66	Country Club Drive	Grange Avenue	Pershing Avenue	8910	66.3	8700	66.2	8600	66.1	-210	-0.1	-310	-0.2	100	-0.1
67	Monte Diablo Avenue	San Juan	Buena Vista	3540	62.3	3700	62.5	3500	62.2	160	0.2	-40	0.0	200	-0.2
68	Harding Way	Pershing	Columbia	3810	62.6	3600	62.3	3700	62.5	-210	-0.2	-110	-0.1	-100	0.1
69	Harding Way	Baker	Stockton	11330	67.3	11400	67.3	11400	67.3	70	0.0	70	0.0	0	0.0
70	Harding Way	Commerce	Madison	24300	72.1	23300	71.9	24000	72.0	-1000	-0.2	-300	-0.1	-700	0.1
71	Harding Way	El Dorado	Center	25910	72.4	27300	72.6	27100	72.6	1390	0.2	1190	0.2	200	0.0
72	Harding Way	California	San Joaquin	21470	71.6	27800	72.7	26800	72.5	6330	1.1	5330	1.0	1000	-0.2
73	Harding Way	At UPRR	0	19550	71.1	18300	70.9	17200	70.6	-1250	-0.3	-2350	-0.6	1100	-0.3
74	Harding Way	Wilson	Sierra Nevada	22040	71.7	16600	70.4	16100	70.3	-5440	-1.2	-5940	-1.4	500	-0.1
75	Fremont St	Watts	Laurel	14610	68.4	11200	67.3	11600	67.4	-3410	-1.2	-3010	-1.0	-400	0.2
76	Fremont St	Broadway	Golden Gate	10960	67.2	14900	68.5	11900	67.5	3940	1.3	940	0.4	3000	-1.0
77	Miner Ave	El Dorado Street	Center Street	7160	66.8	12500	69.2	12600	69.2	5340	2.4	5440	2.5	-100	0.0
78	Miner Ave	California	San Joaquin	8770	67.7	11300	68.8	11600	68.9	2530	1.1	2830	1.2	-300	0.1
79	Main St	California	Sutter	3210	63.3	3700	63.9	3300	63.4	490	0.6	90	0.1	400	-0.5
80	Main St	Court	Ash	9890	68.2	14500	69.9	10800	68.6	4610	1.7	910	0.4	3700	-1.3
81	Main St	Netherton	Golden Gate	15020	70.0	24000	72.0	18000	70.8	8980	2.0	2980	0.8	6000	-1.2
82	Charter Way	W of Roberts	W of Roberts	13650	68.1	17500	69.2	17300	69.2	3850	1.1	3650	1.0	200	0.0
83	Charter Way	Tillie Lewis Drive	Fresno Avenue	12480	67.7	5230	64.0	4440	63.3	-7250	-3.8	-8040	-4.5	790	-0.7

				Existing		Future + P		Future + P - AP		Future + P - Base		Future + P -AP - Base		Approved Projects	
ID	Roadway	Segment	Segment	ADT	CNEL	ADT	CNEL	ADT	CNEL	ADT D	CNEL D	ADT D	CNEL D	ADT D	CNEL D
84	Charter Way	Navy	Fresno	17420	69.2	7420	65.5	6260	64.7	-10000	-3.7	-11160	-4.4	1160	-0.7
85	Charter Way	I-5	Navy	31980	71.8	18300	69.4	17460	69.2	-13680	-2.4	-14520	-2.6	840	-0.2
86	Martin Luther King Jr. Blvd	I-5	Lincoln	34420	73.6	48800	75.1	45400	74.8	14380	1.5	10980	1.2	3400	-0.3
87	Martin Luther King Jr. Blvd	California	Airport Way	30000	73.0	42400	74.5	37900	74.0	12400	1.5	7900	1.0	4500	-0.5
88	Martin Luther King Jr. Blvd	Airport Way	Wilson Way	28550	72.8	43100	74.6	37100	73.9	14550	1.8	8550	1.1	6000	-0.7
89	Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	15220	68.6	17300	69.2	16600	69.0	2080	0.6	1380	0.4	700	-0.2
90	Navy Dr	San Joaquin River	Washington	4560	63.4	4600	63.4	4600	63.4	40	0.0	40	0.0	0	0.0
91	Navy Dr	BN&SF RR	Tillie Lewis	5090	63.8	5700	64.3	5700	64.3	610	0.5	610	0.5	0	0.0
92	Navy Dr	Josephine	Fresno	3970	62.8	5000	63.8	4500	63.3	1030	1.0	530	0.5	500	-0.5
93	Washington St	Agribusiness	Ventura	7940	65.8	7300	65.4	7300	65.4	-640	-0.4	-640	-0.4	0	0.0
94	8th Street	Argonaut	Fresno	12030	69.0	10500	68.4	10300	68.4	-1530	-0.6	-1730	-0.7	200	-0.1
95	8th Street	Monroe	Lincoln	7890	67.2	13000	69.4	12100	69.1	5110	2.2	4210	1.9	900	-0.3
96	8th Street	Pock	D	8190	65.9	12500	67.7	11200	67.3	4310	1.8	3010	1.4	1300	-0.5
97	Carolyn Weston Boulevard	Manthey	McDougald	27660	72.7	29700	73.0	29800	73.0	2040	0.3	2140	0.3	-100	0.0
98	French Camp Rd	McDougald	E.W.S.Wood	10280	66.9	30300	71.6	10900	67.2	20020	4.7	620	0.3	19400	-4.4
99	Sperry Road	Airport	McKinley	10560	68.5	30700	73.1	17500	70.7	20140	4.6	6940	2.2	13200	-2.4
100	Arch-Airport Rd	Airport	Pock	16680	69.0	41200	72.9	23000	70.4	24520	3.9	6320	1.4	18200	-2.5
101	Arch-Airport Rd	HW 99	Quantas	27070	72.6	61700	76.1	39500	74.2	34630	3.6	12430	1.6	22200	-1.9
102	Arch Rd	Frontier	HW 99 Frontage	14010	68.2	39600	72.8	17900	69.3	25590	4.5	3890	1.1	21700	-3.4
103	Arch Rd	Newcastle	Frontier	12340	67.7	36900	72.4	16500	69.0	24560	4.8	4160	1.3	20400	-3.5
104	Trinity Parkway	Scott Creek	8 Mile	14260	69.9	15700	70.3	15700	70.3	1440	0.4	1440	0.4	0	0.0
105	Trinity Parkway	Cosumnes	McAuliffe	8030	67.4	7700	67.2	7100	66.8	-330	-0.2	-930	-0.5	600	-0.4
106	Thornton Rd	Bear Creek	Estate	21140	71.5	19900	71.2	19500	71.1	-1240	-0.3	-1640	-0.4	400	-0.1
107	Thornton Rd	Waudman	Davis	25070	70.8	22400	70.3	22300	70.3	-2670	-0.5	-2770	-0.5	100	0.0
108	Thornton Rd	Aberdeen	Cortez	37460	72.5	34400	72.1	34400	72.1	-3060	-0.4	-3060	-0.4	0	0.0
109	Thornton Rd	Hammer	Rivera	22650	71.8	23100	71.9	23000	71.9	450	0.1	350	0.1	100	0.0
110	Davis Rd	Chaparral	Laramie	11480	67.4	13200	68.0	13100	68.0	1720	0.6	1620	0.6	100	0.0
111	Davis Rd	North of Bear Creek	0	9170	66.4	8900	66.3	9000	66.3	-270	-0.1	-170	-0.1	-100	0.0
112	Davis Rd	Ponce De Leon	Thornton	15400	68.7	17500	69.2	17400	69.2	2100	0.6	2000	0.5	100	0.0
113	Lower Sacramento	Armor	Royal Oaks	17620	70.7	24100	72.1	19900	71.2	6480	1.4	2280	0.5	4200	-0.8
114	Lower Sacramento	Bear Creek	Eight Mile	16340	68.9	22300	70.3	18300	69.4	5960	1.4	1960	0.5	4000	-0.9
115	Lower Sacramento	Hammer	Rivera	17610	70.7	17200	70.6	15900	70.3	-410	-0.1	-1710	-0.4	1300	-0.3
116	West Lane	8 Mile	Morada	17180	70.6	23100	71.9	19300	71.1	5920	1.3	2120	0.5	3800	-0.8
117	West Lane	Dalewood	Westmora	25010	72.3	30700	73.2	26100	72.5	5690	0.9	1090	0.2	4600	-0.7
118	West Lane	Hammer	Hammertown	31760	73.4	25900	72.5	24100	72.2	-5860	-0.9	-7660	-1.2	1800	-0.3
119	West Lane	Swain	March	37470	74.0	46900	74.9	46400	74.9	9430	1.0	8930	0.9	500	0.0
120	West Lane	Bradford	Walnut	24320	72.1	31100	73.2	29900	73.0	6780	1.1	5580	0.9	1200	-0.2
121	Wilson Way	McAllen	Alpine	16290	70.4	20400	71.3	15800	70.2	4110	1.0	-490	-0.1	4600	-1.1
122	Wilson Way	Main	Market	26040	72.4	29800	73.0	27700	72.7	3760	0.6	1660	0.3	2100	-0.3
123	Wilson Way	Market	Washington	26340	72.4	30700	73.1	29200	72.9	4360	0.7	2860	0.4	1500	-0.2
124	Pershing Ave	Venetian	Burke-Bradley	24740	72.2	26000	72.4	25800	72.4	1260	0.2	1060	0.2	200	0.0
125	Pershing Ave	At Calaveras River	0	35990	73.8	32600	73.4	32300	73.3	-3390	-0.4	-3690	-0.5	300	0.0
126	Pershing Ave	Magnolia	Acacia	20440	71.3	21200	71.5	19000	71.0	760	0.2	-1440	-0.3	2200	-0.5
127	Pacific Ave	Douglas	Porter	39970	74.3	43200	74.7	42200	74.6	3230	0.3	2230	0.2	1000	-0.1
128	Pacific Ave	Yokuts	March	33730	73.6	39000	74.2	38100	74.1	5270	0.6	4370	0.5	900	-0.1
129	Pacific Ave	At Calaveras River	0	33150	73.4	29300	72.9	30400	73.1	-3850	-0.5	-2750	-0.4	-1100	0.2
130	Pacific Ave	Cleveland	Wyandotte	20160	71.3	20400	71.3	20300	71.3	240	0.1	140	0.0	100	0.0
131	Fresno Ave	Washington St	Navy Dr	11850	69.0	2370	62.0	2300	61.9	-9480	-7.0	-9550	-7.1	70	-0.1
132	Fresno Ave	Navy Dr	Charter Way	10320	68.4	5110	65.3	5260	65.4	-5210	-3.1	-5060	-2.9	-150	0.1
133	Fresno Ave	Charter Way	8th Street	8090	67.3	7720	67.1	7440	67.0	-370	-0.2	-650	-0.4	280	-0.2
134	El Dorado St	Lincoln	Loretta	17820	70.8	17800	70.8	17700	70.8	-20	0.0	-120	0.0	100	0.0
135	El Dorado St	Mayfair	Robinhood	29200	73.0	32100	73.4	31500	73.3	2900	0.4	2300	0.3	600	-0.1
136	El Dorado St	At Calaveras River	0	29050	72.8	21800	71.6	22900	71.8	-7250	-1.2	-6150	-1.0	-1100	0.2
137	El Dorado St	Pine	Cleveland	23940	72.0	21800	71.6	21500	71.5	-2140	-0.4	-2440	-0.5	300	-0.1
138	El Dorado St	Lindsay	Miner	20590	71.3	22600	71.7	21300	71.5	2010	0.4	710	0.1	1300	-0.3
139	El Dorado St	At AT & SF Overpass	0	15410	70.2	17700	70.8	16700	70.6	2290	0.6	1290	0.3	1000	-0.3
140	El Dorado St	MLK Blvd	First	12270	69.2	13600	69.7	12200	69.2	1330	0.4	-70	0.0	1400	-0.5
141	El Dorado St	Eighth	Ninth	13910	69.7	18900	71.0	14700	69.9	4990	1.3	790	0.2	4200	-1.1
142	California St	Alpine	Harding	18070	68.1	19100	68.3	18600	68.2	1030	0.2	530	0.1	500	-0.1
143	California St	Harding	Park	11530	66.1	21700	68.9	21200	68.8	10170	2.7	9670	2.6	500	-0.1
144	California St	Park	Weber	8050	62.9	19100	66.7	16000	65.9	11050	3.8	7950	3.0	3100	-0.8
145	California St	Weber	Crosstown Freeway	5460	61.3	16300	66.0	13300	65.1	10840	4.7	7840	3.9	3000	-0.9
146	Center St	Poplar	Flora	16180	70.4	14400	69.9	14500	69.9	-1780	-0.5	-1680	-0.5	-100	0.0
147	Center St	At AT & SF Overpass	0	15690	70.3	18800	71.1	17900	70.9	3110	0.8	2210	0.6	900	-0.2
148	Holman Rd	8 Mile	Morada	9530	66.9	10200	67.2	9700	67.0	670	0.3	170	0.1	500	-0.2
149	Holman Rd	Morada Lane	Hammer	17850	69.6	18200	69.7	17800	69.6	350	0.1	-50	0.0	400	-0.1
150	Holman Rd	Auto Center	Auto Center	18230	70.9	18100	70.9	18100	70.9	-130	0.0	-130	0.0	0	0.0
151	Holman Rd	Wind Flower	March	15500	68.7	6100	64.6	5700	64.3	-9400	-4.1	-9800	-4.3	400	-0.3
152	Cherokee Rd	Sierra	Sanguinetti	6420	64.9	12600	67.8	11400	67.3	6180	2.9	4980	2.5	1200	-0.4
153	Waterloo Rd	E	Williams	13890	69.7	13000	69.4	12400	69.2	-890	-0.3	-1490	-0.5	600	-0.2
154	Airport Way	Pinchot	Roosevelt	19900	71.2	34000	73.6	30400	73.1	14100	2.3	10500	1.8	3600	-0.5
155	Airport Way	Fremont	Lindsay	20430	71.3	35000	73.7	31100	73.2	14570	2.3	10670	1.8	3900	-0.5
156	Airport Way	Main	Market	16720	70.5	33600	73.5	29000	72.9	16880	3.0	12280	2.4	4600	-0.6
157	Airport Way	Ninth	Tenth	21760	71.6	49400	75.2	39800	74.2	27640	3.6	18040	2.6	9600	-0.9
158	Airport Way	Sperry	Industrial	16630	70.4	31400	73.2	23200	71.9	14770	2.8	6570	1.4	8200	-1.3
159	Airport Way	Sperry	CE Dixon St	14330	69.8	37400	74.0	14100	69.7	23070	4.2	-230	-0.1	23300	-4.2
160	Mariposa Rd	Stagecoach	SR 99	11300	68.9	53600	75.6	23700	72.1	42300	6.8	12400	3.2	29900	-3.5
161	Mariposa Rd	Farmington	SR 99	12290	67.7	23700	70.5	19000	69.6	11410	2.9	6710	1.9	4700	-1.0
162	Mariposa Rd	MLK Blvd	Farmington	14260	68.3	26300	71.0	19200	69.6	12040	2.7	4940	1.3	7100	-1.4
163	B St	Charter Way	Fourth	13530	68.1	14400	68.4	13500	68.1	870	0.3	-30	0.0	900	-0.3
164	B St	Ralph Ave	Arch Airport	4540	63.3	11400	67.3	10900	67.2	6860	4.0	6360	3.8	500	-0.2
165	Pock Lane	Mariposa	Sixth	3720	62.5	5600	64.3	4900	63.7	1880	1.8	1180	1.2	700	-0.6
166	Pock Lane	Togninali	Carpenter	5170	63.9	7800	65.7	6800	65.1	2630	1.8	1630	1.2	1000	-0.6

Stockton General Plan EXISTING Traffic Noise

CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

#	ROADWAY		SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
						Leq	Ldn	CNEL	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	I 5	North of Eight Mile Road	0	65,000	50	77.2	80.1	**80.7**	258	555	1196
2	I 5	Eight Mile Road	Hammer Lane	78,000	50	78.0	80.8	**81.5**	291	627	1351
3	I 5	Hammer Lane	Ben Holt Drive	106,000	50	79.3	82.2	**82.8**	357	769	1657
4	I 5	Ben Holt Drive	March Lane	120,000	50	79.8	82.7	**83.3**	388	835	1800
5	I 5	March Lane	Country Club Boulevard	121,000	50	79.9	82.8	**83.4**	390	840	1810
6	I 5	Country Club Boulevard	Monte Diablo Avenue	134,730	50	80.3	83.2	**83.8**	419	903	1944
7	I 5	Monte Diablo Avenue	Pershing Avenue	137,170	50	80.4	83.3	**83.9**	424	913	1968
8	I 5	Pershing Avenue	Crosstown Freeway	108,580	50	79.4	82.3	**82.9**	363	782	1684
9	I 5	Crosstown Freeway	Charter Way	143,310	50	80.6	83.5	**84.1**	437	940	2026
10	I 5	Charter Way	8th Street	151,800	50	80.9	83.7	**84.4**	454	977	2105
11	I 5	8th Street	Downing Avenue	113,640	50	79.6	82.5	**83.1**	374	806	1736
12	I 5	Downing Avenue	French Camp Road	120,000	50	79.8	82.7	**83.3**	388	835	1800
13	I 5	French Camp Road	Mathews Road	115,500	50	79.7	82.6	**83.2**	378	814	1755
14	SR 99	North of Eight Mile Road	0	85,910	50	78.3	81.2	**81.8**	307	662	1426
15	SR 99	Eight Mile Road	Morada Lane	81,000	50	78.1	80.9	**81.6**	295	636	1371
16	SR 99	Morada Lane	Hammer Lane	86,000	50	78.3	81.2	**81.8**	307	662	1427
17	SR 99	Hammer Lane	Wilson Way	105,000	50	79.2	82.1	**82.7**	351	757	1630
18	SR 99	Wilson Way	Cherokee Road	98,120	50	78.9	81.8	**82.4**	336	723	1558
19	SR 99	Cherokee Road	Waterloo Road	107,260	50	79.3	82.2	**82.8**	356	767	1653
20	SR 99	Waterloo Road	Fremont Street	115,390	50	79.6	82.5	**83.1**	374	806	1736
21	SR 99	Fremont Street	Crosstown Freeway	114,000	50	79.5	82.4	**83.1**	371	799	1722
22	SR 99	Crosstown Freeway	Martin Luther King Jr Blvd	103,400	50	79.1	82.0	**82.6**	348	749	1614
23	SR 99	Martin Luther King Jr Blvd	Farmington Rd	95,700	50	78.8	81.7	**82.3**	330	711	1532
24	SR 99	Farmington Rd	Mariposa Rd	80,300	50	78.0	80.9	**81.5**	294	633	1363
25	SR 99	Mariposa Road	Arch Road	78,000	50	77.9	80.8	**81.4**	288	621	1337
26	SR 99	Arch Road	French Camp Road	74,000	50	77.7	80.6	**81.2**	278	599	1291
27	SR 99	French Camp Road	Lathrop Road	74,000	50	77.7	80.6	**81.2**	278	599	1291
28	SR 4	West of I 5	West of I 5	18,150	50	71.5	74.4	**75.0**	107	231	499
29	SR 4	I 5	El Dorado St	85,000	50	78.2	81.1	**81.7**	301	648	1396
30	SR 4	El Dorado Street	Stanislaus Street	115,140	50	79.5	82.4	**83.0**	368	793	1709
31	SR 4	Stanislaus Street	Wilson Way	105,000	50	79.1	82.0	**82.6**	346	746	1607
32	Eight Mile Rd	Mokelume Drive	Trinity Parkway	9,010	50	62.8	65.7	**66.3**	28	61	132
33	Eight Mile Rd	Trinity Parkway	I 5	31,480	50	69.8	72.7	**73.4**	84	180	388
34	Eight Mile Rd	Thornton Rd	Davis Rd	15,460	50	66.6	69.5	**70.1**	51	110	237
35	Eight Mile Rd	Davis Rd	Lower Sacramento	16,930	50	65.6	68.4	**69.1**	43	93	201
36	Eight Mile Rd	Lower Sacramento	West Lane	20,420	50	66.4	69.3	**69.9**	49	106	228
37	Eight Mile Rd	West Lane	SPRR	13,170	50	64.5	67.3	**68.0**	37	79	170
38	Eight Mile Rd	West of Bear Creek	Rt 99	11,810	50	64.0	66.9	**67.5**	34	73	158
39	Morada Lane	Lower Sacramento Rd	West Lane	0	50	#NUM!	#NUM!	**#NUM!**	#NUM!	#NUM!	#NUM!
40	Morada Lane	Cherbourg	West	14,290	50	66.3	69.2	**69.8**	48	104	225
41	Morada Lane	Cherbourg	Fox Creek	15,430	50	66.6	69.5	**70.1**	51	110	236
42	Morada Lane	Holman	Hwy 99	18,010	50	67.4	70.3	**70.9**	57	123	266
43	Morada Lane	Mosher Creek	Holman	16,160	50	66.9	69.8	**70.4**	53	115	247
44	Hammer Lane	Mariners Dr	I 5	17,010	50	67.1	70.0	**70.6**	55	119	256
45	Hammer Lane	Westland	Richland	31,960	50	69.9	72.7	**73.4**	84	181	390

Stockton General Plan EXISTING Traffic Noise

CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

#	ROADWAY		SEGMENT	DAILY TRAFFIC VOLUMES	Distance to Reciever	Noise Level (dBA)			DISTANCE TO NOISE CONTOUR (FT.)		
						Leq	Ldn	CNEL	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Hammer Lane	Pershing Ave	Valencia	28,610	50	69.3	72.2	**72.8**	77	166	357
2	Hammer Lane	Lower Sacramento Rd	El Dorado St	41,780	50	71.1	74.0	**74.6**	101	218	469
3	Hammer Lane	At WPRR	0	48,730	50	71.7	74.6	**75.3**	112	241	520
4	Hammer Lane	SPRR	Holman Rd	42,060	50	71.1	74.0	**74.6**	101	219	471
5	Hammer Lane	Holman Rd	Rt 99	40,360	50	70.9	73.8	**74.4**	99	213	458
6	Benjamin Holt Drive	Plymouth	Belmont	22,630	50	66.8	69.7	**70.3**	53	113	244
7	Benjamin Holt Drive	Vicksburg	Gettysburg	16,380	50	65.4	68.3	**68.9**	42	91	197
8	Swain Rd	Pylmouth Road	Morgan	10,690	50	63.6	66.4	**67.1**	32	69	148
9	Swain Rd	Pershing Avenue	Vicksburg Place	9,670	50	63.1	66.0	**66.6**	30	64	138
10	March Lane	Brookside Rd	Morningside Dr	6,950	50	63.2	66.1	**66.7**	30	65	141
11	March Lane	Feather River Drive	I 5	40,100	50	70.8	73.7	**74.4**	98	210	453
12	March Lane	Quail Lakes	Grouse Run	43,050	50	71.2	74.0	**74.7**	102	221	475
13	March Lane	Pershing Ave	Pacific Ave	42,910	50	71.1	74.0	**74.7**	102	220	474
14	March Lane	Pacific Ave	Claremont	33,060	50	70.0	72.9	**73.5**	86	185	399
15	March Lane	At UPRR	0	38,800	50	70.7	73.6	**74.2**	96	206	443
16	March Lane	West Lane	Bianchi	28,720	50	69.4	72.3	**73.0**	79	170	365
17	Alpine Avenue	Pershing	Grange	9,140	50	64.3	67.2	**67.8**	36	77	167
18	Alpine Avenue	Dwight	Kensington	7,820	50	63.7	66.5	**67.2**	32	70	150
19	Alpine Avenue	Center	Commerce	14,490	50	66.3	69.2	**69.8**	49	105	227
20	Alpine Avenue	Sutter	San Joaquin	20,460	50	67.8	70.7	**71.3**	61	132	285
21	Country Club Drive	Grange Avenue	Pershing Avenue	8,910	50	62.8	65.7	**66.3**	28	61	131
22	Monte Diablo Avenue	San Juan	Buena Vista	3,540	50	58.8	61.6	**62.3**	15	33	71
23	Harding Way	Pershing	Columbia	3,810	50	59.1	62.0	**62.6**	16	35	74
24	Harding Way	Baker	Stockton	11,330	50	63.8	66.7	**67.3**	33	71	154
25	Harding Way	Commerce	Madison	24,300	50	68.6	71.5	**72.1**	69	149	320
26	Harding Way	El Dorado	Center	25,910	50	68.9	71.7	**72.4**	72	155	334
27	Harding Way	California	San Joaquin	21,470	50	68.0	70.9	**71.6**	63	137	295
28	Harding Way	At UPRR	0	19,550	50	67.6	70.5	**71.1**	60	128	277
29	Harding Way	Wilson	Sierra Nevada	22,040	50	68.2	71.0	**71.7**	65	139	300
30	Fremont St	Watts	Laurel	14,610	50	64.9	67.8	**68.4**	39	85	182
31	Fremont St	Broadway	Golden Gate	10,960	50	63.7	66.6	**67.2**	32	70	150
32	Miner Ave	El Dorado Street	Center Street	7,160	50	63.3	66.2	**66.8**	31	66	142
33	Miner Ave	California	San Joaquin	8,770	50	64.2	67.0	**67.7**	35	75	162
34	Main St	California	Sutter	3,210	50	59.8	62.7	**63.3**	18	39	83
35	Main St	Court	Ash	9,890	50	64.7	67.6	**68.2**	38	82	176
36	Main St	Netherton	Golden Gate	15,020	50	66.5	69.4	**70.0**	50	108	232
37	Charter Way	W of Roberts	W of Roberts	13,650	50	64.6	67.5	**68.1**	38	81	174
38	Charter Way	Tillie Lewis Drive	Fresno Avenue	12,480	50	64.2	67.1	**67.7**	35	76	164
39	Charter Way	Navy	Fresno	17,420	50	65.7	68.6	**69.2**	44	95	205
40	Charter Way	I 5	Navy	31,980	50	68.3	71.2	**71.8**	66	143	307
41	Martin Luther King Jr. Blvd	I 5	Lincoln	34,420	50	70.1	73.0	**73.6**	87	187	404
42	Martin Luther King Jr. Blvd	California	Airport Way	30,000	50	69.5	72.4	**73.0**	79	171	368
43	Martin Luther King Jr. Blvd	Airport Way	Wilson Way	28,550	50	69.3	72.2	**72.8**	77	165	356
44	Martin Luther King Jr. Blvd	Mariposa Road	Golden Gate Avenue	15,220	50	65.1	68.0	**68.6**	40	87	187
45	Navy Dr	San Joaquin River	Washington	4,560	50	59.9	62.7	**63.4**	18	39	84

Appendix E:
Existing Conditions
Technical Memorandum:
Transportation

Stockton 2040 General Plan Update

Existing Conditions Technical Memorandum:

Transportation

July 12, 2016

EXISTING CONDITIONS TECHNICAL MEMORANDUM: TRANSPORTATION

This document describes the existing transportation setting in the Planning Area for the City of Stockton's General Plan Update. The city is uniquely positioned as a multi-modal center of the San Joaquin Valley, served by all major travel modes including highway, transit, bicycle, pedestrian, rail, water, and air. The city is located at the confluence of many of Northern California's inter-regional transportation facilities including Interstate 5 (I-5), State Route 99 (SR 99), State Route 4 (SR 4), State Route 88 (SR 88), the Port of Stockton and associated deep water channel and navigable waterways, the Stockton Metropolitan Airport, Amtrak, the Altamont Commuter Express (ACE) passenger rail service, and the transcontinental railroad system (provided by Union Pacific Railroad [UPRR] and Burlington Northern Santa Fe [BNSF]). The safe and efficient transport of people and goods across this multi-modal system is crucial to the social and economic well-being of the city – both now and in the future.

The Transportation Element of the General Plan provides policies and actions to maintain and improve Stockton's transportation network. The Element establishes policies to expand transportation choices, improve traffic safety, and make transportation more sustainable, complementing policies contained in the other General Plan elements addressing land use, air quality, greenhouse gas reduction, and public health.

The purpose of this memorandum is to describe the existing condition of the transportation system and identify potential opportunities and challenges for consideration in the General Plan Update process.

OVERVIEW

This section provides an overview of the regulatory and policy context surrounding the existing transportation system in Stockton, and describes the general travel behavior of Stockton residents based on Census data.

REGULATORY CONTEXT

Transportation through and within Stockton is provided by a network of facilities stratified by travel mode, function and capacity. Multiple agencies oversee the planning, development, operation, and funding of these facilities. Nationally, the US Department of Transportation (USDOT) ensures the safety and efficiency of the nation's interstate freeway system, airports, rail lines, and ports. The California Department of Transportation (Caltrans) manages more than 45,000 miles of highway and freeway lanes as well as other transportation facilities across the state. At the regional level, the San Joaquin Council of Governments (SJCOG)[1] is responsible for developing and updating a variety of transportation plans and for allocating Federal and State funds to implement them. San Joaquin Regional Transit District (RTD), Altamont Commuter Express (ACE), and Amtrak are transit transportation providers within the city.

The Federal Railroad Administration regulates freight railroads for the federal government by creating and enforcing national rail safety regulations. At the State level, the California Public Utilities Commission (CPUC) has jurisdiction over safety regulations for common carriers (including trucks and rail) and at-grade railroad crossings.

At the local level, the Stockton Public Works and Community Development Departments are responsible for overseeing the planning, design, construction and maintenance of citywide transportation systems including roadways and bicycle, pedestrian and transit facilities.

The existing City of Stockton General Plan, approved in 2007, establishes a majority of transportation policy in the city and establishes a multi-modal transportation framework.

KEY PLANNING DOCUMENTS

While the City of Stockton General Plan establishes the key vision for how the city develops and adapts over time, other local and regional planning documents also influence the transportation network. The following documents contain policies which should be considered in the General Plan Update.

[1] The San Joaquin Council of Governments (SJCOG) is a Joint Powers Authority comprised of the County of San Joaquin and the Cities of Stockton, Lodi, Manteca, Tracy, Ripon, Escalon and Lathrop. SJCOG serves as the regional transportation planning agency and the Congestion Management Agency (CMA) for San Joaquin County.

CITY OF STOCKTON BICYCLE MASTER PLAN

The City of Stockton is updating the Bicycle Master Plan, which is scheduled to be adopted before the General Plan Update. The Bicycle Master Plan identifies key low stress connections that should be implemented to allow people of all ages and abilities to connect across the city via a bicycle. The document will also identify programs and educational guidelines that could encourage a greater shift in bicycle mode share within Stockton. More information can be found on the City's website[2].

CITY OF STOCKTON PRECISE ROAD PLANS

The City of Stockton has multiple Precise Road Plans which conform to the General Plan. These plans can be used to protect, preserve, and require dedications for planned roadway and/or transportation corridors as future development occurs. These plans should be updated for conformity with multi-modal complete streets principles and to ensure consistency with other recently updated plans.

CITY OF STOCKTON WATERFRONT CONNECTIONS PLAN

The primary purpose of the Waterfront Connections Plan (WCP) is to preserve the opportunity to provide public access to the waterfront. The WCP creates economic and recreational opportunities, as well as alternative modes of transportation (walking and bicycling) from surrounding residential and commercial land uses to Downtown. The efforts to create a waterfront bike and pedestrian pathway on the shores of the Deep Water Channel began more than 30 years ago and have continued up to the present day. Numerous studies have been conducted over this period, design plans have been initiated, and land entitlements have been approved with the condition of providing for a future multi-use trail.

CITY OF STOCKTON CLIMATE ACTION PLAN

The City of Stockton Climate Action Plan (CAP) was adopted in 2014 and identifies reduction targets to reduce greenhouse gas emissions. The CAP relies on voluntary measures for both existing and new development, and includes a number of mandatory measures where required by

[2] http://www.stocktongov.com/government/departments/publicworks/projBike.html

other State or local mandates and other City initiatives. Transportation strategies to reduce vehicle miles traveled (VMT) represent a considerable portion of the CAP measures.

SJCOG REGIONAL CONGESTION MANAGEMENT PROGRAM

The SJCOG Regional Congestion Management Program (RCMP) identifies a network of roadways with regional significance throughout the county and identifies a process to coordinate the land use, air quality, and transportation planning processes. CMP roadways in Stockton include all Caltrans facilities, and major arterial facilities, including Eight Mile Road, Trinity Parkway, Hammer Lane, West Lane, Lower Sacramento Road, Thornton Road, March Lane, Pacific Avenue, Navy Drive, Sperry Road, Arch Road, Mariposa Road, and French Camp Road. Regional level of service (LOS) standards are established for each facility and a monitoring program is required to identify deficient roadways. Multi-modal considerations are incorporated into the program.

SJCOG REGIONAL TRANSPORTATION PLAN & SUSTAINABLE COMMUNITIES STRATEGY

The SJCOG Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS) provides a sustainable vision for 2040 that recognizes the significant impacts the transportation network has on the region's public health, mobility, and economic vitality. The RTP/SCS includes projects from all of the member jurisdictions throughout San Joaquin County and prioritizes regional investments in those projects.

SJCOG MEASURE K RENEWAL ORDINANCE AND EXPENDITURE PLAN

Measure K is a half-cent sales tax dedicated to transportation projects in San Joaquin County. The SJCOG Measure K Expenditure Plan identifies the projects that will be funded (partially or fully) through the voter-approved tax. Revenue from the Plan can be allocated to local street repair (35 percent), congestion relief (32.5 percent), passenger rail/bus/bicycle/pedestrian/Safe Routes to Schools projects (30 percent), or railroad crossing safety investment projects (2.5 percent).

SJCOG EXPRESSWAYS PLAN

SJCOG's Expressways Plan identifies a network of expressways throughout the county, including facilities in Stockton such as Eight Mile Road, Airport Way/West Lane, Trinity Parkway, Sperry

Road, Lower Sacramento Road, and French Camp Road. Discrepancies between the City of Stockton Circulation Map and the SJCOG Expressways Plan should be identified and resolved[3].

SJCOG PARK-AND-RIDE LOT MASTER PLAN

SJCOG's Park-and-Ride Plan, prepared in 2007, identifies the existing Park-and-Ride lots within San Joaquin County and describes the number of spaces and use characteristics for each lot. The Plan also estimates future Park-and-Ride demand and identifies potential locations for new or expanded facilities.

Specific data regarding the existing Park-and-Ride lots in Stockton is discussed in the section on the transit network below.

SJCOG REGIONAL SMART GROWTH TRANSIT-ORIENTED DEVELOPMENT PLAN

This Plan provides key background information that serves as context for smart growth development in the county, including summarizing existing local and regional policies, existing and forecasted greenhouse gas emissions, and economic and demographic trend information. Through an extensive process involving member jurisdictions, community members, and decision makers, SJCOG developed an inventory of sites throughout the county that are appropriate for infill development, including several sites in Stockton. Additional information about these sites is provided in the separate technical memorandum discussing existing land use conditions in Stockton.

SJGOG REGIONAL TRANSPORTATION IMPACT FEE

The Regional Transportation Impact Fee (RTIF) is a county-wide, multi-jurisdictional capital improvement funding program intended to cover a portion of the costs for new transportation facilities required to serve new development within the county. New development throughout the county is subject to the fee. The funding derived from the RTIF program is used in combination with other available funding to complete transportation and transit improvements identified through the SJCOG RTP/SCS.

[3] Potential discrepancies will be highlighted during the model development process for City staff consideration.

SJCOG FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM

The Federal Transportation Improvement Program (FTIP) is a four-year spending plan for San Joaquin County that lists transportation projects that will receive federal funds or that are subject to a federally required action, such as a review and approval of environmental documents. Projects in the FTIP are developed and updated by SJCOG through its member agencies, and in cooperation with state and federal agencies and the eight San Joaquin Valley counties. Transportation system improvements within the City of Stockton identified in the FTIP include freeway mainline and interchange upgrades, roadway widening, traffic signal installation, widening of arterial roadway segments, railroad grade separations, bus rapid transit signal prioritization, airport runway improvements, streetscape improvements, and bicycle facilities. Discrepancies between the City of Stockton Circulation Map and the FTIP improvement list should be identified and resolved[4].

TRAVEL TRENDS IN STOCKTON

The City of Stockton is one of California's largest, fastest growing municipalities. The County seat for San Joaquin County, Stockton is home to a multi-ethnic and multi-cultural population of about 300,000, while an additional 40,000 people reside in nearby unincorporated communities. Stockton is situated along the Calaveras and San Joaquin Rivers, approximately 80 miles east of San Francisco and 50 miles south of Sacramento, the State capital.

Stockton spans an area of approximately ten miles by six miles, generally bordered by Eight Mile Road to the north, the San Joaquin River Delta to the west, SR 99 to the east, and Arch Airport Road/French Camp Road to the south. Stockton includes dozens of neighborhoods and districts, broadly defined as North (north of the Calaveras River), Central (south of the Calaveras River to SR 4), and South (south of SR 4). Several notable unincorporated communities are encircled by or adjacent to Stockton including Country Club, French Camp, Garden Acres, Kennedy, Lincoln Village, Morada, and Taft Mosswood. Stockton has a mild, Mediterranean climate and a flat topography.

[4] Potential discrepancies will be highlighted during the model development process for City staff consideration.

Stockton is a regional employment hub home to approximately 81,000 jobs,[5] most heavily concentrated around Downtown. Several educational institutions are located within Stockton including the University of the Pacific, California State University Stanislaus-Stockton, San Joaquin Delta Community College, and a variety of vocational schools.

COMMUTE TRENDS

Commute related trends provide an overview of which travel mode most residents in Stockton rely on to get to work. The mode of transportation chosen to get to work may be associated with the locations of jobs, land use patterns, or availability of modal choices throughout Stockton. Census journey to work data provides an overview of which transportation modes are most used in Stockton, as summarized in **Table 1**. Between 2000 and 2014, vehicle trips increased while bicycling, walking and transit commute trips decreased slightly. The percent of Stockton residents working from home has increased by 50 percent since 2000. Some of the differences in travel trends could be attributed to changes in U.S. Census data reporting between 2000 and 2014.

The place of work that Stockton residents commute to provides insight into the increase in drive alone trips and reduction in active transportation trips (i.e., biking, walking, or using transit). As summarized in **Table 2**, the percentage of employed persons who live in Stockton but commute outside the city and San Joaquin County has increased between 2000 and 2014. Increasing the proportion of jobs to employed residents in Stockton and San Joaquin County could help reduce the commuting long distances outside of the city or county.

Vehicle ownership trends in Stockton show that the number of households that have at least one automobile has increased from 2000 to 2014, indicating an increased reliance on the automobile for mobility within Stockton. **Table 3** summarizes vehicle ownership trends from 2000 to 2014.

[5] As of 2014, as reported in the 2016 Market Analysis prepared for the Stockton 2040 General Plan Update.

TABLE 1
MEANS OF TRANSPORTATION TO WORK

Mode	2000 Percent of Workers	2010 Percent of Workers	2014 Percent of Workers
Car, truck, or van	91.6%	91.5%	92.1%
Drove alone	*73.6%*	*74.2%*	*75.7%*
Carpooled	*18.0%*	*17.3%*	*16.5%*
Public transportation	1.9%	1.3%	1.3%
Bus	*1.7%*	*0.9%*	*1.1%*
Rail	*0.2%*	*0.4%*	*0.2%*
Walked	3.1%	1.8%	1.4%
Bicycle	0.8%	0.7%	0.6%
Taxicab, motorcycle, or other means	1.0%	1.1%	1.1%
Worked at home	2.4%	3.6%	3.4%

Source: US Census, Commuting Characteristics by Sex, Table S0801, ACS 5-year estimates for 2010 & 2014, 2000 Census, Table P030, SF-3 Sample Data.
Fehr & Peers, 2016.

TABLE 2
PLACE OF WORK

Place of Work	2000 Percent of Employed Stockton Residents	2010 Percent of Employed Stockton Residents	2014 Percent of Employed Stockton Residents
Worked in City of Stockton	60%	59%	58%
Worked in San Joaquin County	26%	25%	25%
Worked Outside San Joaquin County	14%	16%	17%

Source: US Census, Commuting Characteristics by Sex, Table S0801 and Table B08008, ACS 5-year estimates for 2010 & 2014, 2000 Census, SF-3. Fehr & Peers, 2016.

TABLE 3
VEHICLE OWNERSHIP

Number of Vehicles Available	2000 Percent of Households	2010 Percent of Households	2014 Percent of Households
No Vehicle Available	13%	9%	10%
1 Vehicle Available	36%	31%	37%
2 Vehicles Available	36%	38%	33%
3 or More Vehicles Available	15%	22%	20%

Source: US Census, Commuting Characteristics by Sex, Table S0801, ACS 5-year estimates for 2010 & 2014, 2000 Census, Table DP-4, SF-3 Sample Data. Fehr & Peers, 2016.

EXISTING TRANSPORTATION NETWORK

This section summarizes the existing transportation system in Stockton. In addition to motorized vehicle facilities, this section discusses pedestrian facilities, the bicycle network, and public transportation services.

ROADWAY NETWORK

The roadway network in Stockton is made up of freeways, highways, arterials, collectors, and local streets. Each is described in detail below with the existing classification shown on **Figure 1** (all figures are provided at the end of this memorandum).

FUNCTIONAL CLASSIFICATIONS

A hierarchy of roadways provides for vehicle travel within the City of Stockton. Freeways are high-speed facilities that move inter-city or regional traffic, with access generally limited to grade-separated interchanges. Highways are also high-speed, regional facilities, but access is provided at-grade in most cases. Arterials are high-volume facilities that connect the regional roadway

network to the local roadway network, while collector streets typically connect residential and local-serving commercial areas with the arterial system.

Freeways and Highways

I-5 is a major north-south freeway that traverses the western U.S., originating in southern California and continuing north toward Sacramento and beyond. It runs through the western portion of the city, generally providing four travel lanes in each direction through the central portion of Stockton (between Charter Way and Country Club Drive) and three lanes in each direction along the remaining segments, with widening to provide four lanes per direction under construction between County Club Drive and Hammer Lane. Twelve interchanges are provided along the 14-mile stretch of I-5 within and adjacent to the city limit. Average daily traffic volumes on I-5 range between 80,000 in northern Stockton, over 140,000 throughout central Stockton, and approximately 110,000 in southern Stockton.

SR 99 traverses the Central Valley, connecting Sacramento and points north with numerous Central Valley cities including Modesto, Merced, Fresno and Bakersfield. Three travel lanes are provided in each direction north of SR 4, while the segments south of SR 4 include two lanes per direction, with on-going widening that would ultimately provide three travel lanes per direction through Stockton to SR 120 in Manteca. Twelve interchanges are provided along the 12-mile length of SR 99 within and adjacent to the city limit. Average daily traffic volumes on SR 99 range between 80,000 in the northern and southern portions of the city around Morada Lane and Mariposa Road to over 105,000 in the central Stockton area.

The portion of SR 4 between I-5 and SR 99 also functions as a freeway. Known as the Crosstown Freeway, it traverses the city in an east-west direction just south of the Downtown area. This four-mile section is accessed by four interchanges, excluding the freeway-to-freeway interchanges located at the eastern and western ends of the city. The Crosstown Freeway currently carries approximately 100,000 vehicles per day.

Three highways also connect Stockton with points east and west of the city. SR 4 connects with Contra Costa County to the west, and the Sierra foothills and mountains of Calaveras and Alpine Counties in the east. It carries approximately 20,000 vehicles per day west of I-5 and 10,000 vehicles per day east of SR 99. SR 26 connects Stockton to Calaveras County, approximately 40 miles east. Daily traffic volumes on SR 26 are approximately 22,000 east of SR 99. SR 88 connects Stockton with Amador County to the east, and continues to the Nevada state line. This facility is

of particular inter-regional significance as it is one of only three all-weather, east-west highways serving Northern California. East of SR 99, SR 88 carries approximately 26,000 vehicles per day.

Arterials

The primary function of arterial streets is to connect the regional roadway network with the local roadway network. Limited access is provided to abutting parcels in many cases. Arterial streets are typically high-volume, high-speed roadways generally serving between 20,000 and 50,000 vehicles per day with four to eight travel lanes; some minor arterials serve fewer than 20,000 vehicles per day. Traffic signals on arterial roadways in Stockton are generally connected to the City's Traffic Management System, which provides signal coordination and incident response services. The following lists the key north-south and east-west arterials in the city:

North-South Arterials	East-West Arterials
Pershing Avenue	Eight Mile Road
Davis Road	Hammer Lane
Lower Sacramento Road	Benjamin Holt Drive
West Lane	Alpine Avenue
Pacific Avenue	Harding Way
El Dorado Street	Charter Way/ Dr. MLK Jr. Boulevard
Center Street	Arch-Airport/Sperry Road
Wilson Way	Miner Avenue (west of Wilson Way)
Airport Way	March Lane
Thornton Road	Morada Lane
	East Weber Avenue

Collectors

Collector streets serve as principal traffic arteries within residential and commercial areas. These streets typically carry up to 10,000 vehicles per day, although some collectors may carry more vehicle traffic for short segments as they convey traffic between arterial streets and local residential streets. Two to four travel lanes are typically provided on collector streets in Stockton.

Major key collectors include:

- Swain Road
- Quail Lakes Drive
- Bianchi Road
- Tam O'Shanter Drive
- 8th Street
- B Street
- Pock Lane
- A.G. Spanos Boulevard
- Country Club Boulevard (west of I-5)
- Brookside Road
- Miner Avenue (east of Wilson Way)
- Carolyn Weston Boulevard
- Henry Long Boulevard
- Holman Road
- McKinley Avenue
- Industrial Drive
- Fresno Avenue
- Fremont Street
- Feather River Drive
- Whistler Way
- Kelly Drive
- Montauban Avenue
- Lorraine Avenue
- Navy Drive

EXISTING CONDITIONS AND DEFICIENCIES

The roadway network was evaluated to identify existing operational conditions and deficiencies considering roadway segment analyses and accident data. The City of Stockton has established a level of service (LOS) standard to evaluate the operating conditions of roadway segments and intersections within the city.

LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F. The City of Stockton has historically strived to maintain LOS D or better for peak hour intersection and daily roadway segment operations. To encourage the development of a multi-modal transportation system and to acknowledge constraints in developed portions of the city, the current General Plan designates the standard as LOS E for intersections in the Downtown area (bounded by Harding Way, the Union Pacific railroad tracks, Charter Way/Dr Martin Luther King Jr. Boulevard, I-5, and Pershing Avenue), permitting LOS F if improvements for vehicle travel could degrade the quality of the transportation system for other roadway users. A number of other

intersections and roadway segments are also exempt from the LOS D standard due to physical constraints (Existing Policy TC-2.1).

Daily operations of roadway segments were evaluated by comparing the traffic volume on a roadway facility to the functional capacity of the roadway (see **Appendix A** for a description of the analysis method and results), based on the volumes presented on **Figure 2**, the existing functional classification, as presented on Figure 1, and the existing number of lanes. Analysis results indicate that overall, the City of Stockton roadway network functions within capacity, although some potential deficiencies were identified. Detailed analysis results are presented in the Appendix. Of the roadway segments evaluated, most operate at LOS D or better on a daily basis. The following segments operate at LOS E or F:

- SR 99 between Dr. Martin Luther King Jr Blvd and Farmington Road [LOS F] (this freeway section is under construction to add one lane in each direction in Fall 2016, which would result in LOS C operations)
- Eight Mile Road between Lower Sacramento Road and West Lane [LOS F]
- Ben Holt Drive between Plymouth Road and Pacific Avenue (This roadway is exempt from City of Stockton LOS standards due to physical constraints that limit potential roadway improvements. Although a portion of the roadway is located within unincorporated San Joaquin County, the City of Stockton LOS standards prevail as this facility is within the City of Stockton Sphere of Influence [County General Plan Policy TM-3.1].)
- Thornton Road between Davis Road and Waudman Avenue [LOS F]
- Thornton Road between Davis Road and Pershing Avenue [LOS E] (LOS E is considered acceptable for this roadway segment due to physical constraints)
- Lower Sacramento Road between Eight Mile Road and Bear Creek [LOS E]
- Pershing Avenue at Calaveras River [LOS E]

Although the roadway facilities generally provide for vehicle travel, the level of service analysis does not capture the mobility experience of other roadway users. As part of the General Plan Update process, the City may consider policies related to measuring the performance of other travel modes within the City of Stockton.

AUTOMOBILE COLLISIONS

Automobile collision data in Stockton was reviewed for a six-year span between 2009 and 2014. The source for the collision data is the Statewide Integrated Traffic Records System (SWITRS) from the California Highway Patrol (CHP), accessed via the Transportation Injury Mapping System (TIMS) maintained by the Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley.

Between 2009 and 2014, 3,945 motor vehicle collisions occurred within the City of Stockton. Of these collisions, 42 were fatal and 87 resulted in severe injuries. The most common types of collisions were broadside (42 percent of auto collisions) and rear-end collisions (44 percent of auto collisions). The rate of misdemeanor or felony hit and run collisions for automobile-only collisions in Stockton is 12 percent of automobile collisions (444 total), as compared to 9 percent of automobile collisions at the statewide level . Approximately 82 percent of collisions occurred in daylight, while 18 percent occurred during dusk, dawn, or night conditions.

The location of automobile-only collisions is shown on **Figure 3.** The intersections with the highest level of automobile collisions are shown in **Table 4**. **Table 5** summarizes the primary collision factors.

TABLE 4
TOP 20 TRAFFIC COLLISION LOCATIONS, 2009-2014

Intersection	Total Collisions	Fatal	Injury
Interstate 5 Ramps & March Lane	82	1	81
March Lane & Pershing Avenue	52	0	52
Interstate 5 Ramps & Charter Way	42	1	41
Interstate 5 Ramps & Downing Avenue	35	0	35
March Lane & Quail Lakes Drive	35	0	35
Interstate 5 Ramps & Benjamin Holt Drive	33	1	32
Interstate 5 Ramps & State Route 4	33	0	33
Interstate 5 Ramps & Hammer Lane	32	1	31
El Dorado Street & March Lane	31	0	31
Hammer Lane & Tam O'Shanter Drive	30	0	10

TABLE 4
TOP 20 TRAFFIC COLLISION LOCATIONS, 2009-2014

Intersection	Total Collisions	Fatal	Injury
Interstate 5 Ramps & 8th Street	29	2	27
Interstate 5 Ramps & Monte Diablo Avenue	29	0	29
State Route 4 & Filbert Street	26	2	24
State Route 99 & Arch Road	26	0	25
West Lane & March Lane	23	0	23
Airport Road & Park Street	21	0	21
Hammer Lane & Holman Road	21	0	21
Interstate 5 Ramps & Country Club Boulevard	21	0	21
Pacific Avenue & Benjamin Holt Drive	21	0	21
State Route 4 & Wilson Way	20	0	20
Interstate 5 Ramps & Pershing Avenue	17	1	16

Source: California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) 2009-2014 data provided by the University of California, Berkeley Transportation Injury Mapping System (TIMS). Fehr & Peers, 2016.
Note: Data from 2014 may not be complete as noted on the TIMS website.

TABLE 5
PRIMARY COLLISION FACTORS, 2009-2014

Primary Collision Factor	Percent of Collisions
Unsafe Speed	31%
Automobile Right of Way	15%
Traffic Signals and Signs	12%
Improper Turning	9%
Driving or Bicycling Under the Influence of Alcohol or Drug	7%
Unknown	6%
Wrong Side of Road	4%

TABLE 5
PRIMARY COLLISION FACTORS, 2009-2014

Primary Collision Factor	Percent of Collisions
Unsafe Lane Change	4%
Pedestrian Violation	3%
Pedestrian Right of Way	3%
Not Stated	2%
Unsafe Starting or Backing	1%
Other Than Driver (or Pedestrian)	1%
Following Too Closely	1%
Other Hazardous Violation	1%

Source: California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) 2009-2014 data provided by the University of California, Berkeley Transportation Injury Mapping System (TIMS). Fehr & Peers, 2016.
Note: Data from 2014 may not be complete as noted on the TIMS website.

TRANSIT NETWORK

There are numerous transit options for travel within Stockton or regional travel to neighboring counties and beyond. Bus services support local and regional travel, while rail lines provide connectivity to the Bay Area, Sacramento, and Southern California and beyond.

BUS SERVICE

Bus service within Stockton is operated by a major transit provider with some supportive services from operators from around the region.

Primary Local and Regional Service

The San Joaquin Regional Transit District (RTD) is the primary regional transit provider in San Joaquin County. San Joaquin RTD provides public transit services in the Stockton Metropolitan area, as well as inter-city and rural transit services countywide. San Joaquin RTD offers multiple fare prices including a standard rate, discounted rate for seniors and Medicare card holders, and students. Day-long or multi-day passes can also be purchased by regular transit riders.

San Joaquin RTD provides multiple service options as described below with specific routes and ridership information provided in **Table 6,** and the transit route coverage presented on **Figure 4**. Overall, routes with the highest frequency of service have the highest levels of ridership.

Intercity

San Joaquin RTD offers a fixed route service to connect Stockton with Lodi. The Lodi Station offers connections with the Lodi Grapeline, Calaveras Transit, Delta Breeze, and SCT/LINK buses to facilitate travel beyond Stockton.

Metro

Fixed route services within the Stockton Metropolitan Area are provided by Metro Express buses with increased frequencies along major corridors in Stockton, and standard service buses that provide connections to most other areas of Stockton. On normal weekdays, this service provides many routes with great coverage of Stockton. These routes are consolidated on weekends. Some Metro routes have Bus Rapid Transit (BRT) features, including pre-boarding ticket vending machines at stops to reduce dwell time and more frequent peak hour service.

Hopper

San Joaquin RTD offers two levels of Hopper Service including the Metro Hopper and the County Hopper. These are deviated fixed route bus services which serve popular destinations throughout Stockton. There are eight Metro Hopper routes within the city limit that run approximately every hour. These lines can deviate from their route up to approximately one mile which increases transit coverage to approximately 75 percent of the Stockton Metro Area for Americans with Disabilities Act (ADA)-certified customers. Similarly, the County Hopper offers a similar service with more direct connections between Stockton, Tracy, Manteca, Ripon, Lodi, and Lathrop.

Interregional Commuter

San Joaquin RTD provides regional connectivity between the Stockton Transit Center, Altamont Commuter Express (ACE) train station, Tracy, Manteca, Livermore and the Dublin/Pleasanton Bay Area Rapid Transit (BART) station. Other routes connect Stockton with Sacramento and two major Bay Area employers including Lockheed Martin and Northrop-Grumman in Sunnyvale. Reservations and monthly subscription passes are available for this service to give riders confirmation they will have a seat available.

Dial-A-Ride

San Joaquin RTD has two types of Dial-A-Ride services including one for the general public and one for passengers with ADA certification. The general public service provides curb-to-curb service in areas not being served by RTD routes or other public transportation options. The Stockton Metro Area Dial-A-Ride (SMA-ADA) provides curb-to-curb service for passengers who have received ADA certification with San Joaquin RTD to qualify for paratransit services.

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
Intercity Service			
23	Stockton to Lodi via Lower Sacramento Road.	Weekday: 1 hour during peak periods	10,000
Stockton Metropolitan Area Service			
40	Metro Express service for the Pacific Avenue corridor to the Downtown Transit Center and Hammer Lane Triangle.	Weekday: 10 minutes Weekend: Varies 20-30 minutes	203,000
43	Metro Express service along the Hammer Lane corridor generally between Holman Road and Mariners Drive.	Weekday: 15 minutes Weekend: 30 minutes	87,000
44	Metro Express service along the Airport Way corridor between the Downtown Transit Center and Ralph Avenue.	Weekday: 20 minutes Weekend: 30 minutes	59,000
51	El Dorado Street, San Joaquin Street, Malls, Amtrak, and SJ County Hospital. No weekend service is provided.	Weekday: 1 hour	20,000
52	Honor Farm, Downtown Transit Center, California Street, West Lane, and Kaiser. No weekend service is provided.	Weekday: 1 hour	31,000
54	Eighth Street, Dr. Martin Luther King Jr. Boulevard, Amtrak Station, and Downtown Transit Center. No weekend service is provided.	Weekday: 1 hour	14,000

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
55	Carolyn Weston Boulevard, Dr. Martin Luther King Jr. Boulevard, Stanislaus Street, and Downtown Transit Center. No weekend service is provided.	Weekday: 1 hour	10,000
60	Pixie Woods, Monte Diablo Avenue, Fremont Street, Weber Avenue, and Downtown Transit Center. Morning service is limited to the peak period and afternoon services operate between 12:15 PM and 6:30 PM. No weekend service is provided.	Weekday: 1 hour	6,000
61	Sherwood Mall, San Joaquin Delta College, Quail Lakes Drive, Pershing Avenue, Alpine Avenue, and Downtown Transit Center.	Weekday: 55 minutes – 1 hour	21,000
63	Cumberland Place, Benjamin Holt Drive, Sherwood Mall, and San Joaquin Delta College. Limited morning service and afternoon service until 6:00 PM.	Weekday: 1 hour	5,000
66	Ponce de Leon Avenue, Hickcock Drive, Thornton Avenue, Spanos Park West, Davis Road, Woodcreek, and Hammer Lane. Limited morning service; no weekend service is provided.	Weekday: 1.5 hour (limited service)	6,000
70	Hammer Lane, El Dorado Street, and Downtown Transit Center. No weekend service is provided.	Weekday: 1 hour	18,000
71	San Joaquin Delta College, Sherwood Mall, March Lane, Bianchi Road, Holman Road, Hammer Lane, and West Lane. Limited morning service; no weekend service is provided.	Weekday: 1 hour to 1 hour and 15 minutes	5,000
76	Downtown Transit Center, Sanguinetti Lane, Wilson Way, Weber Avenue and Church Street. Limited morning service; no weekend service is provided.	Weekday: 1 hour to 1 hour and 15 minutes	7,000

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
77	Downtown Transit Center, Miner Avenue, Flora Street, and Waterloo Road. Limited morning service; no weekend service is provided.	Weekday: 1 hour to 1 hour and 15 minutes	6,000
80	Sherwood Mall, San Joaquin Delta College, Pershing Avenue, Acacia Street, Downtown Transit Center, Miner Avenue, Wilson Way, Dr. Martin Luther King Jr. Boulevard, County Fairgrounds, and Farmington Road. No weekend service is provided.	Weekday: 1 hour	32,000
83	Downtown Transit Center, Main Street, Washington Street, and Oro Avenue. No weekend service is provided.	Weekday: 1 hour	18,000
85	Limited service between the Downtown Transit Center, Miner Avenue, Fremont Street, Oro Avenue, Farmington Road, B Street, and Arch Airport Road. No weekend service is provided.	Weekday: Limited	1,000
310	Downtown Transit Center, Dr. Martin Luther King Jr. Boulevard, and McKinley Park/Community Center. No weekend service is provided.	Limited Weekday Crosstown Service (2-5 buses per day)	1,000
315	Downtown Transit Center, Amtrak, San Joaquin Street, Dr. Martin Luther King Jr. Boulevard, and Eighth Street. No weekend service is provided.		1,000
340/345	Hammer Lane, Holman Road, March Lane, Wilson Way, Filbert Street, and Fremont Street. No weekend service is provided.		2,000/6,000
360/390	Downtown Transit Center, Miner Avenue, Waterloo Road, Harding Way, and Wilson Way. No weekend service is provided.		1,000/2,000

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
365	Stockton Medical Plaza and northern Stockton neighborhoods with limited service to San Joaquin Delta College and Sherwood Mall transfer center. No weekend service is provided.		1,000
375	Downtown Transit Center, Cherokee Road, Holman Road, and Hammer Lane. No weekend service is provided.		2,000
380	Downtown Transit Center, Fremont Street, Oro Avenue, Farmington Road, B Street, and Airport Way. No weekend service is provided.		4,000
385	Downtown Transit Center, Fremont Street, Oro Avenue, Farmington Road, B Street, Industrial Drive, and Arch Airport Road. No weekend service is provided.		2,000
710	Downtown Transit Center, San Joaquin Street, Carolyn Weston Boulevard, McDouglas Boulevard, and San Joaquin General Hospital. No weekday service is provided.	Weekend: 1 hour	3,000
715	West Eighth Street, Dr. Martin Luther King Jr. Boulevard, Airport Way, and East Eighth Street. No weekday service is provided.	Weekend: 1 hour	1,000
720	Downtown Transit Center, California Street, Alpine Avenue, and Wilson Way. No weekday service is provided.	Weekend: 1 hour	1,000
723	Downtown Transit Center to Lodi Transit Station via El Dorado Street, Pacific Avenue, Swain Road and West Lane. No weekday service is provided.	Weekend: Approx. 1 hour	2,000
725	Acacia Street, Miner Avenue, Downtown Transit Center, Filbert Street, and Main Street. No weekday service is provided.	Weekend: 1 hour	2,000

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
745	Sherwood Mall, San Joaquin Delta College, Robinhood Drive, Goose Run Drive, Pershing Avenue, and Alpine Way. No weekday service is provided.	Weekend: 1 hour	1,000
797	Downtown Transit Center, Tracy, and Manteca. No weekday service is provided.	Weekend: 2 hour	1,000
Metro Hopper Service			
1	Northwest Stockton	Weekday: 1 hour	4,000
2	Northwest Stockton	Weekday: 1 hour	3,000
3	North Stockton	Weekday: 1 hour	2,000
4	Central Stockton	Weekday: 1 hour	4,000
5	Central Stockton	Weekday: 1 hour	6,000
6	Northeast Stockton	Weekday: 1 hour	2,000
7	South Stockton	Weekday: 1 hour	4,000
8	Northeast Stockton	Weekday: 1 hour	2,000
9	Southeast Stockton	Weekday: 1 hour	1,000
County Hopper Service			
90	Stockton to Tracy. No weekend service is provided.	Weekday: Varies, primary service during peak commute period	9,000
91	Stockton to Manteca and Ripon. No weekend service is provided.	Weekday: Varies, primarily service during peak commute periods	9,000
93	Stockton to Lodi. No weekend service is provided.	Weekday: Varies, primarily service during peak commute periods	7,000

TABLE 6
SAN JOAQUIN RTD BUS SERVICE AND TYPICAL MONTHLY RIDERSHIP

Route	Major Locations & Service Area	Frequency	Approx. Monthly Ridership (# of passengers)
97	Tracy to Lathrop and Stockton. No weekend service is provided.	Weekday: Varies, primarily service during peak commute periods	2,000
Interregional Commuter Service			
150	RTD BART Commuter	Weekday: Limited	8,000
152	Stockton/Lathrop to Livermore	Weekday: Limited	2,000
163	Sacramento via Highway 99	Weekday: Limited	3,000
164	Lockheed Martin 2	Weekday: Limited	2,000
165	Sacramento via Interstate 5	Weekday: Limited	4,000
166	Lockheed Martin 3	Weekday: Limited	2,000
172	Lockheed Martin 4	Weekday: Limited	3,000
173	Northrop Grumman/Sunnyvale	Weekday: Limited	2,000

Source: San Joaquin Regional Transit District, www.sanjoaquinrtd.com. Fehr & Peers, 2016.

Park-n-Ride Lots

The San Joaquin RTD Interregional Commuter services are supported by five Park-n-Ride lots located throughout Stockton. These Park-n-Ride lots currently offer free parking for San Joaquin RTD transit riders. The following Park-n-Ride lots are located within Stockton:

- Benjamin Holt Drive and Herndon Place at the Marina Shopping Center (45 spaces)
- Kelley Drive at the Calvary First Assembly of God Church (40 spaces)
- Hammer Lane and Holman Road near the Super Walmart (50 spaces)
- Michigan Avenue at the LifeSong Community Church (45 spaces)
- Morada Ranch Shopping Center (35 spaces)

The SJCOG Park-and-Ride Lot Master Plan identifies approximately ten priority areas within the City of Stockton for new or expanded Park-and-Ride facilities.

Supportive Regional Service

The Calaveras Transit Delta Gold Line provides a connection from the San Andreas Government Center to the Stockton Downtown Transit Center. The Delta Gold Line also provides additional service within Stockton to Amtrak and San Joaquin Delta College. The service runs twice a day to and from Stockton.

Private Bus Service

The Stockton Greyhound bus station is located at 121 S. Center Street on the northern end of Downtown Stockton. Greyhound provides regional service to many parts of northern and southern California with national bus service connections as well.

PASSENGER RAIL SERVICE

The passenger rail services are described in this section while the commercial freight rail operators are discussed with goods movement later in this memorandum. Stockton is served by two heavy rail operators which provide connections within California and beyond.

Altamont Corridor Express (ACE Train)

The Altamont Corridor Express (ACE Train) is a heavy rail service that connects the Central Valley with the Bay Area. The ACE Train is managed under a Cooperative Services Agreement between the San Joaquin Regional Rail Commission, Alameda County Congestion Management Agency, and the Valley Transportation Authority. The San Joaquin Regional Rail Commission is the primary owner/operator of the ACE Train and contracts with Herzog Transit Services, Inc. to operate and maintain the service.

The existing ACE route currently operates between Stockton and San Jose with four round trip services per day (four westbound AM trains and four eastbound PM trains). The ACE Train currently stops in Lathrop, Tracy, Livermore, Pleasanton, Fremont, Milpitas, and Santa Clara. The Stockton Station is located at 949 East Channel Street between Miner Avenue and Weber Avenue on the east side of Downtown. It takes approximately two hours to complete the trip between Stockton and San Jose.

The San Joaquin Regional Rail Commission has also launched ACEforward, a program to start planning for the future of the ACE Train with the goal of establishing six roundtrip trains between Stockton and San Jose while also planning the expansion of a new line to Merced.

Based on data from fall 2015, the Stockton ACE Station serves approximately 350 passengers per day, which is about 10 percent of the total ACE ridership.

Amtrak

The City of Stockton is currently serviced by one Amtrak line which connects from Bakersfield to Oakland or Sacramento. The trip from Stockton to Oakland is approximately two hours. Amtrak stops at both the Downtown Stockton Train Station, which also serves ACE trains on Channel Street, and a station south of Downtown on San Joaquin Street between Hazelton Avenue and Worth Street.

Amtrak provides thruway buses to connect the train service with other metropolitan areas such as San Francisco and the Dublin/Pleasanton BART station. Connections to southern California can be made at the Bakersfield Station.

BICYCLE NETWORK

This section provides a summary of the existing bicycle network including types of facilities, significant routes, and bicycle parking locations. Stockton's geographic barriers (e.g. waterways, railways, and freeways) pose unique challenges to bicycle circulation. In several locations across the city, crosstown circulation is limited to a few bridges and underpasses; consequently, these barriers may pose challenges to bicycle circulation. Stockton has seven bicycle/pedestrian-only bridges across the city, most of which provide more direct access than street alternatives. Bicyclists are generally accommodated on the sidewalk along major street bridges and underpasses.

The City of Stockton is currently updating its Bicycle Master Plan, which provides a more detailed existing conditions assessment than the summary provided below. More information can be found on the City's project website[6]. As part of that process, the proposed bicycle network may

[6] http://www.stocktongov.com/government/departments/publicworks/projBike.html

be modified, and other programmatic elements will be considered, such as bicycle share opportunities, bicycle parking, and other supportive policies and programs.

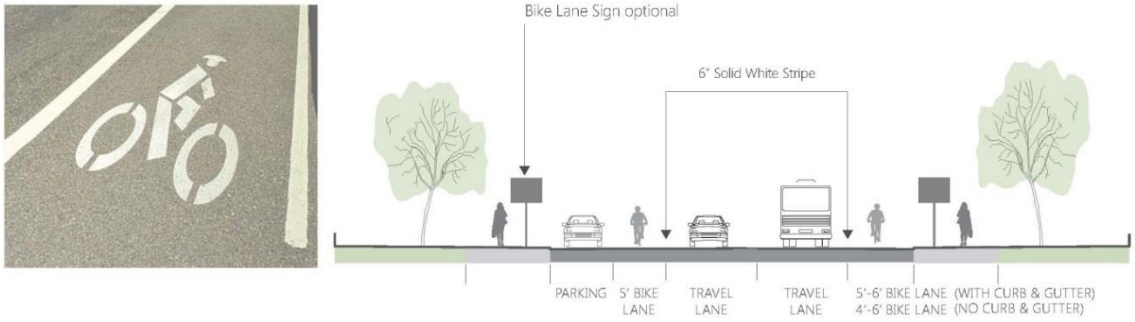
BIKEWAY CLASSIFICATIONS

Caltrans' *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design) and California Assembly Bill 1193 codify four distinct classifications of bikeways. Each bikeway class is intended to provide bicyclists with enhanced riding conditions. Different bikeway designs offer various levels of separation from traffic based on traffic volume and speed, among other factors. The four bikeway types in California and appropriate contexts for each are detailed below.

- *Class I Bikeway (Bike Path)* Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Stockton has many such paths located along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving both recreational and commute trips.

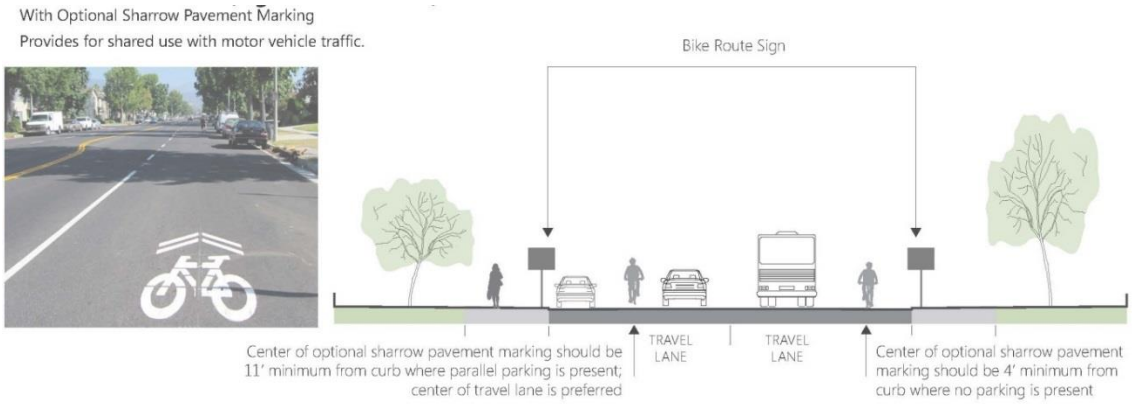
- *Class II Bikeway (Bike Lane)* Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).

Provides a striped lane for one-way bike travel on a street or highway.

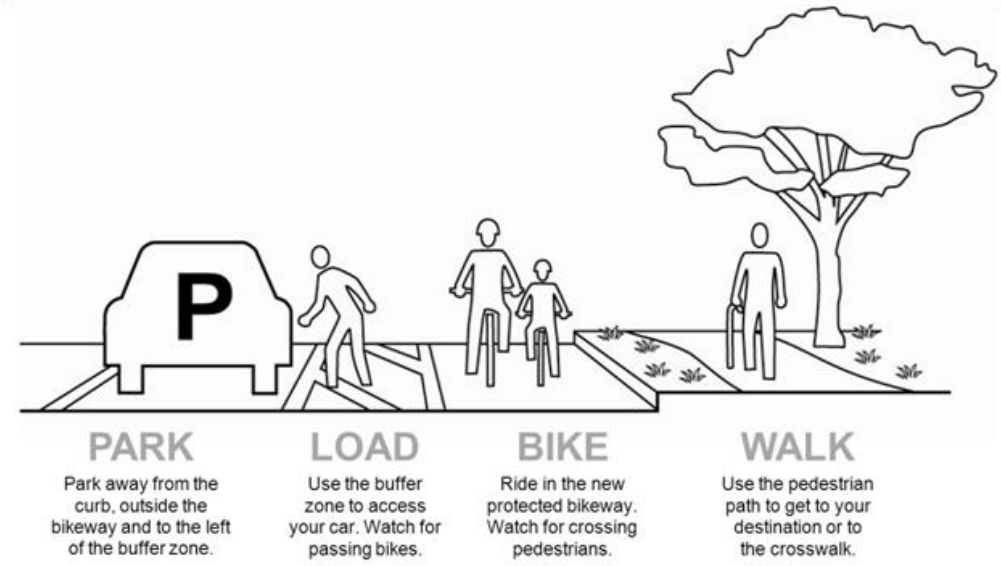


- *Class III Bikeway (Bike Route)* Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes by encouraging slow speeds and discouraging non-local vehicle traffic, often through the use of traffic calming. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

With Optional Sharrow Pavement Marking
Provides for shared use with motor vehicle traffic.



- *Class IV Bikeway (Separated Bikeway)* Separated Bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were recently adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.



EXISTING BICYCLE NETWORK

The City of Stockton has about 117 miles of existing bikeways including approximately 46 miles of bike paths, 36 miles of bike lanes, and over 35 miles of bike routes. However, the level of comfort and connectivity offered by these facilities varies. Overall, the citywide network is largely disconnected:

- Some neighborhoods have access to bicycle facilities that provide links between neighborhoods. However, barriers such as waterways, railways, freeways, and high-speed arterials limit access to other neighborhoods and destinations. In particular, access to Downtown Stockton is limited to one street with bicycle lanes in certain segments (California Street), and no facilities wholly span Downtown.
- North-south connectivity across the city is limited. West Lane provides the only designated north-south route from Downtown to north of the Calaveras River, yet few bicyclists are observed to use the street, likely because of its high-speed mixed traffic conditions.

- Many of Stockton's trails (such as the Calaveras River Trail) have limited connectivity to on-street facilities.

A summary of the existing bicycle network is provided below with **Figure 5** displaying the existing Class I and Class II facilities on the bicycle network.

Bike Paths (Class I)

Class I bike paths form the backbone of Stockton's existing bicycle network. Stockton contains 46 miles of bike paths along the city's rivers, creeks, and canals, mostly aligned in an east-west direction. Popular bike paths include the Calaveras River, March Lane, Bear Creek, and French Camp Slough trails. Additionally, Stockton includes several bicycle- and pedestrian-only bridges, including, but not limited to, two across the Calaveras River (at the University of Pacific campus and east of West Lane), across Smith Canal west of I-5, and across White Slough at Alexandria Place.

Bike Lanes (Class (II)

Stockton contains 36 miles of bike lanes, mostly located in neighborhoods north of the Calaveras River as well as in Weston Ranch. Notable streets with bike lanes include portions of Carolyn Weston Boulevard, El Dorado Street, South B Street, California Street, Feather River Drive, Quail Lakes Drive, Hammer Lane, Holman Road, and Whistler Way.

Bike Routes (Class III)

Stockton officially designates a network of approximately 35 miles of bike routes; however, these facilities are generally unsigned and do not include traffic calming features. These bike routes span a range of street types, from neighborhood streets like Baker Street to major arterials like West Lane. Due to their varied and inconsistent nature, Stockton's designated bike routes do not provide strong guidance toward bicycle-friendly corridors.

Separated Bikeways (Class IV)

The City of Stockton does not have any separated bikeways: this class is a new designation available since the city's current Bicycle Plan was adopted in 2007.

Informal Facilities

Stockton's bicycle network is augmented by a network of informal or unmarked trails associated with levee access roads along the city's waterways and utility rights-of-way. While some of these levee trails have been upgraded to Class I facilities discussed above, many paved and unpaved trails are located along private rights-of-way and are typically gated, unsigned, and/or unpaved; therefore, they are not included in the official bicycle network.

BICYCLE ACTIVITY

Bicycle counts provide a snapshot of cycling activity across Stockton. Counts were conducted for twelve-hour periods on select Tuesdays in September and October 2015. A total of 1,814 bicyclists were counted at 16 locations. Count locations were selected in coordination with City staff in consideration of features such as bicycle facilities, bridges/underpasses, and key destinations.

Over 900 bicycle trips were observed crossing the Calaveras River at the city's six bridge locations. As key gateways across the city, the use of each bridge illustrates the relative popularity of north-south routes. Bridges at the University of the Pacific, North Pershing Avenue, and Pacific Avenue were the most heavily used, each accounting for over 200 trips. Bridges at El Dorado Street, West Lane, and east of West Lane were less used (approximately 100 or fewer trips each).

Several other key bridges and underpasses exhibited relatively strong bicycle activity. In South Stockton, Lincoln Street and Airport Way each carried over 100 trips at bridges over Mormon Slough; the El Dorado Street and Center Street bridges carried far fewer trips. In North Stockton, the Hammer Lane crossing of the UPRR and the Thornton Road bridge across White Slough both carried over 100 trips.

Bicycle activity was fairly consistent from 7 AM to 2 PM, with each hour experiencing between 7 to 8 percent of the daily activity. Between 2 PM and 6 PM, bicycle activity increased to approximately 10 to 11 percent of daily activity, with the peak hour of observed bicycle travel between 3 PM and 4 PM, as summarized in **Table 7.**

TABLE 7
SAMPLE BICYCLE ACTIVITY

Time Period	Number of Bicyclist Observed	Percent of Daily Total
7 to 8 AM	128	7%
8 to 9 AM	103	6%
9 to 10 AM	136	7%
10 to 11 AM	148	8%
11 AM to 12 PM	140	8%
12 to 1 PM	139	8%
1 to 2 PM	134	7%
2 to 3 PM	176	10%
3 to 4 PM	195	11%
4 to 5 PM	181	10%
5 to 6 PM	186	10%
6 to 7 PM	148	8%

Source: Fehr & Peers, based on data collected in September and October 2015 at sixteen locations throughout the city.

BICYCLE COLLISIONS

Bicycle-vehicle collision data was reviewed for a six-year span between 2009 and 2014 including the frequency, cause, type, and severity of collisions involving bicyclists in Stockton. The source for the collision data is the same as for the automobile collision data discussed above: CHP's SWITRS, accessed via the TIMS maintained by SafeTREC at the University of California, Berkeley. The following presents a summary of findings with detailed information provided in the updated Bicycle Master Plan.

Between 2009 and 2014, 404 vehicle-bicyclist collisions occurred within the City of Stockton. Of these collisions, nine were fatal and ten resulted in severe injuries. Bicyclist-involved collisions accounted for approximately eight percent of all traffic collisions, five percent of all serious traffic injuries, and nine percent of all traffic fatalities within the city, all disproportionately higher than the city's 2014 bicycle mode share (0.6 percent of commute trips as presented in Table 1). Stockton experiences a high rate of hit and run collisions involving bicyclists: 22 percent of collisions (89 total) were misdemeanor or felony hit and run, higher than the statewide average of

12 percent. Approximately 83 percent of bicycle involved collisions occurred in daylight, while 17 percent occurred during dusk, dawn, or night conditions.

The location of bicycle collisions is shown on **Figure 6**. The intersections with the highest level of bicycle collisions are shown in **Table 8**. Between 2009 and 2014, nine bicyclist fatalities occurred in the city.

TABLE 8
TOP VEHICLE-BICYCLIST COLLISION INJURY LOCATIONS IN STOCKTON, 2009-2014

Intersection	Number of Bicyclist Injury Collisions
West Lane & Hammer Lane	7
Hammer Lane & Tam O Shanter Drive	6
Pershing Avenue & Quail Lakes Drive	6
Pacific Avenue & Robinhood Drive	6
Harding Way & Center Street	5
Hammer Lane & Lower Sacramento Road	4
Pershing Avenue & March Lane	4

Source: California Highway Patrol
Notes: This table is based on the total number of collisions and does not adjust for vehicle or bicyclist volumes (exposure).
Notes: Midblock collisions were assigned to the nearest intersection.

Data regarding the cause, type, and severity of vehicle-bicycle collisions in Stockton is limited and incomplete. A large proportion of collisions are uncategorized by type and cause, and data often falls short of capturing the nuance of how collisions occurred. **Table 9** and **Table 10** summarize the primary collision factor and type of collision.

TABLE 9
PRIMARY COLLISION FACTORS – BICYCLE COLLISIONS IN STOCKTON, 2009-2014

Primary Collision Factor	Percentage
Wrong Side of the Road	45%
Other/Unknown	13%
Automobile Right of Way	11%
Traffic Signals and Signs	11%
Improper Turning	6%
Unsafe Speed	5%
Not stated	4%
Other Hazardous Violation	2%
Driving or Bicycling Under the Influence of Alcohol or Drugs	2%

Source: California Highway Patrol

TABLE 10
TYPES OF BICYCLE COLLISIONS STOCKTON, 2009-2014

Primary Collision Factor	Percentage
Other	45%
Broadside	42%
Sideswipe	5%
Head-On	2%
Vehicle/Pedestrian	2%
Rear-end	1%
Hit Object	1%

Source: California Highway Patrol

LEVEL OF TRAFFIC STRESS ANALYSIS

The Bicycle Master Plan is evaluating the Level of Traffic Stress (LTS) on roadways throughout Stockton. LTS analysis seeks to measure how much stress is experienced by bicyclists across a city's street network due to various characteristics of roads and bicycle facilities. The LTS methodology was developed by the Mineta Transportation Institute in *Low Stress Bicycling and Network Connectivity,*[7] and is based on an application of Dutch bicycling standards and existing research in bicycle transportation. LTS rankings range from 1 (very low stress; tolerable by all) to 4 (very high stress; tolerable to only a few). Additional details are provided in the city's Draft Bicycle Master Plan.

The results of the LTS analysis compare the citywide LTS analysis on all roadways and paths with the LTS for designated bicycle-only facilities. As shown in **Table 11** and **Figure 7**, most streets in Stockton constitute low stress bikeways; however, nearly all of the city's crosstown arterials and collectors are high stress. Low-stress bikeways (LTS 1 and 2) comprise about two-thirds of Stockton's streets and permeate the city's residential neighborhoods. Low stress bikeways provide limited connectivity for traveling between neighborhoods, accessing major destinations, and crossing major geographic barriers. Most destinations for employment (e.g., Downtown), shopping (e.g., Lincoln Center), and education (e.g., Delta College) can only be accessed via high stress facilities.

The most common factors contributing to high LTS scores across Stockton include high posted speed limits (30-45 MPH), wide streets with multiple lanes, and limited bicycle lanes and paths. Many low stress residential side street segments received high LTS scores at unsignalized intersection crossings of arterials, creating a large number of "weak links."

As part of the General Plan Update, policies related to desired LTS scores may be developed.

[7] Mekuria, Maaza, Peter Furth, and Hilary Nixon. *Low-Stress Bicycling and Network Connectivity*. Mineta Transportation Institute, San Jose State University, 2012. Print.

TABLE 11
CITY OF STOCKTON LTS SUMMARY

LTS Score	Miles of Streets	Percent of Total Streets
1 – interested but concerned child riders (facility appropriate for all users)	547	45%
2 – interested but concerned adult riders (facility appropriate for most users)	183	15%
3 – enthused and confident riders (facility appropriate for some users)	109	9%
4 – strong and fearless riders (facility appropriate for few users)	371	31%
Total Streets	***1,210***	***100%***

Source: City of Stockton Bicycle Master Plan Update, 2016.

PEDESTRIAN NETWORK

The pedestrian network environment generally consists of sidewalks and multi-use trails. Sidewalks are provided in most developed subdivisions and commercial areas. There are gaps in the sidewalk network within unincorporated county pockets. The City of Stockton does not currently have an inventory of sidewalk locations or where gaps exist in the sidewalk network.

The City's *Street Design Guidelines* (November 2003) as reflected in the current *Standard Plans and Specifications* were developed to provide uniform facilities for pedestrian and bicycle travel within Stockton.

To complement the Street Design Guidelines, the City of Stockton developed *Pedestrian Safety and Crosswalk Installation Guidelines* (November 2003). This document establishes standards for installing various crosswalk treatments for controlled intersections, unsignalized crossings, and mid-block locations. According to City staff, the City plans to update this document in the near future to be consistent with the current state of the practice.

PEDESTRIAN COLLISIONS

This section reviews recent citywide vehicle-pedestrian collision data. The data presented includes the frequency, cause, type, and severity of collisions involving pedestrians in Stockton over a six-year span between 2009 and 2014.

Between 2009 and 2014, 413 vehicle-pedestrian collisions occurred within the City of Stockton. Of these collisions, 33 were fatal and 43 resulted in severe injuries. Pedestrian-involved collisions accounted for approximately eight percent of all traffic collisions, 22 percent of all serious traffic injuries, and 31 percent of all traffic fatalities within the city, all disproportionately higher than the city's pedestrian mode share (1.4 percent of commute trips as presented in Table 1). Stockton experiences a high rate of hit and run collisions involving pedestrians: 26 percent of collisions (107 total) were misdemeanor or felony hit and run, higher than the statewide average of 14 percent. Approximately 64 percent of collisions occurred in daylight, while 36 percent occurred during dusk, dawn, or night conditions.

Pedestrian collision locations are shown on **Figure 8**. **Table 12** shows the top vehicle-pedestrian collision locations by street corridor.

TABLE 12
TOP VEHICLE-PEDESTRIAN COLLISION INJURY LOCATIONS IN STOCKTON, 2009-2014

Street Corridor	Number of Pedestrian Injury Collisions
El Dorado Street	26
Hammer Lane	18
March Lane	15
Wilson Way	15
Pacific Avenue	14
California Street	12
Harding Way	12
8th Street	9
Center Street	9

Source: California Highway Patrol
Notes: This list is based on number of collisions and does not adjust for vehicle or pedestrian volumes (exposure).

Data regarding the cause, type, and severity of vehicle-pedestrian collisions in Stockton (and elsewhere in the state) is limited and incomplete. A large proportion of collisions are uncategorized by type and cause, and data often falls short of capturing the nuance of how collisions occurred. Where data is available, the primary collision factors are typically pedestrian violations, such as crossing at a location where no pedestrian facilities are provided (i.e., "jaywalking") or right-of-way violations, such as when a vehicle makes a turn and does not yield to the pedestrian in the crosswalk.

GOODS MOVEMENT

Freight transportation systems in the City of Stockton consist of rail, truck, air, and port facilities as shown on **Figure 9**.

RAIL

Two major transcontinental railroads (BNSF and UPRR) operate within the Stockton area. BNSF serves 28 western states and operates from a 425-acre intermodal facility on the southeast edge of the city. UPRR serves 23 western states and operates a major intermodal facility and other terminal operations in southern Stockton. Both provide rail service to Mexico and Canada and both serve the Port of Stockton.

In addition to the major railroads, several short line railroads also operate in Stockton. The Central California Traction Company (CCT), jointly owned by BNSF and UPRR, operates 52 miles of freight service between Stockton and Lodi and is the short line operator for the Port of Stockton. CCT connections are made with BNSF, UPRR, and the Stockton Terminal & Eastern (STE) Railroads, which run from Stockton to Linden. The 25 miles of freight service operated by STE includes connections with BNSF, UPRR, Tidewater Southern, and CCT.

TRUCK

Truck routes in Stockton consist primarily of the State Highway system and the major arterials within the city (see Figure 9). Of particular importance are SR 99 and I-5, which are major truck routes connecting Central Valley cities to other metropolitan areas throughout the state. As shown in **Table 13**, truck traffic accounts for about 13 to 25 percent of traffic on these two inter-regional facilities. The Crosstown Freeway (SR 4) and Arch-Airport Road also support crosstown

truck circulation, as well as provide connections to the airport and BNSF intermodal facility. Many other truck routes focus on the Port of Stockton and Downtown areas, and the commercial and industrial corridors.

TABLE 13
CURRENT DAILY TRUCK VOLUMES

Route Segment	Total Daily Traffic	Truck Traffic	Percent Truck Traffic
SR 4 – West of Fresno Avenue	23,000	2,970	13%
SR 4 – West of SR 99	99,500	12,200	12%
I-5 – North of Hammer Lane	73,000	16,500	23%
I-5 – South of French Camp Road	107,000	26,750	25%
SR 99 – North of Wilson Way	87,000	11,570	13%
SR 99 – South of Mariposa Road	87,000	11,480	13%
SR 26 – East of SR 99	29,300	3,050	10%

Source: 2014 Annual Average Daily Truck Traffic on the California State Highway System, Caltrans, April 2016.

PORT OF STOCKTON

The Port of Stockton is a deep water port located 75 nautical miles east of the Golden Gate Bridge. According to the *Port of Stockton 2014 Annual Report*, the 4,200-acre port complex contains over 7.7 million square feet of warehousing facilities, 1.1 million square feet of dockside transit sheds and berthing space for approximately 19 vessels. Major imports include cement, liquid fertilizer, molasses, ammonia and cottonseed, while major exports include rice, sulfur, wheat, and scrap steel. As shown in **Table 14**, in 2002 a total of about 2.3 million metric tons of goods passed through the port, which almost doubled by 2014. The Port of Stockton is also a Foreign Trade Zone. Foreign trade zone designation allows for some imports to be held within the zone without paying custom fees and provides other benefits to facilitate international trade and increase the global competitiveness of United States based companies. More detailed information can be found on the port's website[8].

[8] http://www.portofstockton.com/foreign-trade-zone

TABLE 14
PORT OF STOCKTON STATISTICS

	2002	2014
Imports/Exports	2.3 million metric tons	4.1 million metric tons
Port Revenue	$24,000,000	$53,000,000
Number of railcars serving Port	19,000	90,000
Number of Employees	2,000	4,500

Source: Port of Stockton, 2002 and 2014 Annual Reports

Connections to the intercontinental railway system (via UPRR and BNSF) are provided in the port area, where the main short line operator (CCT) handled over 19,000 railcars in 2002 and 90,000 in 2014. Over 200 trucking companies also service the port, including all major transcontinental carriers.

AIR

The Stockton Metropolitan Airport is at the city's southern limit between I-5 and SR 99. The Airport is served by an 8,690-foot long carrier-certified runway and a 4,458-foot long general aviation runway. Passenger service is provided from Stockton to Las Vegas, Nevada, Phoenix/Mesa, Arizona, and San Diego, California by Allegiant. The Stockton Metropolitan Airport is also a designated Foreign Trade Zone.

As shown in **Table 15**, a total of 82,300 commercial enplanements occurred in the 2014 year, which represents a 15-percent increase from 2013. Since 2014, new passenger service has been offered from Stockton, so the current level of enplanements is likely higher than the 2014 data.

Air Cargo service is provided from the Stockton Metropolitan Airport with intermodal connections to truck, rail, and the port. Air Transport Services Group Inc. currently provides air cargo service.

TABLE 15
STOCKTON METROPOLITAN AIRPORT STATISTICS

	2013	2014	Percent Change
Commercial Passengers Enplanements	71,760	82,300	15%
Aircraft Operations Air Carrier Air Taxi Military General Aviation Local General Aviation Itinerant Total		1,138 1,535 5,575 20,030 25,132 **53,410**	

`Source: FAA Enplanement Statistics (http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/media/cy14-commercial-service-enplanements.pdf)

OTHER APPROVED PROJECTS WITHIN THE CITY OF STOCKTON

The City has approved projects that would impact the existing transportation network and may be required to provide improvements or new transportation infrastructure. The developments below are planned to be constructed over the next five to 20 years:

Sanctuary

Located in the northwest corner of Stockton, this master planned community is approximately 2,000 acres and would include 7,070 housing units and 30 acres of mixed-use development. This project would construct a levee to protect the development to 300-year flood levels which exceeds the required protection. New and improved roadway connections would need to be constructed to support this project, including an extension of Hammer Lane, Trinity Parkway, Otto Drive and Regatta Lane. A new interchange with Interstate 5 at Otto Drive was identified as mitigation to support build-out of this project and other adjacent developments.

Westlake Villages

Located in the northwest corner of Stockton, this master planned community is approximately 700 acres with 2,630 planned housing units. This development is currently under construction and is estimated to take five to eight years to reach full buildout. Access to this development is provided primarily by Eight Mile Road, which currently tapers to two travel lanes west of I-5. Eight Mile Road would ultimately be widened to provide six to eight travel lanes along the project boundary.

Crystal Bay

Located in the northwest corner of Stockton, this master planned community is approximately 200 acres with 1,343 planned housing units. Construction has not been initiated and a levee with 200-year protection would be constructed. Access to this development is provided primarily by Eight Mile Road, which currently tapers to two travel lanes west of I-5. Eight Mile Road would ultimately be widened to provide four to six travel lanes along the project boundary.

Delta Cove

Located in the northwest corner of Stockton, this master planned community is approximately 360 acres with 1,545 planned housing units. Three acres of commercial area is also planned. The developer will provide a levee with 300-year protection. New and improved roadway connections would need to be constructed to support this project, including an extension of Trinity Parkway and Otto Drive. A new interchange with Interstate 5 at Otto Drive was identified as mitigation to support build-out of this project and other adjacent developments.

North Stockton Projects – Phase III

Located in north Stockton near the intersection of Eight Mile Road and Lower Sacramento Road, this master planned community is approximately 400 acres with 2,455 planned housing units. Multi-family residential and commercial development is also planned to be incorporated. Improvements to Eight Mile Road and Lower Sacramento Road are proposed as part of the project.

Cannery Park

Located in northeast Stockton, this master planned community is approximately 450 total acres with 104 acres of commercial and 58 acres of industrial development planned. In total, 1,191

housing units are planned over multiple phases. Access to the development is provided primarily by Holman Road and Eight Mile Road. Improvements to Eight Mile Road and Holman Road are proposed as part of the project.

Tidewater Crossing

Located in south Stockton, this master planned community features approximately 900 acres planned to encompass 2,365 housing units, 16 acres of commercial development, and 224 acres of industrial development. Access to the development is provided primarily by Airport Way and French Camp Road near the Stockton Municipal Airport. A new interchange with State Route 99 was planned to support the project, in conjunction with widening of portions of French Camp Road and Airport Way. This project may be re-envisioned to reduce the residential component and increase the industrial component, which could change the level of transportation improvements needed to support project development.

Weston Ranch Towne Center

Located in south Stockton, this major commercial development is located near the I- 5 and French Camp Road interchange. The shopping center will feature approximately 480,000 square feet of commercial area with almost 100,000 square feet dedicated to a proposed Walmart. French Camp Road would be widened along the project frontage.

Mariposa Lakes

Located just outside of southeast Stockton, this master planned community is approximately 3,800 acres with 10,514 planned housing units. Additionally, one million square feet of commercial and 11.5 million square feet of industrial development is proposed. Access to the development would be provided from SR 4, Farmington Road, and Mariposa Road. These roadways would be improved to accommodate vehicle traffic generated by the project, including the widening of Mariposa Road to provide 6 travel lanes.

Airpark 599

Located adjacent to the Stockton Municipal Airport, this primarily industrial and office development project is approximately 550 acres in size. Access to the development is provided primarily by Arch Airport Road and SR 99.

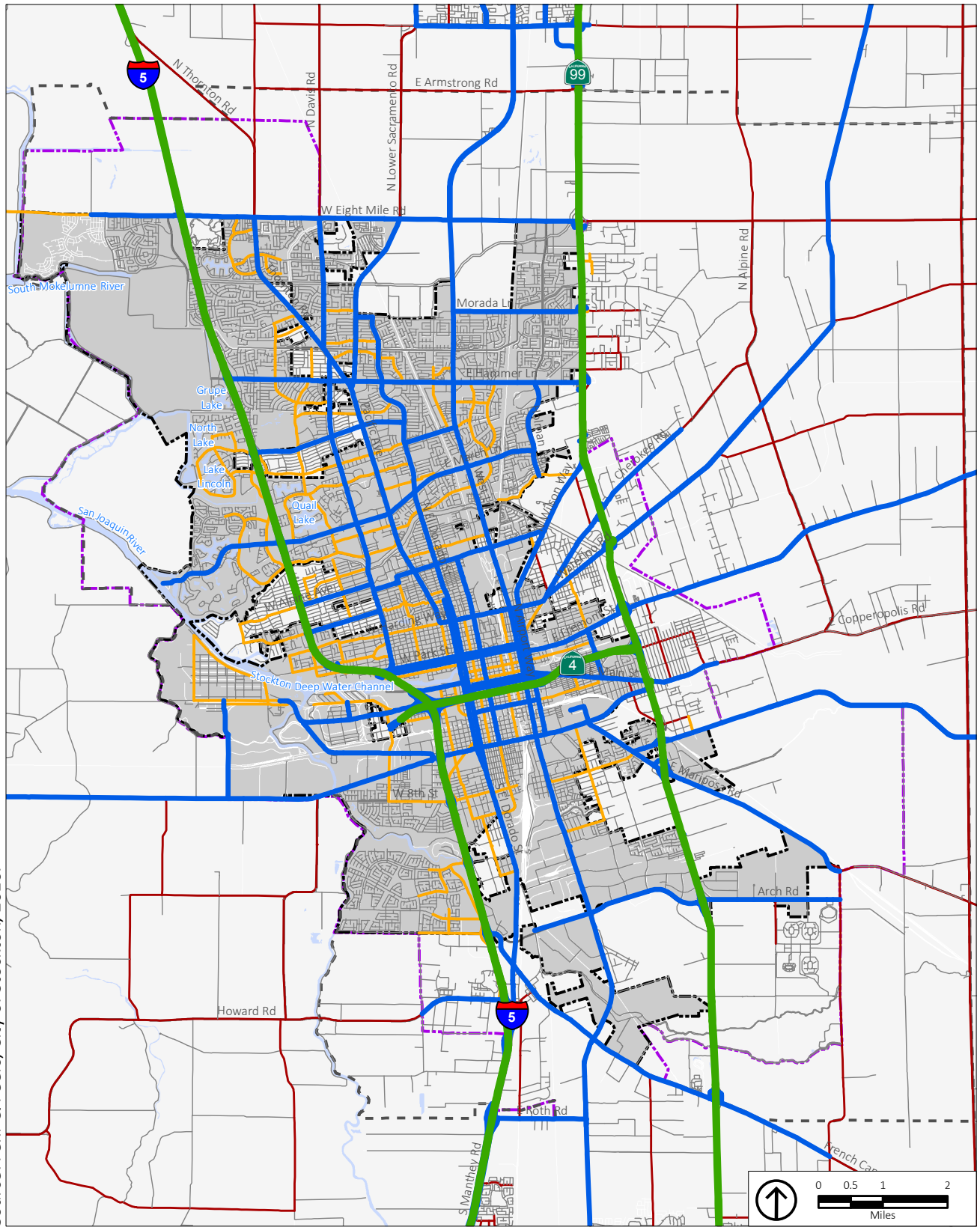
IMPLICATIONS FOR GENERAL PLAN UPDATE

Based on the existing transportation conditions assessment for the City of Stockton, the following could be considered further in the General Plan Update process:

- Review other City planning documents, such as the Climate Action Plan and Bicycle Master Plan, and align policies outlined in those documents with the General Plan Update. Potential opportunities will be identified as part of the policy review process.
- Review regional planning documents related to planned regional roadway network improvements for consistency with the City of Stockton Circulation network. Potential inconsistencies will be identified as part of the travel demand model development process.
- Increase employment opportunities within Stockton such that a larger percentage of employed residents have opportunities to work within the city.
- Evaluate level of service as the metric for evaluating the transportation system and consider how to incorporate other transportation system metrics, such as vehicle miles of travel, level of traffic stress, transit accessibility and pedestrian route directness. Potential options will be provided for City staff review that consider the CEQA implications.
- Evaluate if approved but not yet constructed development projects conform to updated General Plan policies and Capital Improvement Plan projects.

FIGURES

Appendix A Level of Service Analysis

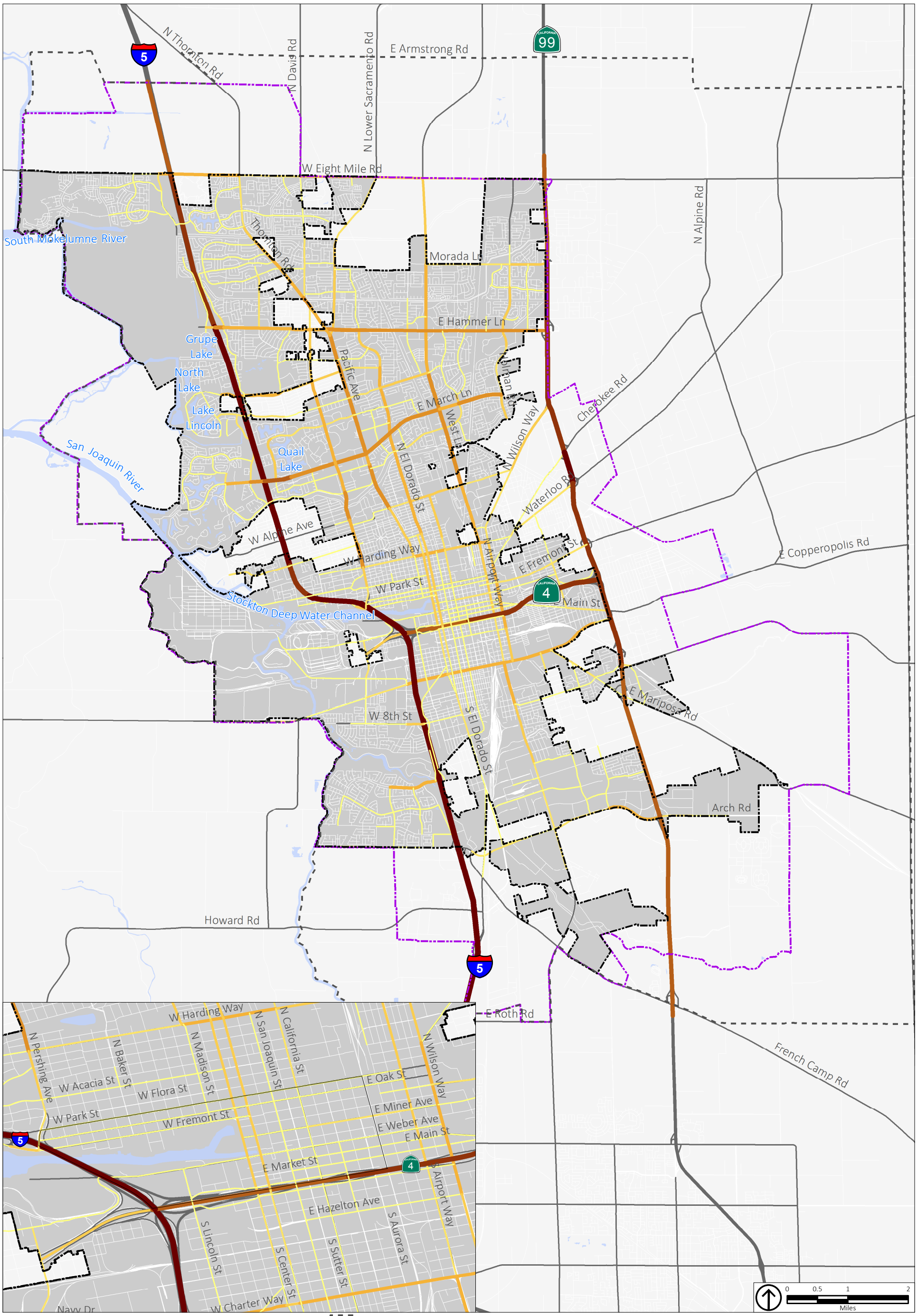


Source: Fehr & Peers, City of Stockton, 2016.

- Interstates and Highways
- Arterials
- Collectors
- Rural Road
- Local Roads
- General Plan Planning Area
- City Limit
- Sphere of Influence

Figure 1

Existing Functional Classification

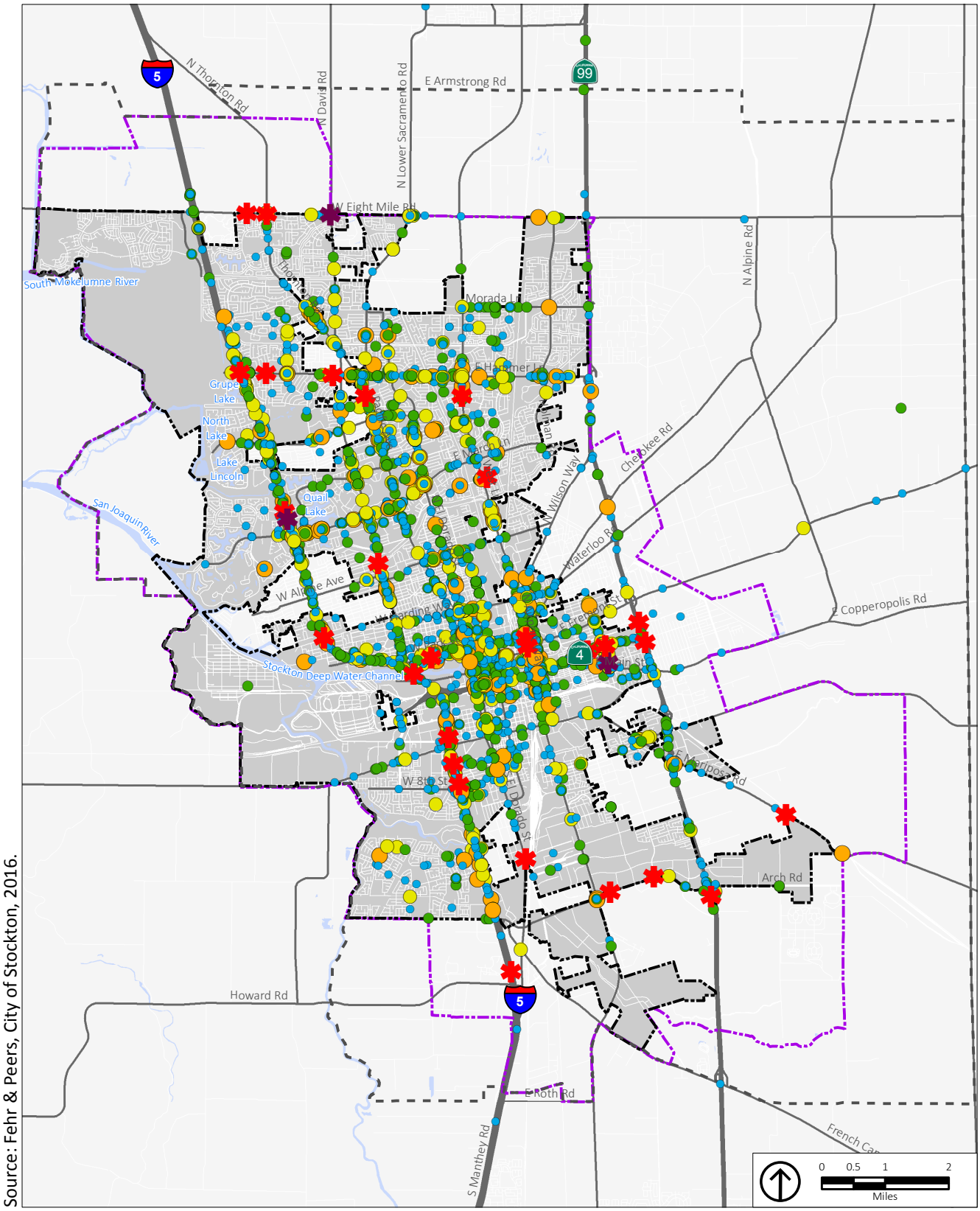


Source: Fehr & Peers, City of Stockton, 2016.

Daily Traffic Volumes (2014)
- <10,000
- 10,001 - 15,000
- 15,001 - 20,000
- 20,001 - 30,000
- 30,001 - 50,000
- 50,001 - 80,000
- 80,001 - 100,000
- >100,000

- General Plan Planning Area
- City Limit
- Sphere of Influence

Figure 2
Existing Daily Traffic Volumes

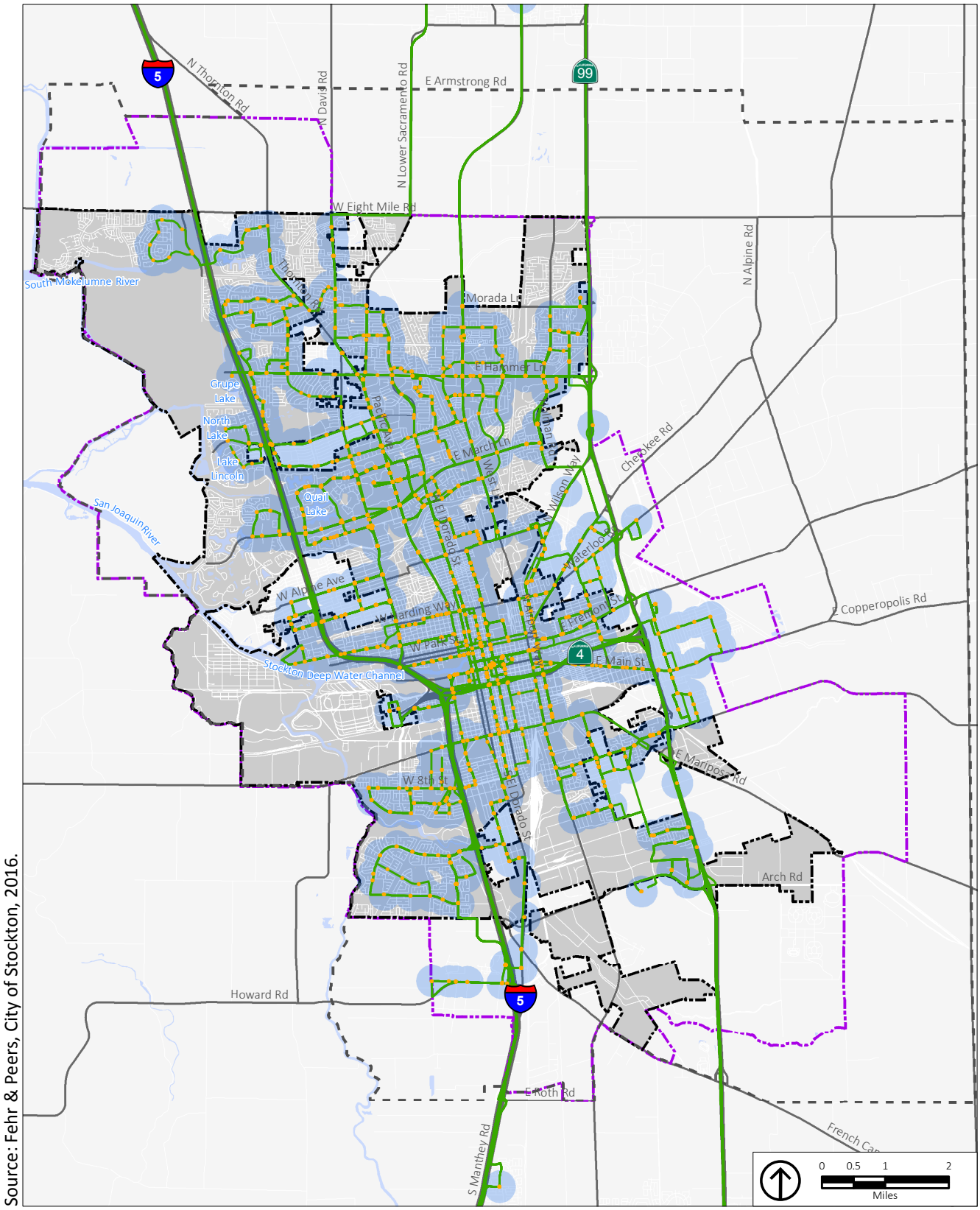


Source: Fehr & Peers, City of Stockton, 2016.

Fatalities: 1, 2
Injuries: 1, 2, 3, >3

General Plan Planning Area
City Limit
Sphere of Influence

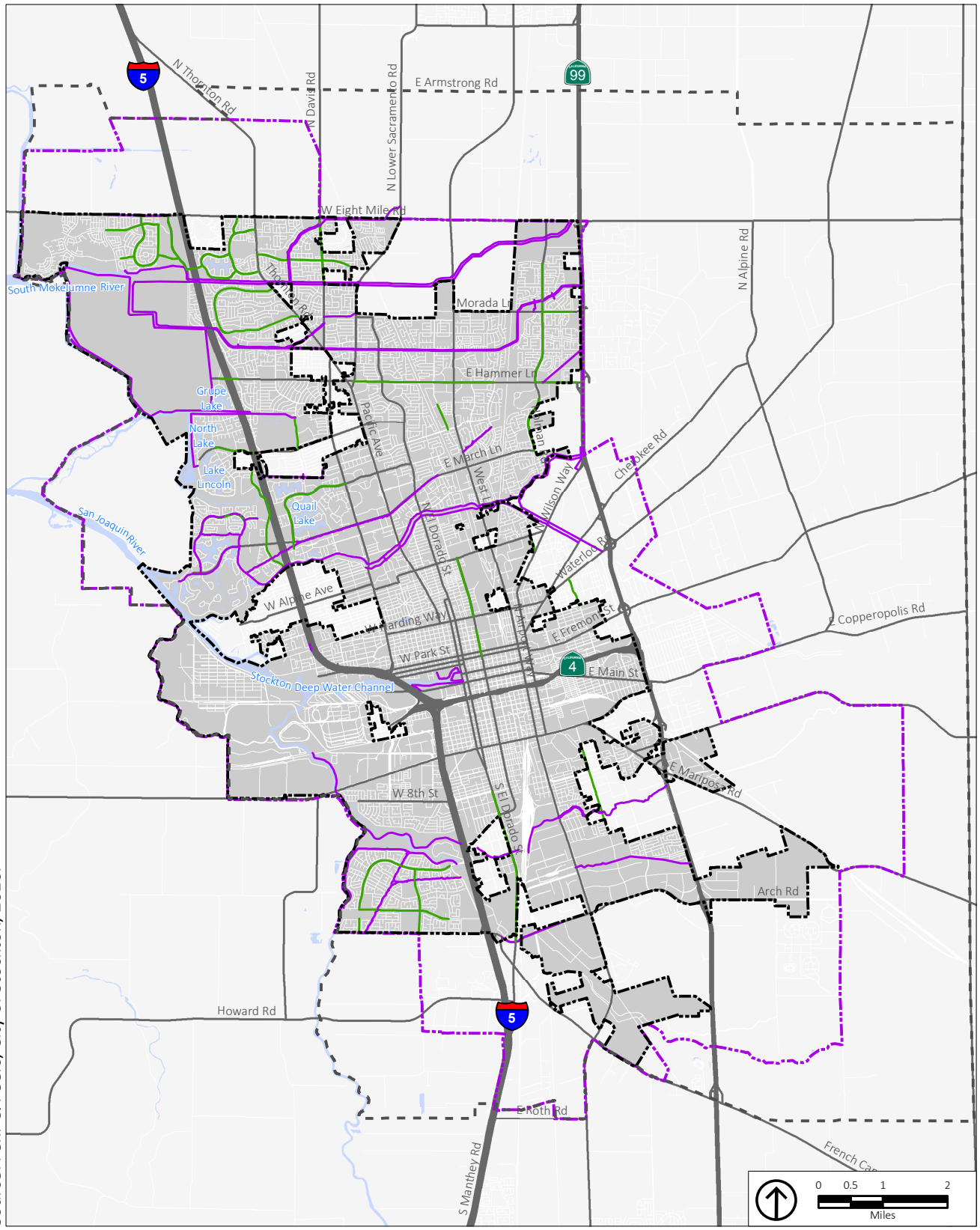
Figure 3
Vehicular Involved Collisions (2009-2014)



Source: Fehr & Peers, City of Stockton, 2016.

- Transit Stops
- Transit Routes
- Transit Stop 1/4 Mile Buffer
- General Plan Planning Area
- City Limit
- Sphere of Influence

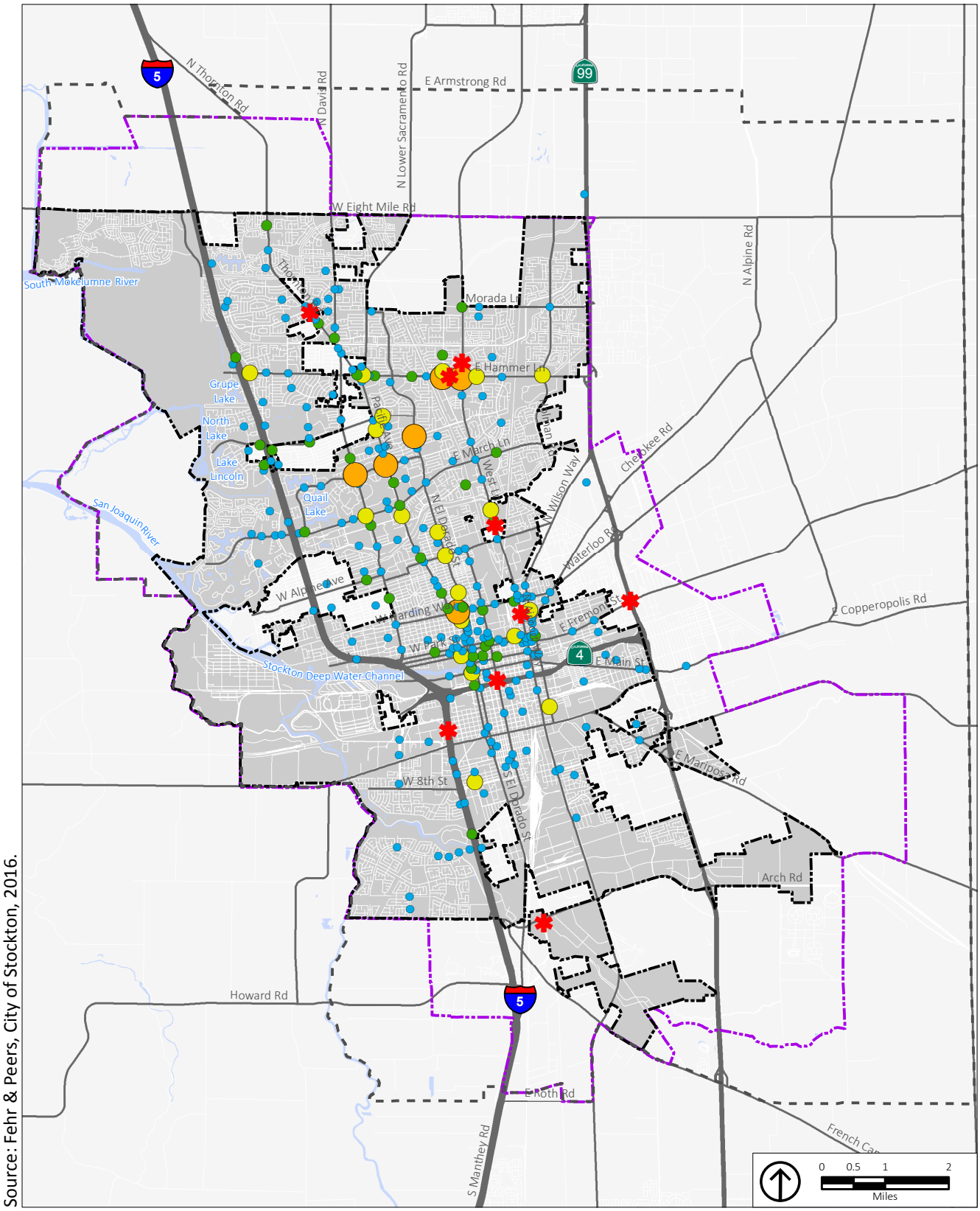
Figure 4
Existing Transit Coverage



Source: Fehr & Peers, City of Stockton, 2016.

Class 1 Path
Class 2 Bike Lane
General Plan Planning Area
City Limit
Sphere of Influence

Figure 5
Existing Bicycle Facilities

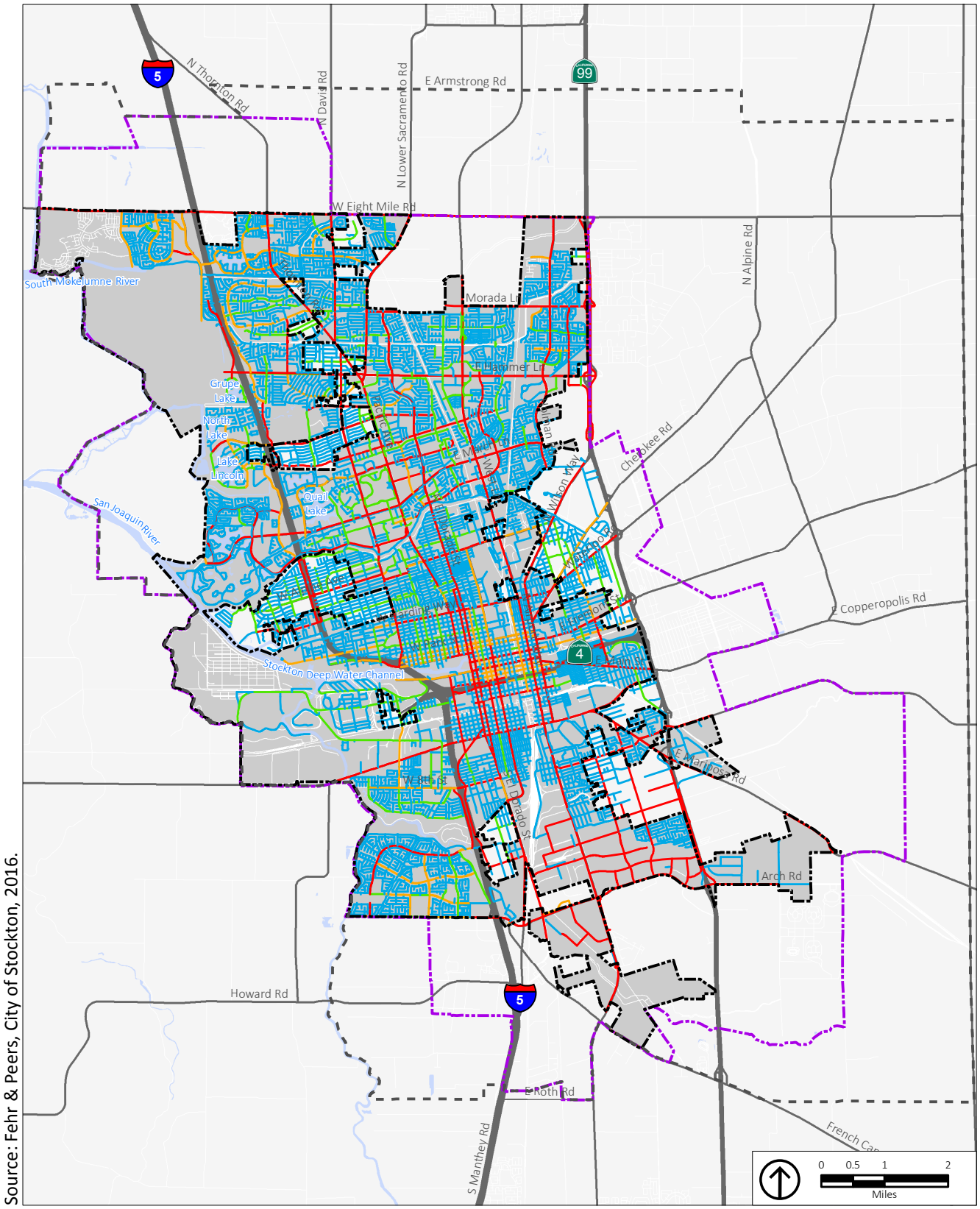


Source: Fehr & Peers, City of Stockton, 2016.

Fatalities Injuries
1
2
3
>3

General Plan Planning Area
City Limit
Sphere of Influence

Figure 6
Bicyclist Involved Collisions (2009-2014)

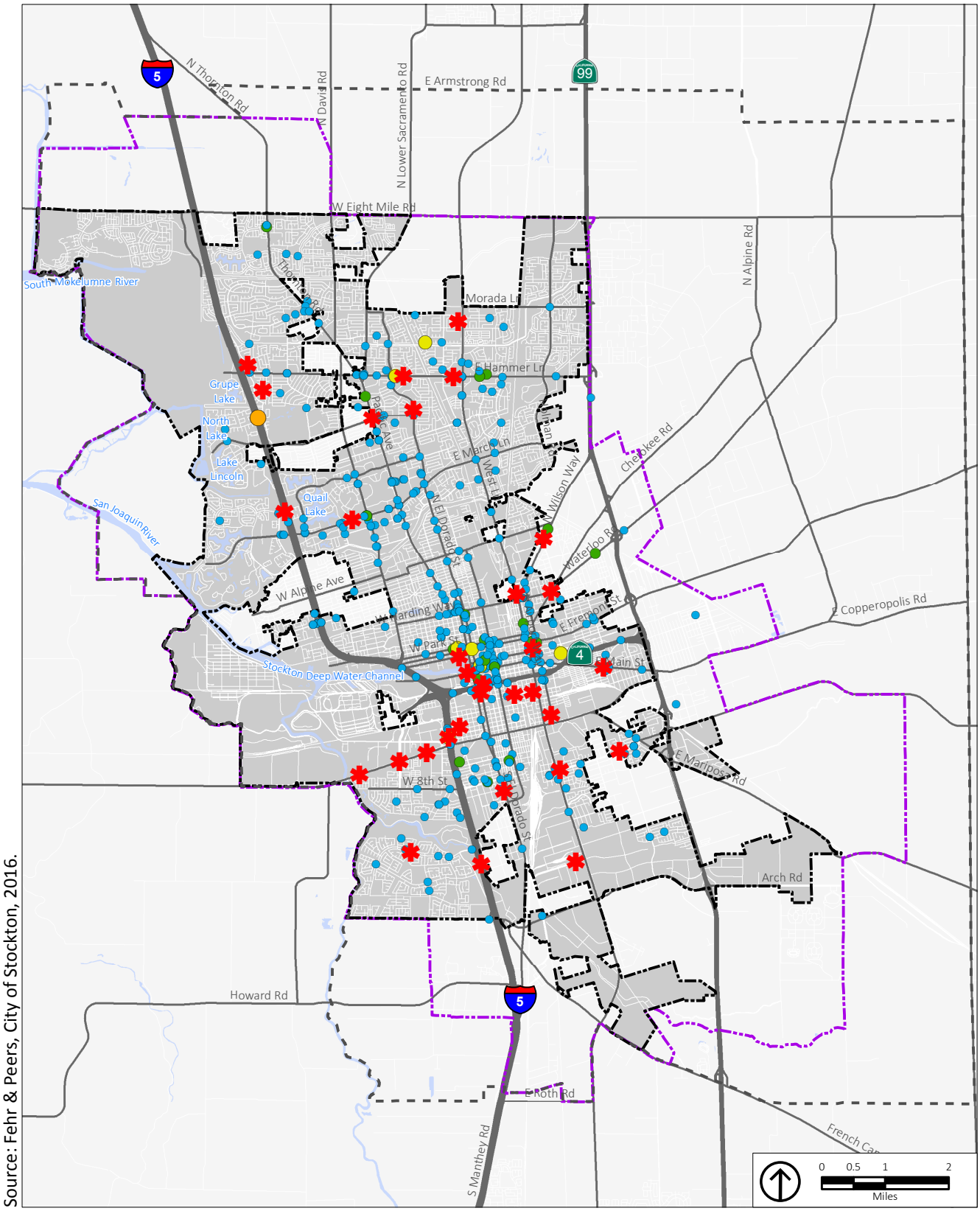


Source: Fehr & Peers, City of Stockton, 2016.

Level of Traffic Stress
- 1- For Interested but Concerned Child Riders
- 2- For Interested but Concerned Adult Riders
- 3- For Enthused and Confident Riders
- 4- For Strong and Fearless Riders

- General Plan Planning Area
- City Limit
- Sphere of Influence

Figure 7
Level of Traffic Stress for Bicyclists

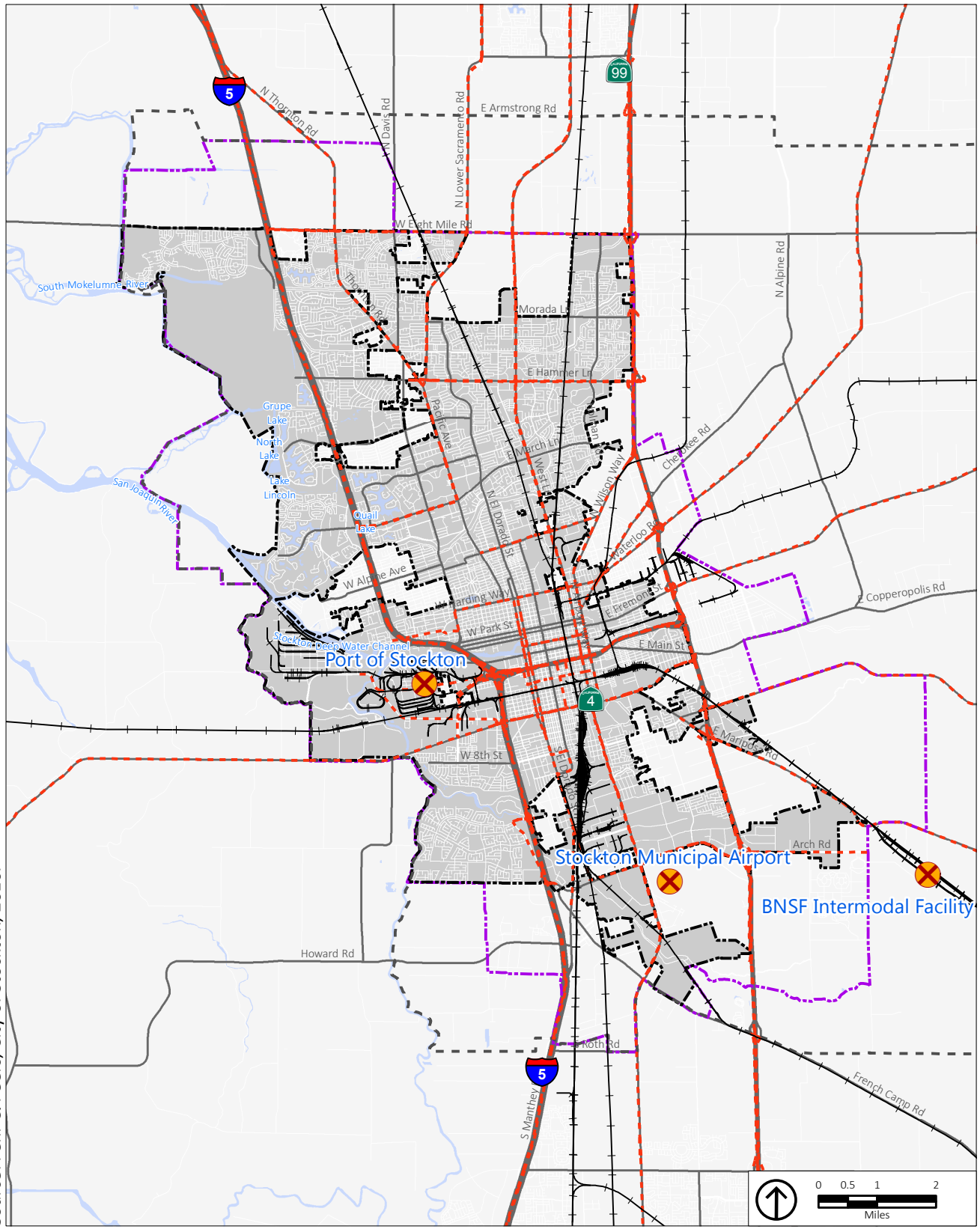


Source: Fehr & Peers, City of Stockton, 2016.

Fatalities Injuries
1
2
3
5

General Plan Planning Area
City Limit
Sphere of Influence

Figure 8
Pedestrian Involved Collisions (2009-2014)



Source: Fehr & Peers, City of Stockton, 2016.

Goods Movement Points of Interest
Rail Lines
Freight Routes
General Plan Planning Area
City Limit
Sphere of Influence

Figure 9
Goods Movement

APPENDIX A – LEVEL OF SERVICE ANALYSIS

ANALYSIS METHODOLOGY

To measure and describe the operational status of a roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). Level of service is a description of a facility's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays).

The analysis of the current operating conditions of the city's streets and highways was conducted using the method outlined in the 2035 General Plan Environmental Impact Report with the LOS thresholds used in this analysis listed in **Table A-1**. Thresholds for arterials and collectors were based on Highway Capacity Manual calculations and were developed in conjunction with City staff at the time the current General Plan analysis was prepared. The arterial thresholds distinguish between roads in the existing urbanized area and those in new development areas; because arterials in new development areas can be designed to higher standards, with medians, exclusive turn lanes, and controlled access from adjacent uses, the capacities are higher than those in previously-developed areas. Thresholds for freeways were based on Highway Capacity Manual procedures relating levels of service to vehicle density ranges. Level of service definitions are presented in **Table A-2.**

TABLE A-1
Roadway Segment Level of Service Thresholds (Bi-Directional)

Facility Class	Lanes	Area Type	LOS A	LOS B	LOS C	LOS D	LOS E
Freeway	4	All Areas	27,600	45,200	63,600	77,400	86,400
	6	All Areas	41,400	67,800	95,400	116,100	129,600
	8	All Areas	55,200	90,400	127,200	154,800	172,800
	10	All Areas	69,000	113,000	159,000	193,500	216,000
Arterial	2	Existing	8,400	9,300	11,800	14,700	17,300
	2	New	10,000	11,100	14,000	17,500	20,600
	4	Existing	18,600	20,600	26,000	32,500	38,200
	4	New	23,300	25,800	32,600	40,700	47,900
	6	Existing	28,800	32,000	40,300	50,400	59,300
	6	New	33,300	37,000	46,600	58,300	68,600
	8	Existing	38,100	42,300	53,300	66,600	78,400
	8	New	41,100	45,700	57,600	72,000	84,700
Collector	2	Existing	6,400	7,100	9,000	11,300	13,200
	2	New	6,400	7,100	9,000	11,300	13,200
	4	Existing	17,600	19,600	24,700	30,900	36,300
	4	New	21,100	23,500	29,600	37,000	43,500

The "Existing" Area is generally located between I-5 and SR 99, and between Eight Mile Road and French Camp Road.
Note: Eight Mile Road is considered a "New" arterial due to lack of existing development in the area.
Source: *Highway Capacity Manual*, Transportation Research Board, 2000; Fehr & Peers, 2005.

Level of service definitions are presented in **Table A-2.**

TABLE A-2
LEVEL OF SERVICE DEFINITIONS FOR ROADWAYS

Level of Service	Description
A	Free-flow operations where vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.
B	Relative free-flow operations where vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.
C	Travel is still at relative free-flow speeds, although freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.
D	Speeds begin to decline slightly with increasing flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.
F	Breakdown in vehicle flow.

Source: 2010 *Highway Capacity Manual.*

ANALYSIS RESULTS

Based on the existing traffic volumes, shown previously on Figure 2, and the existing roadway facility type and number of lanes, daily roadway segment level of service was calculated, as presented in **Table A-3.** Results of the analysis indicate that on a daily basis, most roadway facilities within Stockton operate within the available vehicular capacity, except for:

- SR 99 between Dr. Martin Luther King Jr Blvd and Farmington Road [LOS F] (this freeway section is under construction to add one lane in each direction in Fall 2016, which would result in LOS C operations)
- Eight Mile Road between Lower Sacramento Road and West Lane [LOS F]

- Ben Holt Drive between Plymouth Road and Pacific Avenue (This roadway is exempt from City of Stockton LOS standards due to physical constraints that limit potential roadway improvements. Although a portion of the roadway is located within unincorporated San Joaquin County, the City of Stockton LOS standards prevail as this facility is within the City of Stockton Sphere of Influence [County General Plan Policy TM-3.1].)
- Thornton Road between Davis Road and Waudman Avenue [LOS F]
- Thornton Road between Davis Road and Pershing Avenue [LOS E] (LOS E is considered acceptable for this roadway segment due to physical constraints)
- Lower Sacramento Road between Eight Mile Road and Bear Creek [LOS E]
- Pershing Avenue at Calaveras River [LOS E]

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
1	I-5	North of Eight Mile Road		79,000	6	Freeway	C
2	I-5	Eight Mile Road	Hammer Lane	82,000	6	Freeway	C
3	I-5	Hammer Lane	Ben Holt Drive	104,000	6	Freeway	D
4	I-5	Ben Holt Drive	March Lane	112,000	6	Freeway	D
5	I-5	March Lane	Country Club Boulevard	112,000	6	Freeway	D
6	I-5	Country Club Boulevard	Monte Diablo Avenue	99,000	8	Freeway	D
7	I-5	Monte Diablo Avenue	Pershing Avenue	122,000	8	Freeway	C
8	I-5	Pershing Avenue	Crosstown Freeway	137,000	8	Freeway	D
9	I-5	Crosstown Freeway	Charter Way	139,000	8	Freeway	D
10	I-5	Charter Way	8th Street	138,000	8	Freeway	D
11	I-5	8th Street	Downing Avenue	108,000	6	Freeway	D
12	I-5	Downing Avenue	French Camp Road	105,000	6	Freeway	D
13	I-5	French Camp Road	Mathews Road	105,000	6	Freeway	D
14	SR 99	North of Eight Mile Road		74,000	6	Freeway	C
15	SR 99	Eight Mile Road	Morada Lane	76,000	6	Freeway	C
16	SR 99	Morada Lane	Hammer Lane	81,000	6	Freeway	C

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
17	SR 99	Hammer Lane	Wilson Way	86,000	6	Freeway	C
18	SR 99	Wilson Way	Cherokee Road	86,000	6	Freeway	C
19	SR 99	Cherokee Road	Waterloo Road	97,000	6	Freeway	D
20	SR 99	Waterloo Road	Fremont Street	99,000	6	Freeway	D
21	SR 99	Fremont Street	Crosstown Freeway	96,000	6	Freeway	D
22	SR 99	Crosstown Freeway	Martin Luther King Jr. Boulevard	94,000	6	Freeway	C
23	SR 99	Martin Luther King Jr. Boulevard	Farmington Road	87,000	4	Freeway	**F**
24	SR 99	Farmington Road	Mariposa Road	73,000	4	Freeway	D
25	SR 99	Mariposa Road	Arch Road	69,000	6	Freeway	C
26	SR 99	Arch Road	French Camp Road	70,000	6	Freeway	C
27	SR 99	French Camp Road	Lathrop Road	70,000	6	Freeway	C
28	SR 4	West of I-5	West of I-5	16,500	4	Freeway	A
29	SR 4	I-5	El Dorado Street	79,000	6	Freeway	C
30	SR 4	El Dorado Street	Stanislaus Street	100,000	6	Freeway	D
31	SR 4	Stanislaus Street	Wilson Way	89,000	6	Freeway	C

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
32	Eight Mile Road	Mokelume Drive	Trinity Parkway	8,190	6	Arterial	A
33	Eight Mile Road	I-5	Thornton Road	28,620	4	Arterial	D
34	Eight Mile Road	Thornton Road	Davis Road	14,050	4	Arterial	A
35	Eight Mile Road	Davis Road	Lower Sacramento	15,390	4	Arterial	A
36	Eight Mile Road	Lower Sacramento	West Lane	18,560	2	Arterial	**F**
37	Eight Mile Road	West Lane	SPRR	11,970	2	Arterial	D
38	Eight Mile Road	West of Bear Creek	SR 99	10,740	2	Arterial	C
39	Morada Lane	West Lane	Cherbourg Way	12,990	2	Arterial	D
40	Morada Lane	Cherbourg Way	Fox Creek	14,030	3	Arterial	B
41	Morada Lane	Holman Road	SR 99	16,370	6	Arterial	A
42	Morada Lane	Mosher Creek	Holman	14,690	4	Arterial	A
43	Hammer Lane	Mariners Drive	I-5	15,460	4	Arterial	A
44	Hammer Lane	Westland Avenue	Richland Way	29,050	6	Arterial	B
45	Hammer Lane	Pershing Avenue	Valencia Avenue	26,010	4	Arterial	D
46	Hammer Lane	Lower Sacramento Road	El Dorado Street	37,980	8	Arterial	A
47	Hammer Lane	At WPRR		44,300	8	Arterial	D

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
48	Hammer Lane	SPRR	Holman Road	38,240	6	Arterial	C
49	Hammer Lane	Holman Road	SR 99	36,690	8	Arterial	A
50	Benjamin Holt Drive	Plymouth Road	Belmont Place	21,550	2	Arterial	**F**
51	Benjamin Holt Drive	Vicksburg Place	Gettysburg Place	15,600	2	Arterial	**E**
52	Swain Road	Pylmouth Road	Morgan Place	10,180	2	Collector	D
53	Swain Road	Pershing Avenue	Vicksburg Place	9,210	2	Collector	D
54	March Lane	Brookside Road	Morningside Drive	6,620	6	Arterial	A
55	March Lane	Feather River Drive	I-5	38,190	6	Arterial	C
56	March Lane	Quail Lakes Drive	Grouse Run Drive	41,000	6	Arterial	D
57	March Lane	Pershing Avenue	Pacific Avenue	40,870	6	Arterial	D
58	March Lane	Pacific Avenue	Claremont	31,490	6	Arterial	B
59	March Lane	At UPRR		36,950	6	Arterial	C
60	March Lane	West Lane	Bianchi	27,350	8	Arterial	A
61	Alpine Avenue	Pershing Avenue	Grange	8,700	4	Collector	A
62	Alpine Avenue	Dwight	Kensington	7,450	2	Arterial	A
63	Alpine Avenue	Center	Commerce	13,800	4	Arterial	A

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
64	Alpine Avenue	Sutter	San Joaquin	19,490	4	Arterial	B
65	Country Club Drive	Grange Avenue	Pershing Avenue	8,490	2	Arterial	B
66	Monte Diablo Avenue	San Juan	Buena Vista	3,370	2	Collector	A
67	Harding Way	Pershing	Columbia	3,630	2	Collector	A
68	Harding Way	Baker	Stockton	10,790	2	Collector	D
69	Harding Way	Commerce	Madison	23,140	4	Arterial	C
70	Harding Way	El Dorado	Center	24,680	4	Arterial	C
71	Harding Way	California	San Joaquin	20,450	4	Arterial	B
72	Harding Way	At UPRR		18,620	4	Arterial	B
73	Harding Way	Wilson	Sierra Nevada	20,990	4	Arterial	C
74	Fremont St	Watts	Laurel	13,910	4	Arterial	A
75	Fremont St	Broadway	Golden Gate	10,440	4	Arterial	A
76	Miner Ave	El Dorado Street	Center Street	6,820	4	Collector	A
77	Miner Ave	California	San Joaquin	8,350	4	Collector	A
78	Main St	California	Sutter	3,060	2	Collector	A

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
79	Main St	Court	Ash	9,420	4	Arterial	A
80	Main St	Netherton	Golden Gate	14,300	4	Arterial	A
81	Charter Way	W of Roberts	W of Roberts	10,500	2	Arterial	C
82	Charter Way	Tillie Lewis Drive	Fresno Avenue	9,600	2	Arterial	C
83	Charter Way	Navy	Fresno	13,400	2	Arterial	D
84	Charter Way	I-5	Navy	24,600	4	Arterial	C
85	Martin Luther King Jr. Boulevard	I-5	Lincoln	26,480	4	Arterial	D
86	Martin Luther King Jr. Boulevard	California	Airport Way	23,080	4	Arterial	C
87	Martin Luther King Jr. Boulevard	Airport Way	Wilson Way	21,960	4	Arterial	C
88	Martin Luther King Jr. Boulevard	Mariposa Road	Golden Gate Avenue	11,710	2	Arterial	C
89	Navy Drive	San Joaquin River	Washington	4,340	2	Arterial	A
90	Navy Drive	BN&SF RR	Tillie Lewis	4,850	2	Arterial	A
91	Navy Drive	Josephine	Fresno	3,780	2	Arterial	A
92	Washington Street	Agribusiness	Ventura	7,560	2	Arterial	A

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
93	8th Street	Argonaut	Fresno	9,250	4	Collector	A
94	8th Street	Monroe	Lincoln	6,070	4	Collector	A
95	8th Street	Pock	D	6,300	2	Collector	A
96	Carolyn Weston Road	Manthey	McDougald	21,280	4	Collector	B
97	French Camp Road	McDougald	E.W.S.Wood	7,910	2	Arterial	A
98	Sperry Road	Airport	McKinley	8,120	4	Arterial	A
99	Arch-Airport Road	Airport	Pock	12,830	4	Arterial	A
100	Arch-Airport Road	HW 99	Quantas	20,820	6	Arterial	A
101	Arch Road	Frontier	HW 99 Frontage	10,780	2	Arterial	C
102	Arch Road	Newcastle	Frontier	9,490	2	Arterial	C
103	Trinity Parkway	Scott Creek Road	Eight Mile Road	12,960	6	Arterial	A
104	Trinity Parkway	Cosumnes	McAuliffe	7,300	4	Arterial	A
105	Thornton Road	Bear Creek	Estate	19,220	3	Arterial	D
106	Thornton Road	Waudman	Davis	22,790	2	Arterial	**F**
107	Thornton Road	Aberdeen	Cortez	34,050	4	Arterial	**E**

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
108	Thornton Road	Hammer Lane	Rivera	20,590	5	Arterial	A
109	Davis Road	Chaparral	Laramie	10,440	4	Arterial	A
110	Davis Road	North of Bear Creek		8,340	3	Arterial	A
111	Davis Road	Ponce De Leon	Thornton	14,000	3	Arterial	A
112	Lower Sacramento Road	Armor	Royal Oaks	16,020	3	Arterial	C
113	Lower Sacramento Road	Bear Creek	Eight Mile	14,850	2	Arterial	**E**
114	Lower Sacramento Road	Hammer Lane	Rivera	16,010	4	Arterial	A
115	West Lane	Eight Mile Road	Morada Lane	15,620	4	Arterial	A
116	West Lane	Dalewood	Westmora	22,740	4	Arterial	C
117	West Lane	Hammer Lane	Hammertown	28,870	8	Arterial	A
118	West Lane	Swain	March	34,060	6	Arterial	C
119	West Lane	Bradford	Walnut	22,110	4	Arterial	C
120	Wilson Way	McAllen	Alpine	15,510	4	Arterial	A
121	Wilson Way	Main	Market	24,800	4	Arterial	C

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
122	Wilson Way	Market	Washington	25,090	4	Arterial	C
123	Pershing Ave	Venetian	Burke-Bradley	23,560	4	Arterial	C
124	Pershing Avenue	At Calaveras River		34,280	4	Arterial	**E**
125	Pershing Avenue	Magnolia	Acacia	19,470	4	Arterial	B
126	Pacific Avenue	Douglas	Porter	38,070	6	Arterial	C
127	Pacific Avenue	Yokuts	March	32,120	6	Arterial	C
128	Pacific Avenue	At Calaveras River		31,570	4	Arterial	D
129	Pacific Avenue	Cleveland	Wyandotte	19,200	2	Arterial	B
130	El Dorado Street	Lincoln	Loretta	16,970	4	Arterial	A
131	El Dorado Street	Mayfair	Robinhood	27,810	4	Arterial	D
132	El Dorado Street	At Calaveras River		27,670	4	Arterial	D
133	El Dorado Street	Pine	Cleveland	22,800	4	Arterial	C
134	El Dorado Street	Lindsay	Miner	19,610	4	Arterial	B
135	El Dorado Street	At AT & SF Overpass		14,680	4	Arterial	A
136	El Dorado Street	MLK Blvd	First	9,440	3	Arterial	A
137	El Dorado Street	Eighth	Ninth	10,700	4	Arterial	A

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
138	Center Street	Poplar	Flora	15,410	3	Arterial	C
139	Center Street	At AT & SF Overpass		14,940	3	Arterial	C
140	Holman Road	Auto Center	Auto Center	16,570	6	Arterial	A
141	Holman Road	Wind Flower	March	14,090	5	Arterial	A
142	Cherokee Road	Sierra	Sanguinetti	6,110	2	Arterial	A
143	Waterloo Road	E	Williams	13,230	4	Arterial	A
144	Airport Way	Pinchot	Roosevelt	18,950	4	Arterial	B
145	Airport Way	Fremont	Lindsay	19,460	4	Arterial	B
146	Airport Way	Main	Market	15,920	4	Arterial	A
147	Airport Way	Ninth	Tenth	16,740	4	Arterial	A
148	Airport Way	Sperry	Industrial	12,790	4	Arterial	A
149	Mariposa Road	Stagecoach	SR 99	8,690	2	Arterial	B
150	Mariposa Road	Farmington	SR 99	9,450	2	Arterial	C
151	Mariposa Road	MLK Blvd	Farmington	10,970	2	Arterial	C
152	B Street	Charter Way	Fourth	10,410	2	Collector	D
153	B Street	Ralph Ave	Arch Airport	3,490	2	Collector	A

Table A-2
Existing Roadway Segment Level of Service Summary

Roadway Segment		General Count Location		ADT	Lanes	Facility Type	LOS
154	Pock Lane	Mariposa	Sixth	2,860	2	Collector	A
155	Pock Lane	Togninali	Carpenter	3,980	2	Collector	A
1	I-5	North of Eight Mile Road	North of Eight Mile Road	79,000	6	Freeway	C
2	I-5	Eight Mile Road	Hammer Lane	82,000	6	Freeway	C
3	I-5	Hammer Lane	Ben Holt Drive	104,000	6	Freeway	D
4	I-5	Ben Holt Drive	March Lane	112,000	6	Freeway	D
5	I-5	March Lane	Country Club Boulevard	112,000	6	Freeway	D

Source: City of Stockton, 2014 and Fehr & Peers, 2016.

Appendix F:
Traffic Model Development Documentation

FEHR PEERS

MEMORANDUM

Date: November 28, 2017

To: Tanya Sundberg, PlaceWorks

From: Kathrin Tellez and Mackenzie Watten, Fehr & Peers

Subject: ***City of Stockton General Plan – Model Development Documentation***

WC16-3309

This memorandum documents the development of the City of Stockton ("City") General Plan travel demand model ("Stockton Model"), which was used to evaluate the City's transportation system as envisioned under the General Plan update land use and circulation network alternatives from a transportation metric perspective. The Stockton Model study area, encompassing the city limits of the City of Stockton, as well as the General Plan area (GP), is shown on **Figure 1** (all figures are provided at the end of this memorandum).

The focus of this memorandum is to document changes to land use and circulation network features within the Stockton General Plan boundary area for the base year condition. A summary of model performance against validation thresholds established by the California Transportation Commission is provided for the unadjusted and adjusted model. The additional refinement and model enhancements for the Stockton Model comply with the *2017 California Regional Transportation Plan Guidelines*[1], which outline model performance expectations and validation tests for all travel demand models used by public agencies in California. Compliance with these guidelines indicates the degree to which the model is suitable for developing travel forecasts to evaluate future land use changes and transportation system improvements within the General Plan study area. Having a locally valid model that is able to replicate existing conditions data and reasonably respond to the types of scenarios to be evaluated in the General Plan is a critical step in providing meaningful results. The following presents the model update steps, as well as the results.

[1] http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/docs/2017RTPGuidelinesforMPOs.pdf

The resulting model was used to assess General Plan land use and circulation alternatives, and was also used to conduct the necessary transportation analysis for inclusion in the General Plan Update Environmental Impact Report. The Stockton Model may also be used for future land use development or infrastructure evaluation projects, although further model refinements may be necessary in the vicinity of planned development or infrastructure changes.

BASE YEAR MODEL DEVELOPMENT

The Stockton Model was updated to reflect 2015/2016 conditions and provide daily traffic flow projections on the freeway, expressway, arterial and collector roadways in support of the General Plan update, as well as analyze future land use development proposals and transportation network changes within the City. The model also has the ability to evaluate the transportation system in conjunction with planned land use and transportation system changes, provide information on regional pass-through traffic versus locally generated trips, and graphically display these results. In essence, the travel demand model serves as a tool to implement, manage and monitor the plans, projects, and programs as well as provides a tool to evaluate the potential impacts to the transportation system of proposed land use development within City of Stockton. Potential metrics that the model can provide include vehicle miles of travel, volume-to-capacity ratios, mode split, vehicle hours of delay and travel times.

To develop the model, Fehr & Peers started with the Three-County - San Joaquin, Stanislaus, and Merced (MIP 2) regional travel demand model, extracted the City of Stockton GP planning area, and refined land use and circulation networks within the Stockton general plan area. The City of Stockton General Plan boundary area was extracted from the larger three-county model to provide a more flexible, quick-response tool that is more sensitive to local land use and circulation changes than the three-county model, while maintaining the functionality and connection to the regional model for Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) consistency. Refinements to land use inputs and roadway network characteristics within the Stockton Model area were based on field observations, published reports, data compiled by others on the General Plan update team and American Community Survey (ACS) data.

OVERVIEW

The Stockton model utilizes the Cube modeling software package developed by Citilabs and produces daily trip generation, mode share, and vehicle flows for the General Plan area based on comprehensive land use, transportation network and socioeconomic data (SED). The model follows a four-step process consisting of trip generation, trip distribution, mode choice, and assignment. Additional detail regarding the development and structure of the original model can be found in the *Final Three-County Model VMIP 2 – Model Development Report* (SJCOG, March 2017). The model can also produce peak hour forecasts, although the model was not validated to peak hour conditions.

This section provides an overview of model updates, including changes to the transportation network, TAZ structure, and SED to develop a refined base year model, which serve as the starting point for the development of the General Plan Model.

Transportation Network

The starting point of developing the transportation network was the regional three-county model. The model roadway network was compared to the existing roadway network based on aerial photography and field verification by Fehr & Peers staff. Initial model roadway network modifications include the addition of collector streets, modifications to better reflect on-going improvements along the Interstate 5 and State Route 99 corridors that were completed around the time the traffic counts used in the model validation process were collected, and other roadway network improvements around growth areas that were not reflected in the regional three-county model. Refinements were also made to the model speed assumptions based on posted speed limits.

Figures 2 and **3** present the base year number of bi-directional lanes and model roadway functional classification. The roadway classification shown on Figure 3 represents roadway classification types from the model which most closely aligns with the functional classification and vehicular capacity thresholds shown on the City's Circulation and Transportation Diagram for modeling purposes **Table 1** below shows the road miles by functional class for the City of Stockton.

TABLE 1
LANE MILES BY FUNCTIONAL CLASS – BASE YEAR

Functional Class	Stockton City
Freeway	107
Expressway	6
Arterial/Rural Road	395
Collector	429

Source: City of Stockton Travel Model

Table 2 below shows roadway classifications from the General Plan mapped to the model categories, along with the assumed total daily capacity and daily capacity per lane used in the operations analysis.

TABLE 2
ROADWAY SEGMENT DAILY LEVEL OF SERVICE THRESHOLDS (BI-DIRECTIONAL)

Facility Class (Circulation Element)	Facility Class (Travel Model)	Lanes	Total Capacity	Capacity Per Lane
Freeway	Freeway	4	86,400	21,600
		6	129,600	
		8	172,800	
		10	216,000	
Arterial	Arterial/Rural Road	2	17,300	8,650
		4	38,200	9,550
		6	59,300	9,900
		8	78,400	9,800
Collector	Collector/ Local Road	2	13,200	6,600
		4	36,300	9,080

Source: *Highway Capacity Manual*, Transportation Research Board, 2000; Fehr & Peers, 2005.

Roadway Network Checks

A series of roadway network tests were conducted to review the roadway network and the coding of associated attribute data. These tests included a connectivity check for all roadway links within the Stockton Model using the "Flag Dangling Links" tool. This tool checks every roadway link in the network and "flags" any roadway network link that does not connect to another roadway network link at both ends. This tool is also useful in identifying locations where roadway network links or centroid connectors appeared to connect to the roadway network but are not.

A series of shortest path checks were performed using the "Path Building Tool" which returns the shortest path/distance between two points in the roadway network. This tool was used to check if the distance between two selected locations was correct and to ascertain if the route chosen was reasonable based on a combination of travel distance and speed to determine uncongested travel time. For example, the model was reviewed to ensure that freeways were preferred to local streets for longer distance trips under free-flow conditions. The resulting travel distance data was also compared to data from aerial images and the resulting travel time data was checked for reasonableness against empirical congested travel time data. Based on the review of the network, roadway free-flow speeds reflecting uncongested conditions were updated.

Centroid Connector Configuration

Centroid connectors are used in the model as a representation of local streets to load vehicle trips onto the roadway network from Travel Analysis Zones (TAZs). To better approximate the local street system and connections to higher order roadways, the number and placement of centroid connectors was refined.

In the unmodified model, some centroid connectors loaded traffic to the nearest intersection of a collector or arterial roadway rather than at mid-block locations where local streets typically connect to the street system. To load trips onto the roadway network at a more localized level, centroid connectors associated with TAZs were modified to load at mid-block locations. The number and placement of centroid connectors was also modified to reflect the location of local streets and how they interact with collector and arterial roadways.

The distance on centroids representing external gateways were modified to reflect the weighted average distance of trips exiting the model area. This was done to better reflect the trip distribution patterns and also for more accurate calculations of VMT outside of the model area.

TAZ Structure

Land uses within the Stockton Model are represented by approximately 300 TAZs, as shown on **Figure 4**. TAZ boundaries were reviewed against natural and man-made boundaries, including the roadway network, railroad tracks and water features, based on Google Earth satellite images. Additionally new growth areas were reviewed to ensure appropriate TAZ structure. TAZ splits were carried out in the new growth areas resulting in approximately five new TAZs in the Northwest area of Stockton. A correspondence to the TCM was retained for comparison to future land use development with the SJCOG RTP forecasts.

No special generator refinements, which are land uses whose trip making characteristics do not fall within a typical model category and must be manually entered, were made.

Socioeconomic Data

The Stockton Model utilizes various types of SED to forecast person trips generated by each TAZ. Population-related inputs include numbers of housing units stratified by structure type, household income, age of population in households, and household size. Employment-related inputs are employee by detailed sector. Review of the initial Stockton Model SED based on the three-county model revealed slight inconsistencies in both socioeconomic data control totals as well as income and household size distribution when compared to published sources. For example, the total number of households and household population within the City based on model input data was lower than that reported in ACS. The number of households was factored up to match the Stockton Model households to ACS as well as data provided by others on the team, and the person per household factor was increased to better represent the 2015/2016 population of Stockton. Employment by category generally agreed with the published data and as such was not changed. **Table 3** below compares the unadjusted and adjusted SED data for Stockton model with published data.

TABLE 3
2015/2016 LAND USE DATA COMPARISON

	Unadjusted Model[1] - City of Stockton	Adjusted Model[2] - City of Stockton	Published Data[3,4] - City of Stockton	General Plan Area Total	General Plan Area w/o City of Stockton
Total Households	83,386	98,394	95,428	116,303	17,909
Household Population	223,500	305,900	291,700	363,300	57,400
Total Employment	109,471	110,074	112,225	123,391	13,317
Education	12,169	12,169	12,305	13,369	1,200
Food	8,479	7,476	8,890	8,294	818
Government	12,282	4,105	22,882	4,166	61
Industrial	18,929	28,006	20,183	32,887	4,881
Medical	16,919	9,322	12,305	9,625	303
Office	17,030	17,612	16,489	18,787	1,175
Other	8,565	13,143	3,738	15,722	2,579
Retail	12,975	16,823	13,158	17,982	1,159
Agriculture	2,122	1,418	2,275	2,559	1,141

Source:
1: SJV MIP Three-County Model, as reviewed by Fehr & Peers, October 2016.
2. PlaceWorks as modified by Fehr & Peers.
3. Residential: American Community Survey: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml#.
4. Commercial: *Demographic, Economic, and Fiscal Conditions in the City of Stockton*, March 2016.

Figures 5 and **6** show the adjusted base year total households and employment for all TAZs in the General Plan Area.

In addition to the control total adjustments made above, the distribution of households by income and household size was reviewed against published sources. In general, household income and size was lower in the model compared to the published sources and increased to more closely match. **Figures 7** and **8** show the Census and adjusted model household income and size distributions for all TAZs in the General Plan Area. This was a critical step in model update due to the enhanced sensitivity of the model in connecting job salary and household income, a key factor in commute patterns. In addition to commute patterns (i.e. the number of residents or employees who travel

into or out of the model area for work), magnitude and purpose of trip activity (trip generation), auto ownership, and mode choice are all influenced by household size and household income.

Trip Generation Rates

The model utilizes the trip generation rates to determine the number of trip produced by particular land use category such as Single or Multi Family households, or Retail, Office, or Industrial employment. The trip generation rates were adjusted to be more in-line with industry standard rates such as ITE. **Table 4** displays the adjustments made to model vehicle trip generation rates for common land use codes and comparisons to ITE vehicle trip generation rates. Note that the rates below are average aggregate values for comparison purposes and the model uses detailed cross-classified rates to account for household type, household income, and household size.

TABLE 4
VEHICLE TRIP GENERATION ADJUSTMENTS

Land Use	Model Initial	Model Adjusted	ITE Rate
	Daily	Daily	
Single Family Dwelling Unit[1]	8.52	8.99	9.52
Multi-Family Dwelling Unit[1]	6.00	6.28	6.65
Retail Employment	19.82	20.70	21.35
Office Employment	4.12	3.63	3.32
Industrial Employment	2.73	2.87	3.02

Note: 1. Residential trip generation is classified by household size and income. The results show here represent the income and household size most closely analogous to ITE.
Source: Stockton Model

Additionally, interregional trip characteristics within the initial Stockton Model resulted in too many trips being internalized within Stockton – that is not interacting with other areas such as the Bay Area or Sacramento. The interregional assumptions were adjusted to more closely match observed household survey data. **Table 5** displays the adjustments made to interregional assumptions and comparisons to California Household Travel Survey (2014) (CHTS) data.

The California Department of Transportation (Caltrans) conducts the California Household Travel Survey every ten years to obtain detailed information about the socioeconomic characteristics and travel behavior of households statewide. Regional travel models, including the Statewide Travel

Demand Model, and the Statewide Integrated Inter-regional Transportation Model, use this information as a base to forecast future travel behavior. This data is also used in the validation of regional and local models.

The most recent California Household Travel Survey was conducted between February 2012 and January 2013. Over 40,000 households from all 58 California counties were surveyed. The survey includes traditional travel diaries which track each household member's movements over the course of a single day. It also includes and a smaller set of 5,700 households who also used either personal or vehicle GPS units to supplement the diary information. The combination of travel diary and GPS data allowed the survey to account for trips that are often under-reported in travel surveys, such as walking trips, non-home-based trips, and short stops during longer trips.

The survey represents 42,431 households Statewide, with 13 percent of participating households involved in the GPS data collection; approximately 191 households in Stockton were included in the survey effort. Some limitations to CHTS include only households with landlines were invited to patriciate in the survey, the survey was only administered in English and Spanish, and the sample size within Stockton is relatively small (representative of 0.2% of households). While CHTS data provides for a point of comparison that otherwise would not be available, the data limitations are acknowledged.

TABLE 5
INTERREGIONAL FACTOR ADJUSTMENTS

Trip Type	Model Initial	Model Adjusted	CHTS
	Daily	Daily	
Internal-Internal	80%	66%	67%
Internal-External/External-Internal	20%	34%	33%
Total	100%	100%	100%

Source: Stockton Model

MODEL VALIDATION

The Model validation process involves running the model to project existing travel patterns, checking the model results against actual travel patterns, and then adjusting model input parameters in an iterative manner until model validation criteria established by the California Transportation Commission is attained. Two types of model validation were performed – static validation and dynamic validation. The validation procedures and results are summarized below.

Static Validation

Static model validation measures how well the model's base year traffic volume forecasts replicate base year traffic counts. Existing roadway segment counts were collected on arterial and collector street locations as part of the Background Conditions Report, as well as data collected by the City. This data was supplemented by data from the California Department of Transportation (Caltrans) for freeway segments. The static model validation initially consisted of 110 local roadway link locations calculated from traffic counts and 25 Caltrans link location, for a total of 135 model link locations within and around the Stockton Model study area. The counts ranged over multiple years while the base year of the Stockton Model generally reflects 2015/2016 conditions. Adjustment factors were applied to counts collected in 2014 based on a comparison of counts over time to estimate a 2015/2016 count. Travel models are not expected to validate well for low volume roads; therefore, locations with daily count of less than 1,000 were excluded from the static validation. After reviewing the available count data, the final validation set consisted of 121 roadway link locations. Screen lines were then drawn around the City to establish east-west and north-south flows into and out of the GP area. Additionally, some internal locations were included in the validation. Validation locations are shown on **Figure 9**.

The California Transportation Commission (CTC) established guidelines for determining whether a model is valid and acceptable for forecasting future year traffic and transit volumes. The sub-area validation results were compared to the validation thresholds discussed in *2017 California Regional Transportation Plan Guidelines* (CTC, January, 2011)[2] . This guidance is specifically for State routes (two-way facilities), but we are applying the same criteria to all roadways since Caltrans does not provide guidance on other facilities. The thresholds are:

[2] http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/docs/2017RTPGuidelinesforMPOs.pdf

- The two-way sum of the volumes on all roadway links for which counts are available should be within 10 percent of the counts.
- At least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation, which ranges from approximately 14 to 68 percent depending on total volume (the larger the volume, the less deviation is permitted).
- The correlation coefficient[3] between the actual ground counts and the estimated traffic volumes should be greater than 88 percent.
- The percent root mean square (RMSE[4]) should not exceed 40 percent.

Results of the initial validation of the Stockton Model are summarized in **Table 6**. Red shading indicates the acceptance criterion was not met while green shading indicates the acceptance criterion was met. Prior to the model adjustments discuss in the previous section, none of the validation criteria were satisfied. This is common when using a regional travel demand model to forecast more localized conditions.

After the model was iteratively calibrated with the changes as described above, model validation improved as presented in **Table 6**. The refined model meets or exceeds the guidelines for model accuracy for daily conditions within the City of Stockton GP for three of the five validation categories. While the overall percentage of links within Caltrans standard deviations statistic was not met, the percentage of screenlines within Caltrans standard deviations was met. This indicates that overall travel is being accurately predicted but that the routing of that travel through the model area is not as accurate. Based on all of the guidelines it is acceptable to use this model for purposes of the General Plan but specific care should be given to the model outputs to ground them in reality. One example of this is the use of existing counts to support generation of future forecasts via the difference method. Obtaining a full set of validation counts for a single time period and reflecting the same time period in both transportation system and land use is also recommended. Additional model validation details are provided in **Attachment A.**

[3] Correlation coefficient: A variable that determines the degree to which two variables are associated. The value varies between -1 (-100%) and 1 (100%). A value closer to 1 suggests, in general, the model estimates are in line with observed data.

[4] Root Mean Square Error: A statistical measure for how close the estimated value is to the observed data, regardless of positive or negative direction.

TABLE 6
BASE YEAR STATIC MODEL VALIDATION RESULTS

Validation Statistic	Criterion for Acceptance[1]	Model Results Initial[2]	Model Results Calibrated[2]
		Daily	Daily
% of Links within Caltrans Standard Deviations	75%	5%	62%
% of Screenlines within Caltrans Standard Deviations	100%	0%	100%
2-way Sum of All Links Counted	Within 10%	-35%	+17%
Correlation Coefficient	Greater than 88%	45%	94%
RMSE	40% or less	102%	36%

Source:
1. http://www.catc.ca.gov/programs/rtp/2010_RTP_Guidelines.pdf
2. City of Stockton Travel Model

Dynamic Validation

The traditional approach to the validation of travel demand models is to compare the roadway segment volumes for the model's base year to actual traffic counts collected in the same year. This approach provides information on a model's ability to reproduce a static condition. However, models are seldom used for static applications. By far the most common use of models is to forecast how a change in inputs would result in a change in traffic conditions. Therefore, another test of a model's accuracy is to focus on the model's ability to predict realistic differences in outputs as inputs are changed; in other words, "dynamic" validation rather than static validation.

Dynamic validation determines a model's sensitivity to changes in land uses and the transportation system. These tests are recommended in 2017 California Regional Transportation Plan Guidelines. The results of dynamic validation tests are inspected for reasonableness in the direction and magnitude of the changes.

The Three-County Model underwent dynamic validation tests for land use, traffic assignment, travel cost, and induced demand as part of its model development. It was found to be dynamically valid for change in land use and the addition or removal of transportation network detail. Additional

detail regarding the parent Three-County Model can be obtained in the Model Development for the Eight San Joaquin Valley MPO Traffic Models to Meet the Requirements of SB 375 – Three-County Model (Fehr & Peers, February 2012).

To ensure that the Stockton sub-area model continues to respond reasonably, a subset of dynamic validation tests were conducted with the sub-area model. **Table 7** summarizes land use dynamic tests. Roadway network changes were also tested; when a new roadway was added to the network, vehicle traffic changed travel patterns, by rerouting trips to the new roadway and reducing traffic on parallel roadways. Similar shifts occurred when capacity was added or constrained. These results show that the Stockton sub-area model is able to reasonably respond to dynamic changes.

TABLE 7
DYNAMIC VALIDATION – LAND USE

TAZ	Scenario	Vehicle Trips (VT)	Change in VT	Average VT/Unit
302	Base Case	8,500	-	-
	Add 10 DUs	8,594	94	9.40
	Add 100 DUs	9,372	872	8.72
	Subtract 10 DUs	8,412	-88	8.80
	Subtract 100 DUs	7,610	-890	8.90
363	Base Case	44,000	-	-
	Add 10 KSF Retail	44,215	215	21.50
	Add 100 KSF Retail	46,091	2,091	20.91
	Subtract 10 KSF Retail	43,793	-207	20.70
	Subtract 100 KSF Retail	41,889	-2,111	21.11

Source: Stockton Model

RESULTS

Transportation metrics were developed using the model and compared against published sources, where available, including travel time by trip purpose, mode choice, and vehicle miles of travel.

TRIP BALANCING

In general, if a region (City, GP area or County) has comparable employment and housing then the number of trips produced should balance with the trips attracted. **Table 8** shows the number of trips by purpose for Stockton Model area zones. The recommended guideline for productions to attractions is between 0.9 and 1.1.

TABLE 8
INTERNAL TRIP BALANCING BY TRIP PURPOSE

	Productions			
	HBW	**HBS**	**HBO**	**NHB**
Productions	125,497	144,866	442,536	328,877
Attractions	126,137	144,749	438,980	323,709
Productions/Attractions	0.99	1.00	1.01	1.02

Note: HBW= Home-Work; HBS= Home-Shop; HBO=Home-Other; NHB=Non-Home
Source: Stockton Model

TRAVEL TIME

Travel time measures the average time taken to complete a trip. Travel time as calculated from the City of Stockton model was compared against the CHTS data at the City of Stockton (and nearby areas) level of detail. **Table 9** compares the average trip duration by trip purpose between the model and CHTS. As expected, the average travel time for the City of Stockton General Plan area are lower compared to the household survey averages. This is partly due to reported results from surveys being over estimated and often to the nearest 5 minutes and also the congestion caused by intersections and bottlenecks in the model is not fully accounted. Although the overall travel time is low compared to CHTS, the relative difference between trip purposes is consistent with CHTS.

TABLE 9
AVERAGE TRAVEL TIME (IN MINUTES) BY TRIP PURPOSE

Data Source	Purpose		
	HBW	HBO	NHB
Stockton Model Area	12.4	10.3	9.5
Stockton Model Area CHTS [1]	16.8	14.3	11.0

Notes: HBW = Home Based Work, HBO = Home Based Other and NHB = Non Home Based.

Source:

1. California Household Travel Survey: http://www.dot.ca.gov/hq/tpp/offices/omsp/statewide_travel_analysis/chts.html

MODE CHOICE

Mode choice reflects the mode of transport used to make a trip. The summary of modes used by City of Stockton (and nearby areas) residents and employees is shown in the **Table 10**. For comparison, the respective mode choice from the California Household Travel Survey is also shown. The comparison indicates that the model may slightly overestimate the private vehicle mode share, including both single occupant and carpools, while slightly underestimating walk and bike travel modes. The differences are within the survey error and thus the mode choice validation seems reasonable.

TABLE 10
STOCKTON MODEL AREA - MODE CHOICE COMPARISON

	CHTS[1]	Model Estimate
Drive Alone	31.4%	38.4%
Carpool	58.5%	53.1%
Transit	1.5%	1.6%
Walk/Bike/Other	8.6%	6.9%
Total	100%	100%

Source: California Household Travel Survey, 2012.

VEHICLE TRIP DISTANCE AND TRIPS PER HOUSEHOLD

The Model was used to develop estimates of vehicle miles of travel (VMT) generated by land uses within the Stockton GP area. Published VMT estimates at the city level are not reliable for comparison purposes so vehicle trip distance and household trip generation were compared to CHTS for reasonableness.

Table 11 compares the average trip distance by trip purpose between the Stockton Model and CHTS. The average trip distance in the model is slightly higher than the CHTS data. As noted in the travel time discussion, this is partly due to the model not reflecting congestion and bottlenecks. The other simplification of the model in representing trips traveling outside of the model area as a single weighted value may also contribute to the longer trip distances. These weighted values should be reviewed and adjusted for efforts using this sub-area model for regional influencing projects.

TABLE 11
AVERAGE TRAVEL DISTANCE (IN MILES) BY TRIP PURPOSE

Data Source	Purpose		
	HBW	HBO	NHB
Stockton Model Area	16.4	13.2	10.8
Stockton Model Area CHTS	13.3	11.1	7.0

Notes: HBW = Home Based Work, HBO = Home Based Other and NHB = Non Home Based.

Source:

1. Stockton Travel Demand Model
2. California Household Travel Survey: http://www.dot.ca.gov/hq/tpp/offices/omsp/statewide_travel_analysis/chts.html

The second part of a VMT check is the magnitude of trips. **Table 12** below compares the total trips per household generated by the Stockton Model and the CHTS. The trips per household where both ends of the trip are within the model area are within less than half a trip per household, while the total trips (trips within, entering, or exiting the model area) are slightly low. This combined with the longer than average trip length may result in a reasonable VMT estimate, but the influence of the external travel distance and percentage of internal vs external travel will influence the VMT. This is also consistent with the model traffic assignment being lower than the counts even after updating

the household demographics to generally higher trip generating categories. The interregional travel should be reviewed along with trip balancing for future applications of the model.

TABLE 12
TRIPS PER HOUSEHOLD

Data Source	Daily trips per Household	
	Internal Trips	All Trips
Stockton Model Area	9.0	11.5
Stockton Model Area CHTS	9.4	14.0

Notes: Values repented as Internal Trips (Total Trips)

Source:

1. Stockton Travel Demand Model
2. California Household Travel Survey: http://www.dot.ca.gov/hq/tpp/offices/omsp/statewide_travel_analysis/chts.html

The model validation results demonstrate the model performs acceptably at a city scale especially for key metrics such as VMT and higher volume roadways. At a local scale, sub-area refinements and validation should be performed before using the model for project applications. Refinements may include adding zonal or network detail to the model along with modifications to centroid loadings, network inputs (i.e., speeds), land use inputs, and demographic inputs. Any applications forecasts should also use an appropriate forecasting approach as described by National Cooperative Highway Research Program (NCHRP) Report 255 or 716 rather than using model forecast volumes directly.

VEHICLE MILES OF TRAVEL

The Model was used to develop estimates of vehicle miles of travel (VMT) generated by land uses within the Stockton GP area. The amount of vehicle travel per capita was then compared to the County as a whole. Pending changes to California Environmental Quality Act (CEQA) guidelines could replace traditional vehicular level of service metrics with VMT metrics. Additional information regarding this change will be provided in a separate document.

To assess vehicle miles of travel generated by land uses in Stockton, two accounting methods were used: boundary method and the total accounting method.

Boundary Method

A boundary based estimate captures all the VMT on a roadway network within a specified geographic area (such as the city limits or General Plan Boundary) regardless of the origin and destination of the trip. A limitation of this method is that it does not capture trips that extend beyond a jurisdictions boundary and includes through traffic on regional roadway facilities over which the City has no control, such as State Route 99. However, this information can use useful in estimating total noise and particulates within a specified geographic area. Traditionally, most published data on VMT has been calculated via the boundary method.

Origin-Destination Method - Total Accounting

An origin-destination (OD) method tracks all vehicular trips generated by the City of Stockton across the entire regional network. Four types of trips are isolated, which shares the responsibility of trips with other jurisdictions:

- Internal-Internal (II) trips: Include all trips that begin and end within the City of Stockton.
- Internal-External (IX) trips: Include the entire distance of all trips that begin in within the GP area limits and end outside GP area limits.
- External-Internal (XI) trips: Include the entire distance of all trips that begin outside GP area limits and end inside GP area limits.
- External-External (XX) trips: Trips that begin and end outside the Stockton GP area are not included. The Stockton GP assumes no responsibility for External-External trip type VMTs.

To estimate VMT per service population, trips with at least one trip end within the Stockton GP area are multiplied by the trip distance for all trip types to estimate VMT and then divided by the residential and working population of the Stockton GP area.

Trips that have neither an origin nor destination within the Stockton GP area are not included in the VMT total as City General Plan policies cannot appreciably affect the amount of through traffic in a jurisdiction.

VMT Results

The total VMT is then divided by the Stockton GP area's total service population, defined as the residential population plus the number of jobs; results are summarized in **Table 13**.

TABLE 13
VEHICLE MILES OF TRAVEL SUMMARY – STOCKTON GP AREA

Performance Measure	Boundary Method	Total Accounting Method
Households	116,300	
Population	363,300	
Employment	123,400	
Daily VMT	8,453,900	12,473,400
Daily VMT per Service Population	17.36	25.63

Notes: Boundary method includes through traffic on all roadways through Stockton General Plan area including traffic on State Route 99 and other regional through trips, while shared and total accounting methods only include vehicle trips with at least one trip end in the Stockton GP Area.
Source: City of Stockton Travel Model, summarized by Fehr & Peers, 2017.

CONCLUSIONS

The completes the City of Stockton General Plan – Model Development Documentation. Detailed modeling results for the base year and General Plan condition are provided in the technical memorandum entitled Stockton General Plan – Existing and General Plan Transportation Data, November 28, 2017. Please call Kathrin or Mackenzie at (925) 930-7100 if you have questions.

Attachments:

Figure 1 City of Stockton General Plan Area
Figure 2 Existing Roadway Network – Number of Lanes
Figure 3 Existing Roadway Network – Functional Classification
Figure 4 Travel Analysis Zone Map
Figure 5 Base Year Households by TAZ
Figure 6 Base Year Employment by TAZ
Figure 7 Income and Household Distribution by TAZ – Census Data
Figure 8 Income and Household Distribution by TAZ – Adjusted Model
Figure 9 Model Validation Locations

Attachment A Model Validation Spreadsheet
Attachment B Base Year Land Use by TAZ Summary

PLACEWORKS FEHR & PEERS

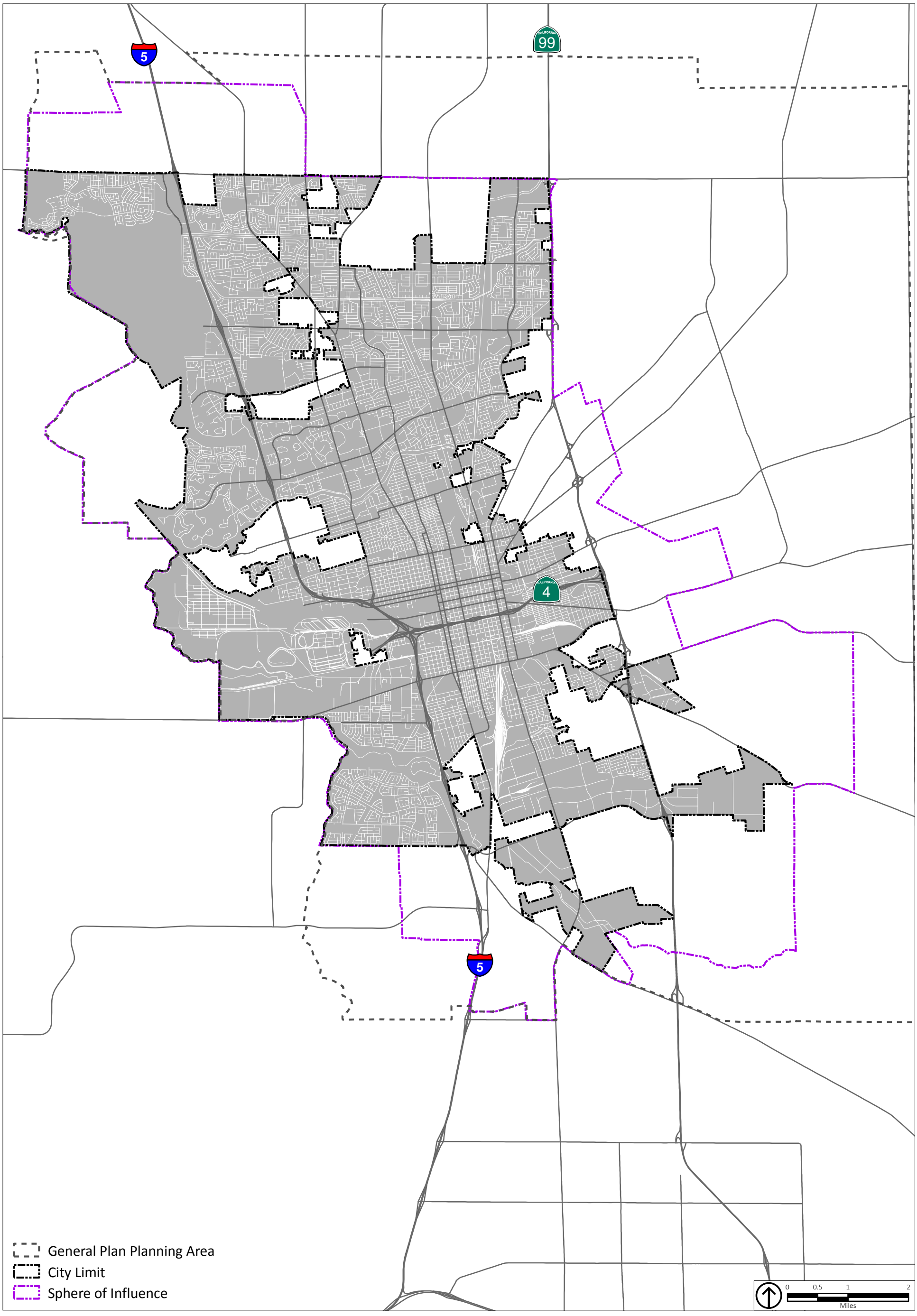
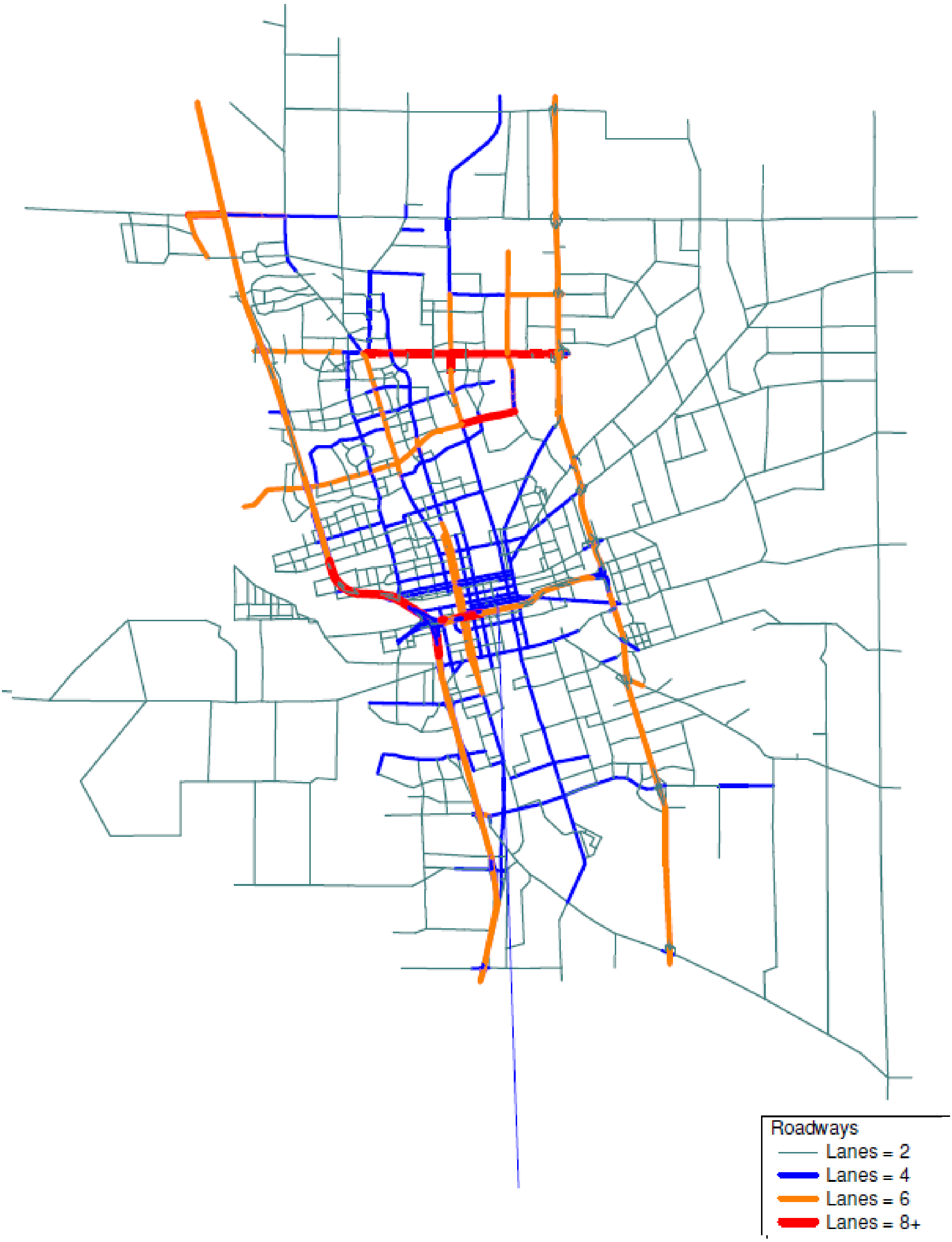


Figure 1

City of Stockton General Plan Area

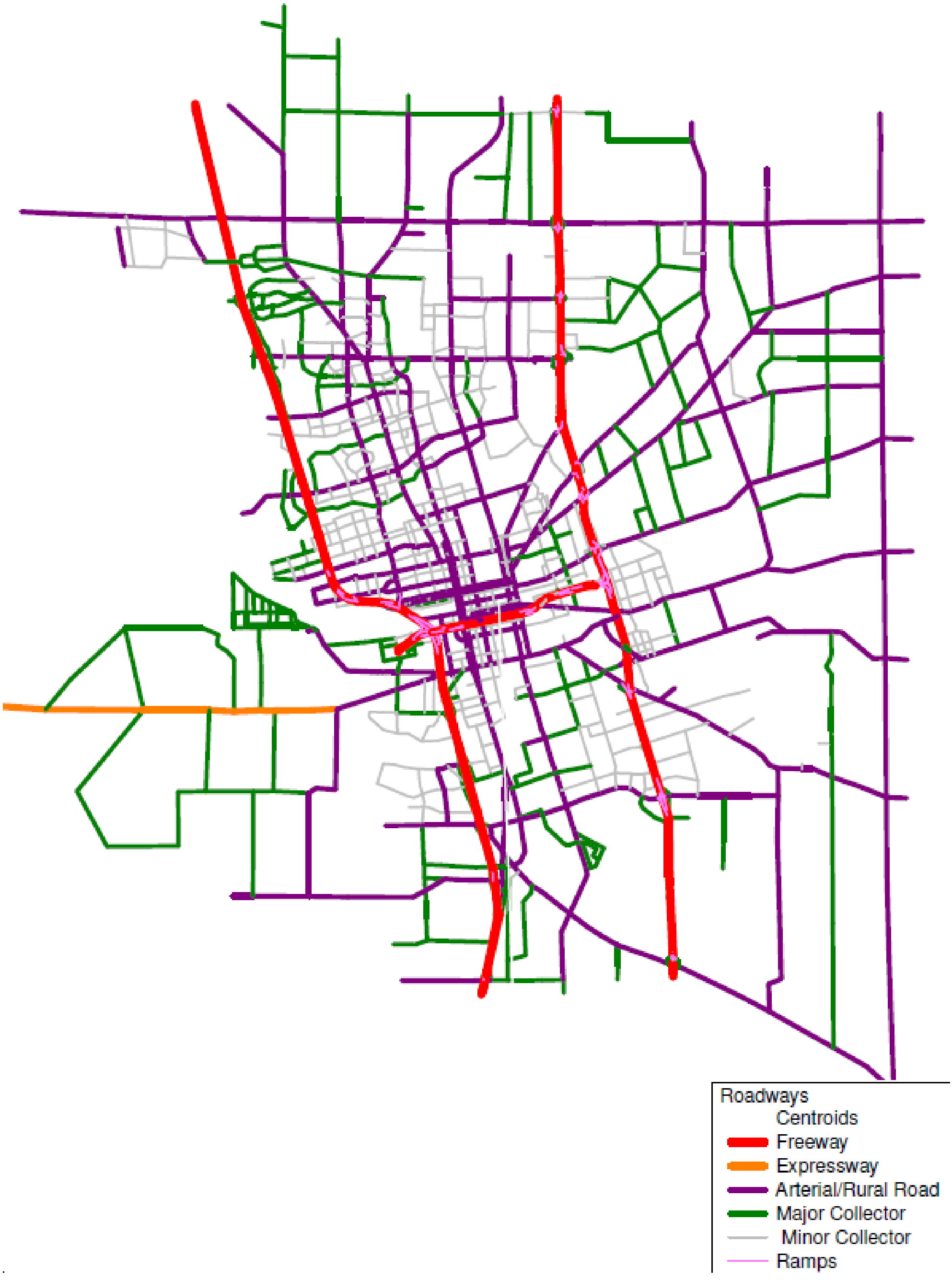
PLACEWORKS FEHR & PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 2
Existing Roadway Network - Number of Lanes

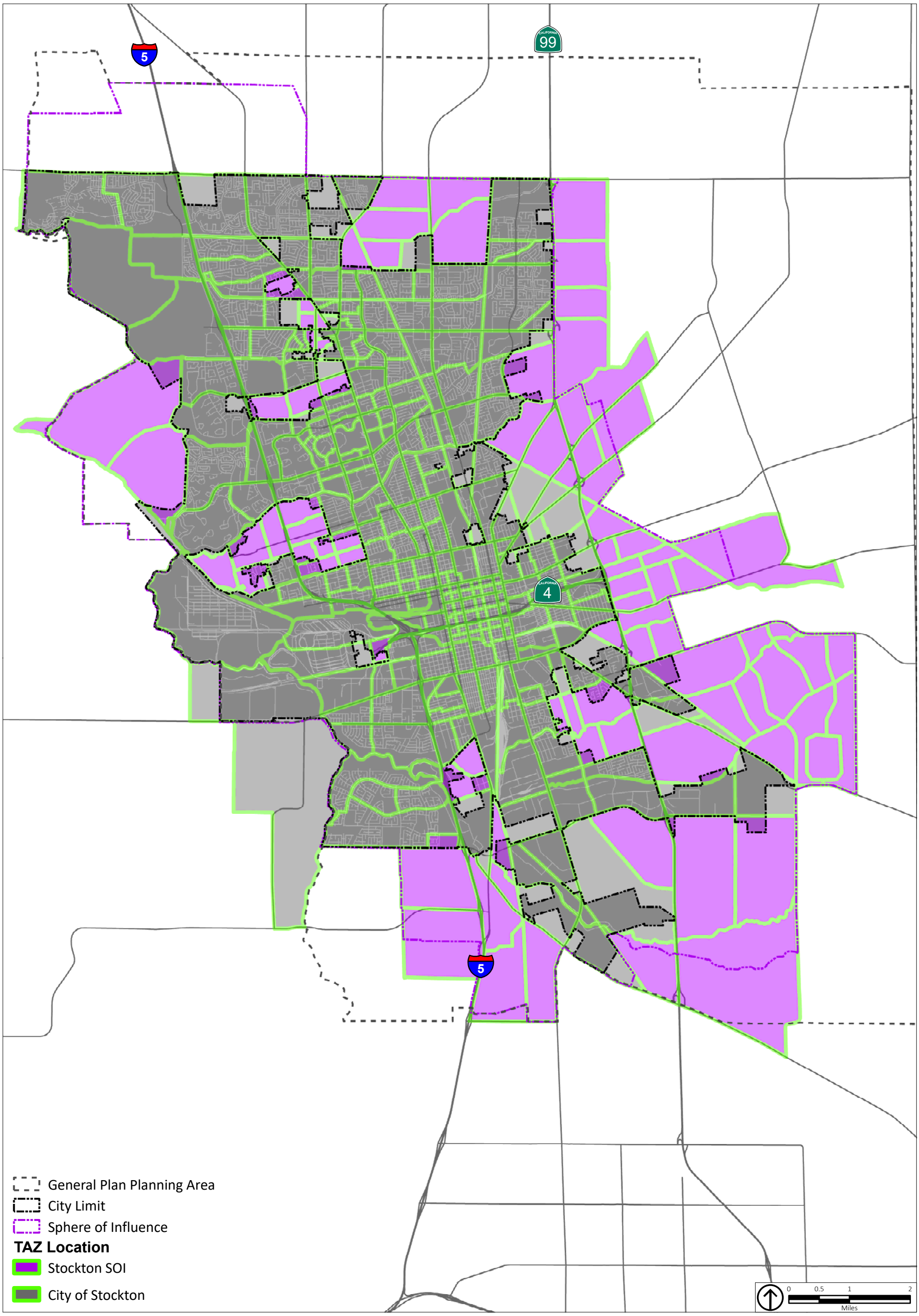
PLACEWORKS FEHR & PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 3
Existing Roadway Network - Functional Class

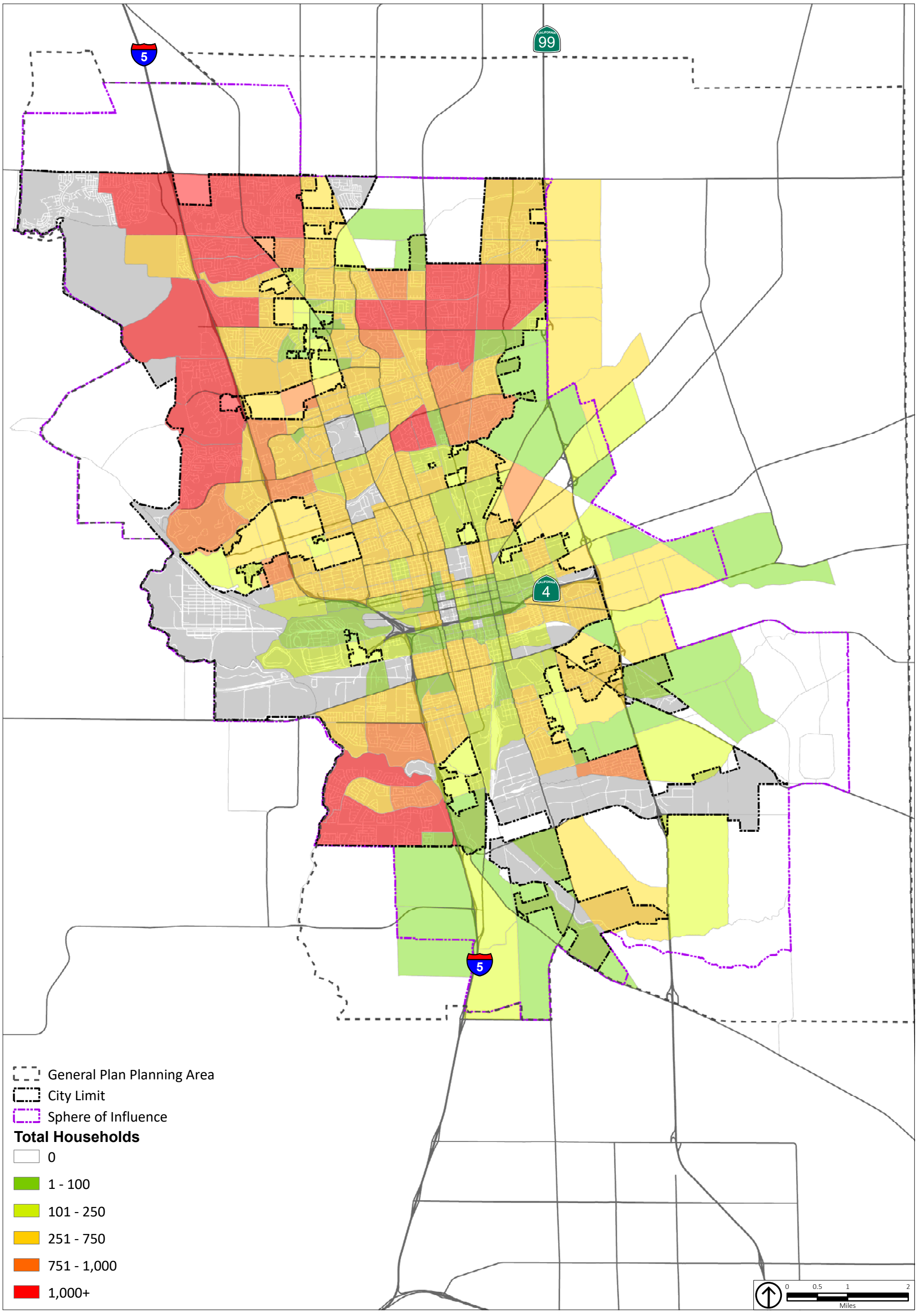
PLACEWORKS FEHR & PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 4
Transportation Analysis Zone (TAZ) Boundaries

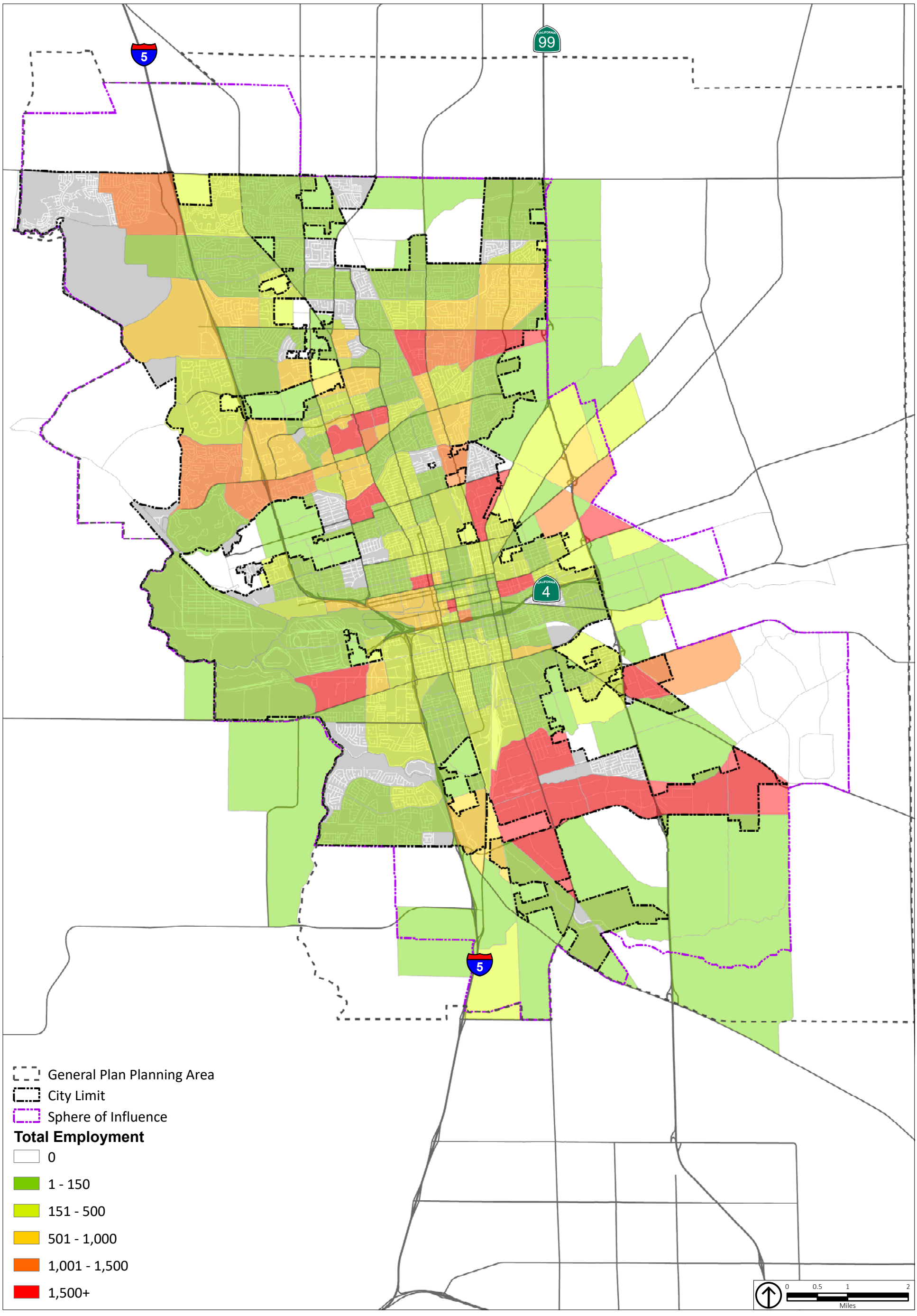
PLACEWORKS FEHR & PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 5
Base Year Households

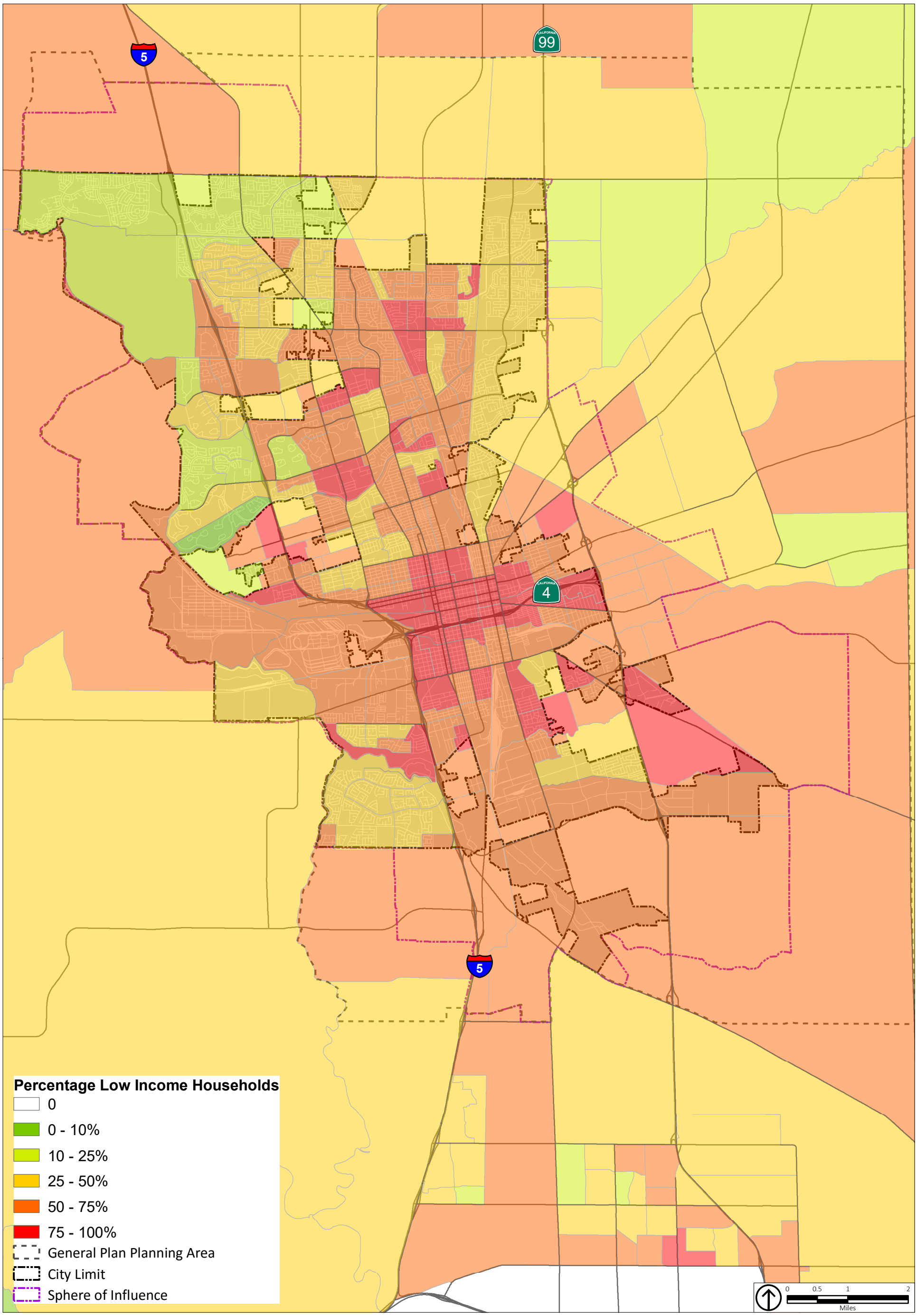
PLACEWORKS FEHR & PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 6
Base Year Employment

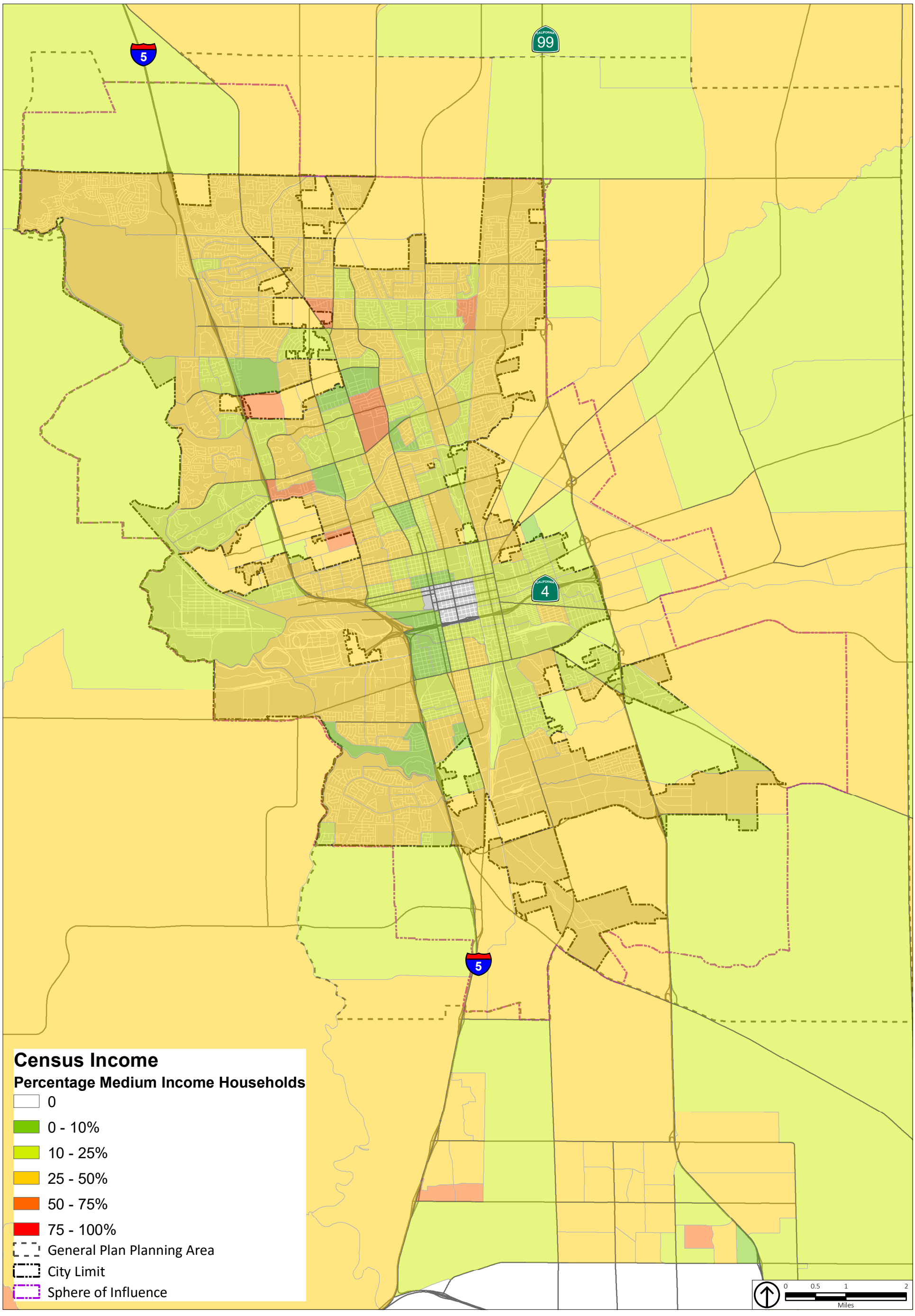
PLACEWORKS FEHR PEERS



Source: Fehr & Peers, City of Stockton, 2017.

Figure 7
Census Households - Income Percentages

PLACEWORKS FEHR PEERS



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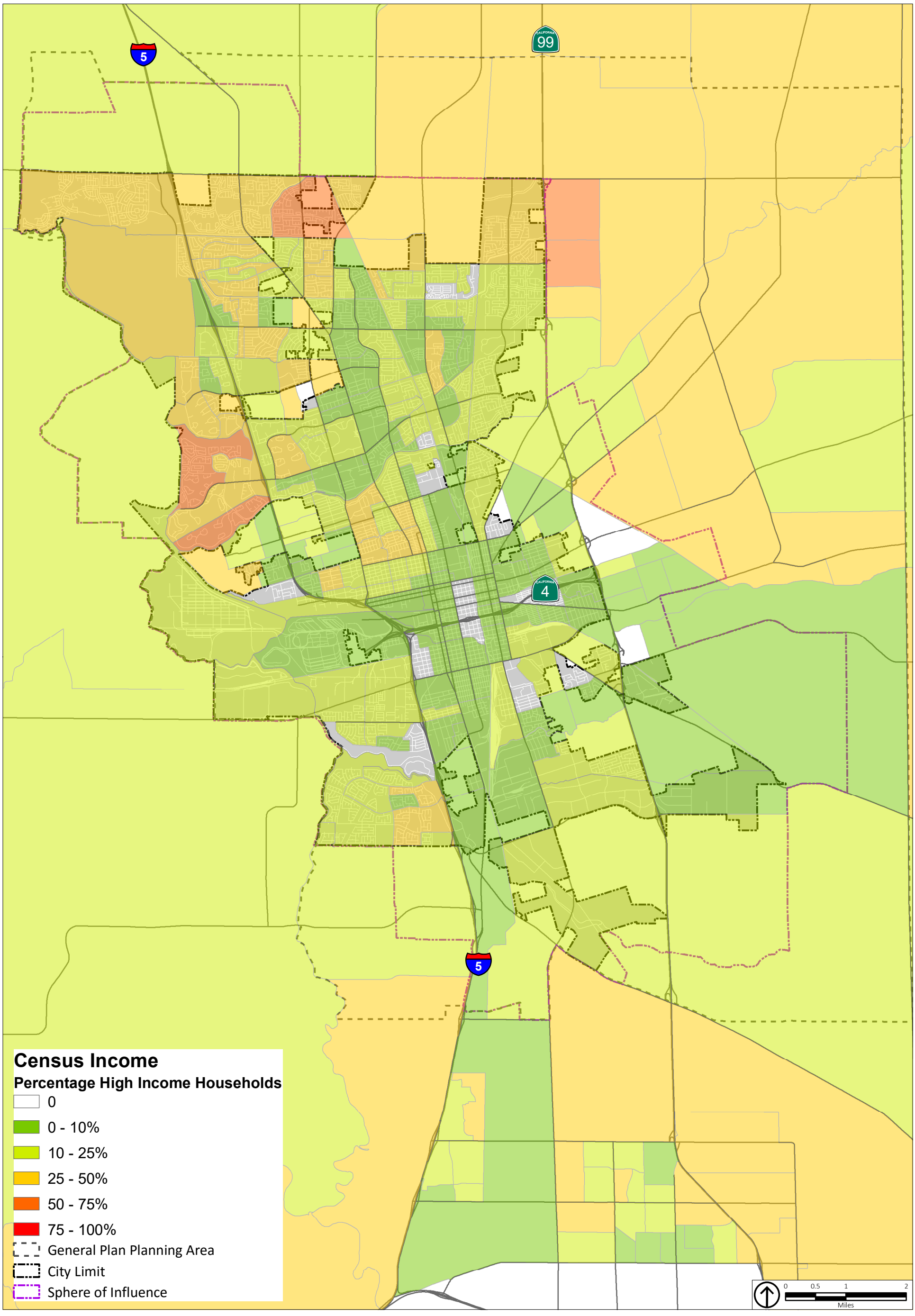

Source: Fehr & Peers, City of Stockton, 2017.

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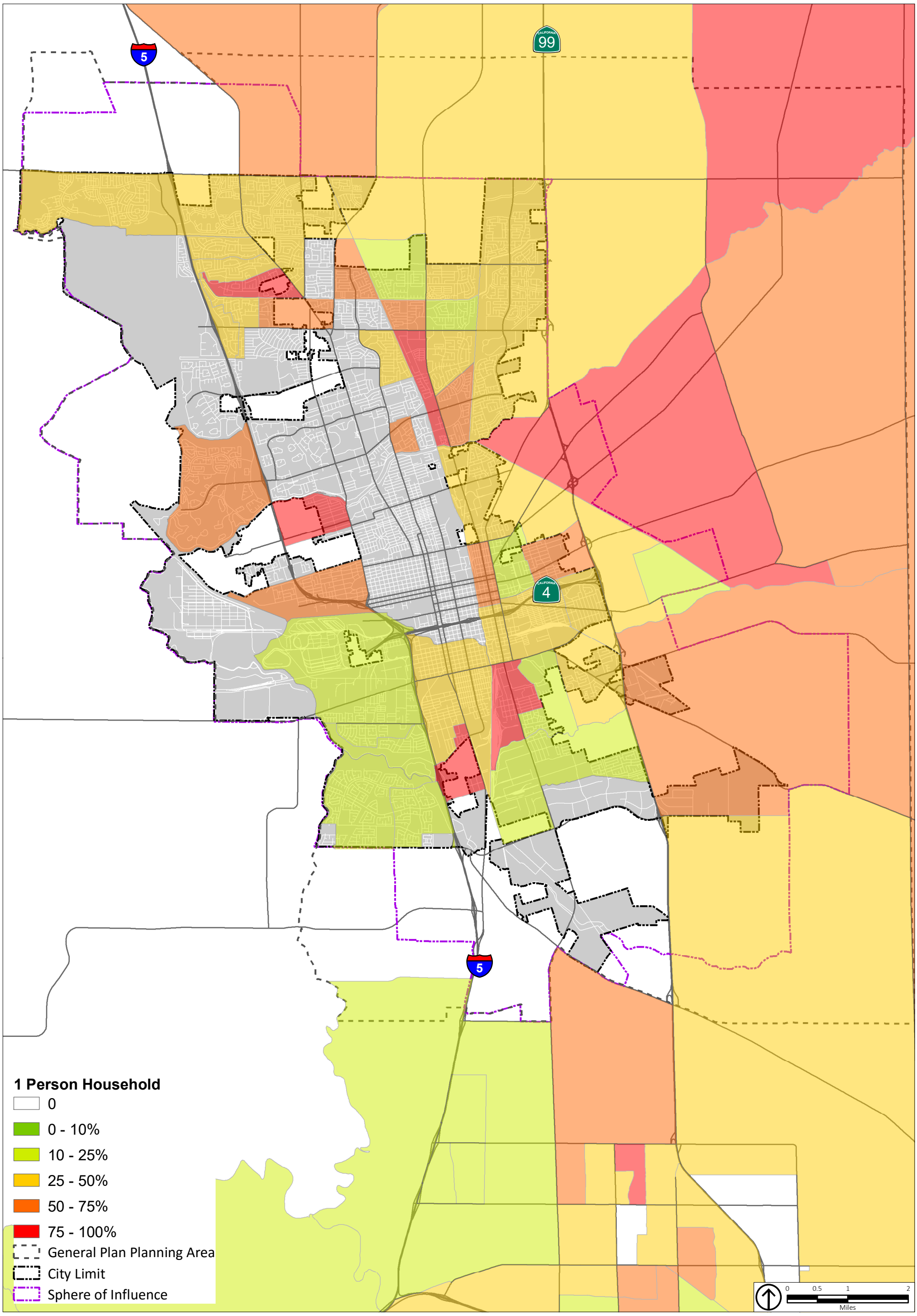
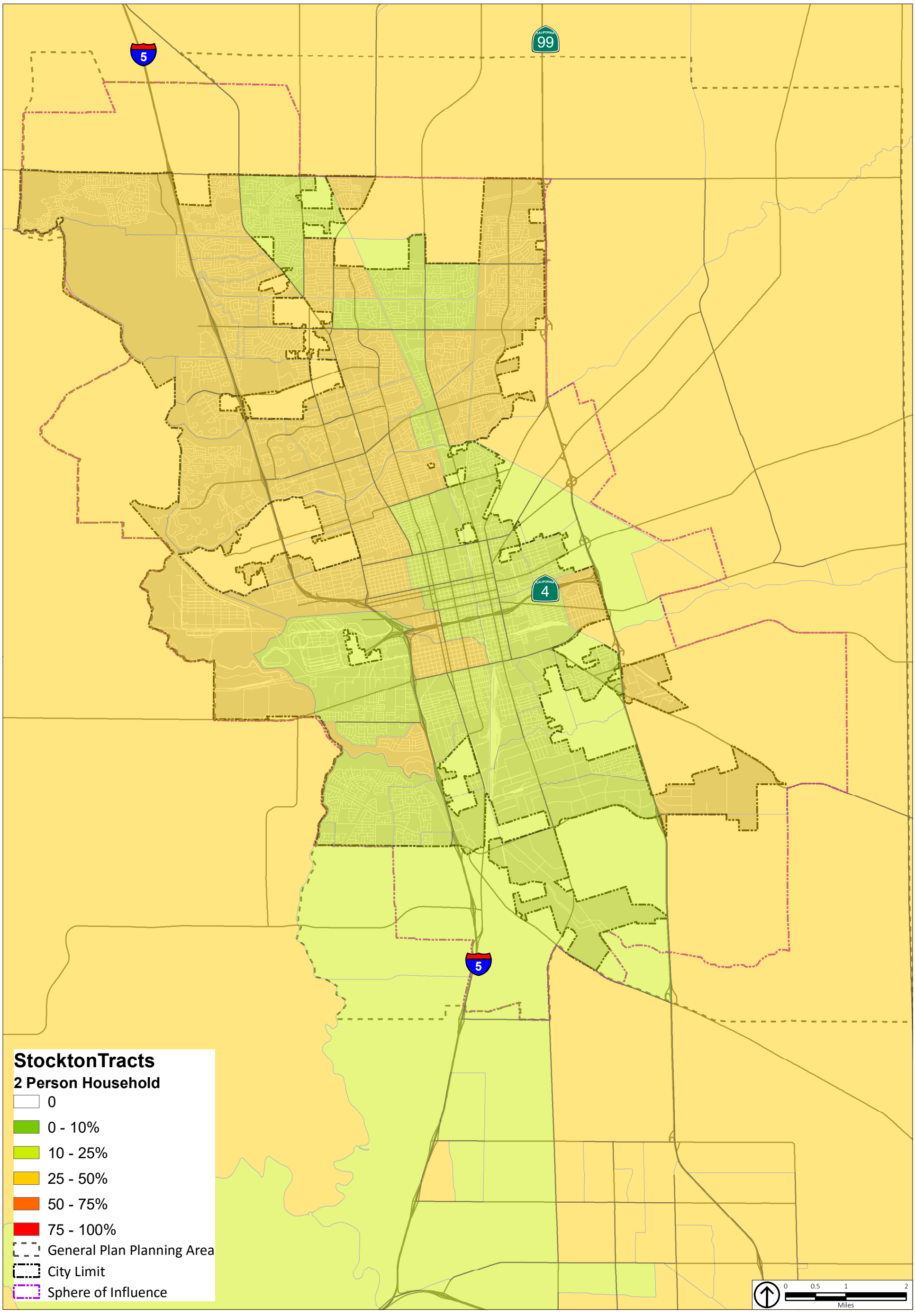


Source: Fehr & Peers, City of Stockton, 2017.

Figure 7
Census Households - Household Size Percentages

PLACEWORKS FEHR PEERS



Source: Fehr & Peers, City of Stockton, 2017.

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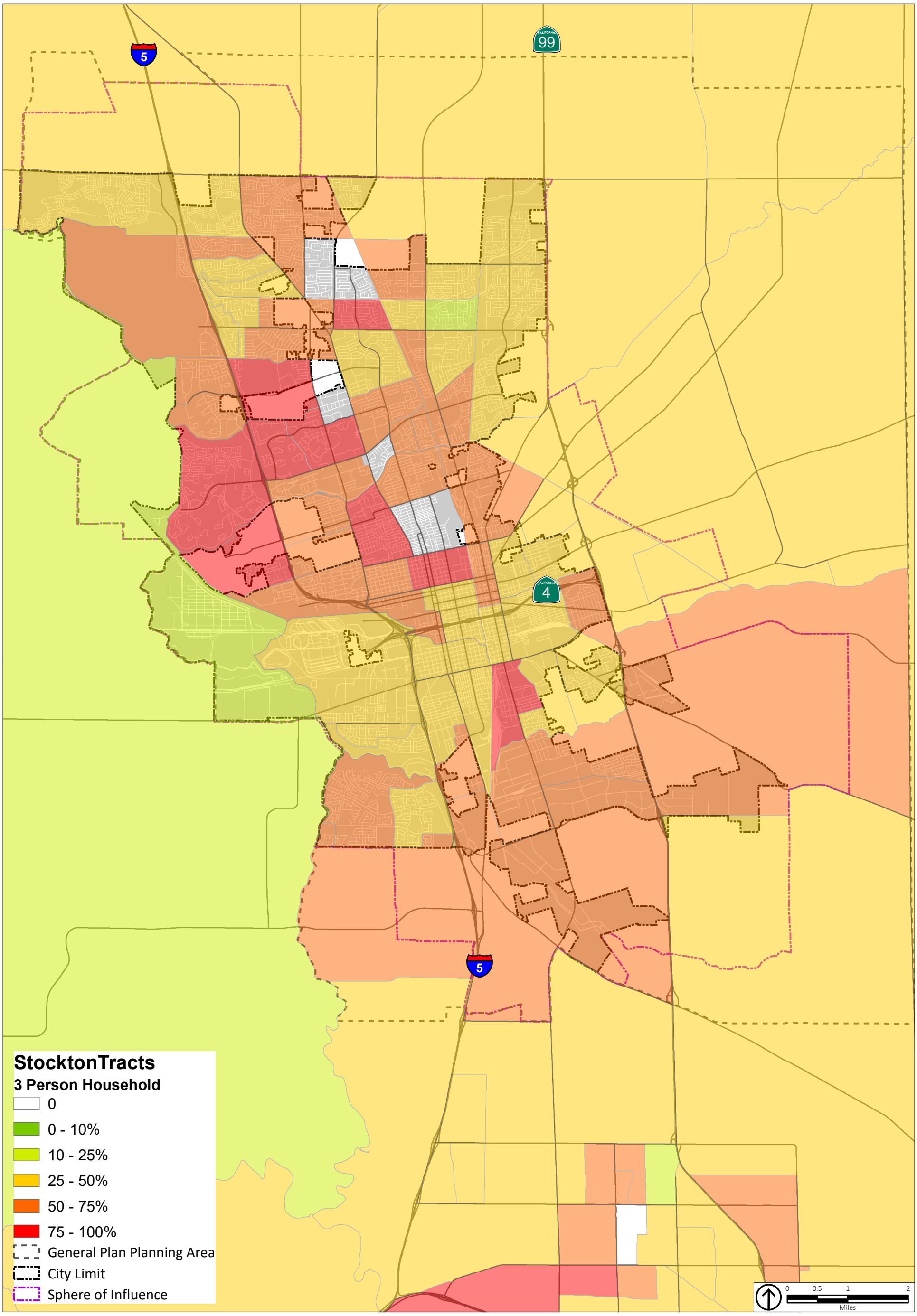

Source: Fehr & Peers, City of Stockton, 2017.

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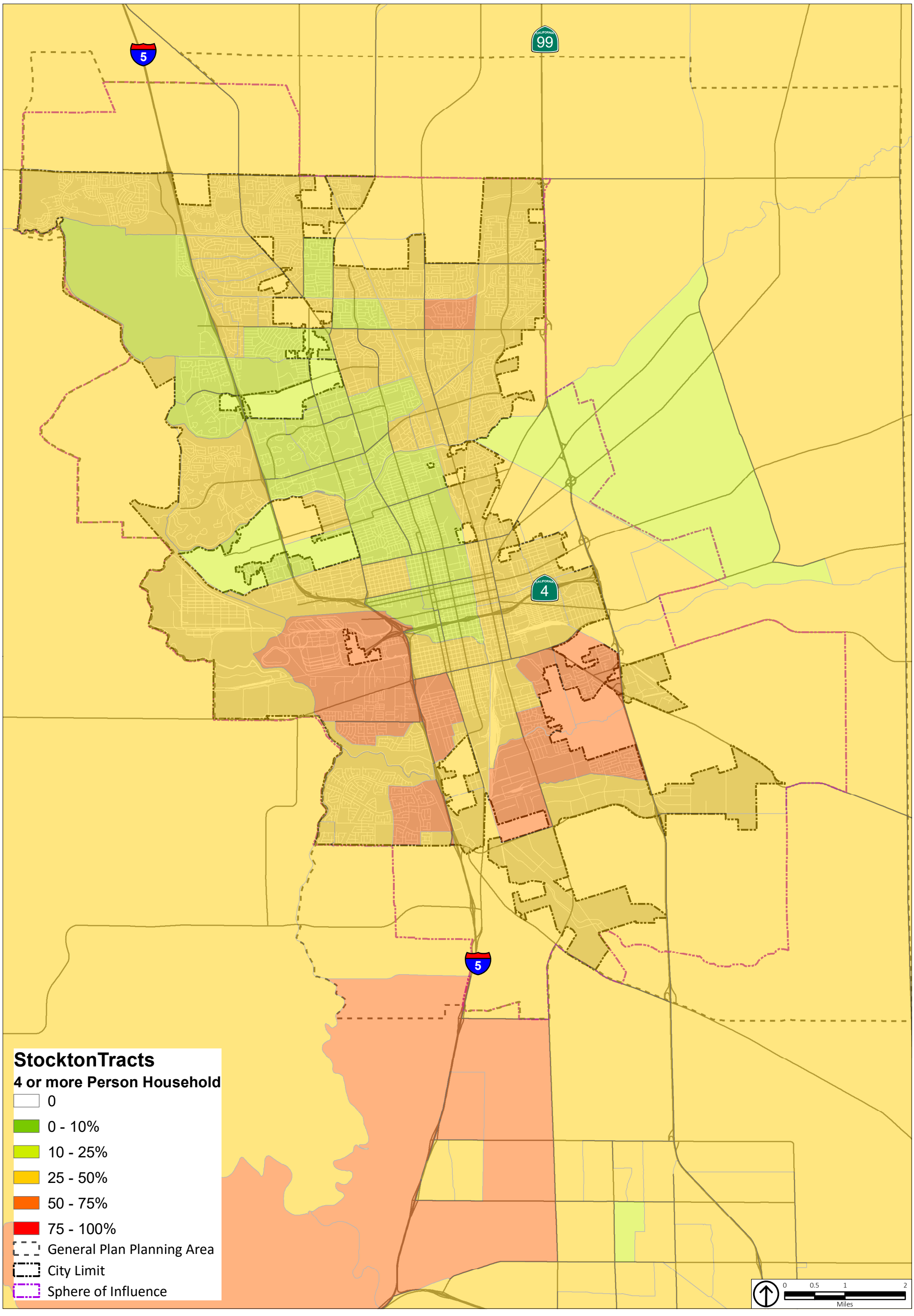

Source: Fehr & Peers, City of Stockton, 2017.

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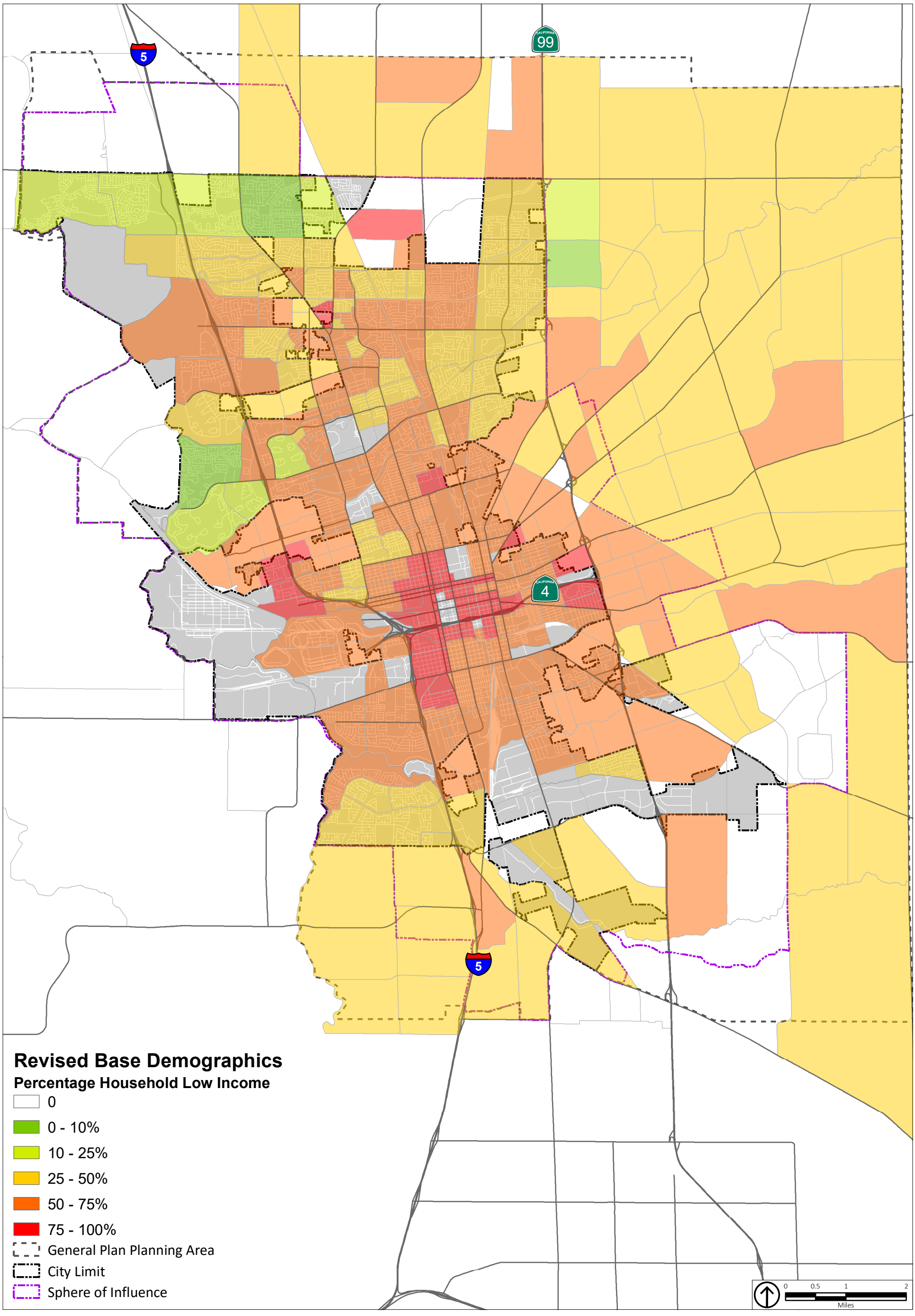
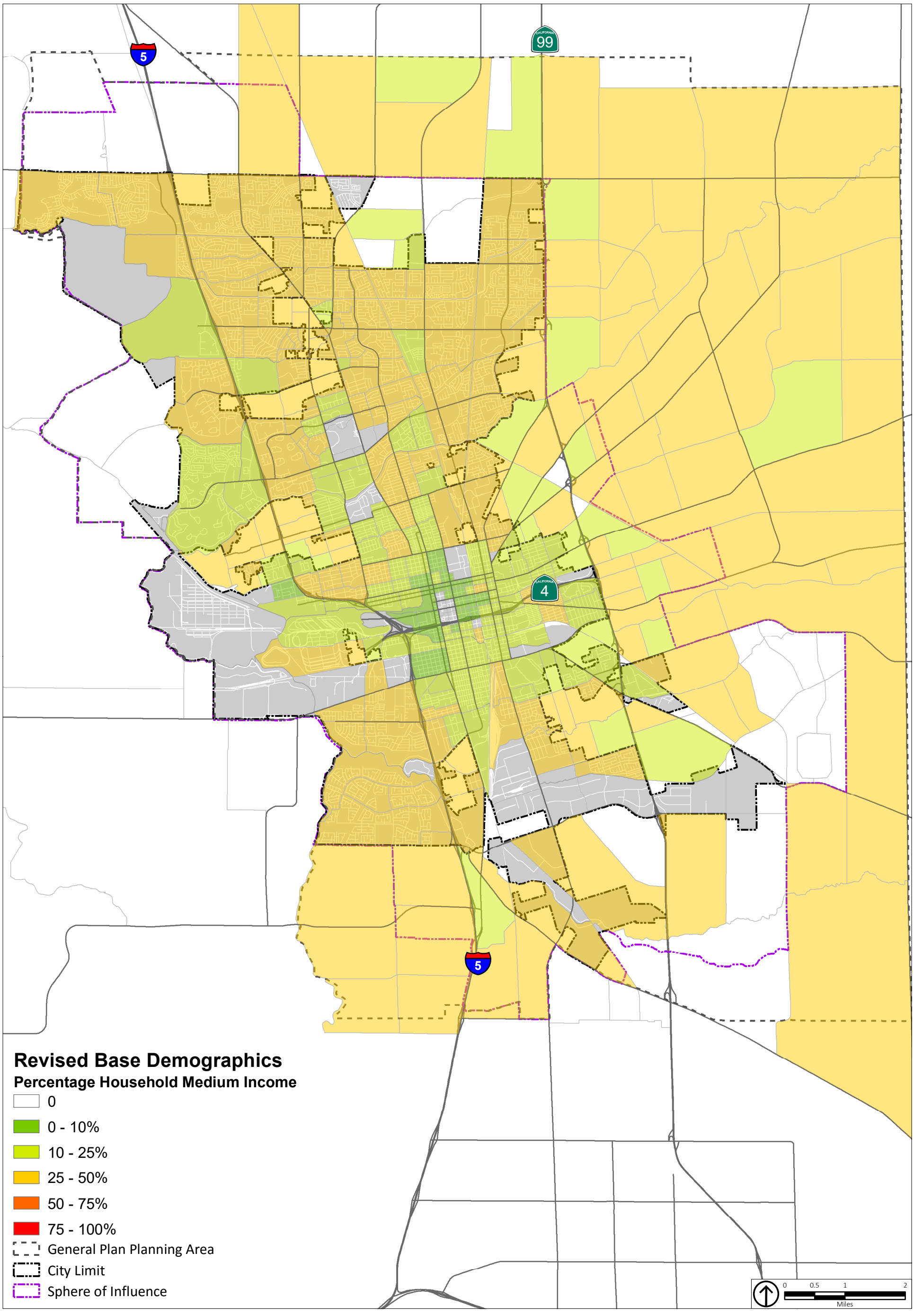


Source: Fehr & Peers, City of Stockton, 2017.

Figure 8

Revised Base Model - Household Size Percentages

PLACEWORKS FEHR & PEERS



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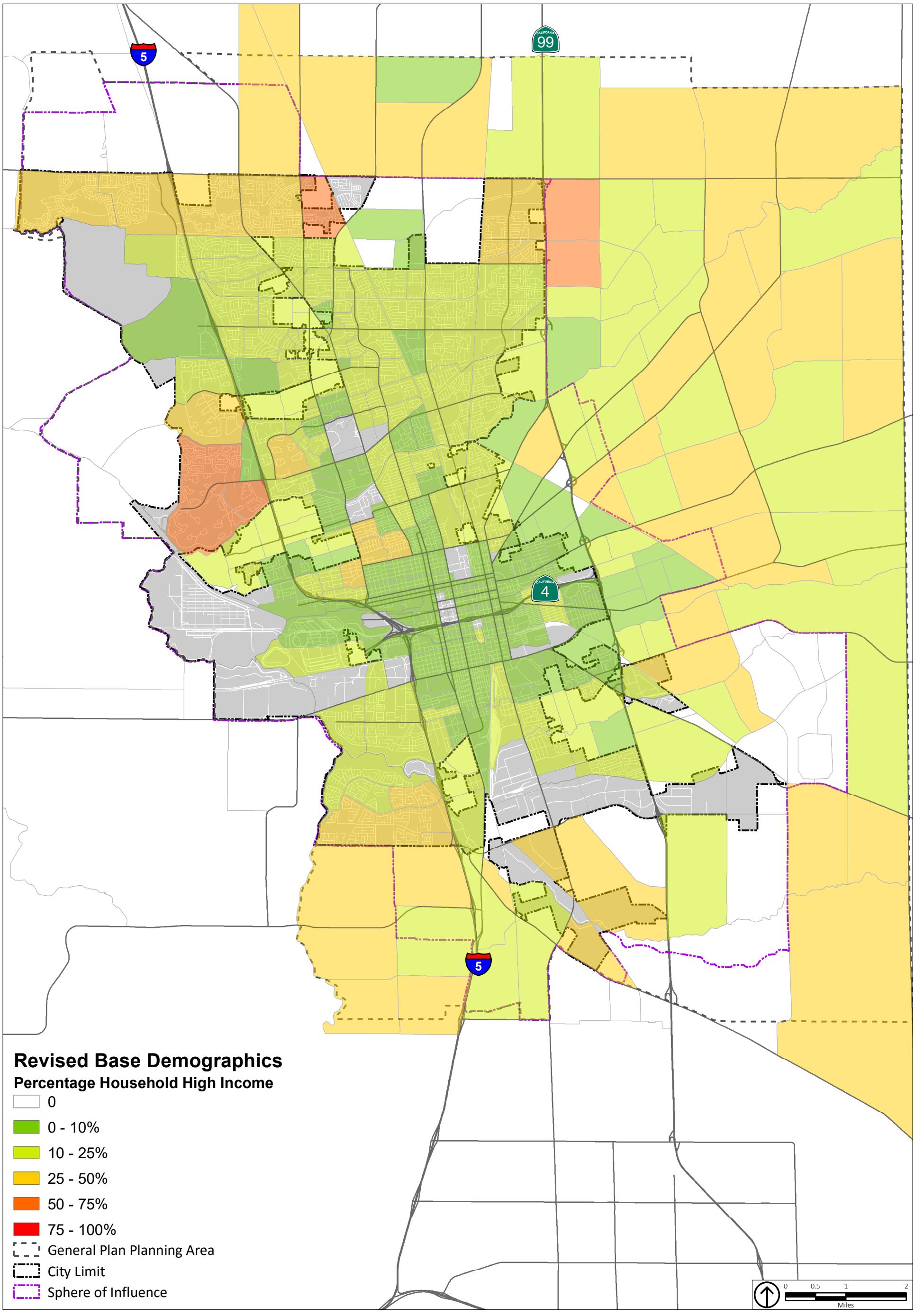

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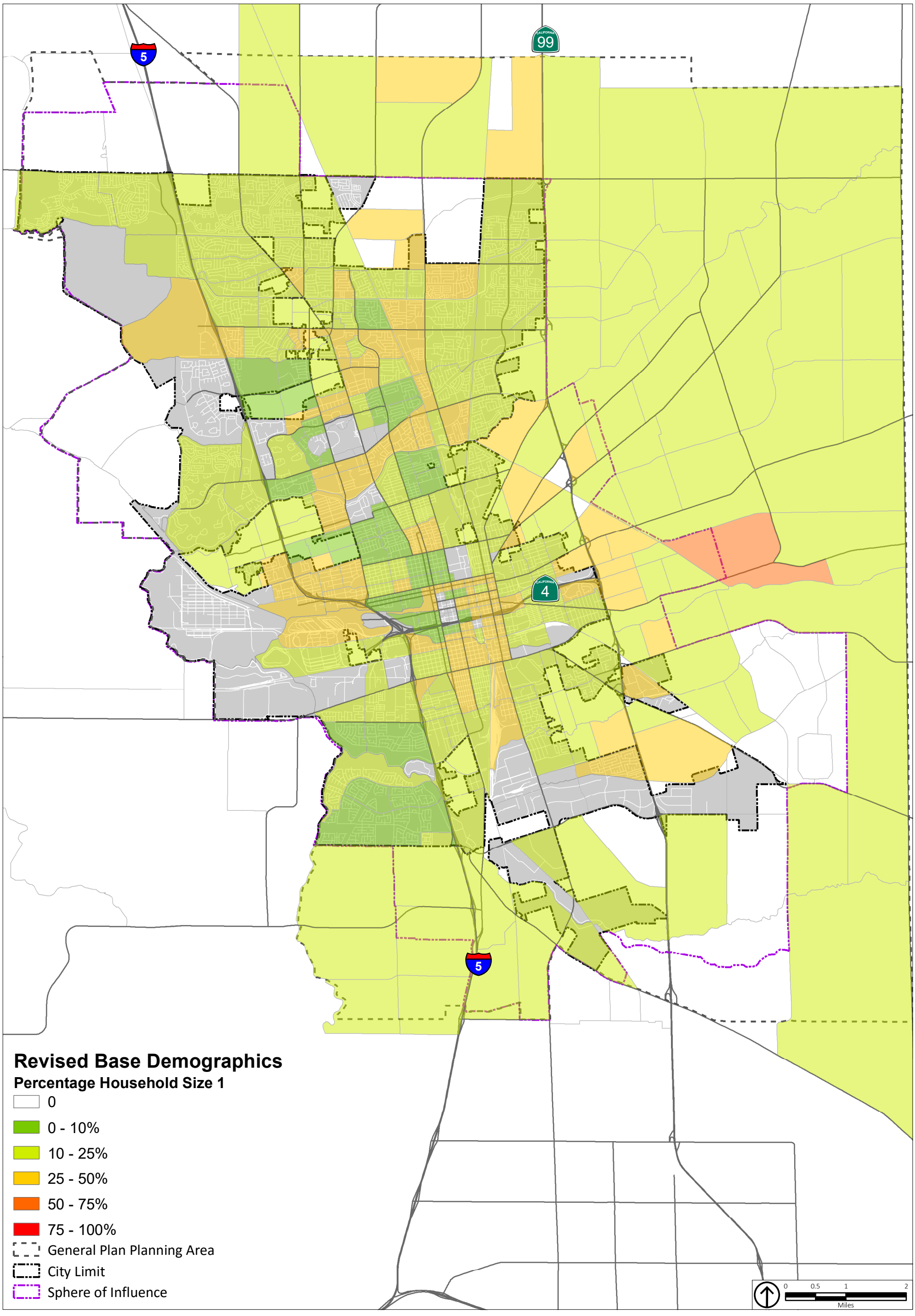

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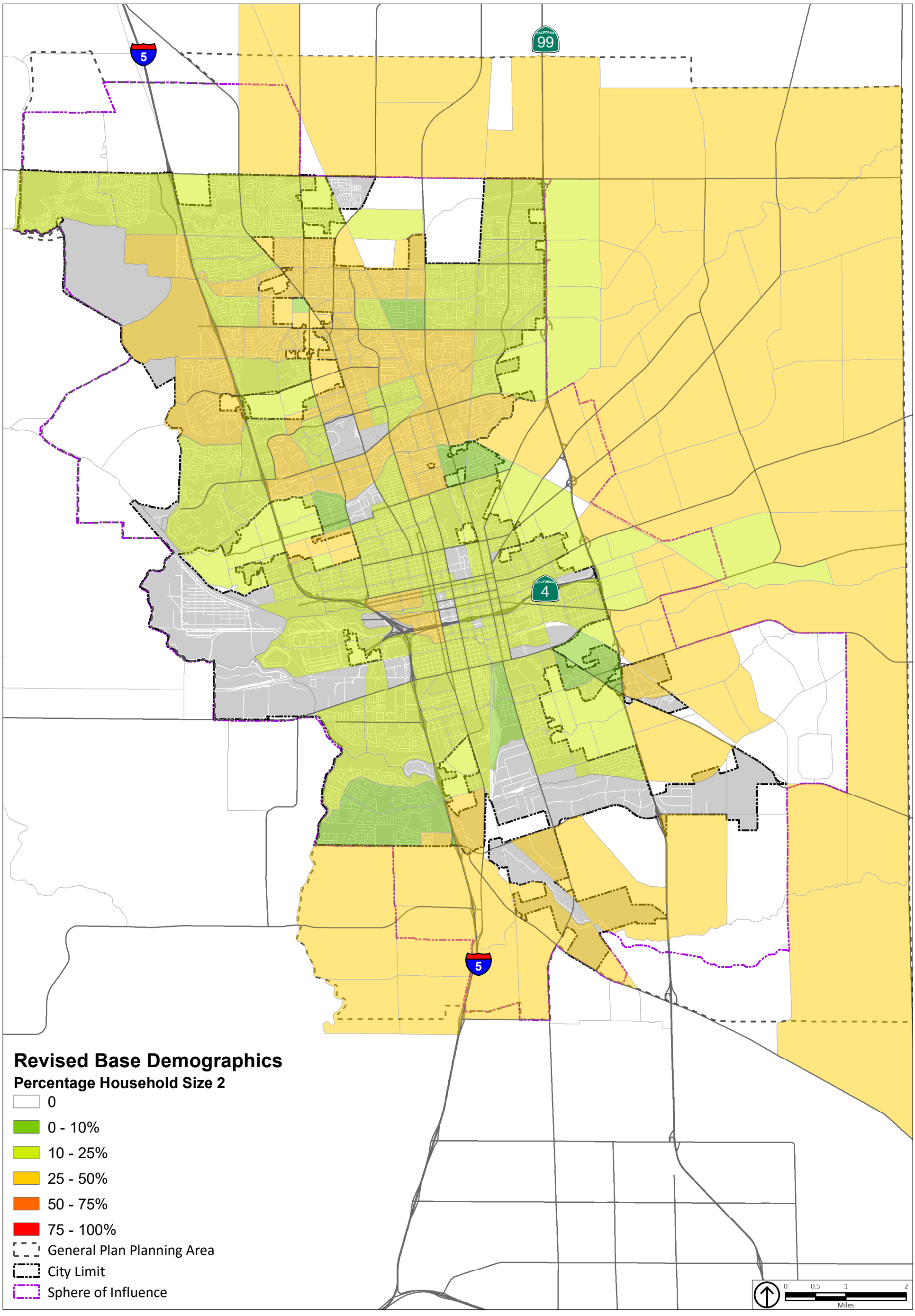

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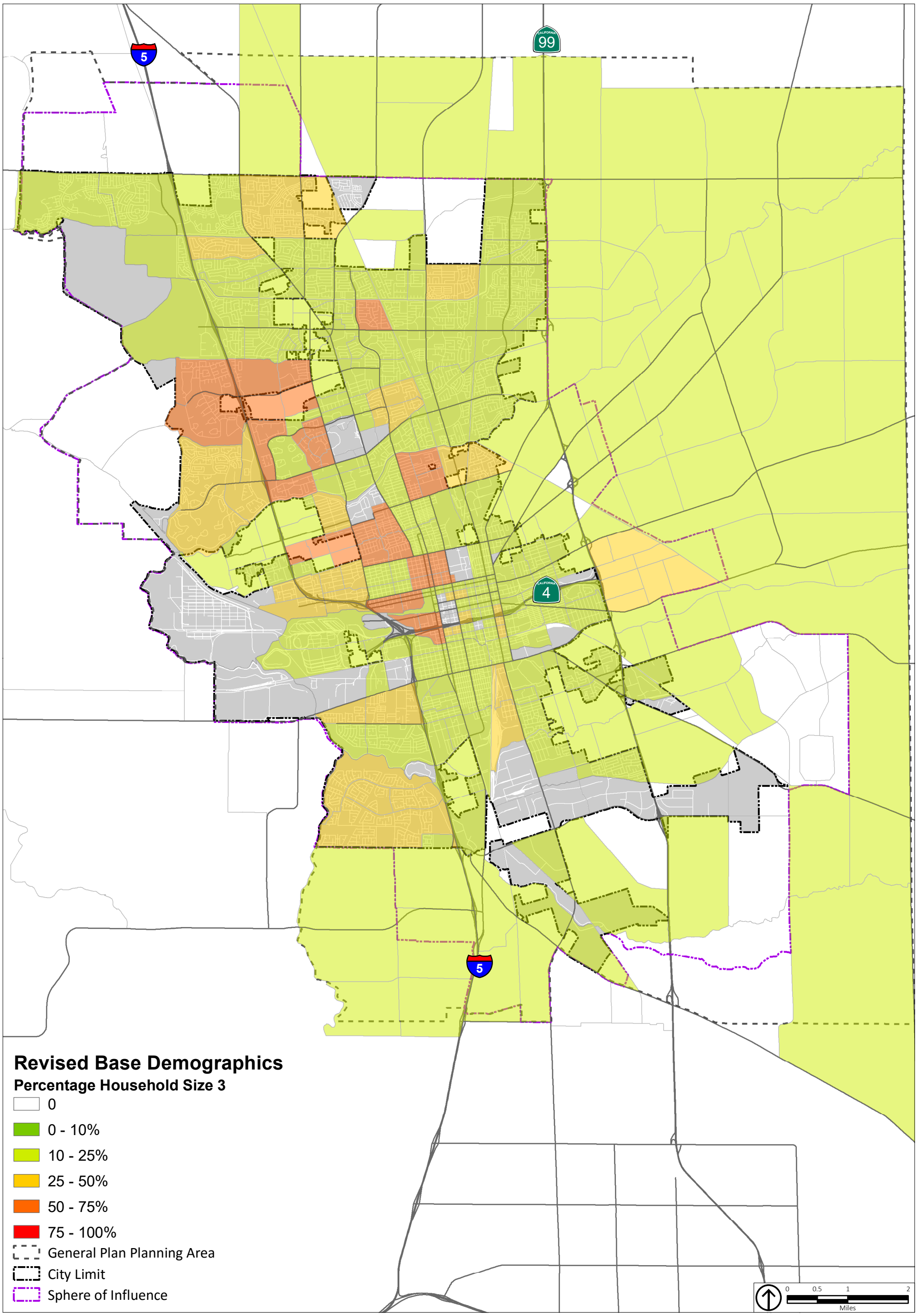

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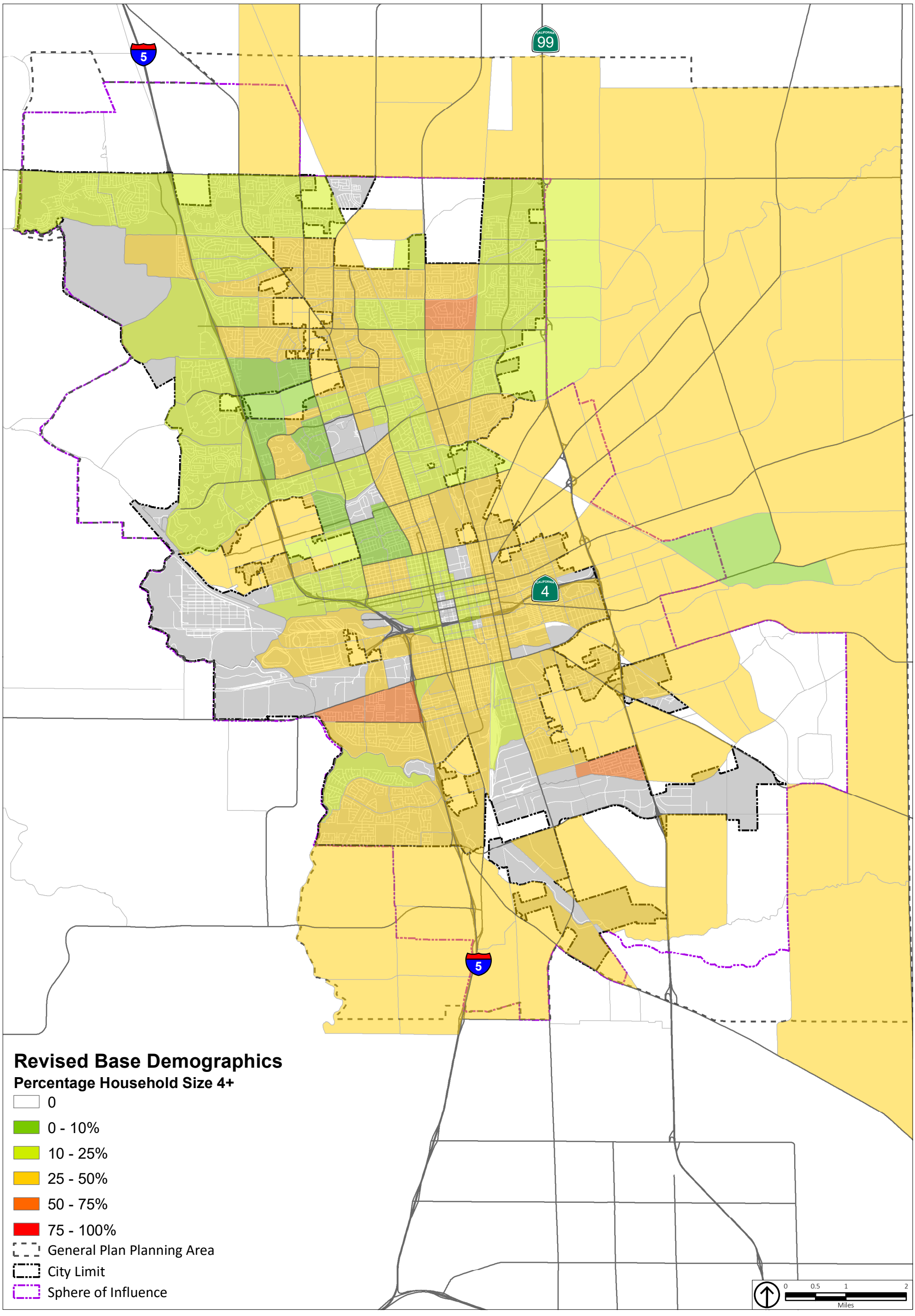

Source: Fehr & Peers, City of Stockton, 2017.

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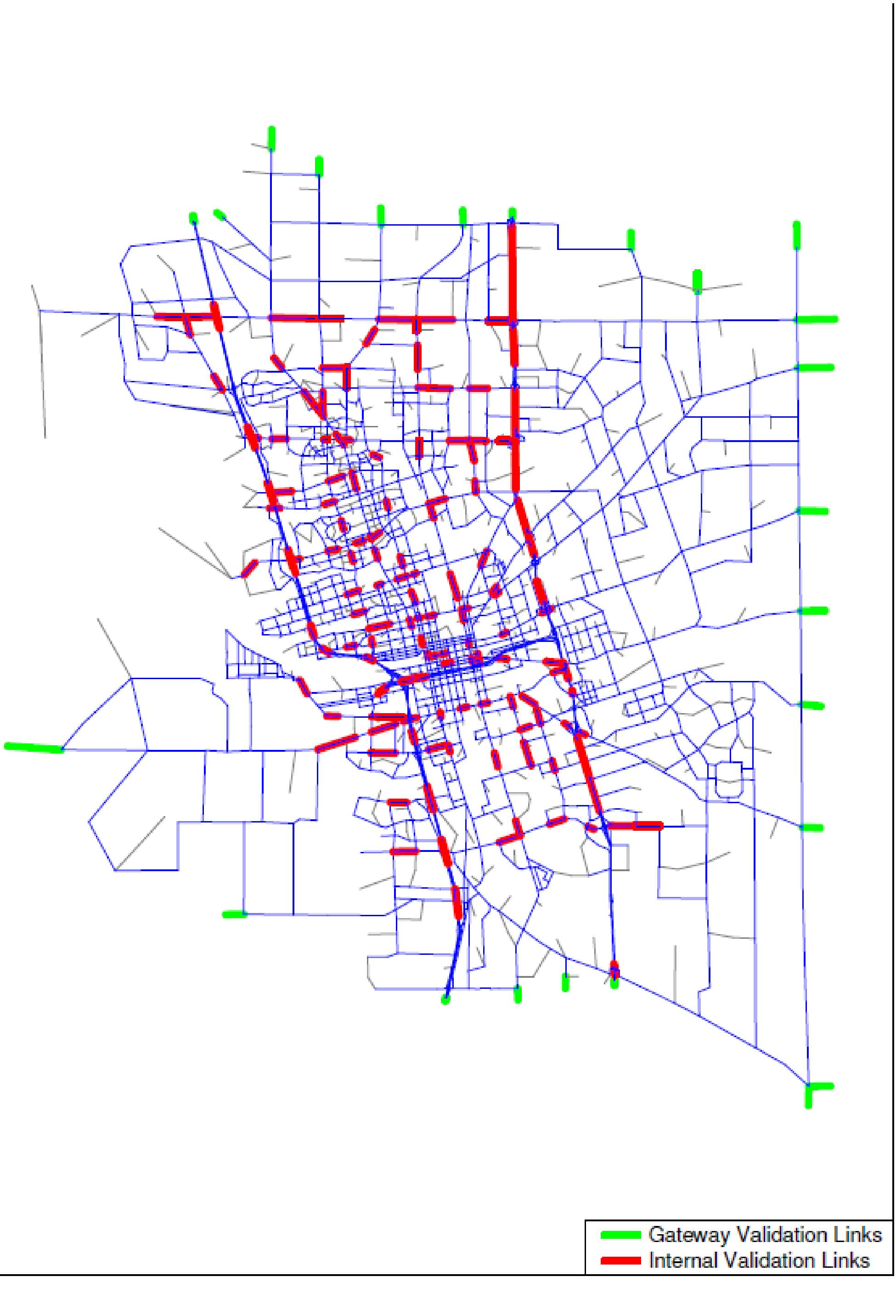

Source: Fehr & Peers, City of Stockton, 2017.

Figure 9

Validation Locations

Attachment A - Model Validation Spreadsheet

Stockton GP Validation Results: Daily Two-Way Total Traffic Volumes

											Two-Way Validation						
											Total Volume						
								Count	Model	Model	Model	Maximum	Within			Model	Difference
Screenlines	A&B	A	B	Roadway	Description	Functional Class	Direction	AB	AB	/Count	# Deviation	Deviation	Deviation			- Count	Squared
0	13168_13461	13168	13461	AIRPORT WAY from Pinchot to Roosevelt		0		19,900	23,443	1.18	0.18	0.28	Yes			3,543	12,550,358
0	12815_13462	12815	13462	AIRPORT WAY from Fremont to Lindsay		0		20,432	21,912	1.07	0.07	0.28	Yes			1,480	2,189,851
0	12849_13463	12849	13463	AIRPORT WAY from Main to Market		0		16,715	14,831	0.89	-0.11	0.29	Yes			-1,884	3,550,122
8	16025_16026	16025	16026	AIRPORT WAY from Ninth to Tenth		0		19,603	29,600	1.51	0.51	0.28	No			9,997	99,949,108
0	12926_16961	12926	16961	AIRPORT WAY from Sperry to Industrial		0		16,631	14,065	0.85	-0.15	0.29	Yes			-2,566	6,584,787
0	13122_13327	13122	13327	ALPINE AVENUE from Center to Commerce		0		14,486	17,787	1.23	0.23	0.31	Yes			3,301	10,896,833
0	13123_13124	13123	13124	ALPINE AVENUE from Sutter to San Joaquin		0		20,466	29,636	1.45	0.45	0.28	No			9,170	84,085,533
0	12929_15030	12929	15030	ARCH ROAD from Frontier to HW 99 Frontage		0		11,854	10,171	0.86	-0.14	0.34	Yes			-1,683	2,831,809
0	12930_15030	12930	15030	ARCH ROAD from Newcastle to Frontier		0		10,442	9,793	0.94	-0.06	0.36	Yes			-649	421,273
0	16028_14251	16028	14251	ARCH AIRPORT from Airport to Pock		0		16,684	22,785	1.37	0.37	0.29	No			6,101	37,219,746
6	14249_12928	14249	12928	ARCH AIRPORT from HW 99 to Quantas		0		26,933	21,222	0.79	-0.21	0.25	Yes			-5,711	32,616,369
2	13031_13793	13031	13793	BENJAMIN HOLT DR from Plymouth to Belmont		0		22,632	25,873	1.14	0.14	0.27	Yes			3,241	10,504,005
0	13034_13035	13034	13035	BENJAMIN HOLT DR from Vicksburg to Gettysburg		0		16,378	13,085	0.80	-0.20	0.29	Yes			-3,293	10,844,119
9	14570_16224	14570	16224	CAROLYN WESTON BLVD from Manthey to McDougald		0		27,667	19,221	0.69	-0.31	0.25	No			-8,446	71,340,393
0	14347_14328	14347	14328	CENTER STREET from Poplar to Flora		0		16,176	27,496	1.70	0.70	0.30	No			11,320	128,134,794
5	14376_14377	14376	14377	CHEROKEE ROAD from Sierra to Sanguinetti		0		6,417	5,846	0.91	-0.09	0.44	Yes			-571	326,054
0	13247_13246	13247	13246	CHARTER WAY from W of Fresno to W of Fresno		0		12,480	9,964	0.80	-0.20	0.34	Yes			-2,516	6,331,165
9	13248_14568	13248	14568	CHARTER WAY from Navy to Fresno		0		17,420	19,686	1.13	0.13	0.29	Yes			2,266	5,136,642
0	13249_15609	13249	15609	CHARTER WAY from I-5 to Navy		0		31,980	28,229	0.88	-0.12	0.24	Yes			-3,751	14,073,151
3	15607_15610	15607	15610	Dr. MLK BLVD from Lincoln to I-5		0		34,420	33,971	0.99	-0.01	0.24	Yes			-449	201,661
0	13255_13256	13255	13256	Dr. MLK BLVD from Airport to California		0		29,999	34,246	1.14	0.14	0.24	Yes			4,247	18,039,796
0	12877_12878	12877	12878	Dr. MLK BLVD from Wilson to Airport		0		28,543	25,095	0.88	-0.12	0.25	Yes			-3,448	11,890,953
0	13145_13143	13145	13143	COUNTRY CLUB BLVD from Pershing to Grange		0		8,915	9,169	1.03	0.03	0.38	Yes			254	64,479
0	12973_16320	12973	16320	DAVIS ROAD from Chaparral to Laramie		0		11,487	9,216	0.80	-0.20	0.34	Yes			-2,271	5,157,800
0	12972_12971	12972	12971	DAVIS ROAD from N/O Bear Creek to N/O Bear Creek		0		9,174	8,884	0.97	-0.03	0.38	Yes			-290	84,052
0	12965_12966	12965	12966	EIGHT MILE ROAD from Thornton to Davis		0		15,456	12,075	0.78	-0.22	0.30	Yes			-3,381	11,433,228
0	12967_16317	12967	16317	EIGHT MILE ROAD from Davis to Lower Sacramento		0		16,929	11,444	0.68	-0.32	0.29	No			-5,485	30,085,000
0	12967_12968	12967	12968	EIGHT MILE ROAD from Lower Sacramento to West		0		20,412	27,974	1.37	0.37	0.28	No			7,562	57,179,768
0	12968_16852	12968	16852	EIGHT MILE ROAD from West to West of SPRR		0		13,171	0	0.00	-1.00	0.33	No			-13,171	173,475,241
4	12716_13383	12716	13383	EIGHT MILE ROAD from West of Bear Creek to West of Bear Creek		0		13,532	17,396	1.29	0.29	0.33	Yes			3,864	14,933,938
0	14093_16214	14093	16214	EIGHT MILE ROAD from Trinity to I-5		0		31,486	25,890	0.82	-0.18	0.24	Yes			-5,596	31,313,839
0	14075_14093	14075	14093	EIGHT MILE ROAD from Trinity to Mokelumne		0		8,930	9,181	1.03	0.03	0.38	Yes			251	62,773
9	13263_14559	13263	14559	EIGHTH STREET from Argonaut to Fresno		0		12,024	9,407	0.78	-0.22	0.34	Yes			-2,617	6,847,559
3	14563_13266	14563	13266	EIGHTH STREET from Monroe to Lincoln		0		7,891	4,497	0.57	-0.43	0.41	No			-3,394	11,522,508
0	12888_15986	12888	15986	EIGHTH STREET from Pock to D		0		8,184	4,526	0.55	-0.45	0.41	No			-3,658	13,381,261
0	13026_14438	13026	14438	EL DORADO STREET from Lincoln to Loretta		0		17,815	12,648	0.71	-0.29	0.29	Yes			-5,167	26,699,019
7	13063_16336	13063	16336	EL DORADO STREET from Mayfair to Robinhood		0		29,196	26,615	0.91	-0.09	0.24	Yes			-2,581	6,662,156
0	13095_13107	13095	13107	EL DORADO STREET from At Calaveras River to At Calaveras River		0		29,065	40,470	1.39	0.39	0.24	No			11,405	130,077,500
0	13211_15651	13211	15651	EL DORADO STREET from Lindsay to Miner		0		20,585	27,064	1.31	0.31	0.28	No			6,479	41,978,732
0	13260_13259	13260	13259	EL DORADO STREET from MLK Blvd to First		0		12,269	8,592	0.70	-0.30	0.34	Yes			-3,677	13,522,333
8	14452_14453	14452	14453	EL DORADO STREET from Eighth to Ninth		0		13,910	9,832	0.71	-0.29	0.31	Yes			-4,078	16,633,883
0	12821_12822	12821	12822	FREMONT STREET from Broadway to Golden Gate		0		10,966	14,455	1.32	0.32	0.36	Yes			3,489	12,173,925
2	15691_16995	15691	16995	HAMMER LANE from I-5 to Mariners		0		17,005	12,651	0.74	-0.26	0.29	Yes			-4,354	18,960,420
0	13001_13002	13001	13002	HAMMER LANE from Westland to Richland		0		31,959	40,791	1.28	0.28	0.24	No			8,832	78,011,745
0	13004_26575	13004	26575	HAMMER LANE from Valencia to Pershing		0		28,614	31,278	1.09	0.09	0.25	Yes			2,664	7,099,248
0	13006_13195	13006	13195	HAMMER LANE from El Dorado to Lower Sacramento		0		41,780	53,666	1.28	0.28	0.22	No			11,886	141,272,539
5	13429_12748	13429	12748	HAMMER LANE from Holman to SPRR		0		42,061	61,456	1.46	0.46	0.22	No			19,395	376,157,843
0	13432_17574	13432	17574	HAMMER LANE from SR 99 to Holman		0		40,270	62,957	1.56	0.56	0.22	No			22,687	514,687,562
0	13159_13158	13159	13158	HARDING WAY from Pershing to Columbia		0		3,810	2,358	0.62	-0.38	0.52	Yes			-1,452	2,109,060
0	13160_14393	13160	14393	HARDING WAY from Baker to Stockton		0		11,334	8,311	0.73	-0.27	0.34	Yes			-3,023	9,139,238
0	13163_14343	13163	14343	HARDING WAY from Commerce to Madison		0		24,296	43,879	1.81	0.81	0.26	No			19,583	383,505,058
0	13164_14343	13164	14343	HARDING WAY from El Dorado to Center		0		25,910	32,949	1.27	0.27	0.26	No			7,039	49,546,421
0	13165_13166	13165	13166	HARDING WAY from California to San Joaquin		0		21,471	26,867	1.25	0.25	0.27	Yes			5,396	29,115,298
0	12790_14195	12790	14195	HARDING WAY from Wilson to Sierra Nevada		0		22,040	41,647	1.89	0.89	0.27	No			19,607	384,437,972
7	16371_12769	16371	12769	HOLMAN ROAD from Wind Flower to March		0		15,501	11,639	0.75	-0.25	0.30	Yes			-3,862	14,914,999
0	12975_12976	12975	12976	LOWER SACRAMENTO RD from Armor to Royal Oaks		0		17,617	16,552	0.94	-0.06	0.29	Yes			-1,065	1,134,025
1	12974_16861	12974	16861	LOWER SACRAMENTO RD from Beer Creek to Eight Mile		0		16,335	16,157	0.99	-0.01	0.29	Yes			-178	31,625
0	13006_13017	13006	13017	LOWER SACRAMENTO RD from Hammer to Rivera		0		17,607	14,071	0.80	-0.20	0.29	Yes			-3,536	12,502,674
0	13974_18089	13974	18089	MAIN STREET from Court to Ash		0		9,892	8,654	0.87	-0.13	0.38	Yes			-1,238	1,533,355
6	12861_15939	12861	15939	MAIN STREET from Netherton to Golden Gate		0		15,013	16,063	1.07	0.07	0.30	Yes			1,050	1,103,310
2	13864_15685	13864	15685	MARCH LANE from I-5 to Feather River		0		40,095	45,129	1.13	0.13	0.22	Yes			5,034	25,344,774
0	13077_13859	13077	13859	MARCH LANE from Grouse Run to Quail Lakes		0		43,045	38,980	0.91	-0.09	0.21	Yes			-4,065	16,527,877
0	13811_15451	13811	15451	MARCH LANE from Pacific to Pershing		0		42,910	55,833	1.30	0.30	0.21	No			12,923	167,016,246
0	13081_16338	13081	16338	MARCH LANE from Claremont to Pacific		0		33,069	46,758	1.41	0.41	0.24	No			13,689	187,376,850
0	13433_13760	13433	13760	MARCH LANE from Bianchi to West		0		28,718	19,770	0.69	-0.31	0.25	No			-8,948	80,061,146
0	14245_15984	14245	15984	MARIPOSA ROAD from Stagecoach to SR 99		0		11,297	25,050	2.22	1.22	0.34	No			13,753	189,157,634
6	12910_15978	12910	15978	MARIPOSA ROAD from Farmington to SR 99		0		12,282	11,130	0.91	-0.09	0.34	Yes			-1,152	1,326,764
0	15983_12890	15983	12890	MARIPOSA ROAD from MLK Blvd to Farmington		0		14,258	12,819	0.90	-0.10	0.31	Yes			-1,439	2,071,407
0	13212_15652	13212	15652	MINER AVENUE from El Dorado to Center		0		7,162	7,490	1.05	0.05	0.44	Yes			328	107,279
2	13174_13175	13174	13175	MONTE DIABLO AVENUE from Buena Vista to San Juan		0		3,540	3,307	0.93	-0.07	0.58	Yes			-233	54,107

Attachment A - Model Validation Spreadsheet

Stockton GP Validation Results: Daily Two-Way Total Traffic Volumes																		
											Two-Way Validation							
											Total Volume							
									Count	Model	Model	Model	Maximum	Within			Model	Difference
Screenlines	A&B	A	B	Roadway	Description	Functional Class	Direction		AB	AB	/Count	# Deviation	Deviation	Deviation			- Count	Squared
0	12996_12999	12996	12999	MORADA LANE from Cherbourg to West		0			14,284	11,178	0.78	-0.22	0.31	Yes			-3,106	9,645,119
4	16113_12740	16113	12740	MORADA LANE from Holman to Hwy 99		0			16,615	14,014	0.84	-0.16	0.29	Yes			-2,601	6,766,324
0	12740_12741	12740	12741	MORADA LANE from Mosher Creek to Holman		0			16,160	14,961	0.93	-0.07	0.30	Yes			-1,199	1,436,892
9	13249_13468	13249	13468	NAVY DRIVE from Josephine to Fresno		0			3,964	2,887	0.73	-0.27	0.52	Yes			-1,077	1,159,941
0	13036_13041	13036	13041	PACIFIC AVENUE from Douglas to Porter		0			39,968	28,640	0.72	-0.28	0.22	No			-11,328	128,324,867
7	13081_15453	13081	15453	PACIFIC AVENUE from Yokuts to March		0			33,725	44,338	1.31	0.31	0.24	No			10,613	112,633,530
0	13057_13091	13057	13091	PACIFIC AVENUE from At Calaveras River to At Calaveras River		0			29,204	47,963	1.64	0.64	0.24	No			18,759	351,912,098
0	13163_14365	13163	14365	PACIFIC AVENUE from Cleveland to Wyandotte		0			20,156	38,711	1.92	0.92	0.28	No			18,555	344,280,487
7	13066_15419	13066	15419	PERSHING AVENUE from Venetian to Burke-Bradley		0			24,739	18,128	0.73	-0.27	0.26	No			-6,611	43,704,727
0	13862_14707	13862	14707	PERSHING AVENUE from At Calaveras River to At Calaveras River		0			31,862	39,514	1.24	0.24	0.24	Yes			7,652	58,546,827
0	13184_14413	13184	14413	PERSHING AVENUE from Magnolia to Acacia		0			20,441	39,743	1.94	0.94	0.28	No			19,302	372,549,712
0	12891_13511	12891	13511	POCK LANE from Mariposa to Sixth		0			3,719	5,050	1.36	0.36	0.58	Yes			1,331	1,771,694
0	12925_12926	12925	12926	SPERRY ROAD from Airport to McKinley		0			19,890	22,073	1.11	0.11	0.28	Yes			2,183	4,765,540
0	13794_13795	13794	13795	SWAIN ROAD from Plymouth to Morgan		0			10,693	12,831	1.20	0.20	0.36	Yes			2,138	4,571,303
0	12983_12985	12983	12985	THORNTON ROAD from Waudman to Davis		0			25,073	21,530	0.86	-0.14	0.26	Yes			-3,543	12,555,908
0	12985_16321	12985	16321	THORNTON ROAD from Aberdeen to Cortez		0			37,459	26,314	0.70	-0.30	0.23	No			-11,145	124,218,034
0	13005_13648	13005	13648	THORNTON ROAD from Hammer to Rivera		0			22,652	31,240	1.38	0.38	0.27	No			8,588	73,749,148
1	14093_30023	14093	30023	TRINITY PKWY from Scott Creek to 8 Mile		0			14,257	16,710	1.17	0.17	0.31	Yes			2,453	6,015,139
5	12798_16016	12798	16016	WATERLOO ROAD from E to Williams		0			13,886	15,780	1.14	0.14	0.31	Yes			1,894	3,588,542
0	12968_16860	12968	16860	WEST LANE from 8 Mile to Morada		0			17,184	15,751	0.92	-0.08	0.29	Yes			-1,433	2,053,041
1	12996_14429	12996	14429	WEST LANE from Dalewood to Westmora		0			25,017	23,009	0.92	-0.08	0.26	Yes			-2,008	4,033,617
0	13010_13013	13010	13013	WEST LANE from Hammer to Hammertown		0			31,754	59,408	1.87	0.87	0.24	No			27,654	764,738,315
7	13099_13760	13099	13760	WEST LANE from March to Bianchi		0			35,677	39,505	1.11	0.11	0.23	Yes			3,828	14,656,007
0	13169_16372	13169	16372	WEST LANE from Bradford to Walnut		0			23,216	42,877	1.85	0.85	0.27	No			19,661	386,565,520
5	12794_14385	12794	14385	WILSON WAY from McAllen to Alpine		0			16,287	13,080	0.80	-0.20	0.29	Yes			-3,207	10,287,142
0	14314_12848	14314	12848	WILSON WAY from Main to Market		0			26,040	32,872	1.26	0.26	0.26	Yes			6,832	46,671,634
0	17547_17546	17547	17546	ROUTE 99 from North of Eight Mile Road to North of Eight Mile Road		0	NB		42,955	44,358	1.03	0.03	0.21	Yes			1,404	1,970,328
0	17544_17545	17544	17545	ROUTE 99 from North of Eight Mile Road to North of Eight Mile Road		0	SB		42,955	44,311	1.03	0.03	0.21	Yes			1,357	1,841,184
1	17556_17555	17556	17555	ROUTE 99 from Eight Mile Road to Morada Lane		0	NB		40,500	48,624	1.20	0.20	0.22	Yes			8,124	65,994,108
1	17553_17554	17553	17554	ROUTE 99 from Eight Mile Road to Morada Lane		0	SB		40,500	48,236	1.19	0.19	0.22	Yes			7,736	59,847,207
0	17565_17566	17565	17566	ROUTE 99 from Morada Lane to Hammer Lane		0	SB		43,000	55,016	1.28	0.28	0.21	No			12,016	144,386,321
0	17564_17563	17564	17563	ROUTE 99 from Morada Lane to Hammer Lane		0	NB		43,000	56,262	1.31	0.31	0.21	No			13,262	175,877,225
0	17575_30060	17575	30060	ROUTE 99 from Hammer Lane to Wilson Way		0	SB		52,500	73,008	1.39	0.39	0.20	No			20,508	420,567,490
0	30061_17577	30061	17577	ROUTE 99 from Hammer Lane to Wilson Way		0	NB		52,500	69,326	1.32	0.32	0.20	No			16,826	283,120,849
0	17593_17594	17593	17594	ROUTE 99 from Wilson Way to Cherokee Road		0	SB		49,061	67,168	1.37	0.37	0.20	No			18,108	327,896,269
0	17597_17596	17597	17596	ROUTE 99 from Wilson Way to Cherokee Road		0	NB		49,061	62,652	1.28	0.28	0.20	No			13,592	184,732,695
0	17603_17602	17603	17602	ROUTE 99 from Cherokee Road to Waterloo Road		0	NB		53,628	62,817	1.17	0.17	0.20	Yes			9,189	84,444,110
0	17604_17605	17604	17605	ROUTE 99 from Cherokee Road to Waterloo Road		0	SB		53,628	68,627	1.28	0.28	0.20	No			14,999	224,967,658
0	17649_17650	17649	17650	ROUTE 99 from Waterloo Road to Fremont Street		0	SB		57,693	76,731	1.33	0.33	0.19	No			19,039	362,467,755
0	17652_17651	17652	17651	ROUTE 99 from Waterloo Road to Fremont Street		0	NB		57,693	69,030	1.20	0.20	0.19	No			11,337	128,528,278
0	17677_17702	17677	17702	ROUTE 99 from Crosstown Freeway to Dr. Martin Luther King Jr. Blvd		0	SB		51,700	57,177	1.11	0.11	0.20	Yes			5,477	29,998,470
0	17703_17673	17703	17673	ROUTE 99 from Crosstown Freeway to Dr. Martin Luther King Jr. Blvd		0	NB		51,700	61,411	1.19	0.19	0.20	Yes			9,711	94,294,265
0	17705_17704	17705	17704	ROUTE 99 from Dr. Martin Luther King Jr. Blvd to Farmington Road		0	NB		47,850	61,411	1.28	0.28	0.20	No			13,561	183,887,796
0	17706_17707	17706	17707	ROUTE 99 from Dr. Martin Luther King Jr. Blvd to Farmington Road		0	SB		47,850	57,177	1.19	0.19	0.20	Yes			9,327	86,994,532
0	17718_26596	17718	26596	ROUTE 99 from Farmington Road to Stockton, Jct. Rte. 4 West; Mariposa Road		0	SB		40,150	57,177	1.42	0.42	0.22	No			17,027	289,921,656
0	26597_17721	26597	17721	ROUTE 99 from Farmington Road to Stockton, Jct. Rte. 4 West; Mariposa Road		0	NB		40,150	61,411	1.53	0.53	0.22	No			21,261	452,009,857
0	17742_17743	17742	17743	ROUTE 99 from Mariposa Road to Arch Road		0	SB		39,000	44,471	1.14	0.14	0.22	Yes			5,471	29,933,679
0	17740_17739	17740	17739	ROUTE 99 from Mariposa Road to Arch Road		0	NB		39,000	43,763	1.12	0.12	0.22	Yes			4,763	22,683,304
0	17799_17803	17799	17803	ROUTE 99 from Turner Station-French Camp Road to Turner Station-French Camp Road		0	SB		37,000	30,015	0.81	-0.19	0.23	Yes			-6,985	48,795,109
0	17805_17795	17805	17795	ROUTE 99 from Turner Station-French Camp Road to Turner Station-French Camp Road		0	NB		37,000	29,544	0.80	-0.20	0.23	Yes			-7,456	55,593,247
9	18104_18105	18104	18105	ROUTE 4 from West of I-5 to Fresno Ave Begin Crosstown		0	EB		9,075	12,401	1.37	0.37	0.38	Yes			3,326	11,061,230
9	18102_18103	18102	18103	ROUTE 4 from West of I-5 to Fresno Ave Begin Crosstown		0	WB		9,075	12,291	1.35	0.35	0.38	Yes			3,216	10,343,849
0	18096_18083	18096	18083	ROUTE 4 from Begin Crosstown @ I-5 to Begin Crosstown @ I-5		0	EB		42,500	49,663	1.17	0.17	0.21	Yes			7,163	51,308,569
0	18095_18097	18095	18097	ROUTE 4 from Begin Crosstown @ I-5 to Begin Crosstown @ I-5		0	WB		42,500	57,783	1.36	0.36	0.21	No			15,283	233,555,164
1	17300_18206	17300	18206	INTERSTATE 5 from Eight Mile Road Interchange to Eight Mile Road Interchange		0	NB		32,500	33,064	1.02	0.02	0.24	Yes			564	318,431
1	18207_17299	18207	17299	INTERSTATE 5 from Eight Mile Road Interchange to Eight Mile Road Interchange		0	SB		32,500	32,673	1.01	0.01	0.24	Yes			173	29,840
0	17278_17286	17278	17286	INTERSTATE 5 from Hammer Lane Interchange to Hammer Lane Interchange		0	NB		39,000	44,486	1.14	0.14	0.22	Yes			5,486	30,094,867
0	17285_17277	17285	17277	INTERSTATE 5 from Hammer Lane Interchange to Hammer Lane Interchange		0	SB		39,000	43,410	1.11	0.11	0.22	Yes			4,410	19,451,546
0	17265_17267	17265	17267	INTERSTATE 5 from Benjamin Holt Drive Interchange to Benjamin Holt Drive Interchange		0	NB		53,000	51,277	0.97	-0.03	0.20	Yes			-1,723	2,969,927
0	17266_17264	17266	17264	INTERSTATE 5 from Benjamin Holt Drive Interchange to Benjamin Holt Drive Interchange		0	SB		53,000	50,103	0.95	-0.05	0.20	Yes			-2,897	8,393,560
0	17253_17255	17253	17255	INTERSTATE 5 from March Lane Interchange to March Lane Interchange		0	NB		60,000	58,227	0.97	-0.03	0.18	Yes			-1,773	3,142,878
0	17254_17252	17254	17252	INTERSTATE 5 from March Lane Interchange to March Lane Interchange		0	SB		60,000	56,782	0.95	-0.05	0.18	Yes			-3,218	10,356,555
0	17231_18203	17231	18203	INTERSTATE 5 from Country Club Blvd to Country Club Blvd		0	SB		60,500	97,176	1.61	0.61	0.18	No			36,676	1,345,152,471
0	18202_17232	18202	17232	INTERSTATE 5 from Country Club Blvd to Country Club Blvd		0	NB		60,500	91,008	1.50	0.50	0.18	No			30,508	930,716,137
0	18193_18194	18193	18194	INTERSTATE 5 from Monte Diablo Ave Interchange to Monte Diablo Ave Interchange		0	SB		67,364	94,583	1.40	0.40	0.17	No			27,219	740,860,352
0	18189_18190	18189	18190	INTERSTATE 5 from Monte Diablo Ave Interchange to Monte Diablo Ave Interchange		0	NB		67,364	95,580	1.42	0.42	0.17	No			28,216	796,158,528
0	18177_18119	18177	18119	INTERSTATE 5 from Pershing Avenue Interchange to Pershing Avenue Interchange		0	SB		68,587	90,179	1.31	0.31	0.17	No			21,592	466,218,513
0	18173_18174	18173	18174	INTERSTATE 5 from Pershing Avenue Interchange to Pershing Avenue Interchange		0	NB		68,587	92,060	1.34	0.34	0.17	No			23,473	550,982,096
0	17216_17219	17216	17219	INTERSTATE 5 from Eight Street to Eight Street		0	NB		75,900	95,387	1.26	0.26	0.15	No			19,487	379,753,217
0	17218_17217	17218	17217	INTERSTATE 5 from Eight Street to Eight Street		0	SB		75,900	97,426	1.28	0.28	0.15	No			21,526	463,376,076

Attachment A - Model Validation Spreadsheet

Stockton GP Validation Results: Daily Two-Way Total Traffic Volumes

Screenlines	A&B	A	B	Roadway	Description	Functional Class	Direction	Count AB	Model AB	Two-Way Validation Total Volume: Model /Count	Model # Deviation	Maximum Deviation	Within Deviation			Model - Count	Difference Squared
0	17201_17203	17201	17203	INTERSTATE 5 from Downing Avenue to Downing Avenue		0	NB	56,819	75,274	1.32	0.32	0.19	No			18,455	340,593,657
0	17202_17200	17202	17200	INTERSTATE 5 from Downing Avenue to Downing Avenue		0	SB	56,819	78,865	1.39	0.39	0.19	No			22,046	486,023,705
0	17196_17187	17196	17187	INTERSTATE 5 from French Camp Turnpike Interchange to French Camp Turnpike Interchange		0	SB	60,000	56,566	0.94	-0.06	0.18	Yes			-3,434	11,792,866
0	17186_17197	17186	17197	INTERSTATE 5 from French Camp Turnpike Interchange to French Camp Turnpike Interchange		0	NB	60,000	55,687	0.93	-0.07	0.18	Yes			-4,313	18,605,844
0	17184_17174	17184	17174	INTERSTATE 5 from Mathews Road to Mathews Road		0	SB	57,750	58,425	1.01	0.01	0.19	Yes			675	455,456
0	17175_17185	17175	17185	INTERSTATE 5 from Mathews Road to Mathews Road		0	NB	57,750	57,684	1.00	0.00	0.19	Yes			-66	4,302

Indicates Model Below Target Volume

Indicates Model Above Target High Volume

Combined Freeway and Local	**4,438,529**	**5,181,388**	**Model/Count Ratio =**	**1.17**	
			Percent Within Caltrans Maximum Deviation =	**62%**	> 75%
			Percent Root Mean Square Error =	**36%**	< 30%
			Correlation Coefficient =	**0.94**	> 0.88
Local	**1,962,468**	**2,193,607**	**Model/Count Ratio =**	**1.12**	
			Percent Within Caltrans Maximum Deviation =	**66%**	> 75%
			Percent Root Mean Square Error =	**41%**	< 30%
			Correlation Coefficient =	**0.85**	> 0.88
Freeway	**6,914,590**	**8,169,170**	**Model/Count Ratio =**	**1.18**	
			Percent Within Caltrans Maximum Deviation =	**54%**	> 75%
			Percent Root Mean Square Error =	**30%**	< 30%
			Correlation Coefficient =	**0.86**	> 0.88

Stockton GP Validation Results: Daily Two-Way Total Traffic Volumes Screenlines

Name	Screenline	Count AB	Model AB	Model /Count	Model # Deviation	Maximum Deviation	Within Deviation			Model - Count	Difference Squared
NB/SB movements South of Eight Mile Road	1	201,609	218,472	1.08	0.08	0.18	Yes			16,863	284,366,533
EB/WB Movements East of I5 & North of SR4	2	83,272	86,960	1.04	0.04	0.26	Yes			3,688	13,604,159
EB/WB Movements East of I5 & South of SR4	3	42,311	38,467	0.91	-0.09	0.36	Yes			-3,844	14,772,864
EB/WB Movements West of SR99 & North of Hammer	4	30,147	31,410	1.04	0.04	0.4	Yes			1,263	1,595,749
EB/WB Movements W of SR99 from Hammer to SR4	5	78,651	96,162	1.22	0.22	0.27	Yes			17,511	306,626,879
EB/WB Movements W of SR99 South of SR4	6	54,228	48,415	0.89	-0.11	0.32	Yes			-5,813	33,785,633
NB/SB Movements around March Lane	7	138,838	140,225	1.01	0.01	0.21	Yes			1,387	1,924,175
NB/SB Movements south of SR4	8	33,513	39,432	1.18	0.18	0.39	Yes			5,919	35,034,434
EB/SB Movements West of I5	9	79,225	75,893	0.96	-0.04	0.27	Yes			-3,332	11,100,021

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
101	0	0	0	0	0	0	0
102	378	22	400	0	0	17	17
103	323	1	324	27	0	231	258
104	446	0	446	0	0	0	0
105	0	0	0	0	2	12	14
106	0	0	0	0	0	3	3
107	0	2	2	0	0	0	0
108	0	0	0	0	0	0	0
109	63	41	104	0	0	69	69
110	0	0	0	0	0	43	43
111	446	354	800	17	1	202	220
112	477	51	528	18	27	295	340
113	239	208	447	16	2	130	148
114	363	73	436	53	92	864	1,009
115	234	69	303	0	4	24	28
116	108	0	108	0	0	0	0
117	627	47	674	0	0	0	0
118	400	41	441	0	0	78	78
119	502	58	560	0	0	37	37
120	486	87	573	55	13	64	132
121	225	250	475	0	1	36	37
122	223	27	250	4	0	72	76
123	422	48	470	11	0	18	29
124	270	61	331	8	5	13	26
125	874	24	898	0	0	3	3
126	115	85	200	51	3	93	147
127	209	28	237	0	28	213	241
128	16	1	17	0	0	0	0
129	15	0	15	0	0	75	75
130	20	81	101	0	26	1,667	1,693
131	9	7	16	0	19	265	284
132	121	49	170	25	0	42	67
133	242	41	283	0	0	60	60
134	521	56	577	0	0	9	9
135	366	89	455	56	0	41	97
136	165	28	193	14	0	143	157
137	310	34	344	0	0	3	3
138	278	48	326	0	0	29	29
139	358	31	389	0	2	9	11
140	0	0	0	0	0	112	112
141	315	6	321	5	5	308	318
142	182	62	244	0	0	20	20
143	184	24	208	3	0	16	19
144	44	25	69	11	0	41	52
145	55	3	58	0	0	0	0
146	175	30	205	1	0	5	6
147	509	133	642	1	0	28	29
148	603	251	854	0	2	31	33
149	206	0	206	226	27	187	440
150	241	186	427	188	109	236	533
151	162	175	337	0	0	55	55
152	314	78	392	0	2	109	111
153	367	91	458	0	0	47	47
154	282	19	301	6	1	10	17
155	140	34	174	0	0	0	0
156	165	0	165	0	0	0	0
157	37	1	38	104	0	4	108
158	17	0	17	66	14	113	193
159	187	243	430	173	313	195	681
160	24	32	56	30	19	58	107
161	61	82	143	5	20	112	137
162	99	0	99	0	0	0	0
163	15	66	81	7	116	113	236
164	152	2	154	69	63	174	306
165	0	0	0	3	419	89	511
166	19	427	446	0	180	71	251
167	14	0	14	0	0	0	0
168	163	258	421	0	39	109	148
169	0	301	301	8	230	283	521
170	4	298	302	47	435	131	613
171	0	0	0	193	44	95	332
172	0	0	0	136	7	5	148

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
173	107	631	738	34	59	292	385
174	21	73	94	19	42	537	598
175	0	11	11	26	0	103	129
176	3	110	113	0	14	34	48
177	14	299	313	0	0	58	58
178	2	24	26	5	0	222	227
179	33	62	95	32	0	21	53
180	39	25	64	5	0	80	85
181	40	27	67	14	0	27	41
182	24	42	66	9	0	24	33
183	17	39	56	158	0	34	192
184	15	12	27	70	18	5	93
185	34	61	95	3	0	105	108
186	13	69	82	0	1	111	112
187	15	3	18	0	23	45	68
188	8	17	25	84	2	75	161
189	8	43	51	2	1	133	136
190	0	32	32	0	0	100	100
191	0	0	0	0	6	127	133
192	22	65	87	0	0	49	49
193	34	137	171	0	0	14	14
194	14	80	94	7	58	29	94
195	8	27	35	41	5	20	66
196	0	0	0	2	39	251	292
197	0	0	0	0	9	453	462
198	0	0	0	10	506	1,596	2,112
199	0	3	3	11	205	57	273
200	8	139	147	64	0	159	223
201	7	89	96	0	54	461	515
202	0	0	0	4	91	228	323
203	1	117	118	25	33	395	453
204	0	72	72	36	1,018	178	1,232
205	0	0	0	30	380	276	686
206	24	75	99	0	0	56	56
207	4	0	4	114	3	88	205
208	0	200	200	0	708	274	982
209	0	278	278	0	85	506	591
210	0	4	4	40	2	202	244
211	133	97	230	133	374	390	897
212	65	277	342	17	106	403	526
213	432	83	515	1	1	5	7
214	196	51	247	1	2	83	86
215	153	477	630	13	55	169	237
216	74	411	485	15	51	315	381
217	21	336	357	2	7	117	126
218	67	394	461	5	107	1,434	1,546
219	119	190	309	0	2	103	105
220	252	68	320	15	12	21	48
221	317	137	454	191	3	198	392
222	30	100	130	0	0	107	107
223	25	47	72	4	26	47	77
224	38	39	77	0	1	2	3
225	64	47	111	0	1	230	231
226	8	20	28	9	0	403	412
227	381	163	544	104	13	333	450
228	237	213	450	28	5	123	156
229	208	164	372	30	1	222	253
230	37	20	57	4	2	63	69
231	0	0	0	769	66	2,739	3,574
232	0	0	0	19	115	267	401
233	78	30	108	0	0	348	348
234	0	0	0	0	0	145	145
235	0	0	0	0	0	0	0
236	89	407	496	0	0	115	115
237	318	55	373	6	0	16	22
238	344	29	373	0	0	40	40
239	320	5	325	0	0	0	0
240	276	97	373	0	70	37	107
241	7	6	13	63	130	315	508
242	69	74	143	18	0	264	282
243	274	481	755	122	1	40	163
244	197	3	200	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
245	576	156	732	0	0	0	0
246	293	253	546	0	6	42	48
247	0	0	0	0	0	2,339	2,339
248	411	228	639	27	14	41	82
249	293	1	294	0	11	0	11
250	431	14	445	0	0	0	0
251	459	40	499	23	9	281	313
252	381	72	453	1	14	167	182
253	438	106	544	0	0	68	68
254	126	21	147	6	16	429	451
255	321	192	513	19	7	389	415
256	233	146	379	113	48	285	446
257	536	98	634	5	18	159	182
258	426	67	493	28	3	143	174
259	248	2	250	0	0	0	0
260	110	245	355	0	0	5	5
261	192	0	192	90	541	564	1,195
262	605	10	615	0	0	0	0
263	136	22	158	320	68	1,194	1,582
264	102	17	119	114	4	91	209
265	112	31	143	0	0	215	215
266	148	45	193	203	18	236	457
267	59	19	78	734	373	3,330	4,437
268	425	23	448	0	1	6	7
269	150	22	172	80	0	1,250	1,330
270	47	53	100	26	2	68	96
271	81	12	93	0	0	67	67
272	285	28	313	0	0	0	0
273	329	59	388	2	0	28	30
274	295	79	374	9	2	105	116
275	136	35	171	36	1	60	97
276	0	0	0	0	0	0	0
277	0	0	0	8	136	490	634
278	0	0	0	0	36	134	170
279	231	37	268	13	15	66	94
280	315	82	397	59	22	43	124
281	277	178	455	28	0	76	104
282	56	6	62	0	7	288	295
283	130	51	181	0	0	14	14
284	208	63	271	0	0	2	2
285	186	23	209	0	0	344	344
286	384	1	385	0	1	79	80
287	382	197	579	46	58	285	389
288	422	208	630	26	3	23	52
289	109	27	136	25	56	300	381
290	1	24	25	82	0	152	234
291	32	14	46	71	0	26	97
292	393	57	450	9	2	46	57
293	322	21	343	20	0	24	44
294	251	39	290	0	1	133	134
295	248	97	345	8	23	113	144
296	510	0	510	0	23	82	105
297	565	0	565	0	0	0	0
298	0	0	0	0	0	0	0
299	0	0	0	181	0	3,361	3,542
300	551	13	564	205	0	1,466	1,671
301	0	0	0	0	58	1,662	1,720
302	959	0	959	0	0	0	0
303	0	0	0	0	0	76	76
304	1,026	777	1,803	14	64	210	288
305	988	964	1,952	75	124	140	339
306	253	0	253	0	0	529	529
307	103	360	463	12	10	46	68
308	101	384	485	10	129	294	433
309	33	477	510	50	36	113	199
310	134	201	335	0	0	13	13
311	0	0	0	0	3	1,786	1,789
312	402	420	822	124	78	419	621
313	397	164	561	0	369	361	730
314	1	206	207	21	60	456	537
315	13	237	250	0	1	320	321
316	278	536	814	136	566	658	1,360

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
317	66	325	391	124	119	423	666
318	1,889	0	1,889	1	788	693	1,482
319	341	128	469	26	761	539	1,326
320	57	44	101	30	25	93	148
321	75	65	140	0	20	52	72
322	698	18	716	0	0	13	13
323	89	4	93	0	0	0	0
324	994	12	1,006	0	2	97	99
325	358	0	358	0	0	21	21
326	945	412	1,357	0	0	93	93
327	2,120	5	2,125	0	0	90	90
328	567	275	842	0	5	53	58
329	77	135	212	11	13	117	141
330	592	78	670	0	0	0	0
331	575	64	639	0	0	82	82
332	363	42	405	0	0	86	86
333	713	571	1,284	122	70	384	576
334	334	319	653	7	5	28	40
335	371	152	523	0	0	0	0
336	243	253	496	0	105	26	131
337	208	113	321	0	0	0	0
338	457	546	1,003	47	0	51	98
339	235	826	1,061	13	4	79	96
340	195	872	1,067	6	1	94	101
341	268	447	715	0	1	24	25
342	379	60	439	0	1	143	144
343	205	4	209	0	1	10	11
344	31	0	31	1,076	356	286	1,718
345	122	0	122	0	1,373	588	1,961
346	330	256	586	76	251	148	475
347	0	0	0	1,057	36	58	1,151
348	419	522	941	0	0	42	42
349	463	53	516	0	12	32	44
350	175	83	258	0	0	0	0
351	164	219	383	9	18	91	118
352	192	430	622	178	27	518	723
353	776	0	776	0	0	56	56
354	881	930	1,811	2	1	91	94
355	722	400	1,122	33	98	750	881
356	567	704	1,271	42	68	298	408
357	0	592	592	171	1,103	1,285	2,559
358	158	324	482	241	63	573	877
359	42	0	42	90	108	396	594
360	917	401	1,318	235	88	749	1,072
361	2,067	0	2,067	260	3	511	774
362	110	5	115	0	0	75	75
363	50	0	50	1,065	101	352	1,518
364	3	3	6	31	44	1,499	1,574
365	1,146	0	1,146	0	0	0	0
366	61	15	76	8	112	670	790
367	2	0	2	9	33	2,592	2,634
368	0	0	0	162	362	3,888	4,412
369	0	0	0	1	3	20	24
370	0	0	0	90	0	19	109
371	58	59	117	5	0	97	102
372	0	0	0	49	297	157	503
373	0	0	0	0	30	0	30
374	28	2	30	0	0	3	3
375	0	0	0	0	0	0	0
376	0	0	0	0	0	2,248	2,248
377	0	0	0	0	0	120	120
378	0	0	0	0	0	0	0
379	0	0	0	34	436	2,400	2,870
380	0	0	0	389	0	3,214	3,603
381	0	0	0	0	0	0	0
382	17	0	17	12	53	465	530
383	71	33	104	0	64	341	405
384	116	23	139	0	3	135	138
385	985	0	985	0	0	85	85
386	669	0	669	0	0	11	11
387	410	427	837	186	29	329	544
388	250	190	440	0	0	62	62

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
389	689	33	722	0	11	350	361
390	796	2	798	3	2	368	373
391	318	68	386	0	0	23	23
392	981	0	981	271	36	136	443
393	693	0	693	0	0	99	99
394	760	0	760	108	15	36	159
395	2,661	0	2,661	0	0	117	117
396	188	27	215	0	1	33	34
397	146	29	175	0	1	46	47
398	63	42	105	0	5	0	5
399	68	3	71	14	14	28	56
400	88	2	90	0	0	0	0
401	126	3	129	0	0	0	0
402	169	7	176	47	51	193	291
403	143	63	206	36	12	240	288
404	124	162	286	62	108	858	1,028
405	55	14	69	0	0	0	0
406	543	168	711	66	13	178	257
407	113	0	113	0	0	0	0
408	450	276	726	96	19	291	406
409	655	0	655	1	37	36	74
410	331	43	374	20	342	114	476
411	111	0	111	0	0	0	0
412	0	3	3	0	0	24	24
413	0	0	0	0	0	0	0
414	11	37	48	48	10	62	120
415	10	0	10	49	27	274	350
416	51	4	55	27	3	255	285
417	59	124	183	85	39	535	659
418	11	0	11	262	15	1,020	1,297
419	300	65	365	3	0	2	5
420	99	121	220	1	0	86	87
421	159	160	319	0	0	0	0
422	34	20	54	3	0	62	65
423	0	0	0	0	0	926	926
424	553	3	556	0	1	18	19
425	27	2	29	0	1	8	9
426	0	0	0	0	0	0	0
427	0	0	0	104	70	629	803
428	0	0	0	0	0	0	0
429	0	0	0	0	0	0	0
430	4	0	4	0	0	27	27
431	0	0	0	0	0	0	0
432	0	0	0	0	3	17	20
433	2	269	271	0	0	32	32
434	1,253	316	1,569	0	0	315	315
435	1,583	0	1,583	0	0	0	0
436	0	0	0	721	336	169	1,226
437	0	0	0	0	0	0	0
438	0	0	0	0	0	0	0
439	0	0	0	0	0	0	0
440	0	0	0	0	0	0	0
441	0	0	0	0	0	0	0
442	0	0	0	0	0	0	0
443	0	0	0	0	0	0	0
444	0	0	0	0	0	0	0
445	0	0	0	0	0	0	0
446	0	0	0	0	0	0	0
447	0	0	0	0	0	0	0
448	0	0	0	0	0	0	0
449	0	0	0	0	0	0	0
450	0	0	0	0	0	0	0
451	0	0	0	0	0	0	0
452	0	0	0	0	0	0	0
453	0	0	0	0	0	0	0
454	0	0	0	0	0	0	0
455	0	0	0	0	0	0	0
456	0	0	0	0	0	0	0
457	0	0	0	0	0	0	0
458	0	0	0	0	0	0	0
459	0	0	0	0	0	0	0
460	0	0	0	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
461	0	0	0	0	0	0	0
462	0	0	0	0	0	0	0
463	0	0	0	0	0	0	0
464	0	0	0	0	0	0	0
465	0	0	0	0	0	0	0
466	0	0	0	0	0	0	0
467	0	0	0	0	0	0	0
468	0	0	0	0	0	0	0
469	0	0	0	0	0	0	0
470	0	0	0	0	0	0	0
471	0	0	0	0	0	0	0
472	0	0	0	0	0	0	0
473	0	0	0	0	0	0	0
474	0	0	0	0	0	0	0
475	0	0	0	0	0	0	0
476	0	0	0	0	0	0	0
477	0	0	0	0	0	0	0
478	0	0	0	0	0	0	0
479	0	0	0	0	0	0	0
480	0	0	0	0	0	0	0
481	0	0	0	0	0	0	0
482	0	0	0	0	0	0	0
483	0	0	0	0	0	0	0
484	0	0	0	0	0	0	0
485	0	0	0	0	0	0	0
486	0	0	0	0	0	0	0
487	0	0	0	0	0	0	0
488	0	0	0	0	0	0	0
489	0	0	0	0	0	0	0
490	0	0	0	0	0	0	0
491	0	0	0	0	0	0	0
492	0	0	0	0	0	0	0
493	0	0	0	0	0	0	0
494	0	0	0	0	0	0	0
495	0	0	0	0	0	0	0
496	0	0	0	0	0	0	0
497	0	0	0	0	0	0	0
498	0	0	0	0	0	0	0
499	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0
501	0	0	0	0	0	0	0
502	0	0	0	0	0	0	0
503	0	0	0	0	0	0	0
504	0	0	0	0	0	0	0
505	0	0	0	0	0	0	0
506	0	0	0	0	0	0	0
507	0	0	0	0	0	0	0
508	0	0	0	0	0	0	0
509	0	0	0	0	0	0	0
510	0	0	0	0	0	0	0
511	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0
513	0	0	0	0	0	0	0
514	0	0	0	0	0	0	0
515	0	0	0	0	0	0	0
516	0	0	0	0	0	0	0
517	0	0	0	0	0	0	0
518	0	0	0	0	0	0	0
519	0	0	0	0	0	0	0
520	0	0	0	0	0	0	0
521	0	0	0	0	0	0	0
522	0	0	0	0	0	0	0
523	0	0	0	0	0	0	0
524	0	0	0	0	0	0	0
525	0	0	0	0	0	0	0
526	0	0	0	0	0	0	0
527	0	0	0	0	0	0	0
528	0	0	0	0	0	0	0
529	0	0	0	0	0	0	0
530	0	0	0	0	0	0	0
531	0	0	0	0	0	0	0
532	0	0	0	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
533	0	0	0	0	0	0	0
534	0	0	0	0	0	0	0
535	0	0	0	0	0	0	0
536	0	0	0	0	0	0	0
537	0	0	0	0	0	0	0
538	0	0	0	0	0	0	0
539	0	0	0	0	0	0	0
540	0	0	0	0	0	0	0
541	0	0	0	0	0	0	0
542	0	0	0	0	0	0	0
543	0	0	0	0	0	0	0
544	0	0	0	0	0	0	0
545	0	0	0	0	0	0	0
546	0	0	0	0	0	0	0
547	0	0	0	0	0	0	0
548	0	0	0	0	0	0	0
549	0	0	0	0	0	0	0
550	0	0	0	0	0	0	0
551	0	0	0	0	0	0	0
552	0	0	0	0	0	0	0
553	0	0	0	0	0	0	0
554	0	0	0	0	0	0	0
555	0	0	0	0	0	0	0
556	0	0	0	0	0	0	0
557	0	0	0	0	0	0	0
558	0	0	0	0	0	0	0
559	0	0	0	0	0	0	0
560	0	0	0	0	0	0	0
561	0	0	0	0	0	0	0
562	0	0	0	0	0	0	0
563	0	0	0	0	0	0	0
564	0	0	0	0	0	0	0
565	0	0	0	0	0	0	0
566	0	0	0	0	0	0	0
567	0	0	0	0	0	0	0
568	0	0	0	0	0	0	0
569	0	0	0	0	0	0	0
570	0	0	0	0	0	0	0
571	0	0	0	0	0	0	0
572	0	0	0	0	0	0	0
573	0	0	0	0	0	0	0
574	0	0	0	0	0	0	0
575	0	0	0	0	0	0	0
576	0	0	0	0	0	0	0
577	0	0	0	0	0	0	0
578	0	0	0	0	0	0	0
579	0	0	0	0	0	0	0
580	0	0	0	0	0	0	0
581	0	0	0	0	0	0	0
582	0	0	0	0	0	0	0
583	0	0	0	0	0	0	0
584	0	0	0	0	0	0	0
585	0	0	0	0	0	0	0
586	0	0	0	0	0	0	0
587	0	0	0	0	0	0	0
588	0	0	0	0	0	0	0
589	0	0	0	0	0	0	0
590	0	0	0	0	0	0	0
591	0	0	0	0	0	0	0
592	0	0	0	0	0	0	0
593	0	0	0	0	0	0	0
594	0	0	0	0	0	0	0
595	0	0	0	0	0	0	0
596	0	0	0	0	0	0	0
597	0	0	0	0	0	0	0
598	0	0	0	0	0	0	0
599	0	0	0	0	0	0	0
600	0	0	0	0	0	0	0
601	0	0	0	0	0	0	0
602	0	0	0	0	0	0	0
603	0	0	0	0	0	0	0
604	21	0	21	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
605	0	0	0	0	0	0	0
606	0	0	0	0	0	0	0
607	0	0	0	0	0	0	0
608	0	0	0	0	0	0	0
609	3	0	3	0	0	0	0
610	0	0	0	0	0	0	0
611	0	0	0	0	0	0	0
612	0	0	0	0	0	0	0
613	0	0	0	0	0	0	0
614	0	0	0	0	0	0	0
615	0	0	0	0	0	0	0
616	0	0	0	0	0	0	0
617	0	0	0	0	0	0	0
618	32	0	32	0	0	0	0
619	0	0	0	0	0	0	0
620	2	0	2	0	0	0	0
621	0	0	0	0	0	0	0
622	0	0	0	0	0	0	0
623	1	0	1	2	0	4	6
624	0	0	0	0	0	0	0
625	0	0	0	0	0	0	0
626	0	0	0	0	0	0	0
627	0	0	0	0	0	0	0
628	0	0	0	0	0	0	0
629	0	0	0	0	0	0	0
630	122	15	137	0	4	116	120
631	10	0	10	0	0	0	0
632	28	0	28	0	0	7	7
633	0	0	0	0	0	0	0
634	0	0	0	0	0	0	0
635	0	0	0	0	0	0	0
636	0	0	0	0	0	0	0
637	0	0	0	0	0	0	0
638	0	0	0	0	0	0	0
639	0	0	0	0	0	0	0
640	0	0	0	0	0	0	0
641	0	0	0	0	0	0	0
642	19	0	19	9	8	3	20
643	0	0	0	0	0	0	0
644	12	0	12	0	0	0	0
645	22	79	101	0	0	0	0
646	0	0	0	0	0	0	0
647	86	97	183	5	36	168	209
648	37	0	37	0	0	46	46
649	62	6	68	0	0	0	0
650	3	0	3	0	0	2	2
651	0	0	0	0	0	0	0
652	0	0	0	0	0	0	0
653	0	0	0	0	0	0	0
654	0	0	0	0	0	0	0
655	0	0	0	0	0	0	0
656	0	0	0	0	0	0	0
657	0	0	0	0	0	0	0
658	0	0	0	0	0	0	0
659	0	0	0	0	0	0	0
660	0	0	0	0	0	0	0
661	0	0	0	0	0	0	0
662	0	0	0	0	0	0	0
663	0	0	0	0	0	0	0
664	0	0	0	0	0	0	0
665	0	0	0	0	0	0	0
666	0	0	0	0	0	0	0
667	0	0	0	0	0	0	0
668	35	0	35	0	0	0	0
669	0	0	0	0	29	2	31
670	3	0	3	0	0	0	0
671	0	0	0	0	0	0	0
672	0	0	0	0	0	0	0
673	0	0	0	0	0	0	0
674	0	0	0	0	0	0	0
675	0	0	0	0	0	0	0
676	0	0	0	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
677	0	0	0	0	0	0	0
678	0	0	0	0	0	0	0
679	0	0	0	0	0	0	0
680	0	0	0	0	0	0	0
681	0	0	0	0	0	0	0
682	0	0	0	0	0	0	0
683	0	0	0	0	0	0	0
684	0	0	0	0	0	0	0
685	0	0	0	0	0	0	0
686	0	0	0	0	0	0	0
687	0	0	0	0	0	0	0
688	0	0	0	0	0	0	0
689	0	0	0	0	0	0	0
690	33	1	34	0	0	0	0
691	0	0	0	0	0	0	0
692	0	0	0	0	0	0	0
693	0	0	0	0	0	0	0
694	0	0	0	0	0	0	0
695	0	0	0	0	0	0	0
696	0	0	0	0	0	0	0
697	0	0	0	0	0	0	0
698	0	0	0	0	0	0	0
699	0	0	0	0	0	0	0
700	0	0	0	0	0	0	0
701	9	0	9	0	0	0	0
702	78	3	81	0	0	0	0
703	40	4	44	0	0	0	0
704	223	1,138	1,361	25	363	478	866
705	4	0	4	0	0	16	16
706	0	0	0	0	0	0	0
707	18	0	18	0	0	10	10
708	36	0	36	0	0	0	0
709	25	3	28	0	0	0	0
710	49	0	49	0	2	0	2
711	9	0	9	0	0	0	0
712	53	0	53	0	0	0	0
713	0	0	0	0	0	0	0
714	3	0	3	0	93	958	1,051
715	78	9	87	0	0	1	1
716	0	0	0	0	0	0	0
717	0	0	0	0	0	0	0
718	0	0	0	0	0	0	0
719	0	0	0	0	0	0	0
720	0	0	0	0	0	0	0
721	0	0	0	0	0	0	0
722	0	0	0	0	0	0	0
723	0	0	0	0	0	0	0
724	1	0	1	0	0	0	0
725	43	6	49	0	0	0	0
726	0	0	0	0	0	0	0
727	0	0	0	0	0	0	0
728	0	0	0	0	0	0	0
729	0	0	0	0	0	0	0
730	5	0	5	0	0	0	0
731	94	6	100	0	0	0	0
732	7	0	7	0	0	0	0
733	12	2	14	0	0	0	0
734	54	2	56	1	0	14	15
735	34	3	37	85	0	648	733
736	94	3	97	2	0	20	22
737	95	13	108	0	5	70	75
738	18	0	18	0	0	0	0
739	170	97	267	0	14	19	33
740	18	2	20	0	0	0	0
741	39	1	40	2	0	17	19
742	97	9	106	1	87	170	258
743	257	17	274	0	0	0	0
744	18	0	18	0	61	139	200
745	21	0	21	0	0	0	0
746	143	109	252	0	0	0	0
747	23	0	23	0	0	0	0
748	67	4	71	0	0	0	0

Attachment B

Stockton General Plan - Land Use by TAZ							
TAZ	Base Year						
	Households			Employment			
	SF	MF	Total	Retail	Office	Other	Total
749	18	0	18	0	0	0	0
750	18	7	25	0	0	0	0
751	6	0	6	0	0	0	0
752	11	0	11	0	0	0	0
753	0	0	0	0	0	0	0
754	0	0	0	0	0	0	0
755	0	0	0	7	0	15	22
756	0	0	0	0	0	0	0
757	0	0	0	0	0	0	0
758	0	0	0	0	0	0	0
759	0	0	0	0	0	0	0
760	0	0	0	0	0	0	0
761	5	1	6	0	0	20	20
762	0	0	0	0	0	0	0
763	0	0	0	0	0	0	0
764	0	0	0	0	0	0	0
765	0	0	0	0	0	0	0
766	0	0	0	0	0	0	0
767	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0
770	0	0	0	0	0	0	0
771	0	0	0	0	0	0	0
772	0	0	0	0	0	0	0
773	0	0	0	0	0	0	0
774	0	0	0	0	0	0	0
775	0	0	0	0	0	0	0
776	0	0	0	0	0	0	0
777	0	0	0	0	0	0	0
778	0	0	0	0	0	0	0
779	0	0	0	0	0	0	0
780	0	0	0	0	0	0	0
781	0	0	0	0	0	0	0
782	0	0	0	0	0	0	0
783	0	0	0	0	0	0	0
784	0	0	0	0	0	0	0
785	0	0	0	0	0	0	0
786	0	0	0	0	0	0	0
787	0	0	0	0	0	0	0
788	0	0	0	0	0	0	0
789	0	0	0	0	0	0	0
790	0	0	0	0	0	0	0
791	0	0	0	0	0	0	0
792	0	0	0	0	0	0	0
793	0	0	0	0	0	0	0
794	0	0	0	0	0	0	0
795	0	0	0	0	0	0	0
796	0	0	0	0	0	0	0
797	0	0	0	0	0	0	0
798	0	0	0	0	0	0	0
799	0	0	0	0	0	0	0
800	0	0	0	0	0	0	0

ENVISION STOCKTON

2040 GENERAL PLAN UPDATE

PLACEWORKS