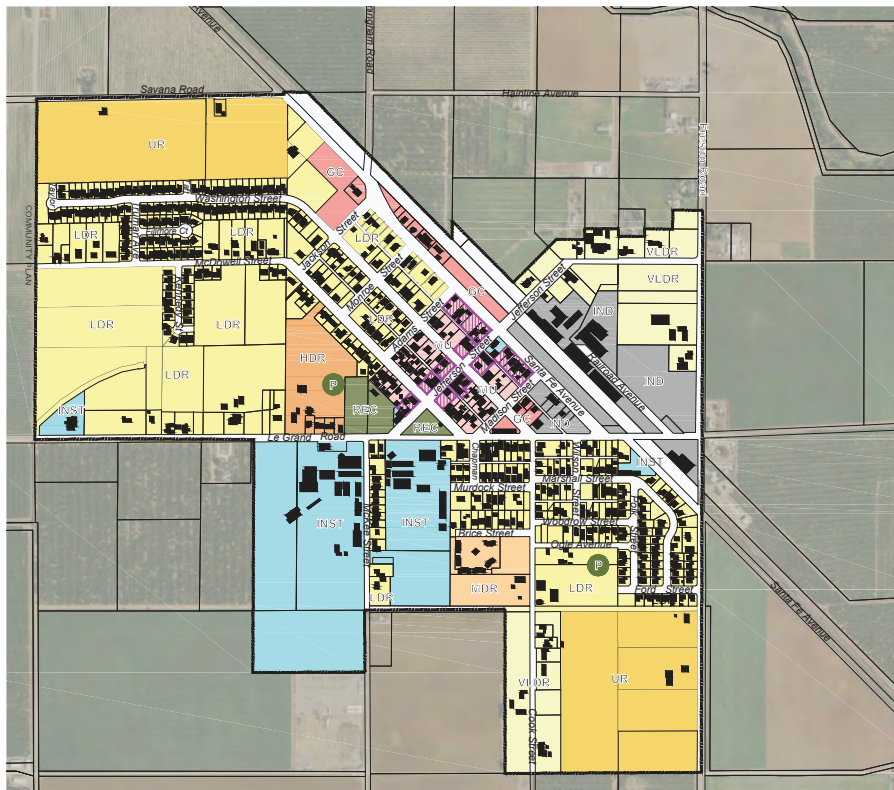


# DRAFT

## Environmental Impact Report

### Le Grand Community Plan SCH 2016101087



Merced County  
Community And Economic Development Department



April 2019

Draft  
Environmental Impact Report

Le Grand Community Plan Update  
SCH #2016101087

Prepared for:  
Merced County

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April 2019

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## **1. INTRODUCTION**

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## INTRODUCTION

The County of Merced is the lead agency, pursuant to the State Guidelines for the California Environmental Quality Act (CEQA Guidelines Section 15050), for the preparation of an Environmental Impact Report (EIR) for the proposed Le Grand Community Plan (Proposed Project).

## LOCATION

Le Grand is an unincorporated community located in Merced County approximately 12 miles southeast of the City of Merced (see Figure 3-1 in Chapter 3, Project Description).

## ENVIRONMENTAL REVIEW

CEQA requires the preparation of an EIR when there is substantial evidence that a project could have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of a proposed project. The EIR process is specifically designed to describe the objective evaluation of potentially significant direct, indirect, and cumulative impacts of a proposed project, to identify alternatives that reduce or eliminate the project's significant effects, and to identify feasible measures that mitigate significant effects of the project. In addition, CEQA requires that an EIR identify those adverse impacts determined to remain significant after mitigation.

The Le Grand Community Plan EIR is a program EIR as defined in CEQA Guidelines Section 15168, which is one type of EIR that can be prepared for planning projects. A program EIR evaluates the impacts of a series of actions that can be characterized as one large project and are related either:

- 1) geographically;
- 2) as logical parts in a chain of contemplated actions;
- 3) are connected with issuances of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or
- 4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The proposed Community Plan is a plan that will govern future development within the Le Grand community. Specific development projects are not proposed at this time, but will be subject to the policies, standards and guidelines set forth in the Community Plan and analyzed in the EIR. When subsequent activities in the program are proposed, the County must determine whether the environmental effects of those activities were adequately addressed in the program EIR and/or whether additional environmental documents must be prepared. Prior to approval of entitlements to develop, therefore, those actions or entitlements will be reviewed to determine if they are within the scope of the program EIR, or if additional environmental analysis is needed prior to consideration. If a later activity would have effects that were not examined in the program EIR, a project-specific CEQA document must be prepared. The project-level CEQA

documents may incorporate by reference general discussions from the broader EIR and focus on the impacts of the individual projects that implement the plan, program, or policy.

In accordance with CEQA regulations, a Notice of Preparation (NOP) was prepared and distributed to responsible agencies, interested parties and organizations, as well as private organizations and individuals that may have an interest in the project. The NOP was circulated for a 30-day public comment period from October 31 through November 30, 2016. The purpose of the NOP was to provide notification that an EIR for the project was being prepared and to solicit guidance on the scope and content of the document. Responses were received from one agency and two individuals (on a single comment card). The NOP and responses are included in Appendices A and B, respectively, of this Draft EIR (DEIR).

The proposed Community Plan has been revised since the publication of the Notice of Preparation. The changes to the land use plan and table include the following:

- **Increase in Residential Uses:** The total number of dwelling units has increased from 1,074 to 1,100, a 2.5% increase. This change results from a General Plan Amendment and Zone Change the County approved in March 2017, when the High Density Residential parcel was re-designated and rezoned from Low Density Residential/Single-Family Residential. The NOP had anticipated that this 10-acre parcel would be designated and zoned for high-density residential development, but had assumed that only 197 dwelling units would be constructed on the site. The March 2017 approval provides for up to 223 units on the parcel, an increase of 27. No change to the land use plan was necessary, but the land use table for the Le Grand Community Plan has been updated accordingly (see Table 3-1 in Chapter 3, Project Description).
- **Correction to Existing Residential Count:** The NOP stated that there are 6 existing dwelling units in the Urban Reserve. However, there are only 5 existing units in this area. This has been corrected in Table 3-1.
- **Correction to Institutional Designation:** The NOP land use plan shows approximately 14 acres of land within the Burlington Northern Santa Fe (BNSF) railroad corridor as designated Institutional. This is in error, and this acreage has been moved to the "Other (e.g., roads, canals, rail facilities)" column. In addition, the Land Use Plan has been revised to show the Fire Station as "Institutional." As the result of these corrections, the Institutional acreage was reduced to 3 acres and the Other (e.g. roads, canals and rail facilities) acreage has increased to 71 acres. In addition, the square footages have been revised to include 30,058 square feet of uses within the Institutional designation. The Institutional uses are existing; therefore, the amount of new non-residential square footage has not changed.
- **Corrections to "Future" Column of the Land Use Summary:** Table 1 of the NOP overstated the increment of future growth in the General Commercial, Mixed-Use and Industrial designations. The existing and total numbers in that table are correct. Table 3-1 in Chapter 3, Project Description, of this Draft EIR has the correct numbers.
- **Change in Land Designated Urban Reserve:** In the NOP land use plan, the parcel south of Savanna Road is designated Low Density Residential. This parcel is now designated Urban Reserve. The parcel south of McDowell Street that had been designated Urban Reserve in the NOP is now designated Low Density Residential. These parcels are of similar size, so the total Urban Reserve and Low Density Residential acreage was unaffected.

The above changes and corrections would not substantially alter the effects of the project, because the Community Plan area boundaries have not changed, the portion of the Plan Area to be developed is similar, and the type of uses to be developed are the same. The magnitude of the project impacts would be slightly higher due to the addition of 26 high-density residential units. However, this change is slight, and no changes in the type of uses or land use plan have resulted. For these reasons, the County has determined that the NOP need not be revised and/or recirculated. The changes described above have been incorporated into the Project Description (Chapter 3) and the analyses prepared for the EIR (see Chapters 4 and 5).

An Initial Study was prepared to focus the EIR analysis on those issue areas where significant impacts could occur, or where there is particular public concern. Based on the Initial Study (see Chapter 5), this Draft EIR focuses on the following topics:

- Agricultural Resources,
- Air Quality,
- Biological Resources,
- Cultural Resources,
- Greenhouse Gas Emissions and Climate Change,
- Land Use,
- Noise,
- Transportation and Circulation, and
- Utilities (including water, wastewater, drainage, and solid waste).

The DEIR is being circulated for public review and comment for a period of 45 days. During this period, comments from the general public, as well as organizations and agencies on the DEIR's accuracy and completeness may be submitted to the lead agency.

Upon completion of the public review period, a Final EIR (FEIR) will be prepared which will include both written and oral comments on the DEIR received during the public review period and responses to those comments, as well as any revisions to the DEIR made in response to public comments. The DEIR and FEIR together will comprise the EIR for the proposed Le Grand Community Plan.

Prior to adopting a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

The Community Plan may only be amended four times per calendar year in the same manner as the County General Plan, as long as the integrity of the Community Plan is maintained. Each amendment shall include all sections or elements of the Community Plan that are affected by the change. Amendments shall be processed as a General Plan Amendment subject to the same restrictions imposed by State Law. Amendments may be made to the Community Plan to expand the Plan Area boundary only if the five-year vacant land inventory has been developed.

Amendments to the Land Use Diagram, including those that do not expand the Plan Area boundary, shall complete environmental review that is needed to satisfy requirements of CEQA deemed necessary by Merced County Community and Economic Development staff. Specific development projects that are consistent with the Community Plan and this EIR would not require additional CEQA review unless the project would result in a new, or a more severe impact than identified in this EIR.

## HOW TO USE THIS REPORT

This report includes six principal parts: Summary, Project Description, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Environmental Checklist, Alternatives Analysis, and CEQA Considerations.

The **Summary** presents an overview of the results and conclusions of the environmental evaluation. This section identifies impacts of the proposed Community Plan and available mitigation measures.

The **Project Description** describes the location, size and design of the proposed Community Plan, and includes project objectives and a list of anticipated approvals needed to develop the project.

The **Environmental Analysis** includes a topic-by-topic analysis of impacts that would or could result from implementation of the proposed Community Plan. Topics discussed are those identified in the Initial Study Checklist as requiring further analysis (see Chapter 5). The analysis is organized in nine topical sections. Each section is organized into two major subsections: Setting (existing conditions and regulatory context), and Impacts and Mitigation Measures, including cumulative impacts and mitigation measures. The results of field visits, data collected and reviewed, and agency contacts are presented in the text.

The **Alternatives Analysis** includes an assessment of alternative methods for accomplishing the basic objectives of the project. This assessment, required under CEQA, must provide adequate information for decision makers to make a reasonable choice between alternatives based on the environmental aspects of the proposed Community Plan and alternatives.

The **CEQA Considerations** section includes a discussion of issues required by CEQA, which includes unavoidable adverse impacts, growth inducement, significant irreversible environmental effects, and a summary of cumulative impacts.

The **Appendices** contain a number of reference items providing support and documentation of the analyses performed for this report.



## 2. SUMMARY

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### INTRODUCTION

This summary chapter provides an overview of the proposed Community Plan (Proposed Project), which is described in detail in Chapter 3, Project Description, and the conclusions of the environmental analysis, provided in detail in Chapters 4 and 5. This chapter also summarizes the alternatives to the proposed Community Plan that are discussed in Chapter 6, Alternatives, and identifies the Environmentally Superior Alternative. Table 2-1, at the end of this chapter, provides a summary of the environmental effects of the Proposed Project identified in each technical issue section of Chapter 4. The table consists of the environmental impacts, the significance of the impact, proposed mitigation, if any, and the significance of the impact after the mitigation measure is implemented. Table 2-2 provides a summary of the relative severity of the impacts of the alternatives.

### LOCATION

Le Grand is an unincorporated community located in Merced County approximately 12 miles southeast of the City of Merced (see Figure 3-1 in Chapter 3, Project Description).

### PROJECT DESCRIPTION

The proposed Community Plan will serve as the long-range vision and land use strategy plan for guiding development within the unincorporated Community of Le Grand in Merced County to 2035. The County and its consultants have been working with community residents, businesses, property owners, and public agencies and organizations to identify and establish the direction and character of growth in Le Grand through the year 2035.

The proposed land uses are shown in Figure 3-3 and Table 3-1 in Chapter 3, Project Description.

The proposed Community Plan is projected to increase the community population to a total of approximately 3,697 residents, an increase of approximately 207 percent. Commercial, Mixed Use, and Industrial development would increase to approximately 398,918 square feet. There would also be a total of four acres of community parks, as well as additional neighborhood parks within new subdivisions. In addition, the proposed Community Plan provides for 63 acres of Urban Reserve.

### ENVIRONMENTAL IMPACTS AND MITIGATION

An Environmental Checklist (Chapter 5) was prepared to determine whether the proposed Community Plan could result in a significant impact on the environment, and to focus the EIR analysis on significant impacts and those issues that require relatively detailed analyses in order to determine the severity of impacts. Based on the Environmental Checklist, this EIR analyzes in detail the proposed Community Plan impacts in the following areas:

- Agricultural Resources,
- Air Quality,

- Biological Resources,
- Cultural Resources,
- Greenhouse Gas Emissions and Climate Change,
- Land Use,
- Noise,
- Transportation and Circulation, and
- Utilities.

The findings of the analyses in Chapters 4 and 5 are discussed briefly below.

### **No Impact**

There are a number of impacts raised in the Environmental Checklist (Chapter 5) that would not occur under the proposed Community Plan. For example, there are no known forestry resources in the Plan Area, so adoption and implementation of the proposed Community Plan would not affect the availability of forests or forestry resources. Other impacts that would not occur because of the character of the Plan Area include adverse effects on scenic resources, loss or conversion of forestry resources, conflicts with adopted ordinances protecting biological resources or conservation plans, exposure to risks of landslides, airport-related hazards, exposure to seiche, tsunami, mudflow, conflict with CEQA Guidelines Section 15064.3(b), loss of an important mineral recovery site, exposure to significant risk of wildfires, and exposure to commercial aircraft noise.

### **Less-than-Significant Impacts**

Some impacts that would occur under the proposed Community Plan would be adverse, but not severe enough to warrant mitigation. These impacts, which would not exceed identified thresholds or standards, are considered “less than significant”. Impacts that would be less than significant even without regulation, proposed Community Plan policies, or mitigation include effects on a scenic vista, creation of light or glare, conflicts with existing agricultural zoning or a Williamson Act contract, loss of mineral resources, exposure to toxic air contaminants, carbon monoxide or odors, loss or degradation of wildlife migration corridors, wasteful, obstruction of a renewable energy or energy efficiency plan, consistency with LAFCO annexation policies, induce substantial unplanned population growth, displacement of existing housing or residents, exposure to vibration from the rail line, increased traffic on local roadways and at local intersections, hazardous roadway design, increased demand for transit services, loss of known mineral resources, increased hazards due to road design or incompatible uses, result in inadequate emergency access, increased demand for potable water supply and wastewater generation, improvements to water and sewer infrastructure, generation of solid waste.

### **Impacts Reduced to Less-than-Significant Levels by Adopted Laws and Regulations**

Other impacts do not exceed established thresholds because they are regulated through federal, State and/or local laws and regulations. For example, the California Building Code includes provisions to ensure that buildings are constructed to withstand geological and soils constraints and seismic events. Other areas where regulations are adequate to ensure that an impact is less than significant include degradation of visual character or quality, conversion of Important Farmland to non-agricultural uses, generation of fugitive dust and particulate matter during construction, inefficient or unnecessary use of energy, exposure to seismic hazards, soil erosion, use of septic systems, the routine use, transport and storage of hazardous materials, including near schools, degradation of water quality, conflicts between Plan Area land uses and surrounding areas, exposure to agricultural noise, increased demand for public services, including schools, fire protection services, law enforcement and parks, and increases in stormwater runoff.

### **Significant Impacts that Can Be Lessened to Less-than-Significant Levels through Mitigation**

Under CEQA, a significant effect 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 project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Based on the analysis contained in this EIR, implementation of the proposed Community Plan could result in significant impacts in the areas of agricultural resources, air quality, biological resources, cultural resources, including tribal cultural resources, greenhouse gas emissions, land use compatibility, noise, and transportation. If an impact is determined to be significant or potentially significant, applicable mitigation measures are identified as appropriate. These mitigation measures are also summarized in Table 2-1. With the exception of the impacts listed below, all of these potentially significant impacts could be reduced to a less-than-significant level through mitigation measures identified in this EIR. The mitigation measures presented in the EIR will form the basis of the Mitigation Monitoring and Reporting Program. An impact that remains significant after mitigation is considered an unavoidable adverse impact of the proposed Community Plan.

### **Significant and Unavoidable Impacts**

The following significant and unavoidable impacts would result from development of the proposed Community Plan:

- Cumulative loss of special-status species habitat (Impact 4.3-7);
- Loss of historically significant buildings, sites and/or facilities (Impact 4.4-2);
- Cumulative loss of historic resources in Merced County and the Central Valley (Impact 4.4-5);
- Emission of greenhouse gasses, contributing to global climate change (Impact 4.5-1);
- Conflict with applicable plan, policy or regulation for the reduction of GHG emissions (Impact 4.5-2);
- Increased traffic noise in the existing community (Impact 4.7-1); and
- Cumulative increase in traffic noise (Impact 4.7-7).

### **SUMMARY OF PROJECT ALTERNATIVES**

The following alternatives to the proposed Community Plan are evaluated in this Draft EIR:

1. **No Action/No Development:** Assumes no additional development in the Plan Area. Neither the proposed Community Plan nor existing zoning would be implemented and no further construction would occur in the Plan Area.
2. **No Project/No Action:** Assumes buildout of the existing land uses and zoning. While the existing land use designations and zoning are similar to the proposed Community Plan, there are differences in the amount and densities of residential and non-residential development, and the size of the Plan Area.
3. **Reduced Footprint:** The development footprint would be reduced with a corresponding increase in Urban Reserve compared to the proposed Community Plan. There would also be an increase in residential densities on some parcels, but overall there would be a decrease in new residential units and non-residential square footage.
4. **Reduced Densities with Similar Footprint:** Alternative 4 would have a development footprint similar to the proposed Community Plan, but would provide for

substantially less residential and commercial development in order to reduce impacts.

For a complete description of project alternatives, please see Chapter 6, Alternatives. The relative impacts of the alternatives are summarized in Table 2-2.

### **Environmentally Superior Alternative**

In addition to the discussion and comparison of impacts of the alternatives to the proposed Community Plan, CEQA requires that an "environmentally superior" alternative be identified and the reasons for such selection disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least adverse impacts.

The No Project/No Action Alternative would not have any environmental impacts, so it would be considered environmentally superior. Of the project alternatives, Alternative 3 would be environmentally superior, because it would convert less biological habitat to urban uses, and would substantially reduce impacts related to increases in population and non-residential development. A more detailed discussion of the environmentally superior alternative appears in Chapter 6.

## **POTENTIAL AREAS OF CONCERN**

The loss of farmland and urbanization of a small, rural community are concerns for some residents of the County. Other areas of concern would be those issues that are related to urban development, such as increases in traffic, noise and air pollutants, the need for additional water supply, and the ability of the Le Grand Community Services District (LGCSD) and the County to serve new development without reducing service to existing development. The potential loss of biological resources could also be a concern. These issues are addressed throughout the EIR.

### **Issues Raised in Response to the NOP**

Two comments were received in response to the NOP. The Native American Heritage Commission provided the names of representatives of tribes that are traditionally and culturally affiliated with the Plan Area and may have information about cultural resources in the Plan Area. The County contacted these representatives as part of the Senate Bill 18 and Assembly Bill 52 consultation. The NAHC letter also suggested that records searches be conducted; such searches were done as part of the Draft EIR analysis (see Section 4.4-4, Cultural Resources, for more information).

A comment was received expressing concern about the rezoning of a site from Low to High Density Residential. The County rezoned 10 acres to High Density Residential as a separate action in 2017. That zoning is reflected in the proposed Community Plan. The impacts of the rezone was evaluated in a Mitigated Negative Declaration.<sup>1</sup> This Draft EIR also assumes that those 10 acres will be developed as High Density Residential, and therefore consider the environmental effects of that designation within the context of the proposed Community Plan.

## **UNRESOLVED ISSUES**

No unresolved issues have been identified.

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<sup>1</sup> Merced County, *Draft Initial Study and Notice of Intent to Adopt a Mitigated Negative Declaration for the General Plan Amendment No. GPA 16-001 and Zone Change No. ZC 16-004 Project*, February 2017.

## SCOPE OF THE EIR

Merced County, as lead agency, identified potentially significant impacts that could result from project implementation in the Notice of Preparation for this EIR circulated from October 31 through November 30, 2016 (found in Appendix A). As discussed above, based on an Environmental Checklist (Chapter 5), Merced County determined that the following areas of potentially significant impact should be addressed in the EIR:

- Agricultural Resources,
- Air Quality,
- Biological Resources,
- Cultural Resources,
- Greenhouse Gas Emissions and Climate Change,
- Land Use,
- Noise,
- Transportation and Circulation, and
- Utilities.

Table 2-1 provides a summary of the environmental impacts that would result from implementation of the proposed Community Plan, including potential mitigation measures identified in Chapters 4, and the level of significance of the environmental impacts before and after implementation of the proposed mitigation.

Table 2-2 provides a comparison of the relative impacts of the alternatives. The full alternatives analysis is provided in Chapter 6.

**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Significance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Significance
<b>4.1 Agricultural Resources</b>					
4.1-1 The proposed Community Plan would result in the conversion of Important Farmland to non-agricultural uses.	LS	None	LS	None required.	LS
4.1-2 The proposed Community Plan could conflict with existing zoning for agricultural use, or a Williamson Act contract.	LS	None	LS	None required.	LS
4.1-3 The proposed Community Plan could involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	S	Policies L-9, LU 17 and OSC-7; Implementation Measure OSC-2	S	<p>MM 4.1-3            If and when LGCSD constructs additional reclamation areas needed to serve the proposed Community Plan, the LGCSD shall implement the following or equally effective measures.</p> <p>(a) Construction methods shall avoid over-compaction of the top layers of soil within 50 feet of the Project site perimeter. Pre-construction soil densities of adjacent lands shall be monitored and the surface soil shall be returned to within five (5) percent of original density.</p> <p>(b) Compaction shall be controlled so that changes to lateral groundwater flow are minimized.</p> <p>(c) All construction-related debris shall be removed from the soil surface to prevent construction debris from interfering with agricultural activities.</p> <p>(d) To avoid interruption of irrigation flows to adjacent lands, installation of new irrigation facilities or improvements to existing irrigation</p>	LS

LS = Less than Significant  
 IM = Implementation Measure

PS = Potentially Significant  
 MM = Mitigation Measure

S = Significant

SU = Significant and Unavoidable

**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>facilities shall be performed during the non-irrigation season;  Or  New irrigation facilities necessary to serve adjacent lands shall be constructed and operational prior to any modification or termination existing irrigation facilities currently serving planned reclamation areas.</p> <p>(e) A Salinity Report shall be prepared to address all areas to be irrigated by wastewater and lands within 200 feet of the reclamation areas. The report shall identify appropriate agronomic rates for irrigation of on-site crops based on preserving short-term and long-term land productivity in consideration with agricultural practices and crops actively grown on adjacent parcels. The District shall implement, as needed, recommended measures to ensure that irrigation of the reclamation area would not cause soil degradation and would not reduce crop yield on adjacent lands. The report shall be reviewed and approved by the California Central Valley Regional Water Quality Control Board prior to commencement of any Project improvements.</p>	
4.1-4 The proposed Community Plan would contribute to the cumulative conversion of Important Farmland.	LS	None	LS	None required.	LS
<b>4.2 Air Quality</b>					
4.2-1 The proposed Community Plan could conflict with or obstruct	S	None	S	MM 4.2-1 (a) All on-site construction equipment shall use	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
implementation of the applicable air quality plans.				<p>Tier 3 rated engines or have emissions levels equivalent to or more stringent than that of Tier 3 rated engines. During construction activities, the construction contractor shall keep a record of the equipment used on site, including, at a minimum, the type of equipment, its engine certification, and all maintenance records.</p> <p>(b) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSD shall implement (a), above, or equally effective measures.</p>	
4.2-2 The proposed Community Plan would generate air pollutants that could exceed air quality standards or contribute to existing air quality violations.	S	None	S	MM 4.2-2 Implement Mitigation Measure 4.2-1	LS
4.2-3 The proposed Community Plan could result in exposure of sensitive receptors to substantial pollutant concentrations of criteria pollutants and TACs.	S	None	S	MM 4.2-3 Implement Mitigation Measure 4.2-1	LS
4.2-4 The proposed Community Plan could expose people to objectionable odors.	LS	None	LS	None required.	LS
4.2-5 The proposed Community Plan could contribute to cumulative increases in criteria air pollutants.	S		S	MM 4.2-5 Implement Mitigation Measure 4.2-1.	LS

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**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
<b>4.3 Biological Resources</b>					
4.3-1 The proposed Community Plan could result in harm to special-status invertebrate species and/or loss or degradation of their habitat.	S	Policy OSC-10 and IM OSC-3	S	<p>MM 4.3-1  <u>VELB</u>            (a)(i) Prior to construction of the multipurpose path or any other development or features within 100 feet of the canal segment north of the Veterans Memorial building, the site to be disturbed shall be surveyed for the presence of the valley elderberry longhorn beetle and its elderberry host plant by a qualified biologist in accordance with current USFWS protocols. If elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level occur on or adjacent to the disturbance site, or are otherwise located where they could be directly or indirectly disturbed, minimization and compensation measures, which could include transplanting existing shrubs and planting replacement habitat (conservation plantings), shall be implemented (see below). Surveys are valid for a period of two years. Elderberry plants with no stems measuring 1.0 inch or greater in diameter at ground level are unlikely to be habitat for the beetle because of their small size and/or immaturity. Therefore, no minimization measures are required for removal of elderberry plants with all stems measuring 1.0 inch or less in diameter at ground level.</p> <p>(ii) For elderberry plants with stems measuring 1.0 inch or greater, any elderberry plant within 100 feet of the area to be disturbed</p>	LS

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				<p>shall be protected and/or compensated for in accordance with the "U.S. Fish and Wildlife Services' (USFWS) Conservation Guidelines for the Valley Elderberry Longhorn Beetle and the Programmatic Formal Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle Within the Jurisdiction of the Sacramento Field Office."</p> <p><u>Moestan Blister Beetle</u></p> <p>(b)(i) Prior to construction that would disturb annual grasslands, a qualified biologist shall conduct a preconstruction survey for Moestan blister beetle during the known active season (April to June) of this species prior to the commencement of construction activities. If no individuals are identified during the survey, no additional action is required.</p> <p>(ii) If individuals of Moestan blister beetle are found during the preconstruction survey, pertinent data regarding the associated habitat (e.g., vegetation communities, soils, associated invertebrate species, etc.) shall be collected to better understand the ecology of the species. All pertinent data collected during the preconstruction survey shall be included in the information submitted to the California Natural Diversity Data Base (CNDDB) along with the new occurrence record. Results of surveys, including negative findings, shall be submitted to CDFW within two weeks of their conclusion. All observations of the Moestan blister beetle shall</p>	

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**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>be reported to the CNDDDB within ten (10) days of sighting.</p> <p>(iii) If individuals of Moestan blister beetle are found during the preconstruction survey, an impact avoidance and minimization plan shall be developed by a qualified biologist and implemented during grading and construction. The plan shall focus on avoidance of occupied habitat where feasible through the use of exclusionary fencing. Where avoidance is not feasible, impacts shall be minimized through on-site biological monitoring. The on-site biological monitor shall have authority to temporarily halt any work that would directly affect occupied habitat and determine if a smaller impact footprint is feasible. Work shall then resume after concurrence on the necessary footprint.</p> <p><u>LGCS D</u></p> <p>(c) If and when LGCS D constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and construction activities would occur within 100 feet of the canal or in annual grasslands, the LGCS D shall implement (a) and (b), above, or equally effective measures.</p>	
4.3-2 The proposed Community Plan could result in harm to special-status reptile species and/or loss or degradation of their habitat.	S	Policy OSC-10 and IM OSC-3	S	<p>MM 4.3-2</p> <p>(a) <u>Individuals</u></p> <p>(i) Prior to project construction or disturbance within standing and/or slow-moving fresh water</p>	LS

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Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>(e.g., canals), a qualified biologist shall conduct a survey of suitable habitat for western pond turtle within the area of disturbance and immediately adjacent to the area. The survey shall be conducted within 30 days prior to project construction to ensure no western pond turtles have occupied the habitat. If ground-disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be re-surveyed. If this survey does not identify any western pond turtles on the project site, no further mitigation is required.</p> <p>(ii) If one or more western pond turtles are determined to be present, exclusionary fencing shall be used to prevent the turtle(s) from entering construction areas. Fencing shall also be placed around any nesting sites. The location of the fence shall be determined by a qualified biologist. Any turtles found in or near the construction zone shall be relocated to an appropriate area of suitable habitat a minimum of 100 feet from any active construction zone.</p> <p>(b) <u>Nesting Sites</u></p> <p>(i) For any ground disturbance of annual grassland or non-disked fields within 600 feet of a water feature (e.g., canal) that could provide habitat for western pond turtle, a qualified biologist shall survey they area and determine whether it provides suitable nesting habitat. If</p>	

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**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>the biologist concludes that the habitat is not suitable for nesting, no further action is required. Urban infill parcels (defined as being surrounded on all sides by existing development) and undeveloped parcels within 600 feet of a suitable water feature, but for which a barrier exists between the creek/canal and the development parcel (e.g., walls, homes) shall be excluded from Mitigation Measure 4.3-2(b).</p> <p>(ii) If the biologist concludes that the habitat could support nesting, then when removing the top 12 inches of soil from ruderal/annual grassland habitat in the Plan Area, contractors shall use a qualified biologist as a “spotter” whose responsibility is to watch for western pond turtle eggs or neonates that are overturned during earthmoving. If eggs or neonates are found, all earthmoving activities within 30 feet of the eggs or neonates will be temporarily halted until the eggs or neonates can be salvaged. The eggs or neonates will then be delivered to a nearby qualified wildlife rescue and rehabilitation facility that has been approved by the CDFW. The eggs or neonates will be held by the wildlife rescue and rehabilitation facility until they are ready for release into the nearest suitable aquatic habitat. Once the top 12 inches of soil has been removed, no further monitoring for western pond turtle eggs or neonates is required given that western pond turtle nests are generally shallow</p>	

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Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>(i.e., less than six inches in depth).</p> <p>(c) <u>Water Quality</u>  Measures shall be implemented to ensure that any water feature that provides habitat for western pond turtle will continue to provide adequate habitat for the turtle by protecting water quality and ensuring that any dewatering or realignment of the channel (temporary or permanent) does not substantially diminish the water levels in the area.</p> <p>(d) <u>LGCSD</u>  If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and construction activities would affect standing and/or slow moving water, or annual grasslands or non-disked field within 600 feet of a water feature, the LGCSD shall implement (a) through (c), above, or equally effective measures.</p>	
4.3-3 The proposed Community Plan could result in harm to special-status bird species and/or loss or degradation of their habitat.	S	Policy OSC-10 and IM OSC-3	S	<p>MM 4.3-3</p> <p>(a) <u>Raptor and Loggerhead Shrike Nesting Habitat</u></p> <p>(i) Prior to development of undeveloped parcels and parcels that contain mature trees and/or dense shrubbery, preconstruction surveys for nesting special-status birds (loggerhead shrike, Swainson's hawk and other raptors except burrowing owl), raptors protected under Section 3503.5 of the California Fish and</p>	LS

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Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>Game Code, and other migratory birds shall be conducted prior to any vegetation clearing or other ground disturbance associated with the proposed project. The preconstruction surveys shall be conducted by a qualified consulting biologist under a two-visit protocol with the first visit occurring no more than 14 days prior to initiation of project construction. The second visit shall occur within the three days prior to initiation of the project. If no nesting raptors, migratory birds or special-status birds are identified, then no further action is required. This measure does not apply to land that is urban infill (defined as being surrounded on all sides by existing development).</p> <p>(ii) If nesting Swainson's hawks are found, project construction shall not be initiated until it can be demonstrated by a qualified biologist that the young-of-the-year are no longer dependent upon the nest site.</p> <p>If other nesting raptors are found, an exclusion zone around each nest shall be established such that no project disturbance occurs within 300 feet of the nests until the young-of-the-year are no longer dependent upon the nest site. Lastly, if other nesting migratory or special-status birds are found, an exclusion zone around each nest shall be established that precludes any project disturbance within 100 feet of the nests until the young-of-the-year are no longer dependent upon the nest site.</p>	

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				<p>Alternatively, project construction may be delayed until after August 15, when all local nesting birds are assumed to have completed nesting.</p> <p>(iii) If project construction commences after August 15, when all local nesting birds are assumed to have completed nesting, no surveys would be required.</p> <p>(iv) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be cleared or graded contains mature trees (other than orchard trees) and/or dense shrubbery, the LGCSD shall implement (i) through (iii), above, or equally effective measures.</p> <p>(b) <u>Burrowing Owls</u></p> <p>(i) Prior to construction on undeveloped and/or fallowed agricultural parcels (except orchards) a qualified biologist shall conduct pre-construction surveys prior to any ground disturbance. All surveys shall be conducted in accordance with Appendix D, Breeding and Non-breeding Season Surveys and Reports, of the 2012 CDFG Staff Report on Burrowing Owl Mitigation. If no burrowing owls are present, no additional mitigation is required. This measure does not apply to land that is urban infill (defined as being surrounded on all sides by existing</p>	

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Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>development) or land that has been in continuous and recent agricultural production.</p> <p>(ii) If burrowing owls are present, the project proponent shall notify the County and CDFW. A qualified biologist shall implement a routine monitoring program and establish a fenced exclusion zone around each occupied burrow. No construction activities shall be allowed within the exclusion zone until such time that the burrows are determined to be unoccupied. The buffer zones shall be a minimum of 150 feet from an occupied burrow during the non-breeding season (September 1 through January 31), and a minimum of 250 feet from an occupied burrow during the breeding season (February 1 through August 31).</p> <p>(iii) The biologist shall prepare a mitigation plan that provides for on-site avoidance and/or relocation to ensure that no burrowing owl is harmed. The mitigation plan shall be reviewed and approved by CDFW. If occupied burrows must be destroyed, no destruction of burrows shall occur during the breeding season. Burrows may be destroyed during the non-breeding season, pursuant to the mitigation plan.</p> <p>(iv) If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed is</p>	

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				<p>undeveloped and/or fallowed agricultural parcels (except orchards), the LGCSD shall implement (i) through (iii), above, or equally effective measures.</p> <p>(c) <u>Swainson's Hawk Foraging Habitat</u></p> <p>(i) For projects that would disturb more than 1 acre of grassland or agricultural land other than orchard that is suitable Swainson's hawk foraging habitat, the project proponent shall preserve annual grasslands or other suitable raptor foraging habitat. The compensation for the loss of suitable foraging habitat shall be consistent with the following guidelines: 1.5 acres of protected suitable habitat for each 1 acre impacted within 1 mile of an active nest site; 0.75 acre of protected suitable habitat for each 1 acre impacted between 1 and 5 miles of an active nest site; and 0.5 acre of protected suitable habitat for each 1 acre impacted between 5 and 10 miles of an active nest site (as approved by the County and CDFW). Preservation may occur through either:</p> <ul style="list-style-type: none"> <li>• Payment of a mitigation fee to Merced County through a negotiated agreement between the County, project proponent, and CDFW. The monies would be held in a trust fund, and used to preserve mitigation land through the purchase, monitoring, maintenance, and remediation of lands that supports suitable foraging habitat for</li> </ul>	

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Impacts	Significance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Significance
				<p>Swainson's hawk (consistent with CDFW guidelines); or</p> <ul style="list-style-type: none"> <li>Purchase of conservation easements or fee title to suitable Swainson's hawk foraging habitat to protect the habitat from urban development.</li> </ul> <p>This measure may be satisfied through conservation easements acquired to offset the loss of agricultural land, as described in Impact 4.1-1, if the easements are for lands that provide suitable foraging habitat for Swainson's hawk, subject to approval by CDFW.</p> <p>Mitigation Measure 4.3-3(c) does not apply to LGCSO infrastructure.</p>	
4.3-4 The proposed Community Plan could result in harm to special-status mammal species and/or loss or degradation of their habitat.	S	Policy OSC-10 and IM OSC-3	S	<p>MM 4.3-4  (a) <u>Pallid Bat and Yuma Myotis</u></p> <p>Prior to removal or reconstruction of existing buildings, a survey for pallid bat and Yuma myotis shall be prepared by a qualified biologist. If bat roosting sites are identified within the survey area, then they shall be avoided during the nursery season (April 1<sup>st</sup> through August 31<sup>st</sup>). The bats may be evicted from the building between September 1 and March 31, which is outside of the nursery season. Eviction of bats shall be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with the CDFW, that allow the bats to exit the roosting</p>	LS

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				<p>site but prevent re-entry to the site. This would include, but not be limited to the installation of one way exclusion devices. The devices shall remain in place for a minimum of seven days and then the exclusion points and any other potential entrances shall be sealed immediately following the removal of the devices. This work shall be completed by a BCI recommended exclusion professional.</p> <p>This measure would not apply to the WWTP expansion, because no buildings would be removed.</p> <p>(b) <u>Western Red Bat and Hoary Bat</u></p> <p>(i) Prior to removal of trees (other than non-native landscape trees) in orchards and/or riparian areas, a preconstruction survey for hoary bat and western red bat shall be conducted by a qualified consulting biologist within three days prior to construction. If a bat maternity roost is identified, buffers around the roost site shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other project activities. If roosting bats are found but no maternity roost is present, white plastic shall be placed under the roost sites to create glare that encourages the bats to seek roost sites elsewhere (given that these species typically select roost sites over dark ground cover). Once the bats are confirmed as</p>	

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				<p>having left the site, construction can begin in the affected area.</p> <p>(ii) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and trees would be removed in orchards and/or riparian areas, the LGCSD shall implement (i), above, or equally effective measures.</p> <p>(c) <u>San Joaquin Kit Fox</u></p> <p>(i) Prior to construction activities in undisturbed areas with sparse, open vegetation, including unimproved roads, canal embankments or similar relatively undisturbed areas, a preconstruction survey for potential dens shall be conducted. Surveys would not be required within urban infill areas and agricultural fields that are regularly disturbed (e.g., disked).</p> <p>(ii) All potential dens (including other subsurface refugia that could be occupied) shall be monitored with a minimum of three consecutive nights in which a suitable tracking medium is placed at the mouth of each potential den or other subsurface feature. Each potential den or other feature where no evidence of use by San Joaquin kit fox (e.g., tracks) is observed shall then be excavated under the supervision of a biological monitor prequalified by the U.S. Fish and Wildlife Service and California</p>	

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				<p>Department of Fish and Wildlife. Upon excavation to all endpoints of a potential den or other feature, it shall be backfilled and brought back to grade. If a den cannot effectively be cleared with additional nights of monitoring that result in three consecutive nights of monitoring without evidence of the taxon, the applicant shall coordinate with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine an appropriate follow-up action. The follow-up action may involve careful excavation of the den under the supervision of a biological monitor prequalified by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife that results in the eviction of any individuals.</p> <p>(iii) If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed contains undisturbed areas with sparse, open vegetation, including unimproved roads, canal embankments or similar relatively undisturbed areas, the LGCSO shall implement (i) and (ii), above, or equally effective measures.</p>	
4.3-5 The proposed Community Plan could result in loss or degradation sensitive habitat, including wetlands.	S	None	S	<p>MM 4.3-5</p> <p>(a) Prior to construction activities for projects over 1 acre on parcels composed of annual grasslands or riparian habitat as shown on Figure 4.3-1, a qualified biologist shall conduct a wetland delineation. If wetlands are present a wetland and/or riparian mitigation plan shall be</p>	LS

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				<p>prepared and shall ensure no net loss of waters of the U.S. and riparian vegetation. The wetland and/or riparian mitigation plan shall be based on a wetland delineation verified by USACE. This measure may be implemented through the 404 permit and Streambed Alteration Agreement processes. The plan shall include the following:</p> <p>(i) The project proponent shall compensate for the loss of wetland and riparian habitat through a combination of restoration, enhancement, and/or the purchase of mitigation credits at an approved mitigation bank. The ratio of compensation shall be determined in consultation with USACE and/or California Department of Fish and Wildlife (CDFW), as part of the 404 permit and/or Streambed Alteration Agreement processes, but shall not be less than 1:1.</p> <p>(ii) Prior to any construction activities on the site, a protective fence shall be erected around the boundaries of wetland and/or riparian areas to be retained. This fence shall remain in place until all construction activity in the immediate area is completed. No activity shall be permitted within the protected areas except for those expressly permitted by the USACE and/or CDFW.</p> <p>(iii) For any construction activities in areas that could result in runoff entering the segment of canal north of the Veterans Memorial building</p>	

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				that supports riparian habitat or wetlands that are to be preserved on-site, water quality shall be protected using best management practices (BMPs) and erosion control techniques during construction including, but not necessarily limited to, preservation of existing vegetation, mulches (e.g., hydraulic, straw, wood), and geotextiles and mats, during construction.  (b) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed contains annual grasslands and/or riparian habitat, the LGCSD shall implement (a), above, or equally effective measures.	
4.3-6 The proposed Community Plan could interfere with the migration of wildlife.	LS	None	LS	None required.	LS
4.3-7 The proposed Community Plan could contribute to the cumulative harm of special-status species and loss or degradation of their habitat.	S	Policy OSC-10 and IM OSC-3	S	MM 4.3-7 Implement MM 4.3-1 through 4.3-4.	SU
4.3-8 The proposed Community Plan could contribute to the cumulative loss or degradation of sensitive habitats, including wetlands.	S	None	S	MM 4.3-8 Implement MM 4.3-5.	LS
4.3-9 The proposed Community Plan could contribute to the cumulative loss or degradation of wildlife	LS	None	LS	None required.	LS

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migration corridors.					
<b>4.4 Cultural Resources</b>					
4.4-1 The proposed Community Plan could result in the loss of archaeological resources.	S	Policy OSC-12 and IM OSC-9	S	<p>MM 4.4-1</p> <p>(a) Prior to approval, projects one acre or greater that require grading or excavation shall have an archaeological survey by a County-approved qualified archaeologist. Areas found to contain or be likely to contain archaeological resources shall be fully surveyed, including excavation and testing to the extent needed to characterize and record the archaeological site. If a sensitive site cannot be fully surveyed prior to construction (due to the presence of pavement or other reasons), a qualified archaeologist shall be present to monitor all grading and excavation activity. Any artifacts and/or sites that are discovered shall be recorded, preserved in situ and/or donated to an appropriate organization or archive, according to the recommendations of the archaeologist. For resources of Native American origin, the geographically and culturally affiliated Native American tribe(s) shall be contacted to request input regarding the disposition of the resource.</p> <p>(b) If a monitoring archaeologist or a member of the construction team believes that an archaeological resource has inadvertently been uncovered, all work within 50 feet of the discovery shall cease, and a qualified archaeologist shall be notified immediately. Appropriate steps shall be taken, as directed by the archaeologist, to protect the discovery</p>	LS

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**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>site. The area of work stoppage shall be adequate to provide for the security, protection, and integrity of the archaeological resources in accordance with federal and State Law, and at a minimum shall be 50 feet from the discovery. Vehicles, equipment, and unauthorized personnel shall not be permitted to traverse the discovery site. Any artifacts and/or sites that are uncovered shall be recorded, preserved in situ and/or donated to an appropriate organization or archive, according to the recommendations of the archaeologist. For resources of Native American origin, the geographically culturally affiliated Native American tribe(s) shall be contacted to request input regarding the disposition of the resource.</p> <p>(c) If human remains are discovered or uncovered during any phase of construction, all ground-disturbing activity within 50 feet of the remains shall be halted and the County Coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours to request the names of the most likely descendent(s), and Public Resources Code Section 5097.98 shall be adhered to in the treatment and disposition</p>	

LS = Less than Significant  
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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>of the remains. The approved treatment and disposition of the remains shall be implemented before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.</p> <p>(d) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSD shall implement (a) and (b), above, or equally effective measures.</p>	
4.4-2 The proposed Community Plan could result in the loss of historically significant buildings, sites and/or facilities.	S	Policy OSC-11 and IM OSC-4 through OSC-7	S	<p>MM 4.4-2</p> <p>Prior to removal or alteration of a building that has been determined to be eligible for listing on the National and/or State historic registers and/or a local list of historically significant buildings, the building shall be recorded pursuant to Secretary of Interior standards, and architectural features and /or artifacts shall be made available to an appropriate museum and/or historical organization.</p> <p>This measure would not apply to LGCSD water and wastewater infrastructure improvements outside of the Plan Area.</p>	SU
4.4-3 The proposed Community Plan could result in the loss of paleontological resources.	S	None	S	<p>MM 4.4-3</p> <p>(a) If paleontological resources (e.g., fossils) are discovered during construction, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery. After cessation of excavation the contractor shall immediately contact the County.</p>	LS

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**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>The potential paleontological resource(s) during construction shall be evaluated by a qualified paleontologist. If it is determined that the project could damage a unique paleontological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines. If avoidance is not feasible, the paleontologist shall develop a treatment plan in consultation with the County. The contractor shall not resume work until authorization is received from the County.</p> <p>(b) If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSO shall implement (a) and (b), above, or equally effective measures.</p>	
4.4-4 The proposed Community Plan would contribute to the cumulative loss of archaeological resources in Merced County and the Central Valley.	S	Policy OSC-12 and IM OSC-9	S	MM 4.4-4 Implement Mitigation Measure 4.4-1.	LS
4.4-5 The proposed Community Plan would contribute to the cumulative loss of historic resources in Merced County and the Central Valley.	S	Policy OSC-11 and IM OSC-4 through OSC-7	S	MM 4.4-5 Implement Mitigation Measure 4.4-2.	SU
4.4-6 The proposed Community Plan would contribute to the cumulative loss of paleonto-	S	None	S	MM 4.4-6 Implement Mitigation Measure 4.4-3.	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
logical resources in Merced County and the Central Valley.					
<b>4.5 Greenhouse Gas Emissions and Climate Change</b>					
4.5-1 The proposed Community Plan would generate GHG emissions, either directly or indirectly, that would contribute to cumulative increases in greenhouse gas emissions and climate change.	S	None	S	<p>MM 4.5-1 Prior to approval of a small lot tentative map or, for non-residential development, a use permit, the applicant shall provide a detailed analysis of anticipated GHG emissions attributable to that project. Where individual project emissions would exceed 4.6 MT CO<sub>2</sub>e annually (prior to 2020) or 3.0 MT CO<sub>2</sub>e annually (prior to 2030), measures shall be identified to reduce project emissions below the target level or by a minimum of 15 percent. Or, if a certified Climate Action Plan has been adopted by the County, the applicant shall demonstrate that the project is consistent with the CAP. If a project can not achieve the targets, then it shall still implement measures to reduce project emissions to the extent feasible for that project. Measures to reduce project GHG emissions may include, but are not limited to the following:</p> <p>(a) <b>Climate Action Plan Compliance:</b> The project may comply with a locally adopted qualified Climate Action Plan if one has been adopted prior to the implementation of the individual development.</p> <p>(b) <b>Implement Appendix J of the Final Staff</b></p>	SU

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p><b>Report</b> – Climate Action Plan: Addressing GHG Emission Impacts under CEQA<sup>2</sup>, or a newer version as applicable, to the reduce emissions to below the regional thresholds.</p> <p>(c) <b>Energy Conservation.</b> Build homes and businesses within the community to be 20 percent more efficient than 2013 Title 24 requirements or the current Title 24 requirement, whichever is more stringent.</p> <p>(d) <b>Area Source Emissions Reductions:</b> Implement the following to reduce GHG Area source emissions:</p> <ul style="list-style-type: none"> <li>i. No residential development shall include a fireplace.</li> <li>ii. For commercial and residential development, electrical outlets shall be provided on the exterior of all buildings.</li> </ul> <p>(e) <b>Water Conservation:</b> Incorporate the following measures into residential and commercial development as applicable.</p> <ul style="list-style-type: none"> <li>i. Install low-flow bathroom faucets</li> <li>ii. Install low-flow kitchen faucets.</li> <li>iii. Install low-flow toilets and showers.</li> <li>iv. Use water-efficient irrigation systems.</li> </ul> <p>(f) <b>TDM Program.</b> Develop a TDM Program for on-site workers. Individual employers would</p>	

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				<p>be responsible for funding and overseeing the trip reduction/TDM programs. It is suggested that Community businesses work together to promote and enhance the VMT offsets that would occur from TDM Program implementation. TDM strategies may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>i. Establishment of carpool, buspool, or vanpool programs;</li> <li>ii. Cash allowances, passes or other public transit subsidies and purchase incentives;</li> <li>iii. Computerized commuter rideshare matching services;</li> <li>iv. Guaranteed ride-home program for ridesharing;</li> <li>v. Encourage telecommuting and alternative work schedules where feasible; and</li> <li>vi. Designation of a community transportation coordinator for the local businesses.</li> </ul> <p>(g) <b>Recycling Requirement.</b> To the maximum practical extent, recyclable materials, from operation and construction activities, will be reused or recycled.</p>	

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**TABLE 2-1  
Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
4.5-2 The proposed Community Plan could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	S	None	S	MM 4.5-2 Implement MM 4.5-1.	SU
<b>4.6 Land Use</b>					
4.6-1 The proposed Community Plan could result in incompatible land uses located in proximity to one another within the Plan Area.	S	Community Design Guidelines; Policies N-1 and N-2, IM N-2	S	MM 4.6-1 Implement Mitigation Measure 4.7-5 (Noise Sources).	LS
4.6-2 The proposed Community Plan could result in land uses that are incompatible with the area surrounding the Plan Area.	S	Policies LU L-9, LU-17 and OSC-9, IM OSC-2	LS	None required.	LS
4.6-3 The proposed Community Plan could be inconsistent with General Plan goals and policies.	LS	Land Use plan; Community Design Guidelines	LS	None required.	LS
4.6-4 The proposed Community Plan could be inconsistent with Merced County LAFCO policies.	LS	None	LS	None required.	LS
<b>4.7 Noise</b>					
4.7-1 The proposed Community Plan would increase traffic noise in the existing community.	S	None	S	None available.	SU

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
4.7-2 Future residences and other noise sensitive land uses would be exposed to transportation noise.	S	None	S	MM 4.7-2 Prior to approval of a residential building permit for projects located in areas estimated to experience noise levels above 65 dB Ldn due to railroad operations, an acoustical study shall be submitted demonstrating that interior noise levels will not exceed 45 dBA Ldn. Noise barriers, site planning, improvement to building facades and/or other effective measures may be used to achieve the required noise levels.	LS
4.7-3 The proposed Community Plan would generate construction noise near noise-sensitive areas.	S	None	S	MM 4.7-3 (a) The following specific noise control measures shall be implemented as appropriate for construction projects occurring within the Plan Area near existing noise-sensitive receptors: <ul style="list-style-type: none"> <li>• All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.</li> <li>• All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.</li> <li>• Electrically-powered equipment shall be used</li> </ul>	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Significance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Significance
				<p>instead of pneumatic or internal-combustion-powered equipment, where feasible.</p> <ul style="list-style-type: none"> <li>• Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.</li> <li>• The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.</li> <li>• No project-related public address or music system shall be audible at any adjacent receptor.</li> </ul> <p>(b) If and when the Le Grand Community Services District (LGCSD) installs water and/or wastewater infrastructure needed to serve proposed Community Plan development, Mitigation Measures 5.7.3(a) or equally effective measures shall be implemented to address noise and vibration at nearby residences.</p>	
4.7-4 New residential development within the Plan Area could be exposed to vibration from the BNSF railroad.	LS	None	LS	None required.	LS
4.7-5 The proposed Community Plan would result in uses that could generate excessive non-vehicular noise.	S	Policies N-1 and N-2	S	<p>MM 4.7-5            New businesses that have outdoor noise sources (e.g., loading docks, HVAC systems) adjacent to residential areas shall demonstrate that the residential outdoor areas will be protected from noise by one or a combination of the following and/or equally effective measures:</p> <p>i) Mechanical equipment associated with the</p>	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

Impacts	Signifi- cance	Mitigation Included in the Community Plan	Significance After CP Mitigation	Additional Mitigation	Residual Signifi- cance
				commercial uses shall be shielded from view of adjacent residential uses by building parapets or located within mechanical equipment rooms; and/or ii) Commercial loading docks located within 300 feet of existing or proposed residences shall be positioned in areas shielded from view of those residences by intervening commercial buildings; and/or iii) Solid noise barriers shall be constructed at the boundary of the commercial uses of sufficient height to intercept line of sight between heavy trucks and the affected area of the residential use; and/or iv) Truck deliveries shall be limited to daytime hours (7 am – 10 pm) and/or v) Signs shall be posted prohibiting Idling of delivery trucks to 10 minutes or less.	
4.7-6 Noise-sensitive uses could be exposed to noise from agricultural operations.	LS	Policy OSC-7	LS	None required.	LS
4.7-7 The proposed Community Plan would contribute to cumulative increase in traffic noise levels on local roadways.	S	None	S	None available.	SU
<b>4.8 Transportation and Circulation</b>					
4.8-1 The proposed Community Plan would increase traffic at local intersections.	LS	IM CIR-3	LS	None required.	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
4.8-2 The proposed Community Plan would increase traffic volumes on local roadways.	LS	IM CIR-3	LS	None required.	LS
4.8-3 The proposed Community Plan would increase demand for transit services.	S	Policies C-1, C-11 and C-12 and IM CIR-3 and CIR-11	LS	None required.	LS
4.8-4 The proposed Community Plan would increase demand for bicycle facilities.	S	Policies C-1, C-8, C-9 and C-10, and IM CIR-3, CIR-6 and CIR-7	S	MM 4.8-4 Merced County shall create bicycle facilities on major collector streets in the Plan Area-- Santa Fe Avenue, Le Grand Road and Jefferson Street.	LS
4.8-5 The proposed Community Plan would increase demand for pedestrian facilities.	S	Policies C-1, C-7 and C-8 and IM C-6 and C-7	S	MM 4.8-5 Merced County shall complete sidewalk improvements on key streets, including the following: <ul style="list-style-type: none"> <li>• Installation of sidewalks at the following locations: <ul style="list-style-type: none"> <li>◦ West side of Santa Fe Avenue along the commercial frontage;</li> <li>◦ North side of Jackson from Washington Street to Santa Fe Avenue;</li> <li>◦ East side of Washington north of Jackson Street;</li> <li>◦ West side of Santa Fe Avenue from Jackson Street to Monroe Street;</li> </ul> </li> <li>• Rehabilitation of crosswalks at Santa Fe Avenue/Jefferson Street intersection;</li> <li>• Improved pedestrian route across Jefferson Street railroad crossing; and</li> <li>• Installation of pedestrian crossing on Le Grand Road near the schools.</li> </ul>	LS
4.8-6 The proposed Community Plan could result in conflicts with the	S	IM CIR-12	S	MM 4.8-6 Implement Mitigation Measure 4.8-5.	LS

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**TABLE 2-1**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
railroad tracks.					
4.8-7 The proposed Community Plan would contribute to cumulative increases in traffic congestion.	S	IM CIR-3	LS	None required.	LS
4.8-8 The proposed Community Plan would contribute to cumulative increases in traffic volumes on local roadways.	LS	IM CIR-3	LS	None required.	LS
4.8-9 The proposed Community Plan would contribute to cumulative increases in demand for transit services.	LS	Policies C-1, C-11 and C-12 and IM CIR-3 and CIR-11	LS	None required.	LS
<b>4.9 Utilities</b>					
4.9-1 The proposed Community Plan would increase demand for domestic water supply.	LS	None	LS	None required.	LS
4.9-2 The proposed Community Plan would require additional water supply and distribution infrastructure.	S	Policies PS-1, PS-2 and PS-3 and IM PS-3 and PFS-7	LS	None required.	LS
4.9-3 The proposed Community Plan would contribute to cumulative increases in groundwater withdrawals from the Merced groundwater basin.	LS	None	LS	None required.	LS
4.9-4 The proposed Community Plan would increase demand for wastewater treatment and disposal.	S	Policies PS-1, PS-2 and PS-3 and IM PS-3 and PFS-8	LS	None required.	LS
4.9-5 The proposed Community	S	Policies PS-1,	LS	None required.	LS

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**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>	<b>Signifi- cance</b>	<b>Mitigation Included in the Community Plan</b>	<b>Significance After CP Mitigation</b>	<b>Additional Mitigation</b>	<b>Residual Signifi- cance</b>
Plan would require installation of new wastewater conveyance infrastructure and upgrades to the existing system.		PS-2 and PS-3 and IM PS-3 and PFS-8			
4.9-6 The proposed Community Plan would contribute to a cumulative increase in demand for wastewater conveyance and treatment facilities.	LS	Policies PS-1, PS-2 and PS-3 and IM PS-3 and PFS-8	LS	None required.	LS
4.9-7 The proposed Community Plan would locate development within the 100-year floodplain.	LS	None	LS	None required.	LS
4.9-8 The proposed Community Plan would increase stormwater runoff entering the Plan Area drainage system.	LS	Policies PS-1, PS-2 and PS-3	LS	None required.	LS
4.9-9 The proposed Community Plan would generate additional solid waste.	LS	None	LS	None required.	LS
4.9-10 The proposed Community Plan would contribute to cumulative increases in solid waste generation.	LS	None	LS	None required.	LS

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<p style="text-align: center;"><b>TABLE 2-2</b>  <b>Comparison Of Alternatives To Proposed Community Plan</b></p>					
<b>Resource</b>	<b>Proposed Community Plan</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
Agriculture	LS/M	NI	LS/M	LS/M	LS/M-
Air Quality	LS/M	NI	LS/M+	LS/M-	LS/M-
Biological Resources	SU/M	NI	SU/M+	SU/M-	SU/M-
Cultural Resources	SU/M	NI	SU/M	SU/M-	SU/M-
GHG/Climate Change	SU/M	NI	SU/M+	SU/M-	SU/M-
Land Use	LS/M	NI	LS/M+	LS/M-	LS/M-
Noise	SU/M	NI	SU/M+	SU/M-	LS/M
Transportation	LS/M	NI	LS/M+	LS/M-	LS/M-
Utilities	LS	NI	LS+	LS-	LS-
<p><b>NOTES:</b>            LS=All impacts less than significant, requiring no mitigation.            LS/M=All impacts would be less than significant after mitigation.            SU=One or more impacts would be significant and/or potentially significant after mitigation (or no feasible mitigation is available).            NI = No Impact.            + = More severe impacts than the proposed Community Plan.            - = Less severe impacts than the proposed Community Plan.</p>					

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### **3. PROJECT DESCRIPTION**

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### 3. PROJECT DESCRIPTION

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#### PROJECT LOCATION

Le Grand is an unincorporated community located in Merced County, approximately 12 miles east of the City of Merced (see Figure 3-1) and eight miles north of the City of Chowchilla. The closest highway is Highway 99, approximately 6 miles to the west of Le Grand. Le Grand Road and Santa Fe Avenue are the primary roadways that connect Le Grand to other communities. Most of the Plan Area is located west of Santa Fe Avenue (see Figure 3-2).

The Burlington Northern-Santa Fe Railroad runs along the northeast corner of the Plan Area, parallel to Santa Fe Avenue.

#### EXISTING ENVIRONMENT

Le Grand is a small, agriculturally-based community surrounded by rural agricultural operations typical of Merced County, including orchards, row crops, and grazing land. The existing adopted Le Grand Community Plan area is approximately 458 acres. The proposed Community Plan would reduce the size of the Community Plan to 430 acres.

At the time of the 2010 Census, there were approximately 500 residential units and 1,659 people living in Le Grand.

Existing land use designations within the Le Grand Plan Area include Agricultural Residential, Low, Medium and High Density Residential, General Commercial, Industrial, Institutional/Public Facility, Recreation, and Residential Reserve.

Approximately 45 percent (192 acres) of the proposed Plan Area is developed with urban uses. Of the undeveloped area, 111 acres are identified as Prime Farmland. There are no agricultural easements or Williamson Act properties within the Le Grand community, although there are numerous Williamson Act properties in the surrounding area.

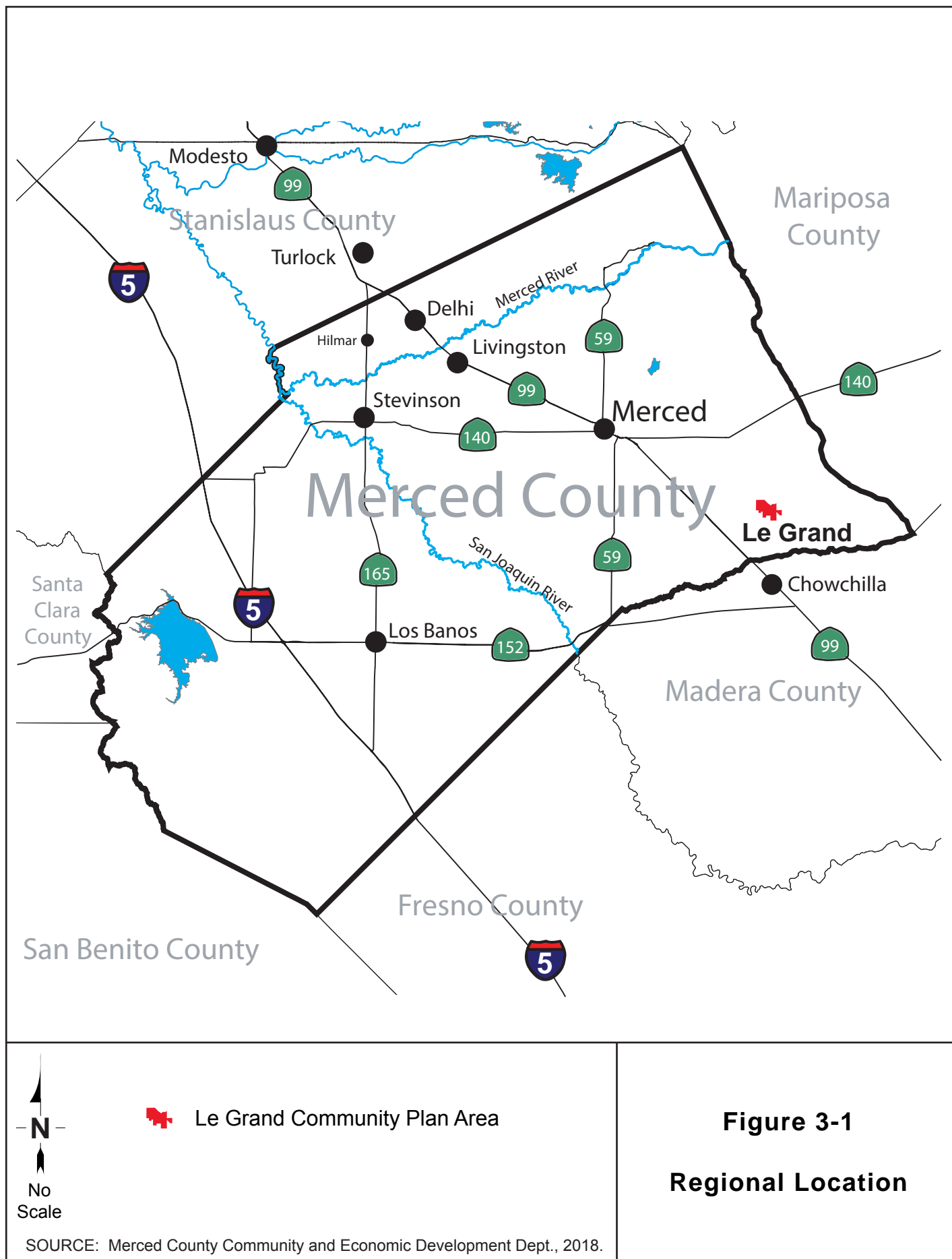
The Community Plan Area is relatively flat. There is little undisturbed land within the Plan Area, because most of it has been developed with residential or commercial uses, and/or agricultural operations. Consequently, there are only a few areas that contain biological habitat, such as open fields and drainages.

The Merced County Fire Department provides fire, rescue and emergency medical services to all unincorporated parts of the County, including Le Grand. The Merced County Sheriff's Department provides law enforcement services.

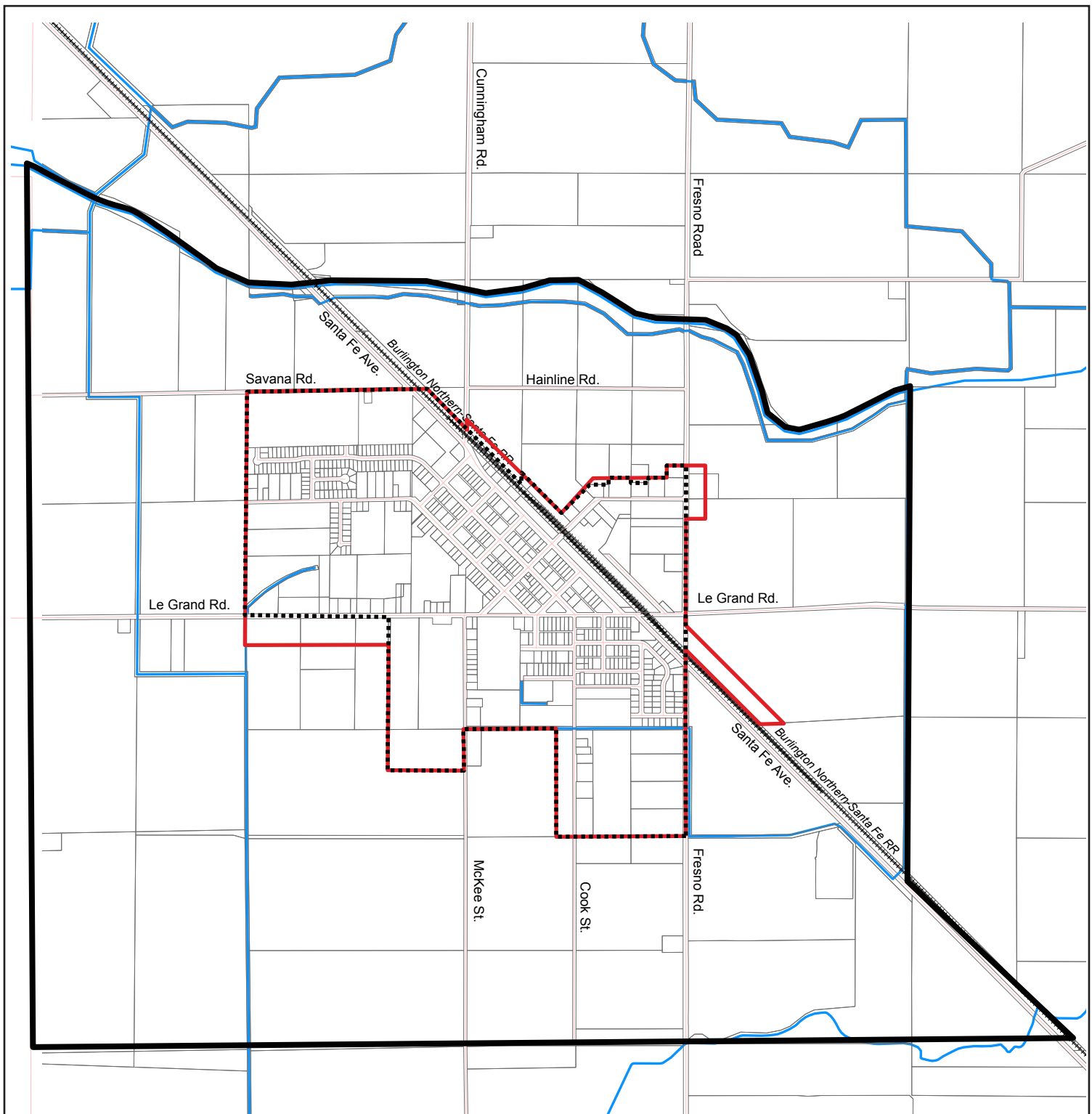
A small portion of the Plan Area is located within the 100-year floodplain, generally north of Washington Street west of the UPRR tracks and north of Jefferson Street east of the tracks. Storm drainage facilities include existing roadside ditches and gutters. The County maintains stormwater basins in the area, which discharge to a Merced Irrigation District (MID) canal.

#### PROJECT OBJECTIVES

The proposed Community Plan identifies the following guiding principles for development of the Plan Area. For purposes of this EIR, these principles are considered the project objectives.



**Figure 3-1**  
**Regional Location**



- Le Grand Community Plan Area Boundary
- Existing Boundary
- Proposed Boundary
- Study Area
- Natural Waterways and Canals



SOURCE: Merced County Planning And Community Development Dept., 2018.

0 1,000 2,000 3,000 4,000

Scale In Feet

3-3

**Figure 3-2  
Proposed  
Community  
Plan Area**

**A. Land Use Principle**

Preserve and enhance the character of Le Grand as a small, neighborhood based, agricultural community, with a strong community core, while encouraging local growth of employment opportunities, retail, service businesses, and a range of housing types.

**B. Circulation Principle**

Improve upon the existing community roadways to facilitate a wide array of mobility options for pedestrians, bicyclists, automobiles, and transit that provide for the safe movement of vehicles, people, and agricultural products.

**C. Recreation Principle**

Integrate a tiered network of community, neighborhood, and pocket parks, connected via a bike and pedestrian system, to promote an active, healthy lifestyle.

**D. Open Space and Conservation Principle**

Reduce conflicts between urban land uses, agricultural land uses, and natural resources through the provision of buffers adjacent to agricultural land and natural resources, thereby preserving the long-term viability of agriculture and open space.

**E. Noise Principle**

Minimize conflicts between noise-sensitive and noise-generating land uses for existing and future land uses through siting, buffering, and other identified business practices.

**F. Public Facilities, Services, and Safety Principle**

Emphasize public safety and provision of adequate community facilities in the design of new development within the community.

**G. Community Design Principle**

Build upon the existing character of Le Grand by encouraging use of traditional building materials, prohibiting incompatible design features, and encouraging enhanced landscaping.

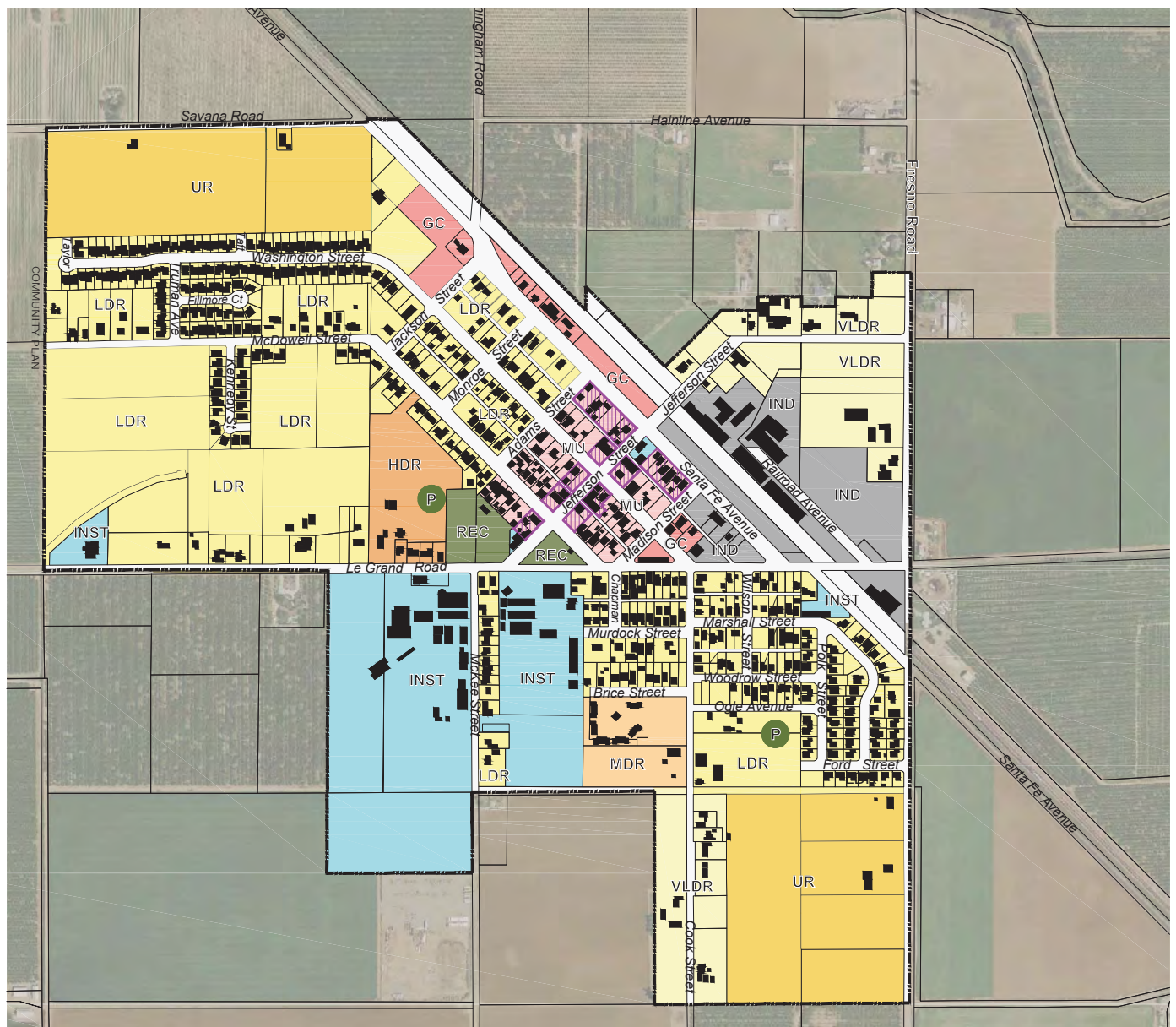
**PROJECT CHARACTERISTICS**

As stated above, the proposed Community Plan is intended to guide development in Le Grand through the year 2035. The proposed Community Plan would amend the County General Plan and provide policies to ensure that the Community Plan is implemented as envisioned by Le Grand residents and the County. The proposed land uses are shown in Figure 3-3 and Table 3-1, and described below. The County Zoning Map would also be amended to reflect the zones associated with the proposed land use designations (see Figure 3-4).

The proposed Community Plan would alter the boundaries of the Community Plan area. As shown in Figure 3-2, the proposed boundary would be coterminous with the current boundary, except that the area south of Le Grand Road and east of the UPRR tracks would be removed, as would the area south of Le Grand Road and west of the High School.

The proposed Community Plan does not include any specific development projects. In order to determine the potential impacts of the proposed Community Plan, the EIR will assume, at buildout, the land uses and levels of development shown in Table 3-1. If the proposed Community Plan is adopted, proposals for new development would need to demonstrate that they are consistent with the land use designations and policies of the adopted Community Plan.

TABLE 3-1 Le Grand Community Plan Land Use Summary				
Land Use	Acreage	Dwelling Units/Square Feet <sup>1</sup> /Number		
	Total	Existing	Future <sup>5</sup>	Total
Residential				
Very Low Density (VLD)	32	16 du	17 du	33 du
Low Density (LD)	143	381 du	335 du	716 du
Medium Density (MD)	8	35 du	47 du	82 du
High Density (HD)	10	6 du	221 du	227 du
Mixed Use (MU) <sup>2</sup>	12	49 du	8 du	37 <sup>b</sup> du
Non-Residential <sup>3</sup>		5 du	0 du	5 du
Total Residential	205	492 du	628 du	1,100 du
Non-Residential				
General Commercial (GC)	8	19,768 sf	60,267 sf	80,034 sf
Industrial (IND)	22	135,701 sf	119,954 sf	255,656 sf
Mixed Use (MU)	See above	47,287 sf	15,941 sf	63,228 sf
Institutional <sup>6</sup> (INST)	3	31,424sf	(1,366) sf	30,058sf 3 acres
Total Non-Residential	33	234,180 sf	194,796 sf	428,976 sf
Schools				
Elementary School (INST)	17	1	0	1 school
High School (INST)	37	1	0	1 school
Total Schools	54	2	0	2 schools
Parks				
Community Park (REC) <sup>4</sup>	4 acres	2 parks 480 sf	0	2 parks 480 sf
Total Parks	4 acres	2	2	2 parks
Other				
Urban Reserve (UR)	63	5 du	0	63 acres 5 du
Other (e.g. roads, canals)	71	n/a	n/a	71 acres
Total Other	134	n/a	n/a	5 du 134 acres
Total 430 acres		1,100 dwelling units 429,456 sf non-residential		
Table 3-1 Notes: du=dwelling units                      sf=square feet Some columns may not add up perfectly due to rounding.				
1. Potential building square footage is derived by multiplying the typical floor area ratio by proposed acreage. Existing building square footage has been subtracted from the total shown.				
2. Assumes 25% of maximum development potential.				
3. Some residential units are located within areas that are not zoned for residential development; it is assumed that these non-conforming units will be removed as development occurs. The dwelling units that are anticipated to be removed as nonconforming uses are included in the "Future" column (i.e., Future is the net of new minus existing-to-be-removed uses).				
4. In addition to the existing Le Grand Community Park and Le Grand Sports Park (total of 4 acres), future residential subdivisions will be required to incorporate neighborhood and/or pocket parks, which are not included in this acreage because the size and location have not been determined.				
5. Assumes that all nonconforming residences within the vertical overlay will be removed (approximately 20 du) and 8 new residences will be built within the MU, for a net reduction of 12 du.				
6. Includes Veteran's Memorial Building, Fire Station and LGCSD facilities.				



PROPOSED LAND USES

VLDR	Very Low Density Residential	MU	Mixed Use	REC	Recreational
LDR	Low Density Residential	MUV	Mixed Use Vertical	INST	Institutional/ Public Facilities
MDR	Medium Density Residential	GC	General Commercial	UR	Urban Reserve
HDR	High Density Residential	IND	Industrial		

FLOATING ZONES

- P Potential Neighborhood Park

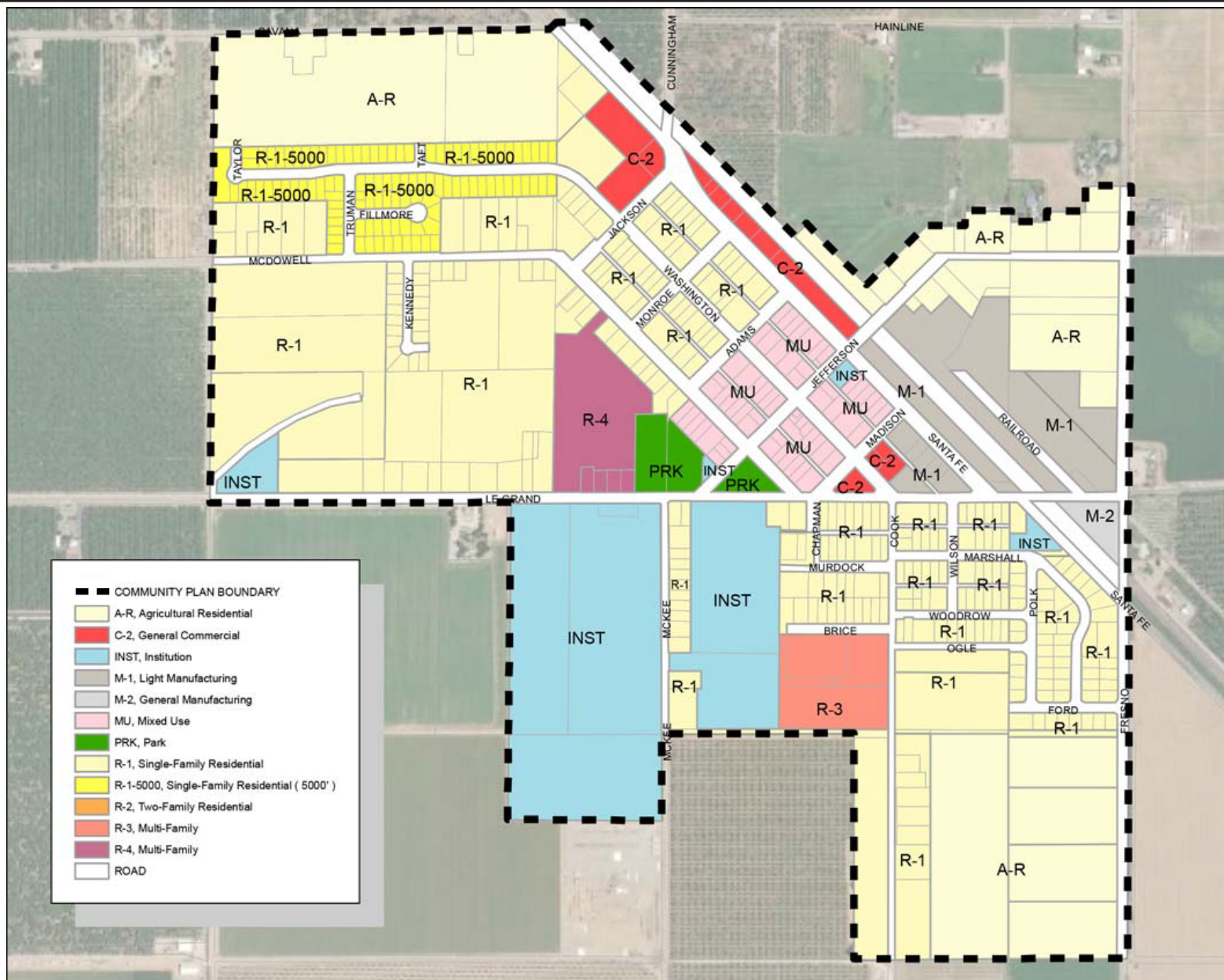


No Scale

SOURCE: RRM Design Group, 2018.

**Figure 3-3  
Proposed  
Land Use  
Designations**





- COMMUNITY PLAN BOUNDARY
- A-R, Agricultural Residential
- C-2, General Commercial
- INST, Institution
- M-1, Light Manufacturing
- M-2, General Manufacturing
- MU, Mixed Use
- PRK, Park
- R-1, Single-Family Residential
- R-1-5000, Single-Family Residential ( 5000' )
- R-2, Two-Family Residential
- R-3, Multi-Family
- R-4, Multi-Family
- ROAD

**Figure 3-4**  
**Proposed Zoning**



### **Land Use**

For purposes of the EIR analysis, it is assumed that the proposed Community Plan could accommodate an increase in the community population to a total of approximately 3,697 residents, an increase of approximately 207 percent. The Community Plan anticipates that the Plan Area population would be approximately 2,337 by 2035, or an increase of approximately 32 percent over 2015 levels, based on an assumed growth-rate of 1.38 percent (see Chapter 2 of the proposed Community Plan for more detail). Commercial, mixed-use, and industrial development would increase to approximately 429,456 square feet, an increase of approximately 83 percent. No new schools are proposed, although the existing schools would be expanded to accommodate the growth in student population.

No new community parks are proposed. Neighborhood parks, ranging from one to seven acres in size, would be provided in new residential areas. New residential areas may also include pocket parks. The Community Plan also provides for an integrated plaza/pocket park and community gateway at the intersection of Jefferson Street and Santa Fe Avenue.

The proposed Community Plan provides for and defines each land use as follows:

#### **Very Low Density Residential**

The Very Low Density Residential (VLDR) designation promotes larger estate or ranchette style single-family residential neighborhoods that serve as a transition between higher density residential areas and the surrounding agricultural environment. Residential parcels range in size from a minimum of 14,520 square feet (where community water and sewer services are available) to one acre or larger. Residential densities within this designation may not exceed 4.0 dwelling units/gross acre. Neighborhood amenities such as parks and schools are allowed.

The Community Plan area includes approximately 32 acres of VLDR. These areas are located along Jefferson Street east of the railroad tracks, along Fresno Road, and along the southern portion of Cook Street. The majority of this area includes larger homes surrounded by fenced areas for animal retention or agriculture operations. A small number of vacant parcels are available for development and/or further subdivision.

#### **Low Density Residential**

The Low Density Residential (LDR) designation is intended to promote single-family residential neighborhoods. Densities vary from a minimum of 4.0 dwelling units/gross acre to a maximum of 8.0 dwelling units/gross acre. Neighborhood amenities such as parks, schools, and religious assemblies are allowed.

At 143 acres, LDR designated property comprises the largest amount of land within the Community Plan area. A significant portion of this is developed with parcels ranging from 6,500 sf to 9,000 sf. Future growth is possible on the west side of the community north of Le Grand Road and south of McDowell Street. A Master Plan should be prepared for development of this area to guide development in a phased approach and to consider provision of community-wide amenities such as a neighborhood park. Further residential development potential occurs west of Ford Street and south of Ogle Avenue where there is a possibility to subdivide large parcels, some of which include existing homes.

#### **Medium Density Residential**

The Medium Density Residential (MDR) designation encourages a variety of detached and attached single and multifamily residential uses (e.g., triplexes, patio/courtyard homes, townhomes, and cohousing). The densities within this designation may range from a minimum of 8.0 dwelling units/gross acre to a maximum of 15.0 dwelling units/gross acre. Neighborhood amenities such as parks, schools, and religious assemblies are allowed. Non-traditional approaches to housing are also encouraged, such as cohousing, cottage developments, and other medium/cooperative housing enterprises.

Eight acres of MDR are provided within the Community Plan area. MDR is limited to the land located east of Le Grand High School, south of Brice Street, and west of Cook Street. The Le Grand Apartments are located in this area, as well as one residential unit. The intent of this area is to provide additional residential units in close proximity to schools.

#### **High Density Residential**

The High Density Residential (HDR) designation encourages a variety of multifamily residential uses. Housing types encouraged include patio/courtyard homes, townhomes, apartments, and condominiums. Densities within this designation range from 15 dwelling units/acre minimum to 33 dwelling units/acre maximum. However, the typical density is 25 dwelling units/acre. This is consistent with Table 5-38 of the County's General Plan, that identifies this area as a candidate rezone site which requires a minimum of 25 dwelling units/acre. This designation is suitable for areas near parks, schools, and town centers. Non-traditional approaches to housing are also encouraged, such as cohousing, cottage developments, and other medium/cooperative housing enterprises.

Approximately 10 acres of HDR are provided within the Community Plan area. The HDR designated area has been consolidated to one area located north of Le Grand Road and east of Le Grand Elementary Sports Park. The intent of this location is to provide additional residential opportunities in close proximity to Downtown, to schools, and to existing parks.

#### **General Commercial**

The General Commercial (GC) land use designation allows for a wide range of retail and service land uses that may be focused on serving the local population or a wider market area. Permitted uses include retail, service, and office. Entertainment establishments are also allowed within this designation, but will typically focus on serving the local community. Land designated General Commercial is typically characterized by having direct access to a collector road that forms the boundary of one or more residential neighborhoods. Activities that have the potential to generate noise above a background level (such as auto repair) are encouraged to locate along the Santa Fe corridor away from residential uses.

Approximately 8 acres of GC are provided within the Community Plan boundary and are divided between three areas. One area is located along Le Grand Road between Washington Avenue and Madison Street. An established pizza restaurant and laundromat are located here. Three parcels located northeast of Washington Street at Madison Street also have potential for commercial uses. The second area is located east of Santa Fe Avenue between Jefferson Street and Cunningham Road. An abandoned, yet historic railroad depot and an auto repair business are located here. Approximately three vacant parcels remain in this area with potential to establish new businesses. The third and largest area is located on Santa Fe Avenue north of Jackson Street. This approximately four-acre site has been designated GC as a result of public input requesting that a commercial area be provided that could accommodate a small market and/or pharmacy. This site is located within walking distance to many residents and could serve as a gateway into the community.

#### **Mixed Use**

The Mixed-Use (MU) designation has been separated into a general Mixed-Use and Vertical Mixed-Use designation in response to community feedback. Both Mixed-Use designations allow a variety of land uses on the same parcel of land. Uses include a combination of residential and commercial spaces that are typically linked together with sidewalks, paths, public spaces, and landscaping. This land use designation supports a full range of neighborhood retail and service uses, including small markets, restaurants, and specialty shops. Medical, professional, and other general office or government services are also encouraged. Residential densities range from 4 dwelling units/acre minimum to 33 dwelling units/acre maximum. Typical density is assumed at 7 dwelling units/ acre.

The community outreach process resulted in the development of guiding principles to implement the Vision for Le Grand. At each workshop, community members stated that revitalization of Le Grand's historic center was an important priority and should be emphasized. This section addresses the heart of the community. Downtown is bound by Madison Street to the south, McDowell Street to the west, Santa Fe Avenue to the east and Adams Street to the north. The area has been designated "Mixed-Use" to promote flexibility and encourage investment, while simultaneously preserving its established character. Refer to the paragraph above for allowed uses.

#### **Mixed-Use Vertical**

The Vertical Mixed-Use (MUV) designation promotes the development and redevelopment of a complementary and creative mix of residential, commercial, office, civic, and government services in the historic core area of Le Grand. This area is generally bound by Adams Street to the north, McDowell Street to the west, Madison Street to the south, and Santa Fe Avenue to the east.

In the Vertical Mixed-Use designation multiple land use types in a single structure are strongly encouraged. Additionally, along Jefferson Street and Santa Fe Avenue, commercial and office uses shall be provided adjacent to the street on the first floor, while residential units may be included above commercial spaces or elsewhere on the parcel. This restriction enhances the economic viability of the downtown area as a central commercial hub and preserves the first floor for commercial uses along the street edge.

The Vertical Mixed-Use designated area is intended to include a variety of uses, contributing to the diversity and character of the community's central core. The adaptive reuse of existing structures is strongly encouraged. Similarly, the submittal of applications proposing to combine small parcels via a master plan approach for development approval is also encouraged.

#### **Industrial**

The Industrial (IND) designation allows for light industrial and manufacturing land uses that are directly associated with local commercial agriculture – either in storage and processing of its products, the manufacture or repair of equipment used for production, processing, or storage of local agricultural commodities, or the repair and maintenance of equipment used for the transportation of locally produced, stored or processed agricultural commodities. Non-agricultural manufacturing, processing, or storage activities may be conditionally allowed when it can be demonstrated that the proposed use will generate a clear benefit to the community through the creation of additional employment opportunities. Merced County General Plan (Table LU-2) permits a FAR of 1.0.

No application for the subdivision of Industrially designated land will be accepted for County processing without the joint submittal of a complete Master Plan, or planned development application for parcels larger than 1 acre, or if the Community and Economic Development Director can make a finding that the proposed use would have minimal impact on traffic, noise, and odors to residents and businesses located within 500 feet of the proposed use. This provision minimizes the possibility of small scale, 'piecemeal' developments consuming the limited supply of available industrially designated land within the community. Small parcels of industrially designated land have been deliberately provided in the land use design to accommodate new, small-scale, industrial operations that do not require several acres of previously undeveloped land to operate efficiently.

Approximately 22 acres of IND designated land are provided within the Community Plan area. The majority of the industrial land is located along the railroad tracks between Le Grand Road and Jefferson Street.

#### **Institutional**

The Institutional (INST) designation accommodates public, quasi-public, and government-owned or operated facilities. Public Facilities include buildings and associated lands that serve the community, including schools, libraries, fire and police stations, utility facilities (wells, pumping stations, treatment plants, and district offices), and community centers. No new institutional uses are planned within the Community Plan area. Maintenance and/or expansion of existing facilities is possible.

#### **Recreation**

The Recreation designation (REC) provides for multiple recreational opportunities. The Recreation designation typically includes neighborhood parks and pocket parks. The size and locations of these parks shall be consistent with Chapter 6, Open Space and Conservation.

Neighborhood parks are strategically located throughout the community to serve residential neighborhoods within walking or biking distance. The Le Grand Community Park is sized and programmed consistent with a neighborhood park designation. Smaller "pocket parks" within residential areas are strongly encouraged. Figure 4.7 shows three potential neighborhood parks

designated with “floating green dots.” The final location of these parks will be determined with the preparation of a Master Plan in conjunction with the associated residential development.

### **Urban Reserve**

Consistent with the General Plan, the Urban Reserve (UR) designation is applied to areas within Le Grand that are considered appropriate for urban land use activities at some future date, depending upon community growth needs and availability of urban services, utilities, and facilities. These areas are intended to remain rural until they are re-designated in the future. This area is not anticipated to be developed under the Community Plan; potential expansion has not been specified. Development of UR designated areas require preparation of a Community Plan amendment and preparation of environmental analysis, as determined by the Community and Economic Development Director.

The Community Plan includes two UR designated areas. One of the areas is located north of the Washington Street residential neighborhood where Taft Street and Taylor Street dead-end. The other area is located south of Ford Street and east of Fresno Road (see Figure 3-3).

The proposed Community Plan does not include any specific development projects. In order to determine the potential impacts of the proposed Community Plan, the EIR will assume, at buildout, the land uses and levels of development shown in Table 3-1. If the proposed Community Plan is adopted, proposals for new development would need to demonstrate that they are consistent with the land use designations and policies of the adopted Community Plan.

The proposed Community Plan requires that the plan be reviewed to determine if an update is warranted at the following milestones:

- a. The population of the Le Grand Community Plan Area exceeds 3,000 residents or;
- b. 80% of the Community Plan area has been built out, or;
- c. The Community Plan area expands by over 50 acres; or
- d. Land use designations have been amended by 10% of the total Community Plan area acreage.

If none of the above criteria occur, then the Community Plan states that an update should be initiated by the year 2036.

### **Master Plans**

The proposed Community Plan requires preparation of Master Plans in four areas within Le Grand, as shown in Figure 3-5. A Master Plan is intended to coordinate development and ensure the construction of infrastructure and public facilities in these areas. The Master Plan process allows for the land use designations within the subject area to be reorganized provided that the overall land use acreage and densities for residential, non-residential and public uses are broadly consistent with the Community Plan. Each Master Plan must contain a number of elements, including descriptions of the distribution of land uses and public/private amenities, acreages, density and product types of residential land uses, park acreages and plans for circulation, water, wastewater and drainage facilities. A phasing plan and financing plan are also required. See Section 10.5, Master Plans, in the Community Plan for a full description of Master Plan requirements and provisions.

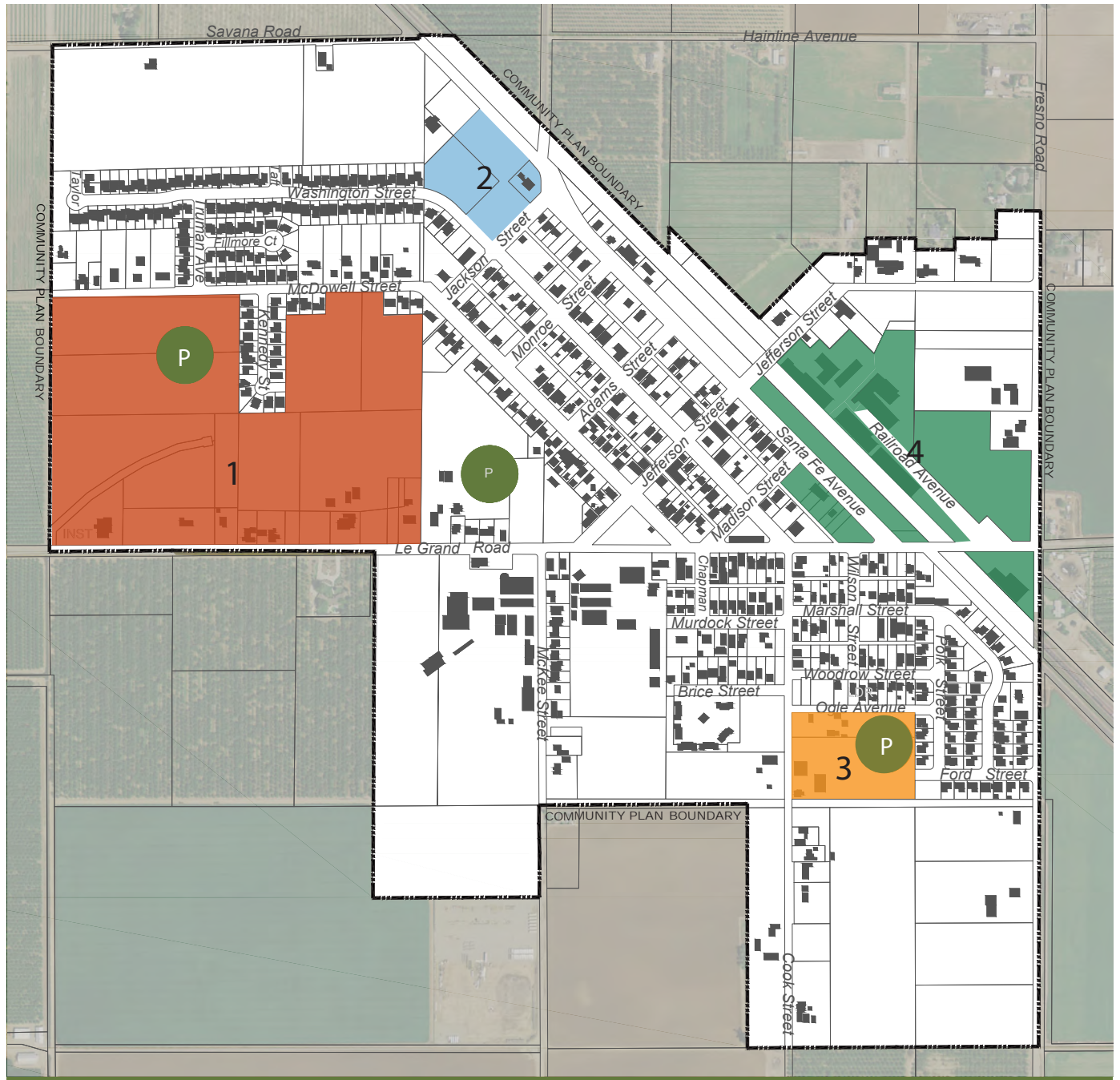
### **Infrastructure**

#### **Circulation**

The existing street system in Le Grand consists of major and minor collector streets, and local streets that form a modified grid pattern (see Figure 3-6). All of the streets adjacent to and within the Plan Area are two-lane roadways (one through lane in each direction).

The Circulation Plan classifies a hierarchy of roadways based on their intended function and projected traffic levels. Three types of roadways are identified—Urban Major Collectors, Urban



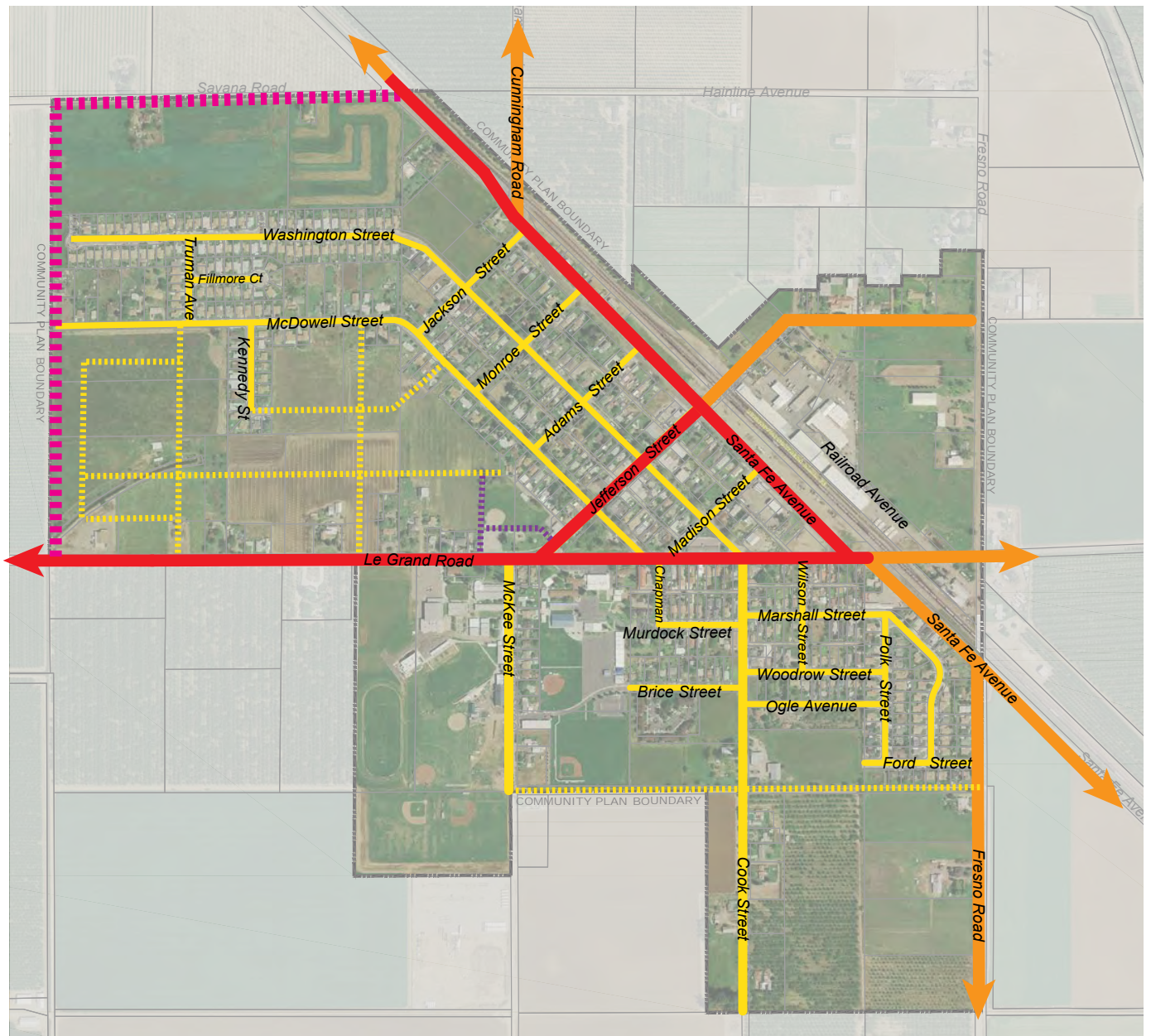


- |  |  |   |
|--|--|---|
| <div style="background-color: orange; width: 20px; height: 10px; margin-bottom: 5px;"></div> 1 <div style="background-color: blue; width: 20px; height: 10px; margin-bottom: 5px;"></div> 2 <div style="background-color: orange; width: 20px; height: 10px; margin-bottom: 5px;"></div> 3 <div style="background-color: green; width: 20px; height: 10px;"></div> 4 | Area 1<br>Area 2<br>Area 3<br>Area 4 (Master Plan requirement applies to areas with parcels larger than 1 acre, or if the Community and Economic Development Director can make a finding that the proposed use would have minimal impact on traffic, noise, and odors to residents and businesses located within 500 feet of the proposed use) | <div style="background-color: green; width: 40px; height: 40px; border-radius: 50%; display: flex; align-items: center; justify-content: center; margin: 0 auto;">P</div> <p>Potential<br/>Neighborhood Park<br/>Location</p> |
|--|--|---|

No Scale

SOURCE: RRM Design Group, 2018.

**Figure 3-5  
Proposed  
Master Plan  
Areas**



- |  |                  |  |                                 |
|--|------------------|--|---------------------------------|
|  | Major Collector  |  | Potential Urban Local Road      |
|  | Minor Collector  |  | Potential Truck By-Pass Route   |
|  | Urban Local Road |  | Potential Pedestrian Connection |



SOURCE: RRM Design Group, 2018.

**Figure 3-6**  
**Circulation Map**

### Minor Collectors, Local Roads, and Cul-de-Sacs.

Urban major collectors would serve as primary circulation corridors. Le Grand Road west of Santa Fe Drive, Santa Fe Avenue north of Le Grand Road, and Jefferson Street from Santa Fe Avenue to Le Grand Road would be urban major collectors. These roadways would have two 12-foot wide vehicle lanes (one in each direction), 4-foot wide bike lanes, 8-foot wide parking lanes and sidewalks or multiuse trails.

The cross-sections for urban minor collectors vary, but what is consistent throughout includes two 11-foot wide vehicle lanes, sidewalks or multiuse trails on at least one side of the street, and 8-foot wide shoulders on one side.

Local roads comprise the majority of the circulation network. New local roads would have, at a minimum, two 10-foot wide vehicle lanes and sidewalks. Bike lanes and traffic calming elements (e.g., bulb outs) would be provided on some roads.

Traffic calming devices are recommended along several streets, including Le Grand Road, Santa Fe Avenue, Jefferson Street, Cook Street, and Fresno Road. Such devices could include bulb outs, speed tables, raised sidewalks, and other elements that slow vehicle traffic. The location of these devices would be determined as new development and roadway improvements are implemented.

### **Bicycle Routes**

There are no designated bike lanes in the Plan Area at this time. The proposed Community Plan calls for Class II bike lanes (on-street, striped bike lanes) on Santa Fe Avenue, Jefferson Street, and Le Grand Road (see Figure 3-7). Class III routes are proposed for Jackson Street, McKee Street, Cook Street and two local roads to be built within future residential development.

In addition to these bike facilities, the Community Plan identifies potential multiuse trail locations along portions of Santa Fe Avenue, Fresno Road, and Le Grand Road. Additional multi-use trails could be located along Ford Street and the extension of Truman Avenue to Le Grand Road.

### **Pedestrian Circulation**

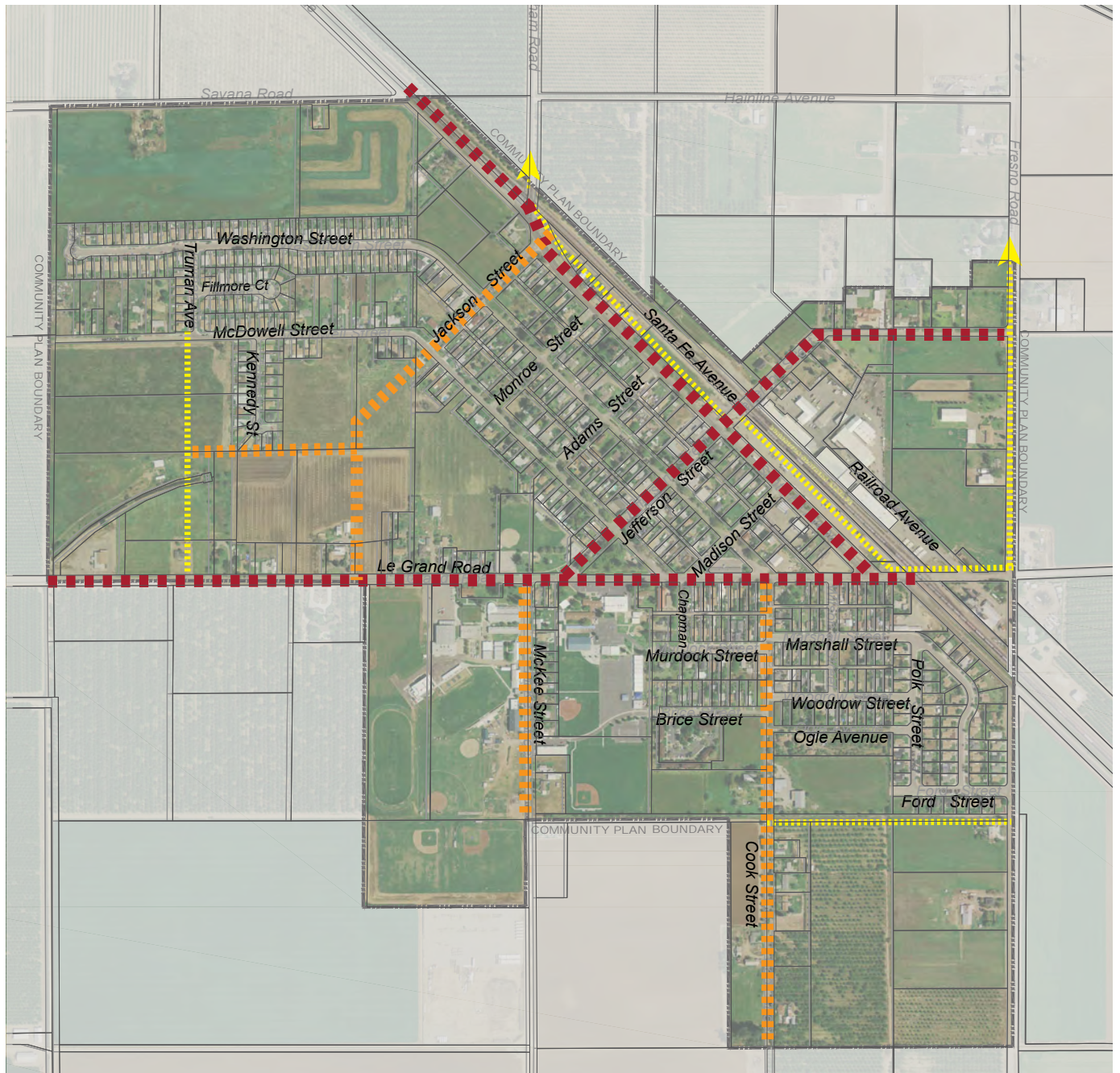
One of the primary concerns expressed during public outreach for the proposed Community Plan was the lack of sidewalks and trails within the Plan Area. The potential priority sidewalks identified in the Community Plan (see Figure 3-8) are largely intended to complete the network of sidewalks/connect the disconnected sidewalk network within the existing street system. New residential development would also be required to provide sidewalks.

### **Public Transit**


Public transit service ("The Bus") is provided by Merced County Transit. The Bus is managed by the Merced County Association of Governments. Unincorporated communities, such as Le Grand, are served by rural routes. Rural routes provide a connection between unincorporated communities and cities within Merced County. Fixed-route service is supplemented by para-transit or "dial-a-ride" service.

An established rural bus route (Route 9) provides a public transit link between the City of Merced and the unincorporated communities of Le Grand and Planada. Route 9 follows Highway 140 from Merced into Le Grand. The bus route winds its way through Planada before heading southwest towards Le Grand via Santa Fe Avenue, with several stops in Le Grand, as noted in Chapter 5, Circulation, of the Community Plan.





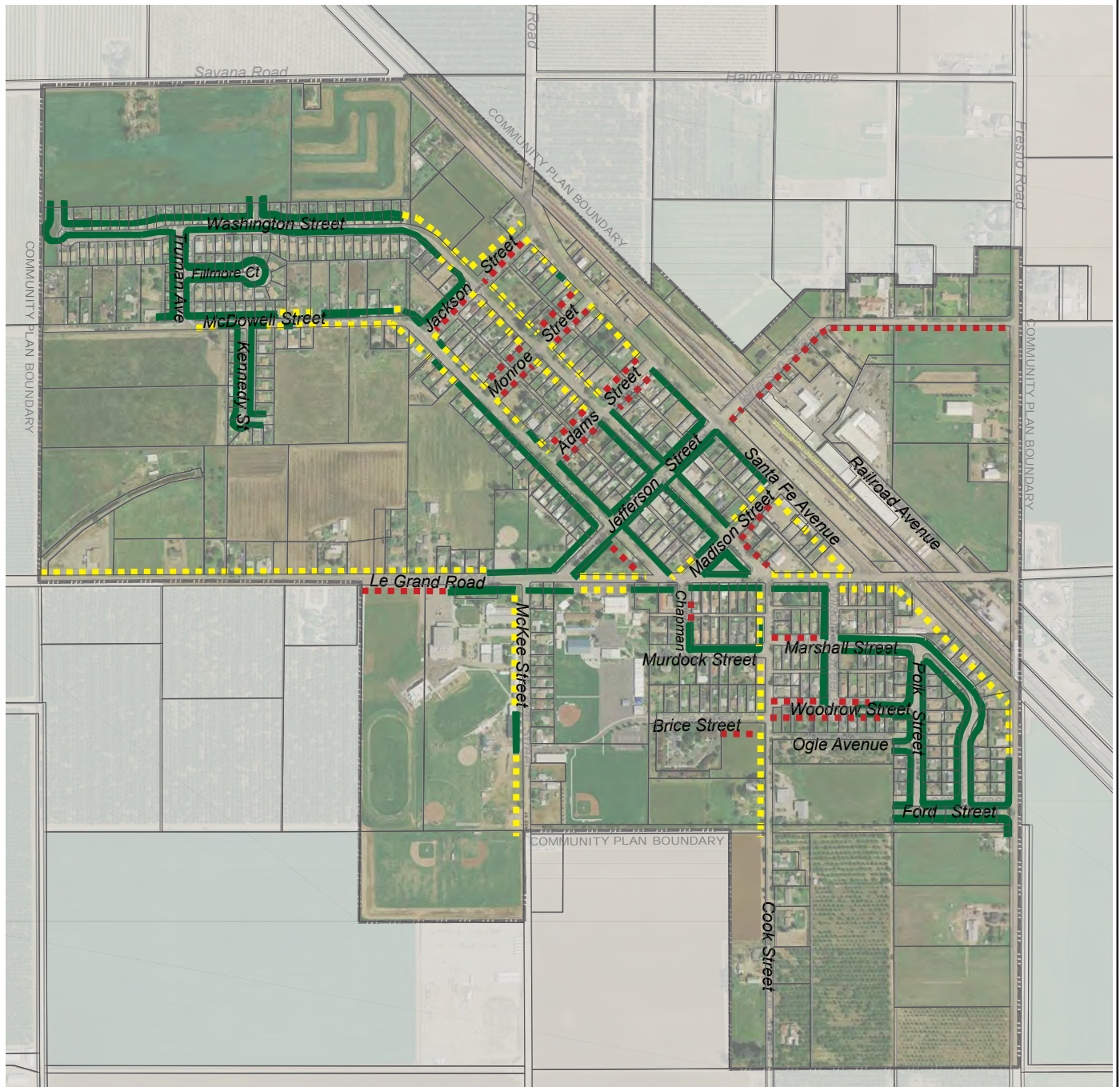
- ■ ■ ■ ■ Potential Class II Lane
- ■ ■ ■ ■ Potential Class III Route
- ■ ■ ■ ■ Potential Multiuse Trail

 No Scale

SOURCE: RRM Design Group, 2018.

**Figure 3-7**  
**Proposed**  
**Bicycle Facilities**





- Existing Sidewalks
- Potential Sidewalks
- Potential Priority Sidewalks



No Scale

SOURCE: RRM Design Group, 2018.

**Figure 3-8**  
**Existing And Potential**  
**Sidewalk Locations**

**Water**

Le Grand Community Service District (LGCS D) provides water and sewer services to the Le Grand community. The LGCS D has approximately 543 water connections. Domestic water is provided entirely from groundwater wells, with a combined peak capacity of approximately 1.7 million gallons per day (mgd) and an average usage of 0.27 mgd, which equates to approximately 96 million gallons per year or almost 300-acre feet per year (AFY).

The proposed Community Plan would increase water demand within the LGCS D service area to approximately 200 million gallons per year or 626 AFY. According to the Water Supply Assessment prepared for the proposed Community Plan, groundwater supplies are adequate to meet this increased demand (see Chapter 4.9, Utilities, and Appendix H, Water Supply Assessment). However, the LGCS D would require additional infrastructure in order to meet maximum day and peak hour demand, including:

- Three additional groundwater wells (500-750 gpm capacity),  
OR
- Two additional groundwater wells and 150,000 gallons of storage.

In addition, water mains will need to be installed within new development areas.

New well sites and the storage facility could be located within or outside of the Plan Area. New well sites would be approximately 100 feet by 100 feet. A water storage tank would require a site at least 600 feet by 600 feet. The tank would be approximately 33 feet wide (in diameter) and 25 feet tall. A centralized location, such as the High School property or a parcel near the high school, would be preferred.

For more detail regarding water demand and service, please see Section 4.9, Utilities.

**Wastewater**

The LGCS D operates a wastewater treatment plant (WWTP) located to the southwest of the community. The WWTP has a design capacity of approximately 0.35 million gallons per day (mgd), and a permitted capacity of 0.50 mgd. The daily average flow is approximately 0.10 mgd. The LGCS D has approximately 492 sewer customers.

The proposed Community Plan would generate an estimated additional 0.132 mgd of wastewater, resulting in a total daily flow to the WWTP of approximately 0.232 mgd. This amount would be within the current WWTP treatment capacity and permitted capacity. However, new conveyance and disposal facilities would be required, including:

- Additional aeration installed in pond 3 of the WWTP,
- Replacement of the existing main lift station south of the High School on McKee Street,
- Installation of sewer lines to new development areas,
- Installation of lift stations in new development areas, and
- Additional 30 to 35 acres agricultural land acquired and/or leased for effluent disposal.

For more detail regarding wastewater generation, conveyance and treatment, please see Section 4.9, Utilities.

**Stormwater Drainage**

A comprehensive drainage system operated by Merced County serves the entire Plan Area, with the exception of undeveloped properties. Retention facilities discharge to a Merced Irrigation District canal.

No community-wide storm drainage facilities are identified in the proposed Community Plan. Rather, each new development must demonstrate to the County that it has included storm drainage facilities adequate to serve the proposed development, in compliance with the Storm Drainage Design Manual. This could also include the installation of additional collection system piping, outfall supplementation, and discharge pond enlargement.

For more detail regarding stormwater drainage, please see Section 4.9, Utilities.

## **Public Services**

### **Schools**

There are three schools within Le Grand---Le Grand Elementary, which serves grades K through 8, Le Grand High School and Granada High School. Le Grand High School serves students from both Planada, Le Grand, and Plainsburg.

No new schools are planned for in the Community Plan. It is anticipated that the existing schools would expand in order to serve increased enrollments.

### **Parks and Open Space**

The Community Plan includes 4 acres of parkland. Parks would include the existing Community Park and Sports Park, and new neighborhood parks and pocket parks. The Community Plan also provides for an integrated plaza/pocket park and community gateway at the intersection of Jefferson Street and Santa Fe Avenue.

#### **Existing Parks**

There are two parks within Le Grand---the Le Grand Community Park, and Le Grand Elementary Sports Park. The Community Park has passive recreational facilities, such as picnic areas. The Sports Park, located across from the high and elementary schools, has play fields. Together, these parks encompass four acres. No additional community parks are proposed in the Community Plan, nor are any specific improvements planned at these parks.

#### **Neighborhood Parks**

Neighborhood parks would serve as neighborhood focal points, and typically range in size from 1 to 7 acres. These parks are intended to serve residents within a half-mile radius. Typically, they would provide playgrounds, picnic areas, and passive spaces. The size of new neighborhood parks would depend on the number of residents expected to live in the new development, and the extent of funding available for developing and maintaining permanent recreational facilities. Potential neighborhood park locations are shown in Figure 6.2 of the proposed Community Plan.

#### **Pocket Parks**

The Community Plan provides for pocket parks, which are small public and/or private spaces that serve a single neighborhood. Pocket parks would be smaller than one acre. They would have limited recreational opportunities, such as playgrounds, benches, or public artwork and a quiet seating area.

### **Police and Fire Protection Services**

The Merced County Fire Department provides fire, rescue and emergency medical services to all unincorporated parts of the County, including Le Grand. Fire Station 84, located on the corner of Santa Fe Avenue and Jefferson Street, serves the Plan Area.

The Merced County Sheriff's Department provides law enforcement services to the Plan Area, based out of the Sheriff's Department main office in the City of Merced. A Community Law Enforcement Office (CLEO), staffed by community volunteer patrols, is located in Planada on

Highway 140.

No additional fire stations, Sheriff's Department, and/or other emergency services are proposed in the proposed Community Plan.

### **Design Guidelines**

The proposed Community Plan includes design guidelines for each land use designation (see Chapter 9, Community Design, of the proposed Community Plan). The guidelines address a variety of design-related elements, including architectural character, massing, sidewalks, storefronts, landscaping, parking, and signage.

### **Agricultural Buffer**

As discussed above, Le Grand is surrounded by agricultural land. Consistent with the County General Plan, the proposed Community Plan requires a 200-foot agricultural buffer between residences and agricultural areas. The buffer location is shown in Figure 3-9. The buffer may not include residences, but could include roads, canals, trails and/or open space. Buffers for other urban uses would be determined in consultation with the Merced County Agricultural Commissioner (MCAC).

### **Off-Site Improvements**

As discussed above, new and/or expanded water, wastewater and drainage facilities will be needed to accommodate development under the proposed Community Plan. Most of this infrastructure, particularly conveyance lines, will be constructed within the Plan Area. However, up to three additional wells, and possibly a water storage tank, could be required. These facilities could be located within or outside of the Plan Area. In addition, while the WWTP has adequate treatment capacity, there would be a need for improvements within the WWTP and additional fields for disposal of treated effluent prior to buildout of the proposed Community Plan. Because these facilities would be required to serve development under the proposed Community Plan, they are analyzed programmatically in this EIR.

The following off-site improvements are assumed to be constructed outside of the Plan Area in order to serve buildout of the proposed Community Plan:

- Three additional groundwater wells (500-750 gpm capacity),  
OR
- Two additional groundwater wells and 150,000 gallons of storage.
- Additional aeration installed in pond 3 of the WWTP, and
- Additional 30 to 35 acres agricultural land acquired and/or leased for effluent disposal.

### **Project Phasing and Schedule**

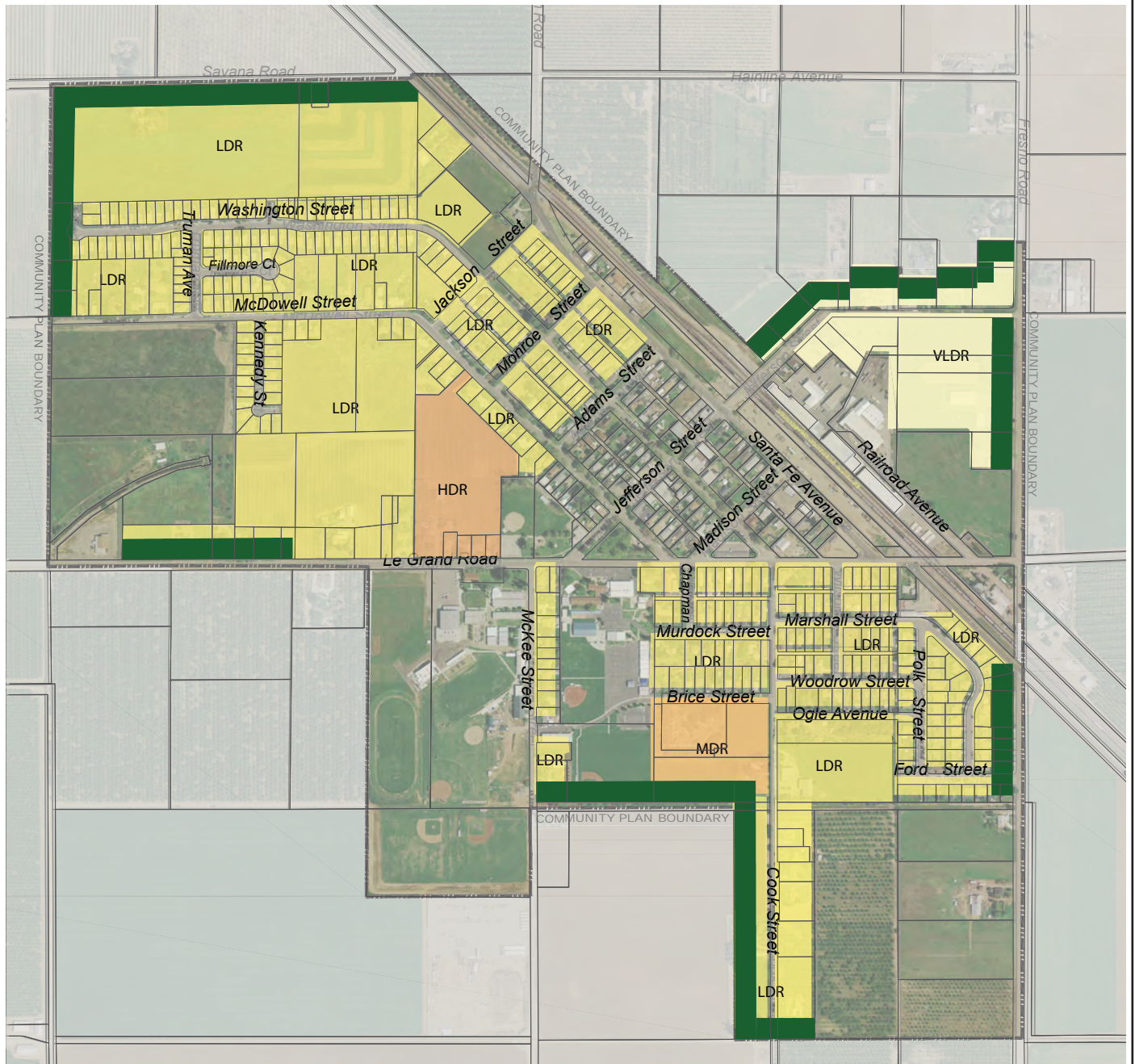
The proposed Community Plan, if adopted, is expected to take approximately 20 years to build out. The actual duration would depend on market and other factors.






## **PROJECT REVIEW AND APPROVAL**

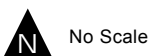
### **Lead Agency**

In conformance with Sections 15050 and 15367 of the CEQA Guidelines, Merced County has been designated the 'lead agency,' which is defined as the "public agency that has the principal responsibility for carrying out or disapproving a project."





- |  |  |
|--|--|
|  Very Low Density Residential |  Medium Density Residential |
|  Low Density Residential      |  High Density Residential   |
|  200' Agriculture Buffer      |  |



SOURCE: RRM Design Group, 2018.

**Figure 3-9  
Designated  
Agricultural Buffers**

### **County Approvals**

The following actions would be taken by Merced County in order to approve the proposed Community Plan:

- **Certification of the EIR** - Certification that the EIR adequately identifies any significant environmental effects of the proposed Community Plan, pursuant to CEQA and the CEQA Guidelines;
- **Mitigation Monitoring** – Adoption of a Mitigation Monitoring Plan to reflect the measures required to mitigate significant impacts, if any, of the project;
- **General Plan Amendment** – Approval of the land use designations for the Plan Area as shown in Figure 3-3;
- **Zoning Change** – Rezoning for the Plan Area as shown in Figure 3-4;
- **Water Supply Assessment** – Adoption of the Water Supply Assessment (provided in Appendix H). Pursuant to State law, the County must adopt the Water Supply Assessment, because the LGCSD has fewer than 3,000 connections, and the proposed Community Plan would increase the number of water connections in the LGCSD service area by more than 10 percent.

### **Subsequent Approvals**

As discussed above, no development proposals have been submitted for the project site. Prior to developing the project site, a Small Lot Tentative Map and/or Conditional Use Permit must be approved by the County. These are discretionary actions subject to CEQA. Additional subsequent actions could include Improvement Plans, grading permits and building permits.

### **Other Agency Actions**

Because no individual projects or entitlements are included in the proposed Community Plan, no action by other agencies is necessary at this time. Subsequent approvals, such as Small Lot Tentative Maps or Conditional Use Permits, could require the following actions of regulatory agencies.

- **Local Area Formation Commission (LAFCO)** for amendments to the Community Plan boundaries and the Le Grand Community Services District Sphere of Influence.
- **Section 7 or Section 10 Consultation** with the U.S. Fish and Wildlife Service if any federally-listed plant or wildlife species could be adversely affected by the proposed development.
- **404 permit** from the US Army Corps of Engineers if any waters of the US would be filled.
- **Section 1602 Streambed Alteration Agreement** from the California Department of Fish and Wildlife for potential disturbance to the bed or bank of jurisdictional waters.
- **Section 401** certification if a federal 404 permit is issued, and/or **National Pollutant Discharge Elimination Permit (NPDES)** from the Regional Water Quality Control Board if discharge to surface waters would be necessary or if discharges would increase over currently permitted levels.
- **State General Construction Activity Storm Water Permit** issued by the State Water Quality Control Board.
- **Permit to Operate from the San Joaquin Air Quality Management District** for any industrial or commercial facility that would include stationary equipment that discharges certain pollutants to the air.
- **Can and Will Serve Letter** for water and wastewater service from the Le Grand Community Service District would be required as a condition of new development.

## **4. ENVIRONMENTAL ANALYSIS**

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## **4.0 INTRODUCTION TO THE ANALYSIS**

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### TOPICS ADDRESSED

Chapter 4, the Environmental Analysis, of this EIR, discusses the environmental setting, impacts and mitigation measures for each of the following topics:

- Agricultural Resources,
- Air Quality,
- Biological Resources,
- Cultural Resources,
- Greenhouse Gas Emissions and Climate Change,
- Land Use,
- Noise,
- Transportation and Circulation, and
- Utilities (including water, wastewater, storm drainage and solid waste).

Impacts that would be less than significant and/or do not require extensive analysis are addressed in Chapter 5, Environmental Checklist.

Chapter 2, Summary, summarizes the impacts identified in Chapter 4, both significant and less than significant, of the proposed Community Plan, policies and implementation measures that would reduce the environmental effects of the proposed Community Plan, identified mitigation measures, and significance before and after mitigation. Alternatives are also summarized in Chapter 2. A full analysis of alternatives appears in Chapter 6.

The format of Chapter 4 sections is described below.

### BASIS OF ANALYSIS

The impacts of the proposed Community Plan are measured against existing conditions in the Plan Area and vicinity. Each section in Chapter 4 describes the existing conditions as they pertain to the particular topic (e.g., agricultural resources).

### SECTION FORMAT

Chapter 4 is divided into sections that provide the environmental setting, regulatory setting, standards of significance, impacts on the environmental setting, and feasible mitigation measures for significant impacts. Each section begins with a description of the proposed Community Plan's **ENVIRONMENTAL SETTING** and a **REGULATORY SETTING** as it pertains to a particular issue. The environmental setting provides a point of reference for assessing the environmental impacts of the proposed Community Plan and alternatives. The setting discussion addresses the conditions that exist prior to implementation of the proposed Community Plan. This setting establishes the baseline by which the proposed Community Plan and alternatives are measured for environmental impacts.

The setting description in each section is followed by an **IMPACTS AND MITIGATION MEASURES** discussion. The impact and mitigation portion of each section identifies Standards of Significance for determining whether an impact is significant, a brief explanation of the Methods

of Analysis, and impact statements, prefaced by a number in bold-faced type. An explanation of each impact, its significance, and available mitigation is provided. The degree of relief provided by identified mitigation measures is also evaluated. A cumulative analysis is included at the end of each section. An example of the format is shown below.

#### **4.X-1 Statement of impact.**

**Applicable Regulations:** State laws, County ordinances, etc.

**Significance:** Significant or Less than Significant, after applicable regulations

**Mitigation Included in the Proposed Community Plan:** Identifies policies and implementation measures of the proposed Community Plan that would reduce the environmental impact

**Significance after Mitigation Included in the Proposed Community Plan:** Significant or Less than Significant, after implementation of applicable regulations and proposed Community Plan policies

**Additional Mitigation:** Mitigation Measure 4.X-1, if required, beyond regulations and Community Plan policies.

*Recommended mitigation measures are numbered to correlate to the impact number.*

**Residual Significance:** Significant or Less than Significant, after regulations, Community Plan policies and implementation measures, and mitigation measures.

The above summary is followed by a discussion of the potential impact and description of how applicable regulations, Community Plan policies, and additional mitigation measures, if identified, would reduce impacts of the proposed Community Plan.

## **4.1 AGRICULTURAL RESOURCES**

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### INTRODUCTION

This section describes the existing agricultural resources within the Plan Area and vicinity, including Important Farmland, Williamson Contract lands, and agricultural activities. The discussion also summarizes the regulations, policies, and programs that apply to agricultural resources in the Plan Area; and evaluates the extent to which the proposed Community Plan could result in the loss of agricultural resources and/or conflicts between agricultural operations and proposed Community Plan uses.

Comments received in response to the Notice of Preparation (NOP) did not identify any issues related to agricultural resources.

### ENVIRONMENTAL SETTING

#### Agricultural Resources

According to the 2030 Merced County General Plan, agriculture is the prominent economic segment in the County and accounts for more than 90 percent of all land area. Merced County is ranked fifth among all counties in California and sixth in the nation in the annual market value of farm products.<sup>1</sup>

According to the 2016 Report on Agriculture, Merced County agriculture commodities grossed \$3,447,830,000 in 2016, a 3.9% decrease over 2015. Milk was the top agricultural commodity (by dollar value), followed by almonds, chickens, cattle and calves, and sweet potatoes. Other top agricultural commodities include tomatoes, corn (for silage), wine grapes, alfalfa, eggs, cotton, and other poultry.<sup>2</sup>

#### Surrounding Land Uses

The land uses immediately surrounding the Plan Area are primarily agricultural, including cultivated crops and other agricultural operations. Beyond the immediate area, farmland supports a diversity of agricultural activities including row crops, nut and fruit orchards, and dairies.

#### Farmland Classification

The Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) identifies farmland that is lost and gained during two-year periods. Farmland monitoring is dependent upon farmland classifications, which are largely based on soil surveys. Agricultural land is quantified based upon acreage, and classified as Prime, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. "Important Farmland" is defined as Prime Farmland, Farmland of Statewide Importance and Unique Farmland. The FMMP also quantifies the amount of urban land and grazing lands within the County. Farmland classifications found in Merced County are defined below:

##### *Prime Farmland*

Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for the irrigated agricultural production at some time during the four years prior to the mapping date.

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<sup>1</sup> Merced County, *2030 Merced County General Plan*, December 10, 2013, page AG-1.

<sup>2</sup> Merced County Department of Agriculture, *2016 Report on Agriculture*, 2016, pages 1 and 2.

*Farmland of Statewide Importance*

Farmland similar to Prime Farmland, but with minor shortcomings, such as greater 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*

Farmland 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 cropped at some time during the four years prior to the mapping date.

*Farmland of Local Importance*

Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. For Merced County, farmlands that have physical characteristics that would qualify for Prime or Statewide Importance except for the lack of irrigation water. Also, farmlands that produce crops that are not listed under Unique Farmland but are important to the economy of the county or city.

*Grazing Land*

Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

*Confined Animal Agriculture*

Lands occupied by poultry facilities, feedlots, dairy facilities, and fish farms. Prior to 2008, these facilities were classified as Farmland of Local Importance in Merced County, or were classified based on the characteristics of the underlying soils.

*Urban and Built-up Land*

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

*Other Land*

Land not included in any other mapping category. Common examples include low density rural residential developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

*Water*

Perennial water bodies with an extent of at least 40 acres.

**Merced County Farmland Inventory**

As stated above, the FMMP inventories the amount of farmland lost and gained and the amount of urban land gained every two years. The most recent report for Merced County covers the years 2014 to 2016.

Merced County was reported to have 1,157,990 acres of Important Farmland and grazing land in 2016 (see Table 4.1-1). In Merced County, there was a net reduction of 582 acres of Important Farmland between 2014 and 2016, or 0.01%. This included a net reduction of 2,671 acres of Prime Farmland, 293 acres of Farmland of Statewide Importance, and 553 acres of Farmland of Local Importance, and an net increase of 2,935 acres of Unique Farmland. During this same time period, there was a net reduction of 4,333 acres of grazing land. Out of the total loss of farmland and grazing land in 2014-2016, a total of 1,157 acres were converted to "Urban

<b>TABLE 4.1-1</b> <b>2016 Merced County Farmland Inventory</b>		
<b>Farmland Type</b>	<b>Acres</b>	<b>% of Total</b>
Prime Farmland	269,243	21.3
Farmland of Statewide Importance	154,509	12.2
Unique Farmland	115,235	9.1
Farmland of Local Importance	61,671	4.9
Grazing Land	552,632	43.7
<b>Total Agricultural Land (Farmland plus Grazing Land)</b>	<b>1,152,990</b>	<b>91.1</b>
Urban and Built-Up land	40,340	3.2
Other	55,771	4.4
Water	16,531	1.3
<b>Total Inventoried Land</b>	<b>1,265,632</b>	<b>100</b>
Source: California Department of Conservation, Division of Land Resource Protection, <i>Merced County 2014-2016 Land Use Conversion Table</i> .		

and Built-up Land” uses.<sup>3</sup>

#### Le Grand Community Plan Farmland Inventory

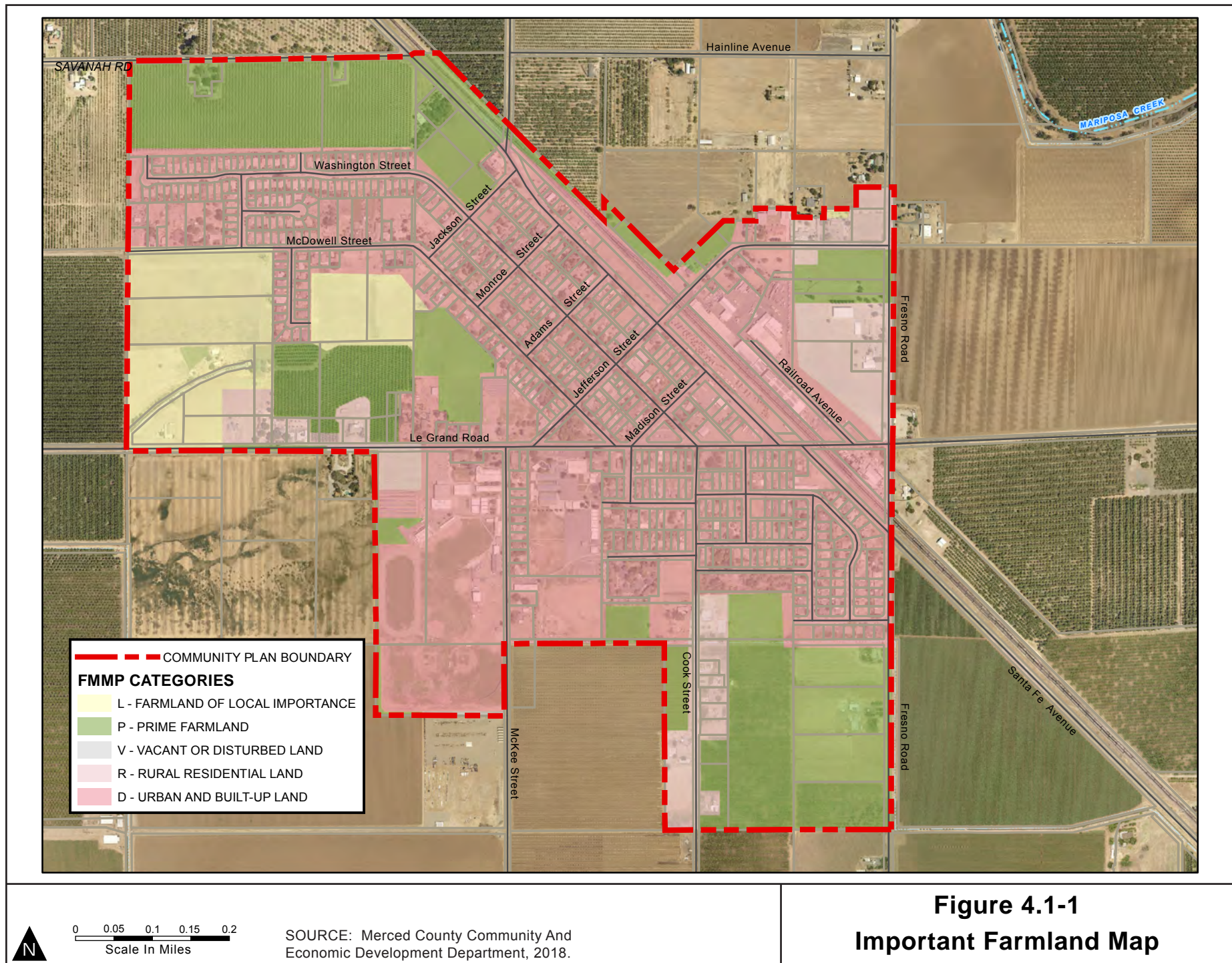
As shown in Table 4.1-2, approximately 65 percent (248 acres of urban and built up land and 35.8 acres of rural residential land) of the Le Grand Plan Area is developed. Of the undeveloped area, approximately 111 acres are designated as Prime Farmland and approximately 38 acres are designated Farmland of Local Importance. Figure 4.1-1 depicts the farmland at the project site.

<b>TABLE 4.1-2</b> <b>Le Grand Community Plan Farmland Inventory</b>	
<b>FMMP Classification</b>	<b>Acreage</b>
Prime Farmland	111.0
Farmland of Local Importance	37.9
Vacant or Disturbed Land	0.4
Rural Residential Land	35.8
Urban and Built-Up Land	247.9
<b>Total</b>	<b>433.0</b>
Note: Total acreage due to mapping inconsistencies between computer data/programs. Source: Brian Guerrero, Merced County, October 2016; California Department of Conservation, <i>Merced County Important Farmland 2014, Sheet 1 of 2</i> August 2015.	

#### Storie Index Rating

The Natural Resources Conservation Service (NRCS) has identified and mapped soils in Merced County and rated their suitability for intensive agriculture using the Storie Index. This index has six numerical ratings for soils, based on characteristics such as soil depth, surface texture, drainage, salts and alkalis, and topography. Soils with a rating over 60 (on a scale of 0 to 100) are considered suitable for most crops. For simplification, Storie Index ratings have been

<sup>3</sup> California Department of Conservation, Division of Land Resource Protection, *Merced County 2014-2016 Land Use Conversion Table*.





combined into six grade classes, as follows: Grade 1 (excellent), 81 to 100; grade 2 (good), 61 to 80; grade 3 (fair), 41 to 60; grade 4 (poor), 21 to 40; grade 5 (very poor), 11 to 20; and grade 6 (nonagricultural), 10 or less.

The soils in the Plan Area are composed of the following Storie Index ratings<sup>4</sup>:

Grade 1 (Excellent):	79.3%
Grade 2 (Good):	0%
Grade 3 (Fair):	20.7%
Grade 4 (Poor):	0%
Grade 5 (Very Poor)	0%

While the majority of the Plan Area is classified Grade 1, which is considered excellent for agriculture, much of the area containing these soils is already developed.

### **Capability Rating**

The NRCS also rates soils for their suitability for most kinds of field crops. The ratings range from Class I to Class VIII, with Class I being soils with few limitations and Class VIII being soils that preclude their use for commercial plants. Prime Farmland is usually composed of Class I and Class II soils.

Most of the soils in the Plan Area are rated Class I and II if irrigated<sup>5</sup>. About 20.7% of the Plan Area is rated Class III. Class 1 soils have few limitations that restrict their use. Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

## **REGULATORY SETTING**

### **State Regulations**

#### **Williamson Land Act**

The California Land Conservation Act of 1965 or Williamson Act recognizes the importance of agricultural land as an economic resource that is vital to the general welfare of society. The enacting legislation declares that the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources, and is necessary not only to the maintenance of the agricultural economy of the state, but also for the assurance of adequate, healthful, and nutritious food for future residents of the state and the nation. Intended to assist the long-term preservation of prime agricultural land in the state, Williamson Act contracts provide the agricultural landowner with a substantial property tax break for keeping land in agricultural use. When under contract, the landowner no longer pays property tax for an assessed valuation based upon the property's urban development potential. The Williamson Act stipulates that for properties under contract, "the highest and best use of such land during the life of the contract is for agricultural uses." Therefore, property under contract is assessed and taxed based upon its agricultural value.

Typically, Williamson Act contracts remain in effect for ten years unless the property owner files

4 Natural Resources Conservation Service, *Web Soil Survey*, <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed July 27, 2018.

5 Natural Resources Conservation Service, *Web Soil Survey*, <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx> July 27, 2018.



for a notice of nonrenewal with the County. The County amended their rules of procedure to implement the Williamson Act in 2010, to comply with the shortened contract period of only 9 years, as authorized by the State through AB 863. This shortened contract period is available in all years where the State pays less than one-half of the required amount of subvention funding for the lost property taxes resulting from participation in the Williamson Act.

The Williamson Act also addresses “compatible” uses. In Section 51231, the Williamson Act states that, “...the board or council, by resolution, shall adopt rules governing the administration of agricultural preserves...Rules related to compatible uses shall be consistent with the provisions of Section 51238.1.” Section 51238.1 states the following:

- (a) Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:
  - (1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
  - (2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves . . .
  - (3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

There are no parcels currently enrolled under a Williamson Act contract within the Plan Area. However, there are a number of Williamson Act contract parcels within a one-mile radius of the vicinity of the Plan Area. Williamson Act contract parcels in the vicinity of the Plan Area are shown in Figure 4.1-2.

### **California Code of Regulations**

The Merced County Agricultural Commissioner enforces the laws and regulations of the California Food and Agriculture Code (CDFA) and the California Code of Regulations while serving at the discretion of the County Board of Supervisors and CDFA Secretary of Agriculture.

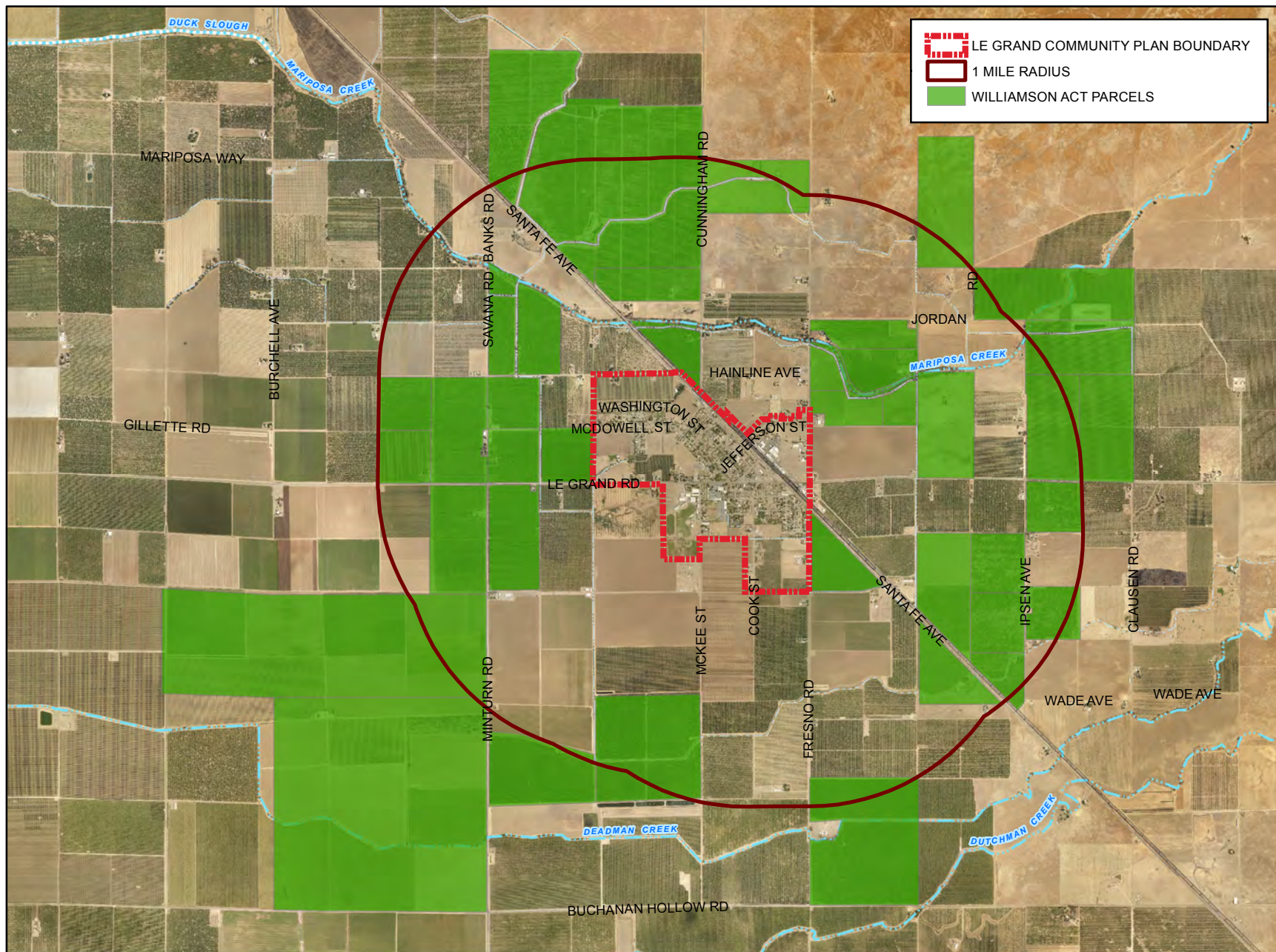
Title 3 of the California Code of Regulations, item 6626 Pesticide Use Reports for Production Agriculture and item 6627 Monthly Summary Pesticide Use Reports, identifies the following specifications related to pesticide use:

#### *6626. Pesticide Use Reports for Production Agriculture*

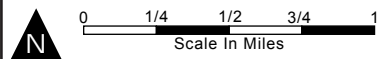
- (a) The operator of the property which is producing an agricultural commodity shall report the use of pesticides applied to the crop, commodity, or site to the commissioner of the county in which the pest control was performed. This report must be submitted by the 10th day of the month following the month in which the work was performed.
- (b) An agricultural pest control business shall report the use of pesticides applied by it for the production of an agricultural commodity to the commissioner of the county in which the pest control was performed. This report must be submitted within seven days of completion of the pesticide application.

#### *6627. Monthly Summary Pesticide Use Reports*

- (a) Except as provided in section 6626, persons required to maintain pesticide use records pursuant to section 6624 shall report a summary of the monthly use of pesticides to the commissioner of the county in which the work was performed. The report shall be provided to the



**Figure 4.1-2**  
**Williamson Act Properties**  
**In The Plan Area Vicinity**



SOURCE: Merced County Community And  
Economic Development Department, 2018.

commissioner by the 10th day of the month following the month in which the work was performed. If the report is mailed, the postmark shall be the date of delivery.

## **Local Regulations**

### **Merced County General Plan**

The 2030 Merced County General Plan Agricultural Element describes the existing agricultural resources in the County and provides the policy context for Merced County to achieve its vision for the protection, preservation, and expansion of productive agriculture.

As indicated in the General Plan, Merced County values its agricultural resources and has numerous policies aimed at protecting and preserving existing agricultural land. These policies address agricultural land preservation and conservation strategies, such as agricultural mitigation requirements, Williamson Act contracts, and farmland conservation programs. The Agricultural Element also identifies goals and policies related to minimize conflicts between productive agricultural areas and urban land uses, and discourage the parcelization and conversion of large agricultural holdings into rural residential parcels or urban uses.

The following General Plan goals, objectives, and policies found in the Agricultural Element would apply to development of the proposed Community Plan and protection of agricultural resources within the county.

### **Agricultural Element**

**Goal AG-2: Ensure the long-term preservation and conservation of land used for productive agriculture, potentially-productive agricultural land, and agricultural-support facilities.**

#### **PolicyAG-2.1: Agricultural Land Preservation**

Protect agriculturally-designated areas and direct urban growth away from productive agricultural lands into cities, Urban Communities, and New Towns.

#### **Policy AG-2.2: Agricultural Land Mitigation**

Protect productive agricultural areas from conversion to non-agricultural residential uses by establishing and implementing an agricultural mitigation program that matches acres converted with farmland acres of similar quality to those converted preserved at a 1:1 ratio. Coordinate with the six cities in Merced County and the Merced Local Agency Formation Commission (LAFCo), consistent with LAFCo's statutory mission to preserve agricultural land and open space, to establish consistent standards and mitigation for the loss of farmland. In addition, the Land Evaluation and Site Assessment Model (LESA model) may be used to determine whether the conservation land is of equal or greater value than the land being converted.

#### **Policy AG-2.3: New Development**

Formalize County-City agreements emphasizing concentration of new development in cities that include agricultural mitigation and avoidance of productive agricultural land conversion.

#### **Policy AG-2.4: Preservation Programs**

Encourage property owner participation in programs that preserve farmland, including the Williamson Act, conservation easements, and USDA-funded conservation practices.

#### **Policy AG-2.7: Modify Merced County Agricultural Preserve Rules**

Modify the Agricultural Preserve Rules and Procedures to allow parcels smaller than 10 acres for a limited number of circumstances authorized as exceptions in the County Zoning Code and consistent with State law.

**Policy AG-2.8: Conservation Easements**

Support the efforts of public, private, and non-profit organizations to preserve agricultural areas in the County through dedicated conservation easements, and rangeland held as environmental mitigation.

**Policy AG-2.12: Antiquated Subdivisions**

Encourage the voluntary merger of antiquated subdivision lots that conflict with adjacent agricultural uses, and continue to require environmental review of permits that could result in adverse environmental impacts in agricultural and rural areas, including traffic generation, groundwater contamination, stormwater drainage disposal, and air quality deterioration.

**Policy AG-2.13: Minimum Agricultural Parcel Size Requirement**

Require a 20-acre minimum permitted parcel size in areas designated Agricultural to discourage land divisions for rural residential purposes and maintain parcels large enough for efficient commercial agriculture production. Require 160-acre minimum permitted parcel size in areas designated Foothill Pasture and in grassland areas.

**Policy AG-2.14: Viability of Smaller Parcels**

Require applicants seeking to divide agriculturally-zoned parcels to demonstrate the continued viability of lots less than 40 acres for commercial agriculture, using specific standards (i.e., access to agricultural water, joint farm management, access for aerial spraying, size viability for specific commodities) and farm management plans.

**Policy AG-2.15: Merced County Agriculture Preserve Consolidation**

Modify the Merced County Agriculture Preserve to be consistent with State Subdivision Map Act and Williamson act rules for allowing parcels less than 10 acres for a limited number of circumstances authorized as exceptions in the County Zoning Code and consistent with State law.

**Goal AG-3: Minimize conflicts between productive agricultural areas and urban land uses, and discourage the parcelization and conversion of large agricultural holdings into rural residential parcels or urban uses.**

**Policy AG-3.1: Right-to-Farm Ordinance**

Continue to implement the Right-to-Farm Ordinance to define and limit instances where agricultural operations may be considered a nuisance to surrounding rural residential, residential or urban development.

**Policy AG-3.2: Agricultural Buffer**

In consultation with the MCAC, require buffers between proposed non-agricultural uses and adjacent productive agricultural operations to protect farms, dairies, and agricultural-related production facilities from conflicts with non-agricultural uses, specifically rural residences and urban area residential development.

**Policy AG-3.3: Agricultural Buffer Standards**

In consultation with the MCAC, establish agricultural buffer standards based on the type of agricultural operation, and historic cropping and pesticide application patterns, to be applied to rural residences and urban area residential development proposals adjacent to productive agricultural land and agricultural-related facilities.

**Policy AG-3.4: Residential Buffers from Agriculture**

Require a minimum 200-foot buffer between new residential development within designated urban areas and existing agricultural operations, and establish design/maintenance guidelines for developers and property owners.

**Policy AG-3.5: Home Site Clustering**

Require clustering of homes on agricultural parcels to minimize interference with agricultural operations.

**Policy AG-3.7: Public Facility Locations**

Discourage public agencies from locating facilities, especially schools, in existing agricultural areas.

**Policy AG-3.9: New Confined Animal Facility Location Requirements**

Require new or expanded confined animal facilities to be located, at a minimum:

a) One-half mile from any Rural Center or Urban Community boundary; residentially-designated or zoned property; sensitive uses such as schools, hospitals, jails, Federal wildlife areas, State wildlife areas, and public parks; or concentrations of five or more off-site residences. This does not include areas for municipal uses such as wastewater treatment facilities, airports, or solid waste recycling or disposal facilities located outside urban areas; and

b) One thousand feet from any off-site residence, unless there is written permission from the off-site property owner.

**Policy AG-3.10: New Adjacent Residences**

Prohibit new single- or multi-family residences within one thousand feet of an existing confined animal facility.

**Merced County Right-to-Farm Ordinance**

Merced County's Right-to-Farm Ordinance is administered by the Planning Department and has been in place since 1986. It requires a disclosure of the importance and protection of agriculture in the residential development process, when subdivisions or parcel splits are approved and building permits are issued. The disclosure is passed on to future property buyers through the title process. The ordinance states that residents moving into areas where there are existing agricultural activities, "should be prepared to accept inconvenience or discomfort from normal, necessary agricultural operations." The Right-to-Farm Ordinance promotes understanding and cooperation between urban residents and agricultural operators. Section 17.08.080 of the Merced County Code states the following:

H. Certificate of Public Acknowledgement of Farming Activities

1. Where required by this code [Title 17], every final map shall have a certificate placed on the map, or shall record by separate instrument, which notifies future buyers, leases, or financiers of the following:

The property described on the final map is in the vicinity of land utilized for agricultural purposes, and residents of this property may be subject to inconvenience or discomfort arising from the use of agricultural chemicals, including, but not limited to, pesticides and fertilizers; and from the pursuit of agricultural operations including, but not limited to, animal husbandry, plowing, spraying, and burning which occasionally may generate dust, smoke, noise, nuisance insects, and odors.

The County of Merced has established agriculture as a priority use in agricultural zones which are outside or in an established Specific Urban Development Plan (SUDP) boundary, Rural Residential Center (RRC) boundary, Highway Interchange Center (HIC) boundary, or Agricultural Service Center (ASC) boundary, and residents of property in the vicinity of such agricultural zones should be prepared to accept inconveniences or discomfort from normal, necessary agricultural operations.

2. This section shall only apply to those properties within agricultural zones (A-1, A-1-40 or A-2) or inside and within one thousand (1,000) feet of a SUDP boundary, Rural Residential Center (RRC) boundary, Highway Interchange Center (HIC) boundary, or Agricultural Service Center (ASC) boundary as designated on the General Plan Land Use Map.

**Merced County Agricultural Conservation Easement Program**

Merced County recently (April 26, 2016) adopted the Agricultural Conservation Easement  
Le Grand Community Plan



Program to implement Policy AG-2.2, Policy AG-2.4, and Policy AG-2.8, which are provided above. The Agricultural Mitigation Ordinance (Merced County Code Section 9.30) requires one-to-one (1:1) mitigation for all General Plan Amendments and rezoning of productive farmland from an agricultural to an urban designation, and for discretionary projects on agriculturally-designated land that involves a non-agricultural use, such as mining or solar energy projects. The ordinance requires that mitigation lands be located in Merced County on similar quality soil and with a similar water supply to the land proposed for conversion, with a minimum 20 acres easement size. This ordinance allows payment of an "in-lieu fee" to a "qualified entity" (farmland trust) as an alternative to obtaining an easement on specific property. "Productive farmland" is identified as the top three soil classifications in the Department of Conservation's Farmland Mapping and Monitoring Program, and includes soils rated Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

### **Merced County Confined Animal Ordinance**

Chapter 18.48 of the Merced County Code regulates animal confinement facilities. The Ordinance provides for the design, construction, operation, and management of animal confinement facilities in Merced County for the protection of the quality of the environment and the safeguarding of the health, safety, and general welfare of the population. The Animal Confinement Ordinance is intended to provide dairy operators a single set of regulations to encompass federal, State and county regulations. In addition, the Ordinance requires operators to submit annual reports. The Ordinance requires inspection of facilities at least every three years (once every two years in sensitive areas) by the Division of Environmental Health.

The Ordinance addresses locating residences near animal confinement facilities under Section 18.48.040, including the following:

#### **3. Offsite Residences**

- (a) New single-family residences, not a part of an existing animal confinement facility, are prohibited within 1,000 feet of an existing facility with any of the following exceptions:
  - (1) The animal facility owner gives written permission for locating the offsite residence closer than 1,000 feet or,
  - (2) The existing residence is being remodeled or,
  - (3) The existing residence is replaced with another dwelling no closer than the existing separation distance.

The Planning Commission, consistent with the purpose and intent of the Animal Confinement Ordinance, may add additional conditions to the waiver, as it deems necessary. The Ordinance includes requirements for animal confinement facilities to minimize odors, pests, air emissions, and storm water runoff. It also requires the completion of a Comprehensive Nutrient Management Plan for new facilities, expansions, adding or deleting manure application areas, or construction a retention pond or settling basin.

There are no confined animal operations within one-half mile of the Plan Area.<sup>6</sup> As noted earlier, General Plan Policy AG-3.9 also prohibits the location of a new dairy or other confined animal operation within one-half mile of the Plan Area.

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<sup>6</sup> Merced County Community and Economic Development Department, Le Grand Community Plan-Dairy Location Map, prepared June 9, 2016.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

The Important Farmlands within the Plan Area were quantified to determine the extent to which such lands would be converted to urban uses. A qualitative evaluation of the potential for the proposed Community Plan to result in the loss and/or diminishment of farmland outside of the Plan Area is also provided. The proximity of new residential development to agricultural uses is also evaluated to determine if there could be conflicts between such uses, and the extent to which County ordinances and policies and Community Plan policies would address such potential conflicts.

### Standards of Significance

For purposes of this EIR, impacts would be considered significant if the proposed Community Plan would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) 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; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

### Project Impacts and Mitigation Measures

#### **4.1-1 The proposed Community Plan would result in conversion of Important Farmland to non-agricultural uses.**

**Applicable Regulations:** Merced County Code Chapter 9.30 (Agricultural Mitigation)

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

As described above, the Plan Area currently contains approximately 111 acres of Prime Farmland, and no Unique Farmland or Farmland of Statewide Importance. While the proposed Community Plan would not increase the size of the Plan Area, and in fact would reduce size of the Plan Area boundaries, it would provide for conversion of existing farmland within the Plan Area to urban uses. Once developed, this land would no longer be available for agricultural use. Of the 111 acres of Prime Farmland within the Plan Area, approximately 63 acres would be designated Urban Reserve, and so would not be subject to development under the proposed Community Plan. Therefore, approximately 48 acres of Prime Farmland within the Plan Area would be converted to urban uses.

In addition, as discussed in Chapter 3, Project Description, the proposed Community Plan would require up to three additional wells for water supply and a water storage tank, although the locations of these facilities have yet to be determined. If one or more of the well sites are

located outside of the Plan Area or in the Urban Reserve, up to an additional one-half acre of Prime Farmland could be converted per well. If storage facilities are constructed, only two wells would be required, but there would need to be approximately 8.5 acres for storage. The proposed Community Plan would also require an additional approximately 30 to 35 acres of farmland to be used for effluent disposal (reclamation area). The reclamation area is would likely occur on land in proximity to the existing WWTP, some of which is classified Important Farmland, and might require the removal of existing orchards or other crops. The reclamation area would then be planted with crops that are not intended for human consumption, so the agricultural use would continue, and there would be no loss of Prime Farmland due to the increased reclamation area.

As required by the Agricultural Conservation Ordinance, any project within the Plan Area that would convert productive farmland to non-agricultural uses must provide an agricultural conservation easement of no less than one acre of mitigation land for each acre of land to be converted. The easement must be placed on land of comparable quality to the land being converted to urban uses. As an option, the developer may pay an in lieu fee, which would be used to purchase agricultural conservation easements. Projects on parcels smaller than 5 acres would be exempt from this requirement.

Agricultural land represents more than 90 percent of the County's land base. In 2016, Merced County had approximately 1.16 million acres of farmland, of which approximately 270,000 acres were designated Prime Farmland (see Table 4.1-1). Conversion of Prime Farmland under the proposed Community Plan would represent less than 0.02 percent of the County's Prime Farmland inventory. The Plan Area is located within an Urban Community, so the proposed Community Plan would further the implementation of the 2030 General Plan, which directs growth to Urban Communities in order to protect farmland outside of developed areas. For these reasons, the conversion of up to 56 acres of Prime Farmland would be a less-than-significant impact.

#### **4.1-2 The proposed Community Plan could conflict with existing zoning for agricultural use, or a Williamson Act contract.**

**Applicable Regulations:** None

**Significance:** Less than significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than significant

**Additional Mitigation:** None required

**Residual Significance:** Less than significant

As shown on Figure 4.1-2, there are no agricultural easements or Williamson Act properties within the Plan Area. There are several Williamson Act contract lands adjacent to the Plan Area. The proposed Community Plan would not alter the use of these lands because they are outside of the Plan Area. Further, by providing for approximately 20 years of development within the Plan Area boundaries, the proposed Community Plan would relieve pressure for the premature conversion of the Williamson Act parcels.

As discussed in Impact 4.1-1, the proposed Community Plan could require acquisition of additional agricultural land for reclamation. There are Williamson Act parcels located in proximity to the WWTP (see Figure 4.1-2), but most of the land surrounding the WWTP is not in



Williamson Act contracts or a conservation easement. If the LGCSD were to acquire land currently under Williamson Act contract, the contract would become void pursuant to State law. However, the land would continue to be used for crops, which would be consistent with the intent of the Williamson Act to preserve the State's agricultural lands. If the land were not used for the stated public purpose, then the land would revert to private ownership and be reenrolled in a Williamson Act contract or encumbered by an equally restrictive mechanism.

Because no Williamson Act contract lands or agricultural easements would be converted to urban uses within the proposed Community Plan, and if such lands were acquired for expansion of reclamation capacity, they would remain in agricultural use, this impact would be ***less than significant***.

**4.1-3 The proposed Community Plan could involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.**

**Applicable Regulations:** Merced County Right-to-Farm Ordinance; Merced County Confined Animal Ordinance; General Plan Policies AG-2.1 (Agricultural Land Preservation), Policy AG-3.1 (Right-to-Farm Ordinance), AG-3.2 (Agricultural Buffer), AG-3.3 (Agricultural Buffer Standards), AG-3.4 (Residential Buffers from Agriculture),

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies L-9, LU 17 and OSC-7; Implementation Measure OSC-2

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.1-3:

*If and when LGCSD constructs additional reclamation areas needed to serve the proposed Community Plan, the LGCSD shall implement the following or equally effective measures.*

- (a) *Construction methods shall avoid over-compaction of the top layers of soil within 50 feet of the Project site perimeter. Pre-construction soil densities of adjacent lands shall be monitored, and the surface soil shall be returned to within five (5) percent of original density.*
- (b) *Compaction shall be controlled so that changes to lateral groundwater flow are minimized.*
- (c) *All construction-related debris shall be removed from the soil surface to prevent construction debris from interfering with agricultural activities.*
- (d) *To avoid interruption of irrigation flows to adjacent lands, installation of new irrigation facilities or improvements to existing irrigation facilities shall be performed during the non-irrigation season;*

*Or*

*New irrigation facilities necessary to serve adjacent lands shall be constructed and operational prior to any modification or termination existing irrigation facilities currently serving planned reclamation areas.*

- (e) *A Salinity Report shall be prepared to address all areas to be irrigated by*

*wastewater and lands within 200 feet of the reclamation areas. The report shall identify appropriate agronomic rates for irrigation of on-site crops based on preserving short-term and long-term land productivity in consideration with agricultural practices and crops actively grown on adjacent parcels. The District shall implement, as needed, recommended measures to ensure that irrigation of the reclamation area would not cause soil degradation and would not reduce crop yield on adjacent lands. The report shall be reviewed and approved by the California Central Valley Regional Water Quality Control Board prior to commencement of any Project improvements.*

**Residual Significance:** Less than Significant

The Plan Area is currently developed with residences, small retail businesses, and government-related services that are interspersed with agricultural land and related agricultural operations. There are also agricultural processing operations in the eastern portion of the Plan Area.

Agricultural parcels located near existing urban uses, specifically residential uses, can have limited long-term viability for active agricultural activities due to urban edge conflicts, stemming largely from the nuisance effects of routine agricultural operations to residential neighbors due to noise, dust, odors, traffic, and the application of herbicides and pesticides. These conflicts could increase costs to the agricultural operations, and, combined with rising land values for residential development, encourage the conversion of farmland to urban or other non-agricultural uses. The 2030 Merced County General Plan and the Le Grand Community Plan both include policies and programs specifically designed to minimize urban edge conflicts between agricultural and residential land use. Proposals for new development in the Plan Area would need to demonstrate that they are consistent with land use policies and ordinances, such as the Merced County Right-to-Farm, the Merced County Confined Animal Ordinance, and Policy AG-3.4: Residential Buffers from Agriculture (RDR), before being approved and constructed.

The proposed Community Plan designates residential land uses adjacent to active agricultural operations in several locations, as shown in Figure 4.6-1 in Section 4.6, Land Use. Any new development in these areas would need to provide a 200-foot buffer from adjacent agricultural lands, as required by proposed Community Plan Implementation Measure OSC-2. In addition, the Merced County Confined Animal Ordinance states that new single-family residences, not a part of an existing animal confinement facility, are prohibited within 1,000 feet of an existing facility. Further, the Merced County Right-to-Farm ordinance specifically states that residents moving into areas where there are existing agricultural activities, “should be prepared to accept inconvenience or discomfort from normal, necessary agricultural operations.”

The Merced County Agricultural Commissioner enforces laws related to pesticide use, which would minimize residents from exposure to pesticides.

These policies and programs would ensure that residential and other non-agricultural uses within the Plan Area would be compatible with surrounding agricultural operations and would not result in the conversion of agricultural lands outside of the project area. Therefore, this impact would be less than significant within the Plan Area.

Approximately 30 to 35 additional acres of farmland would be required for reclamation to accommodate the increase in treated wastewater resulting from the proposed Community Plan. Reclamation areas can affect agricultural productivity in several ways. First, the agricultural land used for reclamation would be restricted to certain crops due to the type of reclaimed wastewater that would be used for irrigation (undisinfected treated effluent). Crops would include those that would not be used for human consumption. While there would be restrictions

on the type of crops that could be grown, the reclamation sites would remain productive farmland. Therefore, the restriction to certain crop types would not have a significant impact on farmland.

The second way in which farmland productivity could be affected would involve temporary disturbances during construction of the reclamation areas, such as disruption of irrigation systems, soil compaction affecting drainage and creation of dust.<sup>7</sup> These disturbances could affect both the reclamation area and adjacent agricultural lands.

Finally, adjacent agricultural operations could be adversely affected if the reclaimed irrigation water moved laterally onto adjacent properties. This could result in excessive irrigation, which could damage the root systems of crops on adjacent properties or allow nutrients and other elements to move onto adjacent lands.<sup>8</sup> The extent of such effects would depend on the soil characteristics of the reclaimed areas, the constituents that could be carried offsite and their respective effects on plants, and other factors.

Mitigation Measure 4.1-3 would ensure that construction and operation of the additional reclamation areas would not adversely affect adjacent agricultural areas by requiring that over-compaction is avoided and/or remediated, that changes to lateral groundwater flow are minimized and that irrigation infrastructure is not disrupted during the irrigation season. In addition, a salinity study would be required to ensure that appropriate agronomic rates are used for irrigation within the reclamation areas.

In summary, the impact on offsite farmland would be less than significant for development within the Plan Area and would be reduced to a ***less-than-significant*** level if and when additional reclamation areas are created to serve buildout of the Plan Area.

### **Cumulative Impacts and Mitigation Measures**

The cumulative context for the loss of Important Farmland (Impact 4.1-1) is Merced County and the greater Central Valley. The proposed Community Plan would not affect any Williamson Act lands or agricultural preserves (Impact 4.1-2), so it would not contribute to cumulative impacts on these resources. The potential for conflicts between urban and agricultural uses (Impact 4.1-3) occurs where those uses abut each other and/or are in close proximity. No changes are proposed to agricultural lands adjacent to or near the Plan Area, so there would not be a cumulative impact associated with such potential conflicts. For these reasons, the only cumulative impact addressed in this EIR is the loss of Important Farmland.

#### **4.1-4 The proposed Community Plan would contribute to the cumulative conversion of Important Farmland.**

**Applicable Regulations:** Merced County Code Chapter 9.30 (Agricultural Mitigation); General Plan Policies

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

<sup>7</sup> Planada Community Services District, *Planada Wastewater Treatment Plant Improvement Project Draft Environmental Impact Report*, September 9, 2011, page 5.1-15.

<sup>8</sup> Planada Community Services District, *Planada Wastewater Treatment Plant Improvement Project Draft Environmental Impact Report*, September 9, 2011, page 5.1-19.

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

Merced County was reported to have 1,152,990 acres of farmland in 2016, including 552,632 acres of grazing land. As shown in Table 4.1-1, in 2016, Merced County had 269,243 acres of Prime Farmland, 154,509 acres of Farmland of Statewide Importance, 115,235 acres of Unique Farmland, and 61,671 acres of Farmland of Local Importance.

Because agricultural land represents more than 90 percent of the County's land base, it provides the primary location for new urban development. During 1992 to 2010, the County lost approximately 21,400 acres of farmland<sup>9</sup>. More recently, during the period 2008-2010, a total of 629 acres of Important Farmland (excluding confined animal agriculture) were committed to non-agricultural activities.<sup>10</sup> Similar conversions of farmland to urban uses are occurring throughout Central Valley counties that are largely agricultural. For example, the 2030 General Plan is estimated to result in the loss of an additional 14,683 acres of important farmland due to development within the urban areas. The loss of farmland within the County and the Central Valley is a significant cumulative impact.

As described above, the Plan Area currently contains approximately 56 acres of Prime Farmland that would be converted to urban uses, which represents less than 0.02 percent of the County's existing Prime Farmland inventory. Compliance with the County's Agricultural Mitigation Code would offset this loss by ensuring that comparable land is placed into conservation.

The conversion of farmland within the Plan Area was anticipated in the 2030 General Plan. The 2030 General Plan Land use diagram and policies (e.g., Policy LU 2.2) are designed to direct new development into incorporated cities and unincorporated urban planning areas,<sup>11</sup> such as Le Grand. Therefore, the proposed Community Plan would further the General Plan strategy for protecting agricultural resources.

Because the proposed Community Plan would convert only a small amount of Prime Farmland, would place comparable farmland in conservation and promote development within an Urban Community rather than rural areas, the project contribution would not be considerable, and would be a less-than-significant impact.

9 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 6-9, Table 6-3.

10 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 6-10.

11 Merced County, *CEQA Findings of Fact and Statement of Overriding Considerations of the Merced County Board of Supervisors for the 2030 Merced County General Plan Program Environmental Impact Report*, page 27.

## **4.2 AIR QUALITY**

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### INTRODUCTION

This section addresses impacts of the proposed Community Plan on ambient air quality and the potential for exposure of people to unhealthful pollutant concentrations. Air pollutants of concern for Merced County include ozone (O<sub>3</sub>), ozone precursors (reactive organic compounds and nitrous oxides), carbon monoxide (CO) and particulate matter 10 microns and 2.5 microns or less in size (PM<sub>10</sub> and PM<sub>2.5</sub>). This section analyzes the type and quantity of emissions that would be generated by construction and operation of the proposed Community Plan. This section also addresses toxic air contaminants (TAC) and odors.

### ENVIRONMENTAL SETTING

The Plan Area is located in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is the second largest air basin by area in California, representing 16 percent of California's geographic area. Fresno, Western and Central Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties are all within the SJVAB. The SJVAB is approximately 250 miles long and 35 miles wide. It is bordered to the east by the Sierra Nevada Mountains, the Coast Ranges to the west, Tehachapi Mountains to the south and the Sacramento Valley to the north. The bowl-shaped topography inhibits pollutant movement out of the valley.<sup>1</sup>

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.<sup>2</sup>

The SJVAB is part of a Mediterranean Climate Zone characterized by sparse rainfall occurring mainly in the winter. Maximum temperatures often exceed 100°F in the valley. Wind in the SJVAB typically blows from the northwest especially during the summer. The winter results in periods of stagnation where winds are very weak again trapping pollutants in the valley.<sup>3</sup>

The SJVAPCD has jurisdiction over the entire SJVAB. Cities within the jurisdiction of the SJVAPCD include Stockton, Modesto, Merced, Madera, Fresno, Hanford, Visalia, and Bakersfield.<sup>4</sup>

### **Project Vicinity**

The average annual temperatures in Le Grand range from a low of 48.3°F to a high of 76.30°F. Summer (June through August) high and low temperatures are 96°F and 57°F, respectively. The average winter (December through February) high and low temperatures are 55°F and 37°F, respectively. Rainfall varies widely from year to year, with an annual average of 12.5 inches.<sup>5</sup>

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1 SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

2 SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

3 SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

4 SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

5 The Weather Company, LLC, *Le Grand, California*. Available at <http://www.intellicast.com/Local/History.aspx?location=USCA0599>. Accessed November 2018.

### Pollutants of Concern

To protect human health and the environment, the USEPA has set “primary” and “secondary” maximum ambient limits for each of the criteria pollutants. Primary standards were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent damage to animals, crops, vegetation, and buildings. Ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) are considered regional pollutants because they (and their precursors) affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), and lead (Pb) are considered local pollutants that tend to accumulate in the air locally. Particulate matter (PM) is both a local and regional pollutant.<sup>6</sup>

The pollutants of concern within the SJVAB, including within the project area, are O<sub>3</sub> (including oxides of nitrogen [NO<sub>x</sub>] and reactive organic gases [ROG]), CO, and PM. Principal characteristics surrounding these pollutants are discussed below. Toxic Air Contaminants (TACs) also are discussed, although no air quality standards exist for these pollutants.

### Ozone

Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) in the presence of sunlight under favorable meteorological conditions, such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. According to the USEPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath.<sup>7</sup> Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease.<sup>8</sup> Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone can also be linked to permanent lung damage, such as abnormal lung development in children.<sup>9</sup> According to CARB, inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.<sup>10</sup> The USEPA states that people most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers.<sup>11</sup> Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure.<sup>12</sup> According to CARB, studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults.<sup>13</sup>

6 USEPA, *Criteria Air Pollutants*, 2016. Available: <https://www.epa.gov/criteria-air-pollutants>.

7 United States Environmental Protection Agency, Health Effects of Ozone Pollution, <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>, last updated October 10, 2018. Accessed January 2019.

8 United States Environmental Protection Agency, Health Effects of Ozone Pollution.

9 United States Environmental Protection Agency, Health Effects of Ozone Pollution.

10 California Air Resources Board, Ozone & Health, Health Effects of Ozone, <https://ww2.arb.ca.gov/resources/ozone-and-health>. Accessed January 8, 2018.

11 United States Environmental Protection Agency, Health Effects of Ozone Pollution.

12 United States Environmental Protection Agency, Health Effects of Ozone Pollution.

13 California Air Resources Board, Ozone & Health, Health Effects of Ozone.

Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.<sup>14</sup> Further research may be able to better distinguish between health effects in children and adults.<sup>15</sup>

### Reactive Organic Gases

ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG that form secondary pollutants such as ozone.<sup>16</sup>

### Volatile Organic Compounds

VOCs are organic chemical compounds of carbon and are not “criteria” pollutants themselves; however, they contribute with NO<sub>x</sub> to form ozone, and are regulated to prevent the formation of ozone.<sup>17</sup> According to CARB, some VOCs are highly reactive and play a critical role in the formation of ozone, and other VOCs have adverse health effects. In some cases, VOCs can be both highly reactive and have adverse health effects.<sup>18</sup> VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids, internal combustion associated with motor vehicle usage and consumer products (e.g., architectural coatings, etc.).<sup>19</sup> For the purposes of the air quality analysis VOCs and ROG are addressed interchangeably.

### Nitrogen Oxides

NO<sub>x</sub> is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include NO<sub>2</sub> and nitric oxide (NO). Ambient air quality standards have been promulgated for NO<sub>2</sub>, which is a reddish-brown, reactive gas.<sup>20</sup> The principle form of NO<sub>x</sub> produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> referred to as NO<sub>x</sub>.<sup>21</sup> Major sources of NO<sub>x</sub> include emissions from cars, trucks and buses, power plants and off-road equipment.<sup>22</sup> The terms NO<sub>x</sub> and NO<sub>2</sub> are sometimes used interchangeably. However, the term NO<sub>x</sub> is typically used when discussing emissions, usually from combustion-related activities, and the term NO<sub>2</sub> is typically used when discussing ambient air quality standards. Where NO<sub>x</sub> emissions are discussed in the context of the thresholds of significance or impact analyses, the discussions are based on the conservative assumption that all NO<sub>x</sub> emissions would oxidize in the atmosphere to form NO<sub>2</sub>. According to the USEPA, short-term exposures to NO<sub>2</sub> can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms.

14 California Air Resources Board, Ozone & Health, Health Effects of Ozone.

15 California Air Resources Board, Ozone & Health, Health Effects of Ozone.

16 Center for Disease Control (CDC), *Air Pollutants*, November 24, 2014.

17 United States Environmental Protection Agency, Technical Overview of Volatile Organic Compounds, <https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds>, last updated April 12, 2017. Accessed January 2019.

18 California Air Resources Board, Toxic Air Contaminants Monitoring, Volatile Organic Compounds, <https://www.arb.ca.gov/aaqm/toxics.htm>, last reviewed June 9, 2016. Accessed January 2018.

19 California Air Resources Board, Toxic Air Contaminants Monitoring, Volatile Organic Compounds.

20 California Air Resources Board, Nitrogen Dioxide & Health, <https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health>. Accessed January 2019.

21 California Air Resources Board, Nitrogen Dioxide & Health.

22 United States Environmental Protection Agency, Nitrogen Dioxide (NO<sub>2</sub>) Pollution, <https://www.epa.gov/no2-pollution/basic-information-about-no2>, last updated September 8, 2016. Accessed January 2019.



Longer exposures to elevated concentrations of NO<sub>2</sub> can contribute to the development of asthma and potentially increase susceptibility to respiratory infections.<sup>23</sup> According to CARB, controlled human exposure studies that show that NO<sub>2</sub> exposure can intensify responses to allergens in allergic asthmatics.<sup>24</sup> In addition, a number of epidemiological studies have demonstrated associations between NO<sub>2</sub> exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses.<sup>25</sup> Infants and children are particularly at risk from exposure to NO<sub>2</sub> because they have disproportionately higher exposure to NO<sub>2</sub> than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease.<sup>26</sup> CARB states that much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO<sub>2</sub> and there is only limited information for NO and NO<sub>x</sub>, as well as large uncertainty in relating health effects to NO or NO<sub>x</sub> exposure.<sup>27</sup>

### Carbon Monoxide

Carbon monoxide (CO) is primarily emitted from combustion processes and motor vehicles due to the incomplete combustion of fuel, such as natural gas, gasoline, or wood, with the majority of outdoor CO emissions from mobile sources.<sup>28</sup> According to the USEPA, breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain. At very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness and death.<sup>29</sup> Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease since these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress.<sup>30</sup> In these situations, short-term exposure to elevated CO can result in reduced oxygen to the heart accompanied by chest pain also known as angina.<sup>31</sup> According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion and dizziness due to inadequate oxygen delivery to the brain.<sup>32</sup> For people with cardiovascular disease, short-term CO exposure can further reduce the body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance.<sup>33</sup> Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO.<sup>34</sup>

### Sulfur Dioxide (SO<sub>2</sub>)

According to the USEPA, the largest source of sulfur dioxide (SO<sub>2</sub>) emissions in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities. Smaller sources of

23 United States Environmental Protection Agency, Nitrogen Dioxide (NO<sub>2</sub>) Pollution.

24 California Air Resources Board, Nitrogen Dioxide & Health.

25 California Air Resources Board, Nitrogen Dioxide & Health.

26 California Air Resources Board, Nitrogen Dioxide & Health.

27 California Air Resources Board, Nitrogen Dioxide & Health.

28 California Air Resources Board, Carbon Monoxide & Health, <https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health>. Accessed January 2019.

29 United States Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air, <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution>, last updated September 8, 2016. Accessed January 2019.

30 United States Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air.

31 United States Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air.

32 California Air Resources Board, Carbon Monoxide & Health.

33 California Air Resources Board, Carbon Monoxide & Health.

34 California Air Resources Board, Carbon Monoxide & Health.

SO<sub>2</sub> emissions include industrial processes such as extracting metal from ore; natural sources, such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.<sup>35</sup> In 2006, California phased-in the ultra-low-sulfur diesel regulation limiting vehicle diesel fuel to a sulfur content not exceeding 15 parts per million, down from the previous requirement of 500 parts per million, substantially reducing emissions of sulfur from diesel combustion.<sup>36</sup> According to the USEPA, short-term exposures to SO<sub>2</sub> can harm the human respiratory system and make breathing difficult.<sup>37</sup> According to CARB, health effects at levels near the State one-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Exposure at elevated levels of SO<sub>2</sub> (above 1 ppm) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.<sup>38</sup> Children, the elderly and those with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO<sub>2</sub>.<sup>39, 40</sup>

### Particulate Matter

Particulate matter air pollution is a mixture of solid particles and liquid droplets found in the air.<sup>41</sup> Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Other particles are so small they can only be detected using an electron microscope.<sup>42</sup> Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers and smaller (PM<sub>10</sub>); and fine inhalable particles with diameters that are generally 2.5 micrometers and smaller (PM<sub>2.5</sub>).<sup>43</sup> Thus, PM<sub>2.5</sub> comprises a portion or a subset of PM<sub>10</sub>. Sources of PM<sub>10</sub> emissions include dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, and wind-blown dust from open lands.<sup>44</sup> Sources of PM<sub>2.5</sub> emissions include combustion of gasoline, oil, diesel fuel and wood.<sup>45</sup> PM<sub>10</sub> and PM<sub>2.5</sub> can be either directly emitted from sources (primary particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO<sub>2</sub>, NO<sub>x</sub>, and certain organic compounds.<sup>46</sup> According to CARB, both PM<sub>10</sub> and PM<sub>2.5</sub> can be inhaled, with some depositing throughout the airways. PM<sub>10</sub> is more likely to deposit on the surfaces of the larger airways of the upper region of the lung, while PM<sub>2.5</sub> is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation.<sup>47</sup> Short-term (up to 24 hours duration) exposure to PM<sub>10</sub> has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to

35 United States Environmental Protection Agency, Sulfur Dioxide (SO<sub>2</sub>) Pollution, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>, last updated June 28, 2018. Accessed January 2019.

36 California Air Resources Board, Final Regulation Order, Amendments to the California Diesel Fuel Regulations, Amend Section 2281, Title 13, California Code of Regulations, <https://www.arb.ca.gov/regact/ulsd2003/fro2.pdf>, approved July 15, 2004. Accessed January 2019.

37 United States Environmental Protection Agency, Sulfur Dioxide (SO<sub>2</sub>) Pollution.

38 California Air Resources Board, Sulfur Dioxide & Health, <https://www2.arb.ca.gov/resources/sulfur-dioxide-and-health>. Accessed January 2019.

39 California Air Resources Board, Sulfur Dioxide & Health.

40 United States Environmental Protection Agency, Sulfur Dioxide (SO<sub>2</sub>) Pollution.

41 United States Environmental Protection Agency, Particulate Matter (PM) Pollution, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>, last updated November 14, 2018. Accessed January 2019.

42 United States Environmental Protection Agency, Particulate Matter (PM) Pollution.

43 United States Environmental Protection Agency, Particulate Matter (PM) Pollution.

44 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>), <https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm>, last reviewed August 10, 2017. Accessed January 2019.

45 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

46 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

47 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

hospitalization and emergency department visits.<sup>48</sup> The effects of long-term (months or years) exposure to PM<sub>10</sub> are less clear, although studies suggest a link between long-term PM<sub>10</sub> exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer.<sup>49</sup> Short-term exposure to PM<sub>2.5</sub> has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms and restricted activity days. Long-term exposure to PM<sub>2.5</sub> has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.<sup>50</sup> According to CARB, populations most likely to experience adverse health effects with exposure to PM<sub>10</sub> and PM<sub>2.5</sub> include older adults with chronic heart or lung disease, children and asthmatics. Children and infants are more susceptible to harm from inhaling pollutants such as PM<sub>10</sub> and PM<sub>2.5</sub>, compared to healthy adults, because children inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems.<sup>51</sup>

### Lead

Major sources of lead emissions include ore and metals processing, piston-engine aircraft operating on leaded aviation fuel, waste incinerators, utilities and lead-acid battery manufacturers.<sup>52</sup> In the past, leaded gasoline was a major source of lead emissions; however, the removal of lead from gasoline has resulted in a decrease of lead in the air by 98 percent between 1980 and 2014.<sup>53</sup> Lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. It affects the oxygen carrying capacity of blood.<sup>54</sup> The lead effects most commonly encountered in current populations are neurological effects in children, such as behavioral problems and reduced intelligence, anemia, and liver or kidney damage.<sup>55</sup> Excessive lead exposure in adults can cause reproductive problems in men and women, high blood pressure, kidney disease, digestive problems, nerve disorders, memory and concentration problems and muscle and joint pain.<sup>56</sup>

### Toxic Air Contaminants

In addition to the criteria air pollutants, another group of airborne substances, called toxic air contaminants (TACs) are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. There are almost 200 compounds that have been designated as TACs in California. The ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data, are: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter.<sup>57, 58</sup>

48 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

49 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

50 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

51 California Air Resources Board, Inhalable Particulate Matter and Health (PM<sub>2.5</sub> and PM<sub>10</sub>).

52 United States Environmental Protection Agency, Lead Air Pollution, <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution>, last updated November 29, 2017. Accessed January 2019.

53 United States Environmental Protection Agency, Lead Air Pollution.

54 United States Environmental Protection Agency, Lead Air Pollution.

55 California Air Resources Board, Lead & Health, <https://ww2.arb.ca.gov/resources/lead-and-health>. Accessed January 2019.

56 California Air Resources Board, Lead & Health.

57 California Air Resources Board, ARB Almanac 2009, Chapter 5.

58 California Air Resources Board, *California Air Toxics Program*, September 2015.

### Existing Conditions

Le Grand is an unincorporated community located in Merced County, approximately twelve miles east of the City of Merced and eight miles north of the City of Chowchilla. The closest highway is Highway 99, approximately 6 miles to the west of Le Grand. Le Grand Road and Santa Fe Avenue are the primary roadways that connect Le Grand to other communities. Most of the Plan Area is located west of Santa Fe Avenue.

Le Grand is a small, agriculturally-based community surrounded by rural agricultural operations typical of Merced County, including orchards, row crops and grazing land. The present adopted Le Grand Community Plan area is approximately 458 acres and includes 497 residential units and approximately 234,660 square feet of commercial, industrial, and recreational buildings. The proposed Community Plan includes the removal or replacement of some of these existing land uses as well as add to the existing development. Table 4.2-1 shows the existing on-site emissions based on a 2016 baseline.

<b>TABLE 4.2-1</b>						
<b>Existing On-site Emissions</b>						
<b>Lbs/Day</b>						
	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>x</sub></b>	<b>PM10</b>	<b>PM2.5</b>
Area	8	1	22	<1	3	3
Energy	<1	1	1	<1	<1	<1
Mobile	4	18	48	<1	5	2
<b>Total</b>	<b>12</b>	<b>19</b>	<b>70</b>	<b>&lt;1</b>	<b>8</b>	<b>5</b>
Source: Refer to CalEEMod Output Sheets, Appendix C.						

### SJVAPCD

The San Joaquin Valley Air Pollution Control District (SJVAPCD) currently operates 36 monitoring stations throughout the SJVAB. The closest monitoring stations to the Plan Area are the Merced-M Street and Merced- Coffee Avenue Stations. These are the only two stations in Merced County and they monitor for different pollutants. The M Street station monitors for PM10 and PM2.5 while the Coffee Street Station monitors for O<sub>3</sub>, NO<sub>2</sub>, and PM2.5. Neither station monitors for CO or SO<sub>2</sub>; therefore, these criteria pollutants are not included in the data summary. The historical ambient air data for monitored criteria pollutants from these two stations are shown in Table 4.2-2 for the three most recent years for which data are available (2015).

Both CARB and USEPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. The SJVAB is currently classified as a federal nonattainment area for Ozone and PM2.5, and is a nonattainment area at the State level for Ozone, PM10 and PM2.5. The current attainment status for the SJVAB is provided in Table 4.2-3.

### Sensitive Land Uses

Sensitive land uses, such as schools, children's daycare centers, hospitals, and convalescent

**TABLE 4.2-2  
SJVAPCD Air Quality Data Summary (2015–2017)**

Pollutant	Monitoring Data by Year			
	Standard <sup>a</sup>	2015	2016	2017
<b>Ozone – Merced-S Coffee Avenue Station</b>				
Highest 1 Hour Average (ppm)		0.102	0.097	0.093
Days over State Standard	0.09 ppm	2	2	0
Highest 8 Hour Average (ppm)		0.090	0.087	0.085
Days over National Standard	0.070 ppm	29	28	16
Days over State Standard	0.070 ppm	34	29	17
<b>Nitrogen Dioxide – Merced-S Coffee Avenue Station</b>				
Highest 1 Hour Average (ppm)		0.035	0.035	0.039
Days over National Standard	0.10 ppm	0	0	0
Days over State Standard	0.18 ppm	0	0	0
Annual Average (ppm)		*	0.006	0.007
Days over National Standard	0.053 ppm	*	0	0
Days over State Standard	0.03 ppm	*	0	0
<b>Particulate Matter (PM10) – M Street Station</b>				
Highest 24 Hour Average ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>		94	64.5	144
Days over National Standard (measured)	150 $\mu\text{g}/\text{m}^3$	0	0	0
Days over State Standard (measured)	50 $\mu\text{g}/\text{m}^3$	5	6	12
Annual Average ( $\mu\text{g}/\text{m}^3$ )	20 $\mu\text{g}/\text{m}^3$	30.7	29.5	35.8
<b>Particulate Matter (PM2.5) - Merced-S Coffee Avenue Station</b>				
Highest 24 Hour Average ( $\mu\text{g}/\text{m}^3$ ) <sup>c</sup>		61.2	43	48.2
Days over National Standard (measured)	35 $\mu\text{g}/\text{m}^3$	15	5	8
Annual Average ( $\mu\text{g}/\text{m}^3$ )	12 $\mu\text{g}/\text{m}^3$	12.7	11.8	*
<b>Particulate Matter (PM2.5) – M Street Station</b>				
Highest 24 Hour Average ( $\mu\text{g}/\text{m}^3$ ) <sup>c</sup>		60.8	42.8	66.7
Days over National Standard (measured)	35 $\mu\text{g}/\text{m}^3$	5	2	6
Annual Average ( $\mu\text{g}/\text{m}^3$ )	12 $\mu\text{g}/\text{m}^3$	12.6	11.1	12.6

ppm = parts per million;  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.

\* = information not available

a Generally, state standards and national standards are not to be exceeded more than once per year.

b Concentrations and averages represent federal statistics. State and federal statistics may differ because of different sampling methods.

c Concentrations and averages represent state statistics. State and federal statistics may differ because of different sampling methods.

Source: CARB, *Top 4 Measurements and Days Above Standard (2015, 2016, and 2017)*. Available: <http://www.arb.ca.gov/adam/topfour/topfour1.php>.

<b>TABLE 4.2-3 Air Basin Attainment Status</b>		
	<b>Attainment Status</b>	
<b>Pollutant</b>	<b>California Standards</b>	<b>Federal Standards</b>
<b>SCCAB</b>		
Ozone	Nonattainment/Severe	Extreme Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO <sub>2</sub>	Attainment	Attainment/Unclassified
SO <sub>2</sub>	Attainment	Attainment/Unclassified
PM10	Nonattainment	Attainment
PM2.5	Nonattainment	Nonattainment
Lead	Attainment	No Designation
Source: SJVAPCD, <i>Ambient Air Quality Standards &amp; Valley Attainment Status</i> . Available at <a href="http://www.valleyair.org/aqinfo/attainment.htm">http://www.valleyair.org/aqinfo/attainment.htm</a> . Accessed September 2018.		

homes are considered to be more sensitive to poor air quality than the general public, because the population groups associated with these uses have increased susceptibility to respiratory distress. In addition, residential uses are considered more sensitive to air quality conditions than commercial and industrial uses because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation.<sup>59</sup>

Currently, sensitive receptors in the Plan Area include the existing and future residential development, parks and the elementary, middle, and high schools. Because the proposed Community Plan is a plan-level document and the exact layout of future development is not known, the distance from development activities to existing and future receptors is unknown. However, as a conservative estimate, it is assumed that all development would have a receptor located within 25 meters of the project border.

## **REGULATORY SETTING**

### **Federal**

#### **Clean Air Act**

The Clean Air Act (CAA) establishes National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards would be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not

<sup>59</sup> California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. 4.2-4 shows the NAAQS currently in effect for each criteria pollutant. The California Ambient Air Quality Standards (CAAQS) (discussed below) also are provided for reference.

### **Nonroad Diesel Rule**

USEPA established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. New construction equipment used for the project, including heavy-duty trucks, off-road construction equipment, and tugboats would be required to comply with the emission standards.

## **State**

### **California Clean Air Act**

In 1988, the State legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. The CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are listed together in Table 4.2-4.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures (TCMs).

### **State Tailpipe Emission Standards**

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, CARB established a series of increasingly strict emission standards for new engines. New construction equipment used for development of the proposed project, potentially including heavy-duty trucks, off-road construction equipment, tugboats, and barges, would be required to comply with the standards.

## **Toxic Air Contaminants**

### **Toxic Air Contaminant Identification and Control Act (Tanner Act)**

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (“Hot Spots” Act). In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California’s program to reduce exposure to air toxics. The “Hot Spots” Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

The CARB identified DPM as a TAC in 1998. Shortly thereafter, the CARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing

**TABLE 4.2-4  
Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time <sup>a</sup>	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
<b>Ozone</b>	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when ROG and NO <sub>x</sub> react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/industrial mobile equipment.
	8 hours	0.07 ppm <sup>b</sup>	0.070 ppm		
<b>Carbon Monoxide (CO)</b>	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm		
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm		
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.50 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Arithmetic Mean	---	0.03 ppm		
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	---		
<b>Fine Particulate Matter (PM<sub>2.5</sub>)</b>	24 hours	---	35 µg/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , sulfur oxides, and organics.
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>		
<b>Lead (Pb)</b>	30 Day Average	1.5 µg/m <sup>3</sup>	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severer cases).	<i>Present source:</i> lead smelters battery manufacturing and recycling facilities. <i>Past source:</i> combustion of leaded gasoline
	Calendar Quarter	---	1.5 µg/m <sup>3</sup>		
	Rolling 3-Month Average	---	0.15 µg/m <sup>3</sup>		
<b>Hydrogen Sulfide</b>	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
<b>Sulfates (SO<sub>4</sub>)</b>	24 hour	25 µg/m <sup>3</sup>	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
<b>Visibility Reducing Particles</b>	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See PM <sub>2.5</sub> .



**TABLE 4.2-4**  
**Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time <sup>a</sup>	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Vinyl Chloride	24 hour	0.01 ppm	No National Standard	Short-term exposure to high levels of vinyl chloride in the air can cause dizziness, drowsiness, and headaches. Long-term exposure through inhalation and oral exposure can cause liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans	Polyvinyl chloride (PVC) plastic and vinyl products.

NOTE: ppm = parts per million; ppb = parts per billion;  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.

a The averaging time is the interval of time over which the sample results are reported.

b This concentration was approved by CARB on April 28, 2005 and became effective May 17, 2006.

Source: CARB 2016b. *Ambient Air Quality Standards*. Last revised: May 4, 2016. Available: <http://www.arb.ca.gov/research/aaqs/aaqs.htm>. Accessed: September 2018.

diesel-fueled engines and vehicles.<sup>60</sup> The goal of the plan is to reduce DPM emissions and the associated health risk by 85% by 2020. The key elements of the plan are to reduce DPM emissions and the associated health risk by 85% by 2020. The key elements of the plan are to clean up existing engines through retrofit emission control devices, adopt more stringent standards for new diesel engines, and implement the use of lower sulfur fuels.

### California Air Resources Board

CARB, a department of the California Environmental Protection Agency, oversees air quality planning and control throughout California. CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementation of the CCAA. The CCAA, which was adopted in 1988, requires CARB to establish the CAAQS. CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. Applicable CAAQS are shown in Table 4.2-4.

The CCAA requires all local air districts in the state to endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts shall focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

CARB's other responsibilities include overseeing compliance by local air districts with California and federal laws; approving local air quality plans; submitting SIPs to USEPA; monitoring air quality; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

### California Green Building Standard Code

In January 2010, the State of California adopted the 2010 California Green Building Standards

60 California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

Code (CALGreen), which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings. The CalGreen Code is revised every 3 years, further increasing developmental efficiencies. The most current CalGreen code is the 2016 version which became effective on January 1, 2017.

### **On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation**

On December 12, 2008, CARB approved the on-road heavy-duty diesel vehicle (in use) regulation to significantly reduce PM and NOx emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. The regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned and for privately and publicly owned school buses. Other public fleets, solid waste collection trucks and transit buses are already subject to other regulations and are not part of the truck and bus regulation.

On January 1, 2012, the regulation implemented phase-in requirements for heavier trucks to reduce PM emissions with exhaust retrofit filters that capture pollutants before they are emitted to the air or by replacing vehicles with newer vehicles that are originally equipped with PM filters. Starting on January 1, 2015, lighter trucks with a GVWR of 14,001 to 26,000 pounds with engines that are 20 years or older were required to be replaced with newer trucks. Starting January 1, 2020, all remaining trucks and buses would need to be replaced so that they would all have 2010 model year engines or equivalent emissions by 2023.

### **Off-Road Diesel Fleet Regulation**

On July 26, 2007, CARB adopted this regulation to reduce diesel PM and NOx emissions from existing off-road heavy-duty diesel vehicles in California that are used in construction, mining, and industrial operations. The Off-Road Diesel Fleet Regulation includes:

- Imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled;
- Restricts the adding of older vehicles into fleets; and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits).

The Off-Road Diesel Fleet Regulation applies to all self-propelled off-road diesel vehicles over 25 horsepower (hp) used in California and most two-engine vehicles (except on-road two-engine sweepers). The regulation does not apply to stationary equipment or portable equipment, such as generators. Vehicles that are exempt from this regulation include personal use vehicles, vehicles used solely for agriculture, vehicles that are awaiting sale, emergency operations vehicles, dedicated snow removal vehicles, low-use vehicles (used under 200 hours per year), and vehicles that are already covered by the Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards (Cargo Handling regulation). The off-road performance requirements are applied to a fleet as a whole and not to individual vehicles, and are based on a fleet's average NOx emissions. The goal of the regulation is to encourage fleet

owners to replace a certain percentage of their diesel fleet over time with cleaner emitting vehicles in order to meet the lower annual NOx limits.

The regulation was amended in December 2010 to provide a 4-year delay from the original compliance timeline for all fleets. By January of each year, starting in 2014, each fleet must meet the fleet average NOx requirements or, as an alternative, a specified percentage of the fleet must be replaced with newer engines.

## **Regional**

### **San Joaquin Valley Air Pollution Control District**

#### **Criteria Air Pollutants**

SJVAPCD attains and maintains air quality conditions in the SJVAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SJVAPCD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SJVAPCD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the federal Clean Air Act, CAAA, and CCAA.

The SJVAPCD has four developed plans to attain and maintain the State and Federal standards for ozone and particulate matter. The 2013 Plan for the Revoked 1-hour Ozone Standard demonstrated attainment of the 1-hour standard by 2017 and remains in place for planning purposes despite the revocation of the 1-hour standard in 2005. The 2016 Plan for the 2008 8-Hour Ozone Standard, the 2007 PM10 Maintenance Plan and the 2016 Moderate Area Plan for the 2012 PM2.5 standard was adopted in June 2016 and satisfies the Clean Air Act requirement and ensures expeditious attainment of the 75 parts per billion standard. The PM10 Maintenance Plan was adopted in September 2007 and assures that the SJVAPCD will continue to meet the EPA's PM10 standard. The PM2.5 Plan was adopted on September 15, 2016 and addresses the Federal's 2012 standard of 12  $\mu\text{g}/\text{m}^3$ . The plan includes attainment impracticability demonstration and requested reclassification of the SJVAPCD from Moderate to Serious nonattainment.

The District is in the process of developing an attainment strategy to address multiple PM2.5 standards (1997, 2006, and 2012 PM2.5 standards) and a plan to demonstrate maintenance of the 1987 PM10 standard as required under the federal Clean Air Act

#### **SJVAPCD Rules and Regulations**

All projects within the SJAB are subject to SJVAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction anticipated under the proposed Community Plan would include the following:

**Rule 4101 – Visible Emissions.** A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is<sup>61</sup>:

1. As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

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<sup>61</sup> SJVAPCD, *Rule 4101 Visible Emissions*, February 17, 2005.

2. Of such opacity as to obscure an observer's view to a degree equal to or greater than the smoke described in Section 5.1 of this rule.

**Rule 4102 – Nuisance.** 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.<sup>62</sup>

**Regulation VIII – Fugitive PM<sub>10</sub> Prohibitions.** Reduce ambient concentrations of fine particulate matter (PM<sub>10</sub>) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions.

The Rules contained in this Regulation have been developed pursuant to United States Environmental Protection Agency guidance for Serious PM<sub>10</sub> Nonattainment Areas. The rules are applicable to specified anthropogenic fugitive dust sources. Fugitive dust contains PM<sub>10</sub> and particles larger than PM<sub>10</sub>. Controlling fugitive dust emissions when visible emissions are detected will not prevent all PM<sub>10</sub> emissions, but will substantially reduce PM<sub>10</sub> emissions.<sup>63</sup>

### **Merced County General Plan**

The following policies from the General Plan<sup>64</sup> are relevant to the proposed Community Plan:

**Policy AQ-1.1: Energy Consumption Reduction**

Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.

**Policy AQ-1.6: Air Quality Improvement**

Support and implement programs to improve air quality throughout the County by reducing emissions related to vehicular travel and agricultural practices.

**Policy AQ-1.11: Truck-Related Development**

Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements is required as part of the permit approval.

**Policy AQ-2.1: Air Quality Plan Compliance**

Require all development projects to comply with applicable regional air quality plans and policies.

**Policy AQ-2.3: Cumulative Impacts**

Encourage the reduction of cumulative air quality impacts produced by projects that are not significant by themselves, but result in cumulatively significant impacts in combination with other development.

**Policy AQ-2.4: Mitigation**

Require that local and regional air quality impacts identified during CEQA review for projects reviewed and approved by the County are consistently and fairly mitigated.

**Policy AQ-2.5: Innovative Mitigation Measures**

Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the San Joaquin Valley Air Pollution Control District, project applicants, and

<sup>62</sup> SJVAPCD. *Rule 4102 Nuisance*. December 17, 1992.

<sup>63</sup> SJVAPCD, *Regulation VIII Fugitive PM<sub>10</sub> Prohibitions*, August 19, 2004.

<sup>64</sup> Merced County, *2030 Merced County General Plan*, December 10, 2013.

other interested parties.

**Policy AQ-3.2: Clean Fleet Vehicles**

Require vehicle replacement practices that prioritize the replacement of older higher emission vehicles and the purchasing of the lowest emission technology vehicles, consistent with cost-effective management of the program.

**Policy AQ-3.3: Teleconferencing**

Use teleconferencing in lieu of employee travel to conferences and meetings when feasible.

**Policy AQ-4.1: Decrease Vehicle Miles Traveled**

Require diverse, higher-density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.

**Policy AQ-4.3: Public Transport Use Incentives**

Prepare incentives and programs to encourage use of public transit and decrease vehicle miles traveled.

**Policy AQ-4.4: Transportation Alternatives**

Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and dropoff locations, and biking paths/storage.

**Policy AQ-4.5: Public Education and Awareness**

Support programs that educate the public regarding the impact of individual transportation, lifestyle, and land use decisions on air quality.

**Policy AQ-4.6: Non-Motorized Transportation**

Encourage non-motorized transportation corridors within and between communities.

**Policy AQ-4.7: Planning Integration**

Require land use, transportation, and air quality planning to be integrated for the most efficient use of resources and a healthier environment.

## IMPACTS AND MITIGATION MEASURES

### Method of Analysis

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to operations. First, during construction (short-term), the proposed Community Plan would affect local particulate concentrations primarily due to fugitive dust sources and diesel exhaust. Under operations (long-term), the proposed Community Plan would result in an increase in emissions primarily due to motor vehicle trips. Other sources include minor area sources, such as landscaping and use of consumer products.

### **Construction**

#### Criteria Pollutant Emissions

Construction emissions for the proposed Community Plan were estimated using the most recent version of the California Emissions Estimator Model (CalEEMod), version 2016.3.2, as applicable. Modeling was based on project-specific data, where available. Where project-specific information was not available (for example, the age and fuel efficiencies of the vehicle fleet) default model settings and/or reasonable assumptions based on other similar projects were used to estimate criteria pollutant emissions. Modeling assumptions, calculations, and input and output files are provided in Appendix C.

The proposed Community Plan is a program-level document that does not have a specific development plan. The Le Grand Community Plan is intended to be built out over a twenty-year period. However, to be conservative, during estimates of emissions it was assumed that ten percent of the Plan would be built out in one year. As a conservative assumption, the year 2019 was chosen for modeling purposes as construction equipment becomes more efficient in subsequent years.

Because the proposed Community Plan would not result in one large development, but provides for numerous smaller projects, there could be more than one project occurring at the same time during the year and therefore increasing the amount of equipment used. As a conservative estimate of emissions, annual construction emissions are presented as three times the annual emissions estimated for the proposed Community Plan. This conservatively assumes that three year-long projects occur at the same time in order to achieve ten percent of the development. Even if less than ten percent is built, it is possible that similar construction schedules could be used for the three projects.

Criteria pollutant emissions as estimated are compared to the SJVAPCD's operational thresholds. Where emissions are determined to exceed regulatory thresholds, mitigation is provided to reduce these emissions.

#### Odors

Odor impacts are determined qualitatively based on the nature of construction activities and the proximity to off-site receptors.

#### Cumulative Impacts

According to the SJVAPCD's guidance, if the mitigated project exceeds the regional thresholds for any criteria pollutant, then that project emissions should be considered cumulatively considerable.

Even if the project is less than significant with respect to all regional thresholds, it could still be cumulatively considerable if it violates any of the AAQS. To determine if a project exceeds any of the AAQS, on-site emissions from construction activities are compared to a 100 pounds per day screening threshold for each criteria pollutant. If the threshold is not exceeded the project is determined to be less than significant. If the threshold is exceeded, then an ambient air quality analysis is performed. An ambient air quality analysis uses dispersion modeling to determine if the emission increases from project construction would contribute to a violation of the ambient air quality standards.<sup>65</sup>

### **Operation**

#### Criteria Pollutant Emissions

CalEEMod was also used to estimate operational emissions from project build out, assumed to occur in 2035. For on-road vehicles, the trip generation rates provided in the proposed Community Plan traffic study (see Section 4.8) were used. Additionally, the entrained road dust was adjusted from the CalEEMod default to the county-specific value. Otherwise CalEEMod defaults were used to estimate criteria pollutant emissions. Appendix C provides detailed CalEEMod information and model results for determining criteria pollutant emissions as well as each analysis described below.

Criteria pollutant emissions as estimated are compared to the SJVAPCD's operational

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<sup>65</sup> SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

thresholds. Where emissions are determined to exceed regulatory thresholds, mitigation is provided to reduce these emissions.

#### CO Hotspots

Localized areas where ambient concentrations of CO exceed state and/or federal standards are termed CO hotspots. Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. Carbon monoxide decreased dramatically in the SJVAB with the introduction of the catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in the SJVAB for some time and the SJVAB is currently designated as a CO attainment area for both the CAAQS and NAAQS. The SJVAB has been in attainment for so long that CO monitoring at the majority of sites has been discontinued. The analysis used the project traffic study<sup>66</sup> to evaluate the project for the potential for CO hotspots. For intersections that do not experience a decrease in LOS to E or F, or, if already operating at LOS F, do not significantly worsen, the intersection is not considered to have the potential to result in a CO hotspot. For intersections that meet either of these conditions, Caline4 is used to determine if the concentrations at the affected intersections, when combined with existing background levels, have the potential to exceed regulatory thresholds.

#### Toxic Air Contaminants

The analysis of toxic air contaminants (TACs) is qualitatively based on the type of development anticipated to occur within the Plan Area, and an assessment of future development's adherence to existing County General Plan policies and SJVAPCD regulations. It is not anticipated that the nature of the community development would result in the development of stationary emissions sources beyond a potential for a boiler or back-up generator, which are regulated by SJVAPCD and therefore would not exceed regulatory thresholds.

For vehicle-related TAC, CARB recommends a 500-foot buffer between sensitive receptors and roadways carrying more than 100,000 vehicles per day.

#### Odors

Odor impacts are determined qualitatively based on the nature of the community plan land uses and the proximity to existing off-site sources.

#### Cumulative Impacts

According to the SJVAPCD's guidance, if a proposed Community Plan exceeds the regional thresholds for any criteria pollutant after application of mitigation, then that project's contribution to cumulative air quality impacts would be cumulatively considerable. Even if the project is less than significant with respect to all regional thresholds, it could still be cumulatively considerable if it violates any of the AAQS.

To determine if a project exceeds any of the AAQS, on-site emissions from operational activities are compared to a 100 pounds per day screening threshold for each criteria pollutant. If the threshold is not exceeded, the project is determined to be less than significant. If the threshold is exceeded, then an ambient air quality analysis is performed. An ambient air quality analysis uses dispersion modeling to determine if the emission increases from project operation would contribute to a violation of the ambient air quality standards.<sup>67</sup>

66 KD Anderson and Associates, Inc. 2018. *Traffic Impact Analysis for Le Grand Community Plan Area*. August 7, 2018.

67 SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.

### **Thresholds of Significance**

The proposed Community Plan would have a significant impact if it could:

- 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; or
- Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines (Section 15064.7) provide that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SJVAPCD.<sup>68</sup> These thresholds generally incorporate the checklist questions contained in Appendix G of the CEQA Guidelines. Table 4.2-5 identifies the Air Quality Significance.

In addition to regional emissions criteria, the SJVAPCD has criteria in place to determine whether construction and operational activities would create significant adverse localized air quality impacts on nearby sensitive receptors. These are their Ambient Air Quality thresholds in which a project would be considered to have a significant impact if its emissions are predicted to cause or contribute to a violation of an ambient air quality standard by exceeding any of the CAAQS, NAAQS or Significant Impact Level (SIL). The SJVAPCD has an Ambient Air Quality Analysis Screening Tool such that if the emissions from on-site activities increase emissions by more than 100 pounds per day, impacts may be significant. If emissions exceed the 100 pounds per day threshold, then an ambient air quality analysis should be performed.

For the purposes of analyzing CO hotspots, intersections are considered to have the potential to result in a CO hotspot if the Level of Service (LOS) on one or more streets or at one or more intersections in the plan will be reduced to LOS E or F, or, for intersections or roadways already operating at LOS F, congestion would substantially worsen. If either of these conditions are met a CO analysis must be conducted to determine the project's significance with respect to CO.

### **Project-Specific Impacts and Mitigation Measures**

#### **4.2-1 The proposed Community Plan could conflict with or obstruct implementation of the applicable air quality plans.**

**Applicable Regulations:** SJVAPCD Rule 4101 – Visible Emissions, Rule 4102 – Nuisance and Regulation VIII – Fugitive PM<sub>10</sub> Prohibitions

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

<sup>68</sup> SJVAPCD, *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts*, March 19, 2015.



TABLE 4.2-5 Regional Air Quality Significance Thresholds		
Pollutant	Mass Daily Thresholds <sup>a</sup> (tons/yr)	
	Construction	Operations
Oxides of Nitrogen (NO <sub>x</sub> )	10	10
Reactive Organic Gases (ROG)	10	10
Respirable Particulate Matter (PM10)	15	15
Fine Particulate Matter (PM2.5)	15	15
Oxides of Sulfur (SO <sub>x</sub> )	27	27
Carbon Monoxide (CO)	100	100
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million people Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Note: As the proposed Community Plan would not involve the development of any major lead emissions sources, lead emissions are not analyzed further in this report.		
Source: SJVAPCD, <i>Final Draft Guidance for Assessing and Mitigating Air Quality Impacts</i> , March 19, 2015.		

**Mitigation:** Mitigation Measure 4.2-1:

- (a) *All on-site construction equipment shall use Tier 3 rated engines or have emissions levels equivalent to or more stringent than that of Tier 3 rated engines. During construction activities, the construction contractor shall keep a record of the equipment used on site, including, at a minimum, the type of equipment, its engine certification, and all maintenance records.*
- (b) *If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSO shall implement (a), above, or equally effective measures.*

**Residual Significance:** Less than Significant

According to the SJVAPCD's guidance, a project would be considered consistent with the applicable air quality plans if it would not exceed the regulatory thresholds for any of the criteria pollutants.

As detailed in Impact 4.2-2 below, the proposed Community Plan would exceed NO<sub>x</sub> emissions for construction prior to mitigation. With the implementation of Mitigation Measure 4.2-1, emissions of NO<sub>x</sub> would be reduced to below the regulatory thresholds and therefore construction activities would not conflict with the implementation of the applicable air quality plans.

With respect to operational activities, Impact 4.2-2 details the emissions estimates for the proposed Community Plan. As shown in Table 4.2-8, operational emissions for the Community Plan Development would not exceed regulatory thresholds. Therefore, the proposed Community Plan would not conflict with the implementation of the applicable air quality management plans.

**4.2-2: The proposed Community Plan would generate air pollutants that could exceed air quality standards or contribute to existing air quality violations.**

**Applicable Regulations:** SJVAPCD Rule 4101 – Visible Emissions, Rule 4102 – Nuisance and Regulation VIII – Fugitive PM10 Prohibitions

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Mitigation:** Mitigation Measure 4.2-2:

*Implement Mitigation Measure 4.2-1*

**Residual Significance:** Less than Significant

**Construction**

Construction-related emissions arise from a variety of activities, including: (1) grading, excavation, road building, and other earth moving activities; (2) travel by construction equipment and employee vehicles, especially on unpaved surfaces; (3) exhaust from construction equipment, trucks, and worker vehicles; (4) architectural coatings; and (5) asphalt paving.

Construction resulting from implementation of the proposed Community Plan was modeled using CalEEMod (version 2016.3.2). This modeling used a combination of project-related and default construction information. Project assumptions are summarized in the Method of Analysis, above, and detailed in Appendix C. Construction activities would generate air emissions from heavy-duty equipment, vehicle trips to haul materials, and from construction workers traveling to and from the Plan Area. The assessment of construction air impacts considers each of these sources and recognizes that construction emissions can vary substantially from day to day and year to year, depending on the level of activity and the specific type of operation.

Table 4.2-6 shows unmitigated criteria pollutant emissions for construction. The estimates include the following basic construction phases: demolition, site preparation, grading, building construction, paving, and application of architectural coatings. As shown in Table 4.2-6, maximum annual regional emissions would exceed the SJVAPCD's annual significance threshold for NO<sub>x</sub>. This is a potentially significant impact.

Implementation of Mitigation Measure 4.2-1 would reduce NO<sub>x</sub> emissions to below regulatory threshold by regulating the engine efficiency of on-site construction equipment. While this mitigation measure is meant to reduce NO<sub>x</sub> impacts, it would also reduce the emissions of most other criteria pollutants. In the case of CO emissions, there is a slight increase between the unmitigated and mitigated scenarios, but this does not result in a significant impact or increase emissions to near the significance threshold. Table 4.2-7 shows the mitigated criteria pollutant emissions for project construction. As shown, maximum annual construction emissions would be below the regulatory thresholds for all criteria pollutants. Construction of off-site sewer and water infrastructure, including expanded areas for disposal of treated effluent would also generate construction emissions, although construction activities would occur over a short period of time and involve primarily grading and excavation only. These emissions could be reduced through Mitigation Measure 4.2-1, but, in combination with the Plan Area emissions,

<b>TABLE 4.2-6</b>						
<b>Unmitigated Annual Construction-Related Pollutant Emissions (tons/year)</b>						
<b>Scenario</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Annual Project Emissions	4	11	8	<1	1	1
<i>SJVAPCD Construction Threshold</i>	10	10	100	27	15	15
Significant Impact?	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Source: Refer to CalEEMod Output Sheets, Appendix C.						

<b>TABLE 4.2-7</b>						
<b>Mitigated Annual Construction-Related Pollutant Emissions (tons/year)</b>						
<b>Scenario</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Annual Project Emissions	4	7	9	<1	1	1
<i>SJVAPCD Construction Threshold</i>	10	10	100	27	15	15
Significant Impact?	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Source: Refer to CalEEMod Output Sheets, Appendix C.						

the generation of NOx would remain significant.

### Operation

Table 4.2-8 summarizes the annual operational emissions of criteria pollutants and compares them to the SJVAPCD significance thresholds. As shown, no criteria pollutants would exceed SJVAPCD's annual thresholds. This is considered a less than significant operational impact. Furthermore, the proposed Community Plan has a number of components that would reduce air emissions by reducing reliance on the automobile, including Class II bike lanes on Jefferson Street, Santa Fe Avenue and Le Grand Road, and sidewalks and crossing improvements throughout the community.

<b>TABLE 4.2-8</b>						
<b>Annual Unmitigated Operational Emissions (tons/year)</b>						
	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Area Source	6	<1	5	<1	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile Source	1	8	18	<1	6	2
Project Total	8	9	23	<1	6	2
<i>SJVAPCD Operational Threshold</i>	10	10	100	27	15	15
Significant Impact?	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Source: Appendix C.						

### 4.2-3: The proposed Community Plan could result in exposure of sensitive receptors to substantial pollutant concentrations of criteria pollutants and TACs.

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Mitigation:** Mitigation Measure 4.2-3:

*Implement Mitigation Measure 4.2-1.*

**Residual Significance:** Less than Significant

### **CO Hotspots**

A total of 7 local intersections and four roadways were analyzed as part of the proposed Community Plan's traffic analysis (Appendix G). As shown in Table 4.2-9, none of the intersections are projected to operate with Levels of Service that exceed the minimum LOS D standard. All roadway segments would operate at LOS D or better with the proposed Community Plan. Because none of the intersections exceed the LOS threshold (prior to mitigation), it can be assumed that these intersections would not exceed the CO standards, and this would be a less-than-significant impact.

### **Localized Air Quality Impacts –TACs**

As described by SJVAPCD, with respect to TACs there are two types of scenarios that are analyzed, those new projects that would place new toxic sources in the vicinity of existing receptors, and land use development that would place new receptors within the vicinity of existing toxic sources.

The proposed Community Plan provides for development of residential, educational, commercial, and retail land uses. These land uses do not typically result in the emission of TACs with the exception of permitted sources (such as emergency generators, boilers, or land uses such as gas stations). While it is unknown at this time if such uses will be developed under the proposed Community Plan, the fact that any of the sources would be permitted means that the SJVAPCD would ensure that their emissions would be below regulatory standards. Additionally, while gas stations can be a TAC source, typically they are not placed within boundary distances of sensitive receptors and in communities like Le Grand are typically not large enough to result in excessive health risk. Therefore, because the Community Plan will not introduce unpermitted sources to the project area, impacts are anticipated to be less than significant.

The existing Plan Area does not include known appreciable un-permitted TAC sources and is surrounded by agricultural uses, which, with the exception of the potential for permitted sources, are not TAC emitters. The closest freeway is Highway 99, which is over five miles from the Plan Area and is outside the health risk zone of influence. Therefore, the proposed Community Plan is not anticipated to locate land uses in the vicinity of existing TAC sources that would expose new sensitive receptors to excessive health risk. Impacts are anticipated to be less than significant.

The proposed Community Plan would not result in exposure of sensitive receptors to substantial levels of CO or TAC, so these impacts would be less than significant.

### **Localized Health Impacts**

State and federal ambient air quality standards were established at levels that provide public health protection and allow an adequate margin of safety, including protecting the health of sensitive populations such as asthmatics, children and the elderly. As shown in Table 4.2-6, unmitigated project-related construction emissions would potentially exceed regional thresholds for NOx.

**TABLE 4.2-9  
LOS Determination**

No.	Intersection	Existing		2035 Plus Project		Significant?
		AM	PM	AM	PM	
Intersection Analysis						
I1	Santa Fe Ave / Savana Road	A	A	B	A	No
I2	Santa Fe Ave / Jackson Street	B	B	C	B	No
I3	Santa Fe Ave / Jefferson St	A	A	B	A	No
I4	Le Grand Rd / Jefferson St	A	A	C	B	No
I5	Santa Fe Ave / Le Grand Rd (West)	A	A	B	B	No
I6	Santa Fe Ave /Le Grand Rd (East)	A	A	B	B	No
I7	Santa Fe Ave / Fresno Road	A	A	A	A	No
Roadway Segment Analysis						
R1	Santa Fe Ave (n of Savana Rd)	B		C		No
R2	Savana Rd	C		C		No
R3	Cunningham Rd	C		C		No
R4	Fresno Rd	C		C		No
R5	Santa Fe Ave (S of Jackson)	C		C		No
R6	Washington St	C		C		No
R7	Jefferson St	C		C		No
R8	McDowell St	C		C		No
R9	Le Grand Rd (w of Santa Fe Ave)	B		C		No
R10	Le Grand Rd (e of Fresno Rd)	C		C		No
R11	Minturn Rd	C		C		No
R12	Santa Fe Avenue (s of Fresno Rd)	C		C		No
Source: KDA Transportation Engineering, 2018.						

As a result, off-site receptors could be exposed to NO<sub>2</sub>, levels in excess of the health-based ambient air quality standards due to the NO<sub>x</sub> emissions generated during construction.<sup>69</sup> Therefore, Mitigation Measure 4.2-1 is required as detailed under Impact 4.2-1 and 4.2-2 above. Given that ozone formation occurs through a complex photo-chemical reaction between NO<sub>x</sub> and VOCs/ROGs in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The SJVAPCD has not established a regional or local threshold for ozone. The health-based ambient air quality standards for ozone are as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO<sub>x</sub> and ROGs). It is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to convert specific emissions concentrations of NO<sub>x</sub> or ROGs emitted in a particular area to a particular concentration of ozone in that area. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone.<sup>70,71</sup> Nonetheless, since project construction would potentially exceed the numeric indicator for NO<sub>x</sub> emissions, it is possible that project construction NO<sub>x</sub> emissions could result in an increase in ground-level ozone concentrations in proximity to the project site or elsewhere in the air basin. Therefore, Mitigation Measure 4.2-1 has been implemented to reduce construction related emissions. As discussed under impact 4.2-2 Construction, and shown in Table 4.2-7 above, with implementation of mitigation, regional emissions from construction would be reduced to less-than-significant levels.

The CEQA criteria pollutants significance thresholds were set by the Air District at emission levels tied to the region's attainment status.<sup>72,73</sup> These are emission levels at which stationary pollution sources permitted by the Air District must offset their emissions and CEQA projects must identify feasible mitigation. The thresholds are not intended to be indicative of any localized human health impact that a project could have. Therefore, a project's exceedance of the mass regional emissions thresholds from project-related activities does not necessarily indicate that the project will cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NO<sub>x</sub> or ROGs emissions from project level. Therefore, it is infeasible to connect the unmitigated project-level NO<sub>x</sub> emissions to potential ozone-related health impact at this time.

The primary health concern with exposure to NO<sub>x</sub> emissions is the secondary formation of

69 Although there is no ambient air quality standard for NO<sub>x</sub>, an exceedance of NO<sub>x</sub> mass emissions thresholds can contribute to exceedance of local ambient air quality standards for NO<sub>2</sub>, as discussed under Pollutants of concern beginning on page 4.2-3.

70 SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

71 SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

72 SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

73 SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

ozone. Because of the complexity of ozone formation and given the state of environmental science modeling in use at this time, it is infeasible to determine whether, or the extent to which, a single project's precursor (i.e., NO<sub>x</sub> and ROG) emissions would potentially result in the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary formed emissions<sup>74, 75, 76</sup>. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone. Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NO<sub>x</sub> or ROG emissions at the local level (project level). Notwithstanding these scientific constraints, the disconnect between project level precursor emissions and ozone-related health impact cannot be bridged at this time.

#### **4.2-4: The proposed Community Plan could expose people to objectionable odors.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than significant

**Mitigation:** None required.

**Residual Significance:** Less than Significant

During construction, exhaust from equipment may produce discernible odors typical of most construction sites. Such odors could be a temporary nuisance to adjacent uses, but would be intermittent and would not affect a substantial number of people. Additionally, odors dissipate with distance. Therefore, these emissions would be minimal.

Land uses that are associated with odor complaints typically include agricultural uses (animal husbandry), wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. As the operational activities associated with the proposed Community Plan are not typically associated with substantial production of odors. Thus, the proposed Community Plan is not expected to result in objectionable odors for the neighboring uses.

The Le Grand Community is surrounded by active agricultural uses, however most of the surrounding uses are for crop growth and are not associated with animal agriculture such as dairy or cattle ranches. Therefore, odors associated with the surrounding agricultural land would be consistent with that associated with construction, minor, temporary emissions from equipment exhaust. While such odors could be a temporary nuisance to adjacent uses, it would be intermittent and would not affect a substantial number of people.

The Community Plan would not result in odors that have the potential to impact a substantial

74 SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

75 SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

76 SCAQMD, 2016. Communication with SCAQMD Staff, Jillian Wong (Planning and Rules Manager) and Michael Krause (Planning and Rules Manager), DTSC, and ESA PCR, August 26, 2016.

number of people. Therefore, this impact would be **less than significant**. No mitigation is required.

### **Cumulative Impacts and Mitigation Measures**

The cumulative context for the analysis of criteria air pollutants is the SJVAB. Carbon monoxide, TAC and odor exposure must occur within proximity to sensitive receptors. Because there are no planned or anticipated changes to land uses and activities adjacent to the Plan Area, there would be no cumulative increases in TACs, odors or CO in proximity to the Plan Area, and no new sensitive receptors outside of, but near the Plan Area. Therefore, these issues are not addressed in this section.

#### **4.2-5: The proposed Community Plan could contribute to cumulative increases in criteria air pollutants.**

**Applicable Regulations:** SJVAPCD Rule 4101 – Visible Emissions, Rule 4102 – Nuisance and Regulation VIII – Fugitive PM10 Prohibitions

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Mitigation:** Mitigation Measure 4.2-5:

*Implement Mitigation Measure 4.2-1*

**Residual Significance:** Less than Significant

Because the SJVAB is currently classified as a state nonattainment area for ozone PM10 and PM2.5, cumulative development outside of the Plan Area could also violate air quality standards, contribute to air quality violation and/or interfere with achievement of air quality standards. This is a significant cumulative impact.

Based on SJVAPCD's cumulative air quality impact methodology, if a project is determined to exceed regional thresholds the project would be determined to contribute considerably to this cumulative air impact. If a project does not exceed regional thresholds it could still be cumulative if it exceeds the AAQS.

As identified for Impact 4.2-2 above, the project would exceed regional thresholds for NOx during construction and would therefore have the potential to result in cumulatively considerable impacts. With the implementation of Mitigation Measure 4.2-1, NOx impacts would be reduced below regional thresholds and therefore would be less than cumulatively considerable with respect to construction activities. The proposed Community Plan would not exceed regional thresholds for operational activities, and therefore would not contribute considerably to cumulative impacts.

Criteria pollutants that exceed 100 pounds per day for either construction or operational activities require dispersion modeling to ensure that the AAQS are not violated, and therefore are not contributing to a cumulative impact. Construction and operational activities are considered separately and are each compared to the 100 pounds per day threshold. As shown in Table 4.2-10, the proposed Community Plan emissions would not exceed 100 pounds per day



**TABLE 4.2-10**  
**Unmitigated AAQS Analysis (lbs/day)**

	ROG	NOx	CO	SOx	PM10	PM2.5
<b>Unmitigated</b>						
Construction	32	83	64	<1	10	6
Operation	36	9	34	<1	2	1
<i>SJVAPCD Operational Threshold</i>	100	100	100	100	100	100
Significant Impact?	No	No	No	No	No	No
<b>Mitigated</b>						
Construction	27	54	69	<1	6	4
<i>SJVAPCD Operational Threshold</i>	100	100	100	100	100	100
Significant Impact?	No	No	No	No	No	No

Source: Appendix C.

for any criteria pollutant. Therefore, with respect to AAQS the proposed Community Plan would be less than cumulatively considerable.

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure and topography. The health impacts associated with exposure to criteria pollutants are evaluated by air districts on a regional level based on all sources in the region and the region's attainment of the AAQS. The mass emissions significance thresholds used in CEQA air quality analysis are not intended to be indicative of any localized human health impact that a project could have. Rather, the emissions thresholds were tied to the region's attainment status. If the thresholds are exceeded, then stationary pollution sources permitted by the air district must offset their emissions using enhanced control technology and CEQA projects must implement feasible mitigations.<sup>77</sup> Therefore, the project's unmitigated exceedance of the mass regional NOx emissions threshold from temporary construction activities does not necessarily indicate that the Project will cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels. Additionally, with implementation of Mitigation Measure 4.2-1, NOx emissions are reduced to less than significant levels and therefore would not result in a localized health impact.

The health concerns associated with NOx emissions are related to its potential to result in the secondary formation of ground-level ozone. As discussed earlier, the Air Basin is designated as nonattainment for ozone. The formation of ground-level ozone is a complex process due to photochemical reactions of precursor pollutants (i.e., VOC/ROG and NOx emissions) in the atmosphere. It is not necessarily the amount of NOx and ROG emissions that cause human health impacts, but the concentration of resulting ozone. Because of the complexity of ozone formation, a specific amount of NOx or ROG emissions in a particular area does not equate to a particular concentration of ozone in an area.<sup>78</sup> Environmental science models today cannot determine whether, or the extent to which, a single project's precursor emissions would

<sup>77</sup> April 2015 Amicus Curiae Brief of the South Coast Air Quality Management District in *Sierra Club v. County of Fresno* (CA Supreme Court, S219783).

<sup>78</sup> April 2015 Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in *Sierra Club v. County of Fresno* (CA Supreme Court, S219783).

potentially result in the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary formed emissions. This is because available models today are designed to determine regional, population-wide health impacts and cannot accurately quantify ozone-related health impacts caused by NO<sub>x</sub> or ROG emissions at a project level.<sup>79</sup> The use of these models for a small source of emissions such as the project would not produce reliable or meaningful results.<sup>80</sup> Therefore, it is not reasonably feasible to correlate the project's unmitigated exceedance of the NO<sub>x</sub> significance threshold during construction to potential ozone-related health impact at this time.

The proposed Community Plan would result in a less than cumulatively considerable net increase of criteria pollutants within the SJVAB with implementation of construction Mitigation Measure 4.2-1.

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79 April 2015 Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in *Sierra Club v. County of Fresno* (CA Supreme Court, S219783).

80 April 2015 Amicus Curiae Brief of the South Coast Air Quality Management District in *Sierra Club v. County of Fresno* (CA Supreme Court, S219783).

### **4.3 BIOLOGICAL RESOURCES**

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### INTRODUCTION

This section describes the existing biological resources within the Plan Area and vicinity, including sensitive biological habitats, special-status species that could be found in the Plan Area, wetlands and riparian habitat. The discussion also summarizes the regulations, policies, and programs that apply to biological resources in the Plan Area; and evaluates the extent to which the proposed Community Plan could result in the loss of special-status species and/or the loss or degradation of sensitive biological habitats.

No comments on biological resources were received in response to the Notice of Preparation (NOP).

### ENVIRONMENTAL SETTING

#### Merced County

Merced County extends from the foothills of the Sierra Nevada in the east to the grasslands and agricultural lands throughout the central and western portions of the County. The County contains a wide range of diverse biological habitats that support 141 rare, threatened and endangered species, including over 20 percent of the wetlands remaining in California.<sup>1</sup> The Merced County General Plan Background Report identifies areas where various sensitive communities and special-status species are located, including vernal pool grasslands, California red-legged frog habitat, San Joaquin kit fox habitat, wetlands, national wildlife refuges, the Fish and Wildlife Service Grasslands Ecological area, federally- and state-funded conservation easements, State wildlife refuges/areas, major riparian woodland areas, known special-status species occurrences, vernal pool critical habitat, and California tiger salamander critical habitat<sup>2</sup>.

#### Le Grand Community Plan Area

The Plan Area has been largely disturbed by development and agricultural operations, so it supports a much more limited range of biological habitat and special-status species than the county as a whole. Most of the vegetation cover types that occur within the undeveloped portions of the Plan Area are associated with agricultural land cover, including orchard, weedy field, field crop, pasture and hay crop. The only natural or semi-natural habitat types within the Plan Area are riparian, freshwater emergent marsh and annual grassland/weedy field.<sup>3</sup> Figure 4.3-1 identifies the habitat types found within the Plan Area.

#### **Riparian Woodland/Scrub**

Riparian woodland and scrub habitats are generally associated with rivers, low gradient streams, floodplains and occasionally ponds and canals. The composition of species in riparian woodland communities is highly variable and dependent on geographic location, elevation, substrate, and amount of flow in the watercourse. Riparian habitats can provide abundant food, cover, and breeding sites for wildlife in close proximity to water.

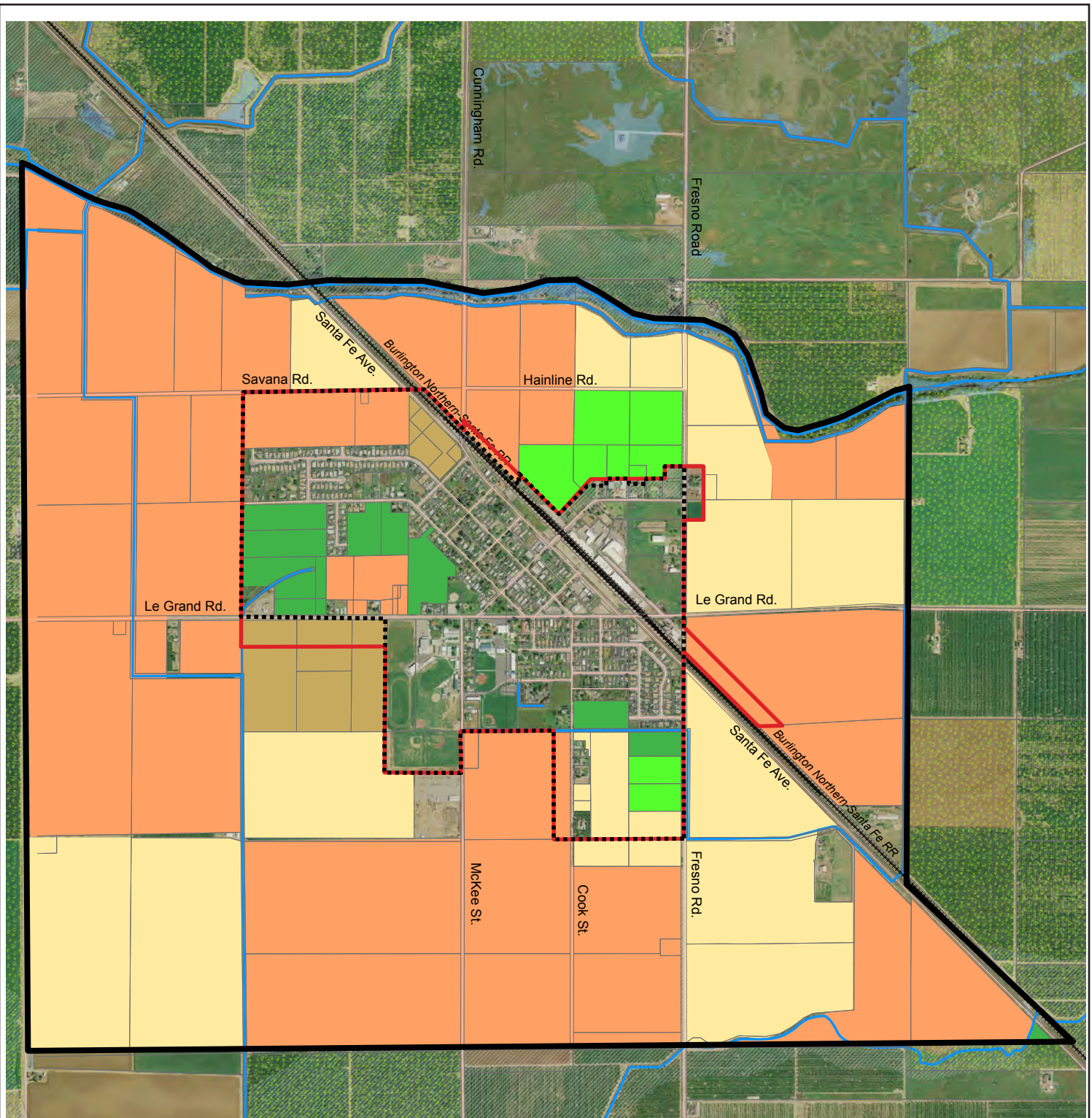
The most substantial stand of riparian habitat in the vicinity of Le Grand is found along Mariposa

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1 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 8-10.

2 Merced County, *2030 Merced County General Plan Background Report*, December 2013, Figures 8-11, 8-12, 8-13, 8-14, 8-15, 8-16, 8-17, and 8-18.

3 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.



- Le Grand Community Plan Area Boundary  
 — Existing Boundary  
 ..... Proposed Boundary  
 — Study Area  
 — Natural Waterways and Canals

- Field Crop  
 Weedy Field  
 Pasture  
 Hay Crop  
 Orchard



SOURCE: Bumgardner Biological Consulting, 2018.

0 1,000 2,000 3,000 4,000

Scale In Feet

4.3-2

**Figure 4.3-1**  
**Biological Habitat**

Creek, approximately one-half mile north of the Plan Area.<sup>4</sup> There is also a small, isolated stand of riparian habitat within the Plan Area, north of Le Grand Road, near the Veterans Memorial building. The proposed Community Plan would not alter the Mariposa Creek corridor, but could affect the isolated stand that is found along the canal in the Plan Area.<sup>5</sup>

### **Non-Native Annual Grassland/Weedy Fields**

Within Merced County, similar to the Central Valley generally, native grassland species have been largely replaced over time by non-native grasses. Non-native annual grassland is now one of the most common plant communities in the county and is dominated by non-native annual grasses and herbaceous species<sup>6</sup>. Where this community has a substantial herbaceous component it is generally referred to as ruderal or weedy fields.

Grasslands can provide habitat for a wide range of wildlife, including pollinating insects, amphibians, reptiles, small birds, and mammals that are prey for other wildlife, such as red-tailed hawks, northern harriers, American kestrels, burrowing owls, coyotes, and gray foxes. The greatest number of wildlife species use grasslands near open water and woodland habitats because they provide places for resting, breeding, and escape.<sup>7</sup>

Based on the reconnaissance survey conducted for the proposed Community Plan, annual grassland is scattered throughout the Plan Area on small parcels that are landlocked by active agriculture or urban development (mostly in the eastern portions of the Plan Area). None of the parcels supporting this vegetation cover type show evidence of natural wetland communities (e.g., vernal pools or seasonal wetlands)<sup>8</sup> that often occur in grasslands in the eastern portion of the county.

### **Cropland**

As shown in Figure 4.3-1, much of the Plan Area that is undeveloped is agricultural cropland, including orchards, field crops, hay, and abandoned orchards. The areas that would be considered for use by the Le Grand Community Services District for reclamation (irrigation with treated wastewater; see Chapter 3 or Section 4.9 for more detail) would similarly be composed of cropland surrounding the wastewater treatment plant, which is located approximately one-half mile south of the Plan Area. These cropland cover types generally provide marginal, if any, habitat value for wildlife species. However, some species (including Swainson's hawk) use certain row, field, and hay crops as foraging habitat.<sup>9</sup> Also, some bat species roost in orchards.

### **Waters of the US and Other Wetlands**

The only potential jurisdictional wetland within the Plan Area is the isolated portion of the canal north of the Veterans Memorial Building. None of the other agricultural sumps or the storm drainage canals observed within the Plan Area during the field survey contained water. The irrigation canals contained water, but provided no associated natural vegetation, except for the reach of irrigation canal north of the Veterans Memorial building. This portion of the canal supports Fremont cottonwood (*Populus fremontii*) and other riparian species. However, it is also isolated from other waters because it goes underground at either end.<sup>10</sup>

In some cases, annual grasslands/weedy field habitats can support vernal pools, although there is no evidence of such wetlands in the parcels containing this habitat. It is likely that these

4 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.

5 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.

6 Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 8-77.

7 Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 8-77.

8 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.

9 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.

10 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 1.



parcels were used for agriculture in the past, and have been allowed to go fallow. Therefore, it is not anticipated that these parcels would contain vernal pools or other waters of the US.<sup>11</sup>

There is a freshwater emergent marsh near an apparent sump associated with the Le Grand Canal, immediately east of Fresno Road, which is outside of the Plan Area. This area appears to have a perennial source of water. At the time of the survey, there was a small area of cattail (*Typha latifolia*), but it appeared that larger areas of cattail may occur in some years.<sup>12</sup> No improvements are planned in this area, so this feature would be unaffected by the proposed Community Plan.

### **Special-Status Species**

A query of the California Natural Diversity Database (CNDDB) identified species that could occur in the Plan Area and vicinity (see Appendix D, which includes descriptions of the species' habitats and distribution, and the likelihood of occurrence within the Plan Area). Table 4.3-1 lists those special-status species that could occur within the Plan Area or surrounding vicinity, based on existing habitat types and conditions. These species are described below.

#### **Plant Species**

The Plan Area does not support habitat for any of the special-status plant species identified in the CNDDB query (see Appendix D for more details regarding the lack of habitat).

#### **Animal Species**

The Plan Area provides potential habitat for a total of 12 special-status species, including two invertebrate species, one amphibian species, four listed bird species and five listed mammal species. Each of the special-status species with potential to occur within the Plan Area is described below.

#### **Invertebrates**

**Valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*)**, a federally threatened species, is a moderate-sized, brightly colored, and sexually dichromatic beetle. VELB is entirely dependent upon its host plant (i.e., elderberry spp.) and is only found where this shrub occurs (typically in riparian vegetation associations, but occasionally in single, isolated shrubs or stands of the plant). The species has a low potential to occur within the riparian habitat associated with the small patches of willow riparian habitat identified in survey of the Plan Area, and only if elderberry shrubs are present.

**Moestan blister beetle (*Lytta moesta*)**, a California Special Animal, is an elongated black beetle that is found in the Central Valley. Very little is known about the species. The females will excavate shallow burrows and deposit eggs there. The larvae are nest parasites of solitary, ground-dwelling bees. The beetle larvae feed on the pollen stores that the female bee provides for her own larvae.<sup>13</sup> The beetle's host species is ground-nesting solitary bees, which are widely distributed in California. The ecology of this species is not well understood, but it has been reported in the region. Therefore, there is some, albeit low, potential for the Moestan blister beetle to occur in grasslands within the Plan Area.

11 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 2.

12 Bumgardner Biological Consulting, letter report to Adrienne Graham, July 24, 2018, page 2.

13 California Department of Fish and Wildlife, *Lytta moesta*, accessed at <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=107593&inline=1>, January 11, 2017.

**TABLE 4.3-1  
Special-Status Species with Potential to Occur within the Plan Area**

Genus/Species	Common Name	Status Federal/CA/Other
<b>INVERTEBRATES</b>		
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT/none/none
<i>Lytta moesta</i>	Moestan blister beetle	none/SA/none
<b>REPTILES</b>		
<i>Emys marmorata</i>	Western pond turtle	none/CSC/none
<b>BIRDS</b>		
<i>Buteo swainsoni</i>	Swainson's hawk (nesting)	none/ST/none
<i>Circus cyaneus</i>	Northern harrier (nesting)	none/CSC/none
<i>Athene cunicularia</i>	Burrowing owl (burrow sites)	none/CSC/none
<i>Lanius ludovicianus</i>	Loggerhead shrike (nesting)	none/CSC/none
<b>MAMMALS</b>		
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE/ST/none
<i>Antrozous pallidus</i>	Pallid bat	none/CSC/none
<i>Lasiurus blossevillii</i>	Western red bat	none/CSC/none
<i>Lasiurus cinereus</i>	Hoary bat	none/SA/none
<i>Myotis yumanensis</i>	Yuma myotis	none/SA/none
Notes: <b>FEDERAL</b> FE                Federally listed as Endangered FT                Federally listed as Threatened FPE              Federally proposed as Endangered FPT              Federally proposed as Threatened FC                Federal Candidate Species (former Category 1 candidates) BCC              U.S. Fish and Wildlife Service designated "Birds of Conservation Concern" 2008  <b>STATE</b> SE                State listed as Endangered ST                State listed as Threatened SR                State listed as Rare CFP              California Department of Fish and Wildlife designated "Fully Protected" CSC              California Department of Fish and Wildlife designated "Species of Special Concern" SA                California Department of Fish and Wildlife designated "Special Animal"		
Source: Appendix D.		

### Reptiles

**Western pond turtle (*Emys marmorata*)**, a California Species of Special Concern, is an aquatic turtle that ranges throughout much of California from the Sierra Nevada foothills to the coast - and in coastal drainages from the Oregon border to Baja California. It occurs in suitable habitat throughout the region in ponds, slow moving streams and rivers, irrigation ditches, and reservoirs that have abundant emergent and/or riparian vegetation. The turtle requires adjacent (i.e., within 600-1,200 feet of water) uplands for nesting and egg-laying - typically in soils with high clay or silt component on unshaded, south-facing slopes. The Plan Area has slow-moving



perennial aquatic habitat in several small, fragmented features (e.g., canals), so there is a moderate potential for the pond turtle to occur within the Plan Area.

### Birds

**Swainson's hawk (*Buteo swainsoni*)**, a California threatened raptor, is found in riparian areas with suitable nest trees adjacent to prime foraging habitat (large, open grasslands or low croplands). Nesting trees are often oaks, cottonwoods, walnuts or willows. Suitable foraging grounds include native and non-native grasslands, lightly grazed pastures, and certain grain and row croplands. Croplands in which prey is scarce or difficult to get at because of the density of vegetative cover are unsuitable hunting grounds for the Swainson's hawk. The species has been recorded nesting along Deadman, Beer and Owens Creeks, as well as other locations within 10 miles of the Plan Area. Therefore, there is a moderate potential for the species to nest and/or forage in portions of the Plan Area with suitable habitat (e.g., certain row crops, fallow fields and pasture).

**Northern harrier**, a California Species of Special Concern, is found in annual grasslands, oak savannah and valley and coastal marshes. Within the Central Valley, it typically nests in emergent wetlands, tall, dense grassland, or grain fields. The Plan Area provides some potential for nesting in weedy fields, hay crops or grain crops. However, known occurrences of nesting are east of Le Grand, and this species is considered to have low potential for nesting in the Plan Area.

**Burrowing owl (*Athene cunicularia*)**, a California Species of Special Concern, feeds on rodents, small reptiles, and large insects in annual grasslands, pastures, and ruderal vegetation. They breed between March and August in burrows that they have taken over from ground squirrels and other burrowing mammals. Suitable habitat for this species occurs throughout the Plan Area, particularly where there are colonies of California ground squirrels and low, open habitat for foraging, roosting, and predator detection. The species has been recorded at multiple locations in the general vicinity of the Plan Area, and is relatively tolerant of human activity. Therefore, it is considered to have a moderate potential to occur within the Plan Area.

**Loggerhead shrike (*Lanius ludovicianus*)**, a California Species of Special Concern, is a common breeding resident and winter visitor in the open, lowlands and the Sierra Nevada and Coast Range foothills. The species is highly associated with open landscapes and is usually observed perching on a fence line along rural roadways. Nesting habitat is usually in densely foliated shrubs and trees. Nest locations are based more on the degree of cover afforded than by shrub or tree species. Breeding season begins in March and April and extends through August. The Plan Area provides potential nesting sites in dense trees or shrubs located adjacent to fallow agricultural lands, vacant lots, or some types of field crops. Therefore, this species is considered to have a moderate potential to occur in the Plan Area.

### Mammals

**San Joaquin kit fox (*Vulpes macrotis mutica*)**, a federally endangered and California threatened species, occurs as an occasional vagrant from portions of its historic range to the south and west. It occurs in open, sparsely vegetated areas of low relief (typically in native or non-native grassland or alkali sink scrub), but can also occasionally be found in areas adjacent to active agriculture that are not subject to ground disturbance (e.g., dirt shoulders of unimproved roads, canal embankments, and other similar areas with sparse, open vegetation). The taxon uses dens and other subsurface refugia in these latter areas and forages in areas with long line-of-sight views (typically not in active agricultural lands). It is known only as an occasional vagrant to the northeastern San Joaquin Valley. There are small areas of suitable habitat for this taxon within the Plan Area (i.e., open, weedy fields); however, the available habitat is fragmented, shows

a history of having been disked, and is in the vicinity of largely active agricultural land. Therefore, the potential for this species to occur within the Plan Area is considered low.

**Pallid bat (*Antrozous pallidus*)**, a California Species of Special Concern, ranges throughout California and roosts in buildings, caves, mines, and tree snags. At lower elevations it is strongly associated with oak savanna habitat and forages along riparian corridors, over grasslands, and possibly in agricultural areas. Pallid bats have also been captured while drinking at stock ponds. No roosts have been recorded within the Plan Area, but there is a low potential that the species occurs, particularly in existing buildings and/or bridges.

**Western red bat (*Lasiurus blossevillii*)**, a California Species of Special Concern, is widespread, occurring in the southwestern United States and Central and South America. In California, western red bats occur throughout the Central Valley and along the coastal ranges from Mendocino County south to the Mexican border. They are often associated with riparian habitat dominated by mature cottonwoods and sycamores. Roosting sites are found in tree or shrub foliage between 2 and 40 feet above ground (typically in large cottonwoods, sycamores, walnuts, and willows, but sometimes in orchards). Western red bats are open-air foragers and feed primarily on moths. There is a low potential that the species occurs within the Plan Area, particularly in large, densely-foliaged trees.

**Hoary bat (*Lasiurus cinereus*)**, a California Species of Special Concern, is found throughout most of California and is the most widespread of all the North American bats. It occurs from dry lowlands to deciduous and coniferous forests of the high mountains (to 9,000 feet MSL). It is typically found in small numbers roosting in the dense foliage of medium to large trees near water in forest or woodland habitats. Foraging usually occurs over bodies of water—lakes, ponds, and streams. A single individual of this species was found in Planada, approximately seven miles north of Le Grand, in 1918. The Plan Area has some suitable day or night roosts, particularly in large, densely-foliaged trees, so there is a low potential for the species to occur within the Plan Area.

**Yuma myotis (*Myotis yumanensis*)**, a State Special Animal, occurs in a variety of habitats including riparian, scrublands and deserts, and forests. The species roosts in bridges, buildings, cliff crevices, caves, mines, and trees. Individuals become active and forage just after sunset, feeding primarily on aquatic emergent insects. No roosts for this species have been recorded in the Plan Area. However, suitable day or night roosts, particularly in buildings, could be present in the Plan Area, so the species has a low potential of occurring.

## REGULATORY SETTING

### Federal Regulations

#### **Federal Endangered Species Act**

The Federal Endangered Species Act (FESA) regulates and protects take of threatened and endangered plants and animals and their critical habitat. Candidate species are those formally proposed for listing; these species are usually treated by resource agencies, and for the purposes of this EIR, as if they were actually listed during the environmental review process. Impacts on federally listed species require consultation with the US Fish and Wildlife Service (USFWS), which administers the FESA for all non-marine species, through either a FESA Section 10(a) incidental take permit or consultation under FESA Section 7. Section 10(a) applies to situations where a non-federal government entity must minimize and mitigate for potential adverse impacts to species protected under the FESA. Section 7 applies to projects directly undertaken by a federal agency or private project requiring a federal permit, approval or funding. As an example, a private project requiring a permit from the U.S. Army Corps of Engineers for fill

of wetlands or waters of the U.S. pursuant to section 404 of the Clean Water Act may address its potential impacts on federally-listed species through a Section 7 consultation. If the project has no requirement for a federal permit or approval, and is not funded with federal monies, it would require a Section 10(a) incidental take permit pursuant to an approved HCP.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs. Most actions that result in a taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird banding, and other similar activities. The USFWS is responsible for overseeing compliance with the MBTA.

### **Clean Water Act**

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Sections 401 and 404 of the CWA regulate certain actions that can affect biological resources.

#### Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands. Applicants must obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Waters of the United States are under the jurisdiction of the USACE and the Environmental Protection Agency (EPA).

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of FESA and the National Historic Preservation Act (NHPA) have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

#### Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities that could result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if relevant, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and that could affect California water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

### **State Regulations**

#### **Regional Water Quality Control Board**

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) (together "Boards") are the principal State agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne), the Legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from

degradation...” (California Water Code section 13000). Porter-Cologne grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the State. Waters of the State determined to be jurisdictional would require, if impacted, waste discharge permitting and/or a Clean Water Act Section 401 certification (in the case of the required USACE permit). The enforcement of the State's water quality requirements is not solely the purview of the Boards and their staff. Other agencies (e.g., the California Department of Fish and Wildlife, or CDFW) have the ability to enforce certain water quality provisions in State law.

### **California Endangered Species Act**

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for State-listed species. CDFW maintains a list of “candidate species” which are species that CDFW formally notices as being under review for addition to the list of endangered or threatened species. State-listed species are fully protected under the mandates of the CESA. “Take” of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 2081. Authorization from CDFW would be in the form of an Incidental Take Permit.

### **Fully Protected Species**

Certain species are identified as “fully protected”, meaning that the Code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals. None of the species that are considered to have potential to occur within the Plan Area are on the CDFW list of fully protected animals.<sup>14</sup>

### **Protection of Birds and Their Nests**

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 of the code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory non-game birds are protected under Section 3800, while other specified birds are protected under Section 3505.

### **Stream and Lake Protection**

CDFW has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Sections 1600 et seq. through administration of lake or streambed alteration agreements. Such agreements are not a permit, but rather a mutual accord between CDFW and the project proponent. Specifically, CDFW has the authority to regulate work that will “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream.” CDFW enters into a streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because CDFW includes under its jurisdiction streamside habitats that may not qualify as wetlands under the

<sup>14</sup> California Department of Fish and Wildlife, *Fully Protected Species*, [http://www.dfg.ca.gov/wildlife/nongame/t\\_e\\_spp/fully\\_pro.html](http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/fully_pro.html), accessed July 25, 2018.

federal CWA definition, CDFW jurisdiction may be broader than USACE jurisdiction.

### **Native Plant Protection Act**

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants (Fish and Game Code Sections 1900-1913). CESA expanded on the original NPPA and enhanced legal protection for plants. Three listing categories for plants are employed in California: rare, threatened, and endangered.

Section 1913 of the Fish and Game Code requires that land owners who have been notified of the presence of a rare or endangered native plant growing on their property must notify the CDFW at least 10 days in advance of changing the land use to allow the plant to be salvaged by the CDFW.

### **California Native Plant Society Plant Lists**

The California Native Plant Society (CNPS) maintains a list of plant species native to California that are known to exist in low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants may receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- 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 more 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.

No potential habitat for CNPS-listed plants was identified during study area surveys.

### **NPDES General Construction Permit for Storm Water Discharges**

The SWRCB oversees the statewide NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Construction General Permit), which is intended to prevent degradation of water quality. Every construction project that disturbs one or more acres of land surface or that is part of a common plan of development or sale that disturbs more than one acre of land surface is subject to the provisions of the Construction General Permit. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation. To obtain coverage under the Construction General Permit, the landowner or other applicable entity must file Permit Registration Documents (PRDs) prior to the commencement of construction activity, which include a Notice of Intent (NOI), Storm Water Pollution Prevention Plan (SWPPP), and other documents required by the Construction General Permit.

The Construction General Permit requires specific minimum Best Management Practices (BMPs), depending upon the project sediment risk (Risk Level 1 through 3). The SWPPP must

identify the appropriate risk level and related BMPs and other requirements. The results of monitoring and corrective actions, if any, must be reported annually to the SWRCB. This permit also specifies minimum qualifications for SWPPP developers and construction site inspectors.

### **Local Regulations**

#### **Merced County General Plan**

The following General Plan goals, objectives, and policies found in the Natural Resources Element would apply to development of the proposed Community Plan and protection of biological resources within the county.

#### **Natural Resources Element**

**Goal NR-1 Preserve and protect, through coordination with the public and private sectors, the biological resources of the County.**

#### **Policy NR-1.2: Protected Natural Lands**

Identify and support methods to increase the acreage of protected natural lands and special habitats, including but not limited to, wetlands, grasslands, vernal pools, and wildlife movement and migration corridors, potentially through the use of conservation easements.

#### **Policy NR 1.5: Wetland and Riparian Habitat Buffer**

Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.

#### **Policy NR 1.12: Wetland Avoidance**

Avoid or minimize the loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.

#### **Policy NR-1.13: Wetland Setbacks**

Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.

#### **Policy NR-1.21: Special Status Species Surveys and Mitigation**

Incorporate the survey standards and mitigation requirements of state and federal resource management agencies for use in the County's review processes for both private and public projects.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

A reconnaissance-level field visit was conducted on May 16 and 20, 2011, to map vegetation cover types within the Plan Area, and to determine if sensitive or otherwise important biological resources are associated within any of the undeveloped portions of the Plan Area. A follow-up field visit was conducted in May 2016.<sup>15</sup>

In addition, a records search was conducted through the California Natural Diversity Database (CNDDDB) on (updated on July 24, 2018) to identify special-status species that had been recorded as occurring in the Plan Area or environs (see Appendix D). An assessment was then made of whether the Plan Area contained habitats that could support the species identified through the CNDDDB. The species that could occur within the habitat types found in the Plan Area were then identified (see Table 4.3-1), and an assessment made of the potential for the

<sup>15</sup> Bumgardner Biological Consulting, letter report to Adrienne Graham, July 25, 2018.  
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proposed Community Plan to adversely affect those species and/or their habitat.

As discussed in Chapter 3, Project Description, buildout of the proposed Community Plan could require offsite water and wastewater infrastructure improvements. Therefore, a qualitative analysis of the potential impacts of the construction this infrastructure on biological resources is included in this analysis. The offsite improvements could include additional groundwater wells and associated pipelines and use of approximately 30 to 35 acres of farmland for disposal of treated effluent. While the location of the additional reclamation area is not known at this time, it would be located in proximity to the WWTP, similar to the existing reclamation areas. The reclamation area would continue to be used for crops such as alfalfa, but not for crops that are intended for human consumption. The reclamation areas would need to be cleared, graded and reseeded, and an irrigation system would need to be installed.

### **Standards of Significance**

For purposes of this EIR, impacts would be considered significant if the proposed Community Plan 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, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service;
- 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 California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, and coastal habitat) 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; or
- 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 County does not have any ordinances pertaining to protection of trees or other biological resources, and the proposed Community Plan would comply with County policies addressing biological resources through the mitigation measures identified below. Therefore, conflicts with local policies or ordinances are not further addressed in this section.

There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans in or near the Plan Area, so this issue is not addressed further.

### **Project Impacts and Mitigation Measures**

#### **4.3-1 The proposed Community Plan could result in harm to special-status invertebrate species and/or loss or degradation of their habitat.**

**Applicable Regulations:** Federal Endangered Species Act

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-10 and Implementation Measure OSC-3.

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-1:

VELB

- (a)(i) *Prior to construction of the multipurpose path or any other development or features within 100 feet of the canal segment north of the Veterans Memorial building, the site to be disturbed shall be surveyed for the presence of the valley elderberry longhorn beetle and its elderberry host plant by a qualified biologist in accordance with current USFWS protocols. If elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level occur on or adjacent to the disturbance site, or are otherwise located where they could be directly or indirectly disturbed, minimization and compensation measures, which could include transplanting existing shrubs and planting replacement habitat (conservation plantings), shall be implemented (see below). Surveys are valid for a period of two years. Elderberry plants with no stems measuring 1.0 inch or greater in diameter at ground level are unlikely to be habitat for the beetle because of their small size and/or immaturity. Therefore, no minimization measures are required for removal of elderberry plants with all stems measuring 1.0 inch or less in diameter at ground level.*
- (ii) *For elderberry plants with stems measuring 1.0 inch or greater, any elderberry plant within 100 feet of the area to be disturbed shall be protected and/or compensated for in accordance with the "U.S. Fish and Wildlife Services' (USFWS) Conservation Guidelines for the Valley Elderberry Longhorn Beetle and the Programmatic Formal Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle Within the Jurisdiction of the Sacramento Field Office."*

Moestan Blister Beetle

- (b)(i) *Prior to construction that would disturb annual grasslands, a qualified biologist shall conduct a preconstruction survey for Moestan blister beetle during the known active season (April to June) of this species prior to the commencement of construction activities. If no individuals are identified during the survey, no additional action is required.*
- (ii) *If individuals of Moestan blister beetle are found during the preconstruction survey, pertinent data regarding the associated habitat (e.g., vegetation communities, soils, associated invertebrate species, etc.) shall be collected to better understand the ecology of the species. All pertinent data collected during the preconstruction survey shall be included in the information submitted to the California Natural Diversity Data Base (CNDDB) along with the new occurrence record. Results of surveys, including negative findings, shall be submitted to CDFW within two weeks of their conclusion. All observations of the Moestan blister beetle shall be reported to the CNDDB within ten (10) days of sighting.*



- (iii) *If individuals of Moestan blister beetle are found during the preconstruction survey, an impact avoidance and minimization plan shall be developed by a qualified biologist and implemented during grading and construction. The plan shall focus on avoidance of occupied habitat where feasible through the use of exclusionary fencing. Where avoidance is not feasible, impacts shall be minimized through onsite biological monitoring. The onsite biological monitor shall have authority to temporarily halt any work that would directly affect occupied habitat and determine if a smaller impact footprint is feasible. Work shall then resume after concurrence on the necessary footprint.*

LGCS

- (c) *If and when LGCS constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and construction activities would occur within 100 feet of the canal or in annual grasslands, the LGCS shall implement (a) and (b), above, or equally effective measures.*

**Residual Significance:** Less than significant

The only special-status invertebrates that were identified as potentially occurring in the Plan Area are the Valley elderberry longhorn beetle (VELB) and Moestan Blister Beetle. The proposed Community Plan requires that special-status habitat be identified and surveyed prior to development.

Valley Elderberry Longhorn Beetle

VELB occurs on and in elderberry plants, which grow in riparian areas. There are no known occurrences of the beetle within the Plan Area or vicinity. The only portion of the Plan Area that has this habitat is relatively small, associated with a segment of canal north of the Veterans Memorial building. Isolated plants could also occur outside of riparian habitat, but in proximity to this segment of canal. For these reasons, the potential for the VELB to occur within the Plan Area is considered low. Nonetheless, the possibility that elderberry plants, and therefore VELB, are present cannot be ruled out.

The proposed Community Plan designates the canal segment and surrounding area (with the exception of the Veterans Memorial building) Low Density Residential and identifies a potential multipurpose trail that could cross the canal segment. The riparian vegetation along this segment of the canal and the land immediately adjacent to the canal could contain elderberry plants. In addition, the location of offsite infrastructure (e.g., groundwater well, reclamation area, storage tank) is not known at this time, and one or more facilities could be located in proximity to riparian habitat that contains elderberry plants. Removal of elderberry plants could result in the mortality of VELB, if any are present in the elderberry plant, and the loss of potential habitat. This would be a significant impact.

The proposed Community Plan requires that special-status habitat be identified and surveyed prior to development. Mitigation Measure 4.3-1(a) would implement this policy, and further reduce the potential impact on VELB to a less-than-significant level by requiring surveys of the canal and adjacent area prior to being disturbed by development or construction of a multi-purpose path. If any elderberry plants are present, they will be examined to determine if they have stems of 1-inch diameter or greater at ground level (smaller stems would not provide adequate habitat for the beetle). Elderberry plants that have stems of over 1-inch in diameter would be protected from damage during construction. If any of the plants need to be removed, compensation would be provided through protection and/or enhancement of VELB habitat elsewhere, or similar measures, consistent with USFWS guidelines. As a result, the impact on VELB would be less than significant.

### Moestan Blister Beetle

The Plan Area supports areas of annual grassland, which could provide habitat for the Moestan blister beetle, particularly if native, ground-dwelling bee nests are present. Off-site infrastructure could also be located in areas with annual grasslands. The ecology of this species is not well understood, but it has been reported in the region. If the beetle is present within the development parcels, then grading activities could harm one or more individuals, and convert its habitat to urban uses. The California Department of Fish and Wildlife has indicated that the Moestan Blister Beetle is a Special Animal, so the potential harm to the beetle is considered a significant impact.

Mitigation Measure 4.3-1(b) would implement Policy OSC-10 and reduce the impact on the Moestan blister beetle by ensuring that, if present, it is identified and protected from grading and construction activities, and that information from the survey is forwarded to the CNDDB and CDFW in a timely manner in order to facilitate better understanding of the species. Therefore, the impact on the Moestan blister beetle would be less than significant with mitigation.

### **4.3-2 The proposed Community Plan could result in harm to special-status reptile species and/or loss or degradation of their habitat.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-10 and Implementation Measure OSC-3.

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-2:

#### *(a) Individuals*

- (i) Prior to project construction or disturbance within standing and/or slow-moving fresh water (e.g., canals), a qualified biologist shall conduct a survey of suitable habitat for western pond turtle within the area of disturbance and immediately adjacent to the area. The survey shall be conducted within 30 days prior to project construction to ensure no western pond turtles have occupied the habitat. If ground-disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be re-surveyed. If this survey does not identify any western pond turtles on the project site, no further mitigation is required.*
- (ii) If one or more western pond turtles are determined to be present, exclusionary fencing shall be used to prevent the turtle(s) from entering construction areas. Fencing shall also be placed around any nesting sites. The location of the fence shall be determined by a qualified biologist. Any turtles found in or near the construction zone shall be relocated to an appropriate area of suitable habitat a minimum of 100 feet from any active construction zone.*

#### *(b) Nesting Sites*

- (i) For any ground disturbance of annual grassland or non-disked fields within 600 feet of a water feature (e.g., canal) that could provide habitat for western pond*

*turtle, a qualified biologist shall survey the area and determine whether it provides suitable nesting habitat. If the biologist concludes that the habitat is not suitable for nesting, no further action is required. Urban infill parcels (defined as being surrounded on all sides by existing development) and undeveloped parcels within 600 feet of a suitable water feature, but for which a barrier exists between the creek/canal and the development parcel (e.g., walls, homes) shall be excluded from Mitigation Measure 4.3-2(b).*

- (ii) *If the biologist concludes that the habitat could support nesting, then when removing the top 12 inches of soil from ruderal/annual grassland habitat in the Plan Area, contractors shall use a qualified biologist as a “spotter” whose responsibility is to watch for western pond turtle eggs or neonates that are overturned during earthmoving. If eggs or neonates are found, all earthmoving activities within 30 feet of the eggs or neonates will be temporarily halted until the eggs or neonates can be salvaged. The eggs or neonates will then be delivered to a nearby qualified wildlife rescue and rehabilitation facility that has been approved by the CDFW. The eggs or neonates will be held by the wildlife rescue and rehabilitation facility until they are ready for release into the nearest suitable aquatic habitat. Once the top 12 inches of soil has been removed, no further monitoring for western pond turtle eggs or neonates is required given that western pond turtle nests are generally shallow (i.e., less than six inches in depth).*

(c) Water Quality

*Measures shall be implemented to ensure that any water feature that provides habitat for western pond turtle will continue to provide adequate habitat for the turtle by protecting water quality and ensuring that any dewatering or realignment of the channel (temporary or permanent) does not substantially diminish the water levels in the area.*

(d) LGCSD

*If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and construction activities would affect standing and/or slow moving water, or annual grasslands or non-disked field within 600 feet of a water feature, the LGCSD shall implement (a) through (c), above, or equally effective measures.*

**Residual Significance:** Less than significant

The only special-status reptile species identified as having the potential to occur within the Plan Area is western pond turtle, which occurs within still or slow moving water, similar to conditions found in some canal segments within the Plan Area. Western pond turtle could be affected by development in several ways. First, construction within or adjacent to a waterway could harm or kill the turtle, if it is present. Second, if a pond or other waterway that is used by the turtle is filled or otherwise modified, its habitat value would be lost or degraded. Finally, the western pond turtle will nest in areas up to several hundred feet or more from the water, so construction in areas adjacent to the waterway could result in the destruction of nests. Any of these impacts would be considered significant.

The proposed Community Plan provides for development adjacent to the canal segments within the Plan Area, including bike paths. In addition, western pond turtle habitat could be where future water or wastewater infrastructure is constructed, or when new reclamation areas are created. If nests or individual turtles are present when construction occurs in these areas, they could be harmed or destroyed. Mitigation Measure 4.3-2(a) requires a survey to determine

whether there are any individual western pond turtles present in areas subject to disturbance. Any individuals that are present would be protected by fencing to keep turtles out of the construction area, and/or the turtles would be relocated outside of the construction zone. A survey of the upland habitat adjacent to the water habitat would indicate whether the area to be disturbed is suitable for nesting. If so, a monitor would be present during the initial grading (removal of the top 12 inches of soil) to identify and protect nests, if any are present (Mitigation Measure 4.3-2(b)). Further, measures would be required to ensure that construction activities do not degrade water quality, or reduce the water levels in the water habitat (Mitigation Measure 4.3-2(c)). This mitigation would ensure that individual turtles and/or their nests would not be harmed. Therefore, the impact would be less than significant after mitigation.

**4.3-3 The proposed Community Plan could result in harm to special-status bird species and/or loss or degradation of their habitat.**

**Applicable Regulations:** California Endangered Species Act, Migratory Bird Treaty Act, California Fish and Game Code Section 3503

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-10 and Implementation Measure OSC-3.

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-3:

*(a) Raptor and Loggerhead Shrike Nesting Habitat*

- (i) Prior to development of undeveloped parcels and parcels that contain mature trees and/or dense shrubbery, preconstruction surveys for nesting special-status birds (loggerhead shrike, Swainson's hawk and other raptors except burrowing owl), raptors protected under Section 3503.5 of the California Fish and Game Code, and other migratory birds shall be conducted prior to any vegetation clearing or other ground disturbance associated with the proposed project. The preconstruction surveys shall be conducted by a qualified consulting biologist under a two-visit protocol with the first visit occurring no more than 14 days prior to initiation of project construction. The second visit shall occur within the three days prior to initiation of the project. If no nesting raptors, migratory birds or special-status birds are identified, then no further action is required. This measure does not apply to land that is urban infill (defined as being surrounded on all sides by existing development).*
- (ii) If nesting Swainson's hawks are found, project construction shall not be initiated until it can be demonstrated by a qualified biologist that the young-of-the-year are no longer dependent upon the nest site.*

*If other nesting raptors are found, an exclusion zone around each nest shall be established such that no project disturbance occurs within 300 feet of the nests until the young-of-the-year are no longer dependent upon the nest site. Lastly, if other nesting migratory or special-status birds are found, an exclusion zone around each nest shall be established that precludes any project disturbance within 100 feet of the nests until the young-of-the-year are no longer dependent upon the nest site. Alternatively, project construction may be delayed until after August 15, when all local nesting birds are assumed to*

*have completed nesting.*

- (iii) If project construction commences after August 15, when all local nesting birds are assumed to have completed nesting, no surveys would be required.*
- (iv) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be cleared or graded contains mature trees (other than orchard trees) and/or dense shrubbery, the LGCSD shall implement (i) through (iii), above, or equally effective measures.*

**(b) Burrowing Owls**

- (i) Prior to construction on undeveloped and/or fallowed agricultural parcels (except orchards) a qualified biologist shall conduct pre-construction surveys prior to any ground disturbance. All surveys shall be conducted in accordance with Appendix D, Breeding and Non-breeding Season Surveys and Reports, of the 2012 CDFG Staff Report on Burrowing Owl Mitigation. If no burrowing owls are present, no additional mitigation is required. This measure does not apply to land that is urban infill (defined as being surrounded on all sides by existing development) or land that has been in continuous and recent agricultural production.*
- (ii) If burrowing owls are present, the project proponent shall notify the County and CDFW. A qualified biologist shall implement a routine monitoring program and establish a fenced exclusion zone around each occupied burrow. No construction activities shall be allowed within the exclusion zone until such time that the burrows are determined to be unoccupied. The buffer zones shall be a minimum of 150 feet from an occupied burrow during the non-breeding season (September 1 through January 31), and a minimum of 250 feet from an occupied burrow during the breeding season (February 1 through August 31).*
- (iii) The biologist shall prepare a mitigation plan that provides for onsite avoidance and/or relocation to ensure that no burrowing owl is harmed. The mitigation plan shall be reviewed and approved by CDFW. If occupied burrows must be destroyed, no destruction of burrows shall occur during the breeding season. Burrows may be destroyed during the non-breeding season, pursuant to the mitigation plan.*
- (iv) If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed is undeveloped and/or fallowed agricultural parcels (except orchards), the LGCSD shall implement (i) through (iii), above, or equally effective measures.*

**(c) Swainson's Hawk Foraging Habitat**

- (i) For projects that would disturb more than 1 acre of grassland or agricultural land other than orchard that is suitable Swainson's hawk foraging habitat, the project proponent shall preserve annual grasslands or other suitable raptor foraging habitat. The compensation for the loss of suitable foraging habitat shall be consistent with the following guidelines: 1.5 acres of protected suitable habitat for each 1 acre impacted within 1 mile of an active nest site; 0.75 acre of protected suitable habitat for each 1 acre impacted between 1 and 5 miles of an*

*active nest site; and 0.5 acre of protected suitable habitat for each 1 acre impacted between 5 and 10 miles of an active nest site (as approved by the County and CDFW). Preservation may occur through either:*

- *Payment of a mitigation fee to Merced County through a negotiated agreement between the County, project proponent, and CDFW. The monies would be held in a trust fund, and used to preserve mitigation land through the purchase, monitoring, maintenance, and remediation of lands that supports suitable foraging habitat for Swainson's hawk (consistent with CDFW guidelines); or*
- *Purchase of conservation easements or fee title to suitable Swainson's hawk foraging habitat to protect the habitat from urban development.*

*This measure may be satisfied through conservation easements acquired to offset the loss of agricultural land, as described in Impact 4.1-1, if the easements are for lands that provide suitable foraging habitat for Swainson's hawk, subject to approval by CDFW.*

*Mitigation Measure 4.3-3(c) does not apply to LGCSD infrastructure.*

**Residual Significance:** Less than significant

#### Nesting Birds

Although almost all natural habitats have been converted to developed or agricultural uses, there is still some potential for birds (including migratory birds) to nest within the Plan Area. The grassland and croplands that are fallow or planted with low-profile crops provide foraging habitat for raptors such as Swainson's hawk and burrowing owl, in large part due to the colonization of these areas by ground squirrels, which are prey for these raptors. Burrowing owls use these areas for foraging, burrows and nesting, but in closer proximity to their burrows. Swainson's hawks forage as much as ten miles from their nesting site, and are known to nest within 10 miles of the Plan Area. There is also suitable nesting habitat for Swainson's hawk within the Plan Area. Loggerhead shrike can nest in dense trees or shrubs that are located adjacent to fallow agricultural land, undeveloped land, annual grassland and/or certain field crops. Expansion of the LGCSD's reclamation capacity and installation of wells or water storage facilities could involve the acquisition and clearing of cropland that provides habitat, especially if trees or dense shrubs are to be removed.

Most bird species in California are protected by the federal Migratory Bird Treaty Act (16 U.S.C. §§ 703-712) and California Fish and Game Code § 3503. The Migratory Bird Treaty Act (MBTA) states "Unless permitted by regulations, the act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not." In addition, California Fish and Game Code § 3503 states "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Violation of these regulations could occur as a result of new development in the Plan Area if nests, eggs, or young birds are destroyed during site clearing or development activities. This would be a significant impact.

For projects that would be constructed in areas with suitable nesting habitat, Mitigation Measure 4.3-3(a) and (b) require that the area to be disturbed by project construction be surveyed for nests immediately prior to construction activities, and if any active raptor, loggerhead shrike or migratory bird nests are found, the nests must be protected until the young have fledged. If

burrowing owls, which nest on the ground, are found, their burrows must be protected, a buffer zone will be established, and the owls will only be relocated (if necessary) outside of the breeding season. These measures would ensure that the owls are not disturbed during the nesting season, that adult and young are protected from direct harm, and that, if the burrows are to be destroyed, that they are relocated to appropriate habitat.

By protecting nesting birds and providing for relocation of burrowing owls, if necessary, Mitigation Measure 4.3-3 would reduce this impact to a less-than-significant level.

#### Foraging Habitat for Swainson's Hawk

Swainson's hawk is known to forage up to 10 miles from nesting sites, and nests have been recorded within 10 miles of the Plan Area. The conversion of substantial swaths of foraging habitat would be a significant impact.

The Plan Area contains approximately 120 acres of land that could be suitable habitat for Swainson's hawk (e.g., annual grasslands, hay crops, disked crops). A substantial portion of this land, approximately 56 acres, would be designated Urban Reserve, and therefore not subject to development. Approximately 64 acres could be converted to urban uses under the proposed Community Plan, which would be considered a significant impact due to the loss of foraging habitat. Mitigation Measure 4.3-3(c) requires that lands suitable for Swainson's hawk foraging be placed into conservation easements at a ratio based on the distance to the closest active nest, consistent with CDFW protocols. While there would still be a net loss of habitat, at present there is substantial amount of suitable foraging habitat surrounding the Plan Area in the form of pasturelands and grasslands. For example, in 2016 there were over 500,000 acres of grazing land in Merced County<sup>16</sup>. By protecting habitat outside of the Plan Area from development, this measure would ensure that the proposed Community Plan would not substantially reduce the amount of acreage available for foraging under existing conditions. Therefore, this impact would be less than significant with mitigation.

The farmland that would be acquired for reclamation areas would remain planted in crops other than orchards. Therefore, the quality of this farmland for foraging habitat would be similar after conversion to a reclamation area. New sites for wells could occur on existing grasslands, but each well would be under an acre. The water storage site would be approximately eight acres, but the area to be disturbed would be substantially less (the storage tank would be only 33 feet in diameter). Therefore, installation of water and wastewater infrastructure would have a less-than-significant impact on Swainson's hawk foraging.

#### **4.3-4 The proposed Community Plan could result in harm to special-status mammal species and/or loss or degradation of their habitat.**

**Applicable Regulations:** Federal Endangered Species Act and California Endangered Species Act

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-10 and Implementation Measure OSC-3.

**Significance after Mitigation in the proposed Community Plan:** Significant

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<sup>16</sup> State of California Department of Conservation, Division of Land Resource Protection, *2014-2016 Land Use Conversion Table*.

**Additional Mitigation:** Mitigation Measure 4.3-4:(a) Pallid Bat and Yuma Myotis

*Prior to removal or reconstruction of existing buildings, a survey for pallid bat and Yuma myotis shall be prepared by a qualified biologist. If bat roosting sites are identified within the survey area, then they shall be avoided during the nursery season (April 1<sup>st</sup> through August 31<sup>st</sup>). The bats may be evicted from the building between September 1 and March 31, which is outside of the nursery season. Eviction of bats shall be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with the CDFW, that allow the bats to exit the roosting site but prevent re-entry to the site. This would include, but not be limited to the installation of one-way exclusion devices. The devices shall remain in place for a minimum of seven days and then the exclusion points and any other potential entrances shall be sealed immediately following the removal of the devices. This work shall be completed by a BCI recommended exclusion professional.*

*This measure would not apply to the WWTP expansion, because no buildings would be removed.*

(b) Western Red Bat and Hoary Bat

- (i) *Prior to removal of trees (other than non-native landscape trees) in orchards and/or riparian areas, a preconstruction survey for hoary bat and western red bat shall be conducted by a qualified consulting biologist within three days prior to construction. If a bat maternity roost is identified, buffers around the roost site shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other project activities. If roosting bats are found but no maternity roost is present, white plastic shall be placed under the roost sites to create glare that encourages the bats to seek roost sites elsewhere (given that these species typically select roost sites over dark ground cover). Once the bats are confirmed as having left the site, construction can begin in the affected area.*
- (ii) *If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and trees would be removed in orchards and/or riparian areas, the LGCSO shall implement (i), above, or equally effective measures.*

(c) San Joaquin Kit Fox

- (i) *Prior to construction activities in undisturbed areas with sparse, open vegetation, including unimproved roads, canal embankments or similar relatively undisturbed areas, a preconstruction survey for potential dens shall be conducted. Surveys would not be required within urban infill areas and agricultural fields that are regularly disturbed (e.g., disked).*
- (ii) *All potential dens (including other subsurface refugia that could be occupied) shall be monitored with a minimum of three consecutive nights in which a suitable tracking medium is placed at the mouth of each potential den or other subsurface feature. Each potential den or other feature where no evidence of use by San Joaquin kit fox (e.g., tracks) is observed shall then be excavated under the supervision of a biological monitor prequalified by the U.S. Fish and*



*Wildlife Service and California Department of Fish and Wildlife. Upon excavation to all endpoints of a potential den or other feature, it shall be backfilled and brought back to grade. If a den cannot effectively be cleared with additional nights of monitoring that result in three consecutive nights of monitoring without evidence of the taxon, the applicant shall coordinate with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine an appropriate follow-up action. The follow-up action may involve careful excavation of the den under the supervision of a biological monitor prequalified by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife that results in the eviction of any individuals.*

- (iii) *If and when LGCSO constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed contains undisturbed areas with sparse, open vegetation, including unimproved roads, canal embankments or similar relatively undisturbed areas, the LGCSO shall implement (i) and (ii), above, or equally effective measures.*

**Residual Significance:** Less than significant

Four special-status species of bats were identified as having the potential to occur within the Plan Area. Two of those species, pallid bat and Yuma myotis, would be most likely to roost in buildings or under bridges. The other two, western red bat and hoary bat, roost in trees with dense foliage, such as orchards and riparian areas. The potential for any of these species to occur in the Plan Area is considered low. Nonetheless, if any of these bats were roosting in an area slated for development, construction activities could disturb or harm them. Bats roost during the day, when most construction activity occurs. The removal of occupied roosting sites and/or disturbance of bats while roosting, especially at maternity roosts, would be considered a significant impact.

Within the Plan Area, pallid bat and Yuma myotis are most likely to roost in buildings or under bridges. The proposed Community Plan does not require the removal or replacement of bridges, so any bats roosting under bridges would be unaffected. The proposed Community Plan could result in the demolition, replacement and/or rehabilitation of existing buildings, particularly in the mixed-use designation. If bats are present in buildings where demolition or reconstruction occurs, the roosts could be disturbed and/or bats could be harmed. Mitigation Measure 4.3-5(a) requires that any building to be removed or altered be surveyed for bats, and identifies steps to be taken if bats are present. When prohibited from reentering a building, the bats would find another roosting site. They would therefore be protected from harm, so the impact would be less than significant with mitigation.

The proposed Community Plan designates several areas planted in orchards for residential or commercial development, which would require removal of most or all of the orchard trees. Extension or expansion of water and wastewater infrastructure, particularly additional reclamation area, could also require removal of orchards. Development in these areas could result in the removal of trees that are suitable for western red bat or hoary bat roosting. Mitigation Measure 4.3-4(b) would protect roosting bats, if present, by ensuring that the bats are identified through surveys, and, if present, relocated using appropriate protocols. If a maternity roost is present, buffers would ensure that the roosting bats and young are not disturbed by construction. With these measures, the impact would be less than significant.

The only other special-status mammal having the potential to occur within the Plan Area or vicinity is San Joaquin kit fox. However, it should be noted that individuals recorded in these areas are likely vagrants from portions of the historic range to the south and west. An

established population of the taxon has not been documented to occur in the region. Nonetheless, vagrant individuals occasionally appear at locations in the northeastern San Joaquin Valley. Much of the habitat within and adjacent to the Plan Area is unsuitable as it is utilized as active agricultural land that is regularly disked. Similarly, potential reclamation areas would already be planted in crops. Hence, dens are not established in these areas. Potential dens are however occasionally found along the shoulders of unimproved roads, canal embankments, and similar other relatively undisturbed areas with sparse, open vegetation. Construction activities that result in ground disturbance in areas with potential dens, other than urban infill sites, could therefore result in the entombment of and subsequent injury to or death of individuals. The potential injury to or mortality of individuals is considered a significant impact. Mitigation Measure 4.3-4(c) would protect individuals, if present, from harm by identifying and closing den sites within the area to be disturbed. Therefore, with mitigation this impact would be less than significant.

**4.3-5 The proposed Community Plan could result in loss or degradation sensitive habitat, including wetlands.**

**Applicable Regulations:** Sections 401 and 404 of the Clean Water Act, California Fish and Game Code Sections 1600 et seq, State General Construction Permit

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-5:

- (a) *Prior to construction activities for projects over 1 acre on parcels composed of annual grasslands or riparian habitat as shown on Figure 4.3-1, a qualified biologist shall conduct a wetland delineation. If wetlands are present a wetland and/or riparian mitigation plan shall be prepared and shall ensure no net loss of waters of the U.S. and riparian vegetation. The wetland and/or riparian mitigation plan shall be based on a wetland delineation verified by USACE. This measure may be implemented through the 404 permit and Streambed Alteration Agreement processes. The plan shall include the following:*
  - (i) *The project proponent shall compensate for the loss of wetland and riparian habitat through a combination of restoration, enhancement, and/or the purchase of mitigation credits at an approved mitigation bank. The ratio of compensation shall be determined in consultation with USACE and/or California Department of Fish and Wildlife (CDFW), as part of the 404 permit and/or Streambed Alteration Agreement processes, but shall not be less than 1:1.*
  - (ii) *Prior to any construction activities on the site, a protective fence shall be erected around the boundaries of wetland and/or riparian areas to be retained. This fence shall remain in place until all construction activity in the immediate area is completed. No activity shall be permitted within the protected areas except for those expressly permitted by the USACE and/or CDFW.*
  - (iii) *For any construction activities in areas that could result in runoff entering the segment of canal north of the Veterans Memorial building that supports riparian habitat or wetlands that are to be preserved onsite, water quality shall be*

*protected using best management practices (BMPs) and erosion control techniques during construction including, but not necessarily limited to, preservation of existing vegetation, mulches (e.g., hydraulic, straw, wood), and geotextiles and mats, during construction.*

- (b) *If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, and the area to be disturbed contains annual grasslands and/or riparian habitat, the LGCSD shall implement (a), above, or equally effective measures.*

**Residual Significance:** Less than significant

The Plan Area is largely disturbed due to development and agricultural use. Consequently, there are few areas where sensitive habitats are likely to occur. Grassland areas could contain small wetlands, such as seasonal swales, and there is some riparian habitat adjacent to a segment of canal north of the Veterans Memorial building.

Some of the annual grassland would remain undeveloped because it would be designated Urban Reserve. However, there are several areas where annual grassland would be designated for residential or commercial development. In addition, it is possible that offsite infrastructure would be located in grasslands. If wetlands were present in areas to be developed, their fill or destruction would be a significant impact. Mitigation Measure 4.3-5 requires that areas that could contain wetlands be surveyed and, if wetlands are present, that a mitigation plan be prepared that provides for compensation at a minimum 1:1 ratio. If the wetlands are determined to be waters of the U.S, the presence of wetlands would be determined through a USACE-verified delineation, and the mitigation measure could be satisfied through the 404 permit process, which requires that wetlands that are filled or destroyed be compensated for at a level that ensures no net loss of wetlands.

Construction activities could also remove riparian habitat to accommodate homes and/or a multipurpose trail. As required by Mitigation Measure 4.3-5, the loss of riparian habitat would be compensated for at a minimum 1:1 ratio. This could occur through the Streambed Alteration Agreement through the CDFW, which is required for any construction activity that would occur within the stream channel or adjacent riparian habitat,

In addition to removing or disturbing wetlands and riparian habitat, construction activities can adversely affect these resources if erosion occurs, and/or if soils or contaminants from the construction site enter runoff that is carried into the preserved wetlands. Mitigation Measure 4.3-5 requires that construction activities use BMPs and erosion control measures adjacent to the creek and/or wetlands that would be preserved. In addition, a Stormwater Pollution Prevention Plan (SWPPP) would be required for construction under the NPDES General Construction Permit. These requirements would ensure that water quality in the creek is protected from erosion and pollutants.

Federal and State regulations and Mitigation Measure 4.3-5 would reduce potential impacts on sensitive habitats by requiring compensation for the fill or removal of wetlands and riparian habitat and protecting water quality

#### **4.3-6 The proposed Community Plan could interfere with the migration of wildlife.**

**Applicable Regulations:** None

**Significance:** Less than significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than significant

**Additional Mitigation:** None required.

**Residual Significance:** Less than significant

Typically, wildlife will use contiguous swaths of habitat, such as riparian corridors, to move through the landscape and avoid traveling through areas exposed to extensive human activity. In addition, migratory birds must have access to water bodies along their migration paths. The Plan Area does not contain contiguous corridors of open space, because most natural drainages have been channelized, redirected to pipelines and/or simply removed. Because the proposed Community Plan would not interfere with wildlife migration, this impact would be less than significant.

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for biological resource impacts is Merced County and the greater San Joaquin Valley. The 2030 General Plan (December 2013) provides for increased growth, primarily within existing urban communities like Le Grand, and associated infrastructure.

#### **4.3-7 The proposed Community Plan could contribute to the cumulative harm of special-status species and loss or degradation of their habitat.**

**Applicable Regulations:** Federal Endangered Species Act, California Endangered Species Act, California Fish and Game Code Sections 1600 et seq, 1900-1903 and 3503, Migratory Bird Treaty Act

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-10 and Implementation Measure OSC-3.

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-7:

*Implement Mitigation Measures 4.3-1 through 4.3-4.*

**Residual Significance:** Significant

As discussed in Impacts 4.3-1 through 4.3-4, the Plan Area contains several habitat types that could support a number of special-status species. Buildout of the Plan Area could adversely affect these species, if they are present. These same impacts could occur elsewhere in the county. The 2030 General Plan states that approximately 14,683 acres of undeveloped land in the county could be converted to urban uses as the designated urban areas are built out, and development of these lands could have impacts on special-status species.<sup>17</sup> Development of rural residential development, smaller rural communities and some agricultural, mining and industrial activities could encroach on special-status species habitat outside of the urban areas,

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<sup>17</sup> Merced County, 2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report, July 2013, page 8-15.

further reducing and/or degrading habitat.<sup>18</sup> There are habitats and associated species within the County that would not be expected to occur within Le Grand, such as Merced kangaroo rat and vernal pool fairy shrimp<sup>19</sup>, so the proposed Community Plan would not have any effect on these species. At the same time, the types of habitat that could be found in the Plan Area also exist elsewhere in the county, especially in other urban communities. Like Le Grand, much of the undeveloped land within the County urban communities is composed of a variety of agricultural lands and grasslands that can support wildlife. For example, a number of raptor species, including Swainson's hawk and burrowing owl, use fields and some croplands for foraging (Impact 4.3-3). Orchards and trees with dense foliage located near agricultural areas can provide roosting sites for western red bat and hoary bat (Impact 4.3-4).

Other aspects of the General Plan that could affect plant and animal species would be the extension and expansion of public facilities and infrastructure.

General Plan development could also encroach on riparian habitat, particularly near rivers, creeks and other natural drainages. As discussed in Impacts 4.4-1 and 4.4-2, these areas can support VELB and western pond turtle.

The General Plan seeks to direct new development to the urban communities in order to reduce the amount of undeveloped land needed to meet the needs of future growth. This approach would also minimize habitat fragmentation. However, as discussed above, there is a substantial amount of undeveloped land within the urban community boundaries that could provide habitat for special-status species. The 2030 General Plan EIR concludes that this would be a significant and unavoidable impact.<sup>20</sup> The Board of Supervisors found that the significant impact on biological resources would be offset by the benefits provided by the 2030 General Plan, including that the 2030 General Plan provides a framework for achieving the County's vision, would protect and preserve open space, agricultural areas and biological resources and sensitive habitats by directing growth to cities and urban areas, would provide for needed economic development, would improve the quality of life in the County, and would provide transportation and circulation improvements.<sup>21</sup>

New development can also be expected to convert habitat to urban uses in other counties in the San Joaquin Valley, resulting in additional impacts on special-status species. Regulation, policies similar to those in the Merced County General Plan, and mitigation measures similar to those identified in Impacts 4.3-1 through 4.3-4 could reduce the severity of the impact on special-status species, but because there would be permanent conversion of habitat for these species, the cumulative impact would be significant.

The 2030 General Plan identifies Le Grand as an urban community, and the 2030 General Plan EIR assumes conversion of approximately 169 acres of undeveloped land within Le Grand to urban uses.<sup>22</sup> The proposed Community Plan provides for conversion of fewer acres (the 63 acres proposed to be designated Urban Reserve) than anticipated in the 2030 General Plan EIR, so the proposed Community Plan would not increase the severity of the impacts evaluated in the General Plan EIR. For most of the special-status species that have the potential to occur

18 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 8-17.

19 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, Table 8-1.

20 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 8-30.

21 Merced County, *CEQA Findings of Fact and Statement of Overriding Considerations of the Merced County Board of Supervisors for the 2030 Merced County General Plan Program Environmental Impact Report*, pages 144 and 145.

22 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, Table 8-1.

within the Plan Area, the habitat is marginal and/or occurs in small pockets. Mitigation Measures 4.3-1 through 4.3-4 would ensure that the special-status species and their nests would be protected, so development of this habitat would not be considered a considerable contribution to cumulative impacts on these species. Nonetheless, the proposed Community Plan could result in the permanent loss of habitat for special status species, including up to 63 acres of foraging habitat for Swainson's hawk and other raptors. While mitigation would ensure that similar habitats are preserved in perpetuity, there would still be a permanent reduction in foraging habitat, which would be a considerable contribution to the loss and/or degradation of special-status species habitat in Merced County and the San Joaquin Valley. The conversion of this habitat to urban uses would therefore result in a significant and unavoidable cumulative impact.

**4.3-8 The proposed Community Plan could contribute to the cumulative loss or degradation of sensitive habitats, including wetlands.**

**Applicable Regulations:** Sections 401 and 404 of the Clean Water Act, California Fish and Game Code Sections 1600 et seq

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None.

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.3-8:

*Implement Mitigation Measure 4.3-5.*

**Residual Significance:** Less than significant

Since 1700s, riparian forests and wetland habitats have been cleared and developed for farming, lumber, flood control and riparian development and thus have been reduced substantially from their native range. Over 90 percent of California's wetlands have reportedly been lost.<sup>23</sup> State and federal laws, such as Section 404 of the CWA, now regulate the fill or conversion of wetlands. Nonetheless, future development will likely continue to affect these sensitive habitats. Riparian vegetation has been removed from areas near rivers, creeks and other drainages to accommodate encroaching development. The cumulative loss of wetlands and riparian habitat is considered a cumulative impact.

Merced County contains extensive sensitive habitats, particularly wetlands. For example, over 25,000 acres of vernal pools have been mapped in the county, much of which is federally-designated as Critical Habitat for vernal pool ecosystems.<sup>24</sup> Three major rivers traverse the county (the San Joaquin, Merced and Chowchilla), as well as a number of creeks, such as Miles Creek, and irrigation canals. The lower Merced and San Joaquin rivers are largely intact.<sup>25</sup> Future development in the county could result in the loss or degradation of portions of these riparian and other sensitive habitats. The General Plan includes numerous policies intended to protect these resources from loss or degradation. For example, GP Policy NR 1.5 requires that buffer zones be designated around wetland and riparian habitat areas to protect them from

23 California State University, Chico, Department of Geography and Planning and Geographic Information Center, *the Central Valley Historic Mapping Project*, April, 2003, Table 5, page 14.

24 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 8-27.

25 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 8-5.

degradation, encroachment or loss. Policy NR-1.12 seeks to avoid or minimize the loss of wetland resources through careful placement and construction of new public utilities and facilities. NR-1.13 requires setbacks from delineated edges of wetlands. The General Plan EIR concludes that while the concentration of development within urban communities and other General Plan policies would reduce impacts on sensitive habitats, some loss could still occur. Therefore, the impact was found to be significant and unavoidable.

Le Grand is not in an area that has been designated vernal pool grassland or critical habitat for vernal pools<sup>26</sup>. However, as discussed in Impact 4.3-5, the Plan Area could contain wetlands in grasslands and there is some riparian habitat near a canal within the Plan Area. Mitigation Measure 4.3-5 requires that areas that could contain wetlands be surveyed and, if wetlands are present, that a mitigation plan be prepared that provides for compensation at a minimum 1:1 ratio. If the wetlands are determined to be waters of the U.S. through a USACE-verified delineation, the mitigation measure could be satisfied through the 404 permit process, which requires that wetlands that are filled or destroyed be compensated for at a level that ensures no net loss of wetlands. Because wetlands within the Plan Area would be fragmented from larger wetland areas in the county, and mitigation would ensure that there would be no net loss of wetlands, the project would not contribute considerably to the cumulative loss of wetlands. The potential loss of riparian habitat would also not be considerable, because the small area that could be affected provides marginal habitat and Mitigation Measure 4.3-5 would minimize the loss by requiring compensation. For these reasons, the project's contribution to cumulative losses of sensitive habitats would be less than significant.

#### **4.3-9 The proposed Community Plan could contribute to the cumulative loss or degradation of wildlife migration corridors.**

**Applicable Regulations:** Sections 401 and 404 of the Clean Water Act, California Fish and Game Code Sections 1600 et seq

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required.

**Residual Significance:** Less than significant

As grasslands and other habitat have been fragmented by agriculture and urban development, migration corridors have become an important means for wildlife to move between areas that provide food and shelter. Waterways also provide water and forage for waterfowl using the Pacific Flyway. Over time, migratory corridors have been removed or blocked by physical barriers, such as dams, roads and urban development. Consequently, habitat has become less accessible for wildlife. In addition, the loss of large wetland areas to development and flood control has reduced areas available to migrating waterfowl. This is considered a significant cumulative impact.

As discussed in Impact 4.3-6, there are no contiguous open space areas within the Plan Area. Therefore, no barriers would be constructed that would impede wildlife travel within or through

<sup>26</sup> Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, Figures 8-3 and 8-6.

the Plan Area. Therefore, the project contribution to this cumulative impact would be less than significant.



## **4.4 CULTURAL RESOURCES**

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### INTRODUCTION

This section addresses the potential effects of the proposed Community Plan on cultural resources in the Plan Area, including prehistoric, historic and paleontological resources.

Comments were received in response to the Notice of Preparation (NOP) outlining the processes for consultation with tribes required by Government Code Section 65352.3 (see Appendices A and B). These requirements are discussed in this section.

### ENVIRONMENTAL SETTING

#### **Northern Valley Yokuts**

Merced County is in an area that was the territory of the Penutian-speaking Northern Valley Yokuts. The Yokut Indians originally inhabited all of the San Joaquin Valley, including the area that became Merced County. Yokut villages were typically located near principal waterways.<sup>1</sup> The Yokuts subsisted on the varied food sources available in the San Joaquin Valley. Acorns were a central food source, along with gathered wild seeds and other vegetable foods.<sup>2</sup> These food sources were supplemented by game, wild fowl, small mammals, fish, shellfish and turtles.<sup>3</sup> With the arrival of the Spanish, the Yokuts were forcibly relocated to missions, and their population began to decline. An outbreak of malaria in 1833 reduced the population by 75%. The 1849 Gold Rush and increasing European settlement of the Central Valley further reduced the Yokut population.

No prehistoric or historic archaeological resources located within the project vicinity have been reported to the Central California Information Center,<sup>4</sup> and there are no known Yokut sites in the Plan Area.

#### **Merced County**

European settlement of the Merced County area began with four Mexican land grants in the 1840s. Settlement accelerated with the discovery of gold in California. As the Gold Rush dwindled, many turned their efforts to agriculture. Merced County was formed in 1855 from a portion of Mariposa County.

The Central Pacific Railroad was built in Merced County in 1872, providing connections to markets in the north and south, and, farther afield, the east<sup>5</sup>. By 1874 much of the county was under crop cultivation, with wheat a major crop while herds of cattle occupied the uncultivated grasslands. Reservoirs were constructed to control flooding, and to provide water during the dry season through an extensive irrigation system. The majority of land in the county, over 80 percent, continues to be classified “farmland” to the present time.<sup>6</sup>

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1 Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 9-29.

2 Peak and Associates, Inc., *Cultural Resource Assessment of the Planada Self-Help Housing Project*, October 7, 2016, page 6.

3 Peak and Associates, Inc., *Cultural Resource Assessment of the Planada Self-Help Housing Project*, October 7, 2016, page 6.

4 Central California Information Center, *Update to previous record search #79451—Le Grand Community Plan*, February 29, 2016, page 1.

5 Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 9-29.

6 Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 9-34.

### **Le Grand Community**

Le Grand began as a farming town, originally called Idlewild. The town experienced settlement at least by the mid-1800s.<sup>7</sup> Like many small, Central Valley towns, the community was affected by the completion of the railroad (San Joaquin Valley Railroad, later called Santa Fe Railroad or ATSF) in 1896. Businesses relocated from Plainsburg in order to be near the rail line. The first subdivision was recorded for Le Grand in 1895, and by 1908 most of the surrounding farmland had been subdivided into 5-, 10-, and 20-acre parcels. After 1913, subdivision activity essentially ceased until starting again in the early 1970s.<sup>8</sup>

### **Cultural Resources in the Plan Area**

According to the Central California Information Center, the Plan Area is considered to have moderate to high sensitivity for prehistoric and historic archaeological resources, as well as historic buildings.<sup>9</sup>

The Plan Area does not contain any prehistoric or tribal sites or other resources that are listed on the National or State registers of historic places, or on a local list of historic resources<sup>10</sup>. No sacred lands have been recorded in the Plan Area<sup>11</sup>, nor have any tribal cultural resources been identified.

Several historic resources have been recorded within the Plan Area<sup>12</sup>:

- The former Le Grand Atkinson Topeka Santa Fe (ATSF) Railroad depot building (still standing but moved from its original 1896 location); and adjacent workshop building, walnut-processing shed, and another shed;
- Building foundations, landscaping and a metal sign at the original 1896 location of the Le Grand ATSF Railroad depot;
- Segment of the Burlington North and Santa Fe Railroad (BNSF), also known as the ATSF;
- The Merced Irrigation District (Historic District); and
- Three bridges in the Caltrans Bridge inventory.

None of these buildings have been evaluated for eligibility for listing on the California Register of Historical Resources.<sup>13</sup> The Merced Irrigation District has not been formally recognized as a historic district but has been recorded as a potential historic district.

In addition, a search of the Assessor's Parcels indicates that approximately 335 parcels have residential and nonresidential buildings constructed before 1973. Because these buildings would be over 45 years of age, they would be considered historic. Determining whether any of these buildings are *historically significant* (that is, eligible for listing on the NHP or CHRP) would require evaluation by a qualified architectural historian. Almost 160 of these buildings were constructed before 1940, and approximately 10 were built in 1900 or earlier. The oldest building

7 Central California Information Center, letter to Adrienne L. Graham, CCIC File #7945 I—*Le Grand Community Plan*, May 10, 2011, page 2.

8 Merced County Planning Department, *Le Grand Community Specific Plan*, 1983, page II-1.

9 Central California Information Center, letter to Adrienne L. Graham, CCIC File #7945 I—*Le Grand Community Plan*, May 10, 2011, page 2.

10 Central California Information Center, letter to Adrienne L. Graham, CCIC File #7945 I—*Le Grand Community Plan*, May 10, 2011, page 2.

11 Gayle Totton, M.A., PhD., Associate Governmental Program Analyst, Native American Heritage Commission, written communication to Adrienne Graham, Environmental Consultant, December 12, 2016.

12 Central California Information Center, letter to Adrienne L. Graham, CCIC File #7945 I—*Le Grand Community Plan*, May 10, 2011, page 2.

13 Central California Information Center, letter to Adrienne L. Graham, CCIC File #7945 I—*Le Grand Community Plan*, May 10, 2011, page 2.

is reported as being constructed in 1870 and the second oldest building is dated from 1880.<sup>14</sup>

### **Paleontological Resources**

Paleontological resources are any fossilized remains, traces, or imprints of organisms preserved in or on the earth's crust, that provide information about the history of life on earth and its evolution, with the exception of archeological resources.<sup>15</sup> The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on paleontological resources.<sup>16</sup>

Paleontological specimens have been found in western Merced County and could be present elsewhere in the county. According to the Merced County General Plan Background Report, 12 localities in Merced County have yielded Late Pleistocene-Age large mammals, including Bison, Camel, Columbian Mammoth, horse, American Mastodon, and *Elephas* spp.<sup>17</sup>

The Plan Area is underlain by two geologic formations: Modesto Formation and Riverbank Formation.<sup>18</sup> The Modesto Formation, which consists of sands and gravels, with silty sand and sandy mud overbank deposits forming a thin veneer over the older Riverbank Formation. The Riverbank Formation is similar, consisting of several disconnected, but contemporaneous alluvial fan deposits. Within the San Joaquin Valley, 27 fossils have been reported from six locations of Modesto Formation.<sup>19</sup> The Riverbank Formation appears to have a greater potential for paleontological resources. The Riverbank Formation has yielded a large number of mammal fossils (Mammuthus, Camelops, Glossotherium, Equus, Canis, Bison, Thomomys, Scapanus, Neotoma, Nothrotheriops, Megalonyx, Smilodon, Homotherium, Tetrameryx, Capromeryx, Hemiauchenia, Miraecinonyx, Lepus, Dipodomys, Notiosorex, and Vulpes), as well as reptiles and amphibians (Clemmys, Thamnophis, and Xerobates), fish (Orthodon), and bird (not identified to genus level) remains.<sup>20</sup> Based on the existing records, the Modesto and Riverbank Formations in Merced County do have the potential to contain paleontological resources, but given the relatively low number of recorded sites, that potential would not be considered high.

## **REGULATORY SETTING**

Federal, State, and local governments have developed laws and regulations designed to protect significant cultural resources from development activities. The National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and California Environmental Quality Act (CEQA) are the basic federal and State laws governing preservation of historic resources of national, regional, State, and local significance.

### **Federal**

Federal regulations for cultural resources are governed primarily by Section 106 of the NHPA, which applies to any project that is subject to federal approval or receives federal funding. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing on the National Register of Historic Places (NRHP). The definition

<sup>14</sup> Merced County, Assessor Parcel search, August 13, 2018.

<sup>15</sup> Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 9-29., page 9-22.

<sup>16</sup> Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontologic Resources*, 2010, page 2.

<sup>17</sup> Merced County, *2030 Merced County General Plan Background Report*, December 2013, page 9-29., page 9-35

<sup>18</sup> State of California, *Generalized Geologic Map of Merced County*, 1999.

<sup>19</sup> California High-Speed Rail Authority, U.S. Department of Transportation, Federal Railroad Administration, *Paleontological Resources Technical Report, Merced to Fresno Section, Project EIR/EIS*, April 2012, page 4-3.

<sup>20</sup> California High-Speed Rail Authority, U.S. Department of Transportation, Federal Railroad Administration, *Paleontological Resources Technical Report, Merced to Fresno Section, Project EIR/EIS*, April 2012, page 4-8.

of historic property includes any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The criteria for listing on the NRHP are:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded, or may be likely to yield, information important in prehistory or history.

## **State**

### **California Register of Historical Resources**

The California Register is “an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

Similar to the National Register, to be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

- 1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- 2. Is associated with the lives of persons important in our past;
- 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- 4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age, and retain enough of its historic character or appearance (integrity) to convey the reason for its significance.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation and have been recommended to the State Historical Commission for inclusion on the California Register.

**Senate Bill 18**

Senate Bill (SB) 18 (Chapter 905, Statutes of 2004) requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting tribal cultural resources. SB 18 applies to the adoption or substantial amendment of general plans and specific plans, and requires that the Lead Agency consult with California Native American Tribes that are on the Native American Heritage Commission (NAHC) contact list and have traditional lands located within the agency's jurisdiction.

The County contacted the NAHC and six tribes to notify them of the proposed Community Plan in November 2016. No requests for consultation were received<sup>21</sup>.

**Assembly Bill 52**

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the Public Resources Code (PRC) regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources," separately from archaeological resources (PRC § 21074; 21083.09), in recognition that archaeological resources have cultural values beyond their ability to yield data important to prehistory or history (Criterion 4/D). The Bill defines "tribal cultural resources" in a new section of the PRC Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC § 21080.3.1, 21080.3.2, 21082.3).

As of this time, no tribes have requested of the County that they be included in AB 52 consultation<sup>22</sup>.

**Health and Safety Code, Sections 7052 and 7050.5**

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

**Public Resources Code, Section 5097**

Public Resources Code Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

**California Environmental Quality Act**

In general, a significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines

21 Brian Guerrero, Planner III, Merced County Community & Economic Development Department, electronic communication to Adrienne Graham, November 7, 2016.

22 Brian Guerrero, Planner III, Merced County Community & Economic Development Department, electronic communication to Adrienne Graham, November 7, 2016.

Section 15064.5(a). Substantial adverse change is defined as “physical demolition, destruction, relocation, or alteration of the resource *or its immediate surroundings* [emphasis added] such that the significance of a historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1)). According to CEQA Guidelines Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

- A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- C. Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Standards) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

If a lead agency determines that an archaeological site is an historical resource, it must implement the provisions of Section 21084.1 of the Public Resources Code.

Impacts on resources that do not qualify as historical resources or “unique” archaeological sites are not considered significant, and need not be considered further in the CEQA process (PRC Section 21083.2).

### **Local**

The County, at this time, does not have an ordinance or specific standards addressing cultural resources. However, the General Plan does include policies intended to protect archaeological, historic and paleontological resources:

#### **Policy RCR-2.1: Archeological Site and Artifact Protection**

Require development projects that affect archeological sites and artifacts to avoid disturbance or damage to these sites.

#### **Policy RCR-2.2: Historical Area Preservation**

Support the preservation of historical structures and areas, particularly those listed on the National Registrar of Historic Places and California Registrar of Historic Places.

#### **Policy RCR-2.3: Architectural Character Preservation**

Require that the original architectural character of significant State- and Federally-listed historic structures be maintained in compliance with preservation standards and regulations.

#### **Policy RCR-2.4: Park and Open Space Historic Resource Preservation**

Require the preservation of historic resources located in parks and publicly-owned open space areas.

**Policy RCR-2.5: Human Remains Discovery**

Require that, in the event of the discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified.

**Policy RCR-2.6: Historic Buildings and Areas**

Identify buildings and areas with special and recognized historic, architectural, or aesthetic value to be preserved and rehabilitated during the Community Plan update process. New development should respect architecturally and historically significant buildings and areas, and conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, and incorporate adaptive reuse practices, where feasible, to preserve the County's historical heritage and rural character.

**Policy RCR-2.7: Historic Preservation**

Support the efforts of local preservation groups and community property owners to preserve or improve building facades and exteriors consistent with the historic and visual character of the specific building or area.

**Policy RCR-2.8: Historical Preservation Area/Site Designations**

Allow sites of historical and archeological significance to be designated as historical preservation areas or sites during the Community Planning process or on individual sites in rural areas.

**Policy RCR-2.9: Historical and Cultural Resources Investigation, Assessment, and Mitigation Guidelines**

Establish and adopt mandatory guidelines for use during the environmental review processes for private and public projects to identify and protect historical, cultural, archaeological, and paleontological resources, and unique geological features.

**Policy RCR-2.10: Tribal Consultation**

Consult with Native American tribes regarding proposed development projects and land use policy changes consistent with Planning and Zoning Law at Government Code Section 65351, and the OPR Tribal Consultation Guidelines (2005).

**IMPACTS AND MITIGATION MEASURES****Method of Analysis**

Because there are no specific development plans included as part of this Draft Environmental Impact Report (DEIR), a qualitative approach was used to determine the potential for significant impacts on cultural resources. A record search was conducted by the Central California Information Center (CCIC) at California State University, Stanislaus, to identify any prehistoric or historic resources that had been recorded in or near the Plan Area. To determine the number of buildings that could be over 45 years of age, Assessor's Parcel records were reviewed. For paleontological resources, the Merced County General Plan and other documentation was reviewed, as well as geological data for the Plan Area. This information was used to characterize the potential for cultural resources to occur within the Plan Area. The impact analysis then considers whether there would be construction activities that could affect these resources.

**Standards of Significance**

The proposed Community Plan would have a significant impact if it could result in:



- Cause a substantial change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or unique geologic feature; and/or
- Disturb any human remains, including those interred outside of formal cemeteries.

### **Project-Specific Impacts and Mitigation Measures**

#### **4.4-1 The proposed Community Plan could result in the loss of archaeological resources.**

**Applicable Regulations:** Public Resources Code Sections 5097 and 21084.1; Health and Safety Code Sections 7052 and 7050.5

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-12 and Implementation Measure OSC-9

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-1:

- (a) *Prior to approval, projects one acre or greater that require grading or excavation shall have an archaeological survey by a County-approved qualified archaeologist. Areas found to contain or be likely to contain archaeological resources shall be fully surveyed, including excavation and testing to the extent needed to characterize and record the archaeological site. If a sensitive site cannot be fully surveyed prior to construction (due to the presence of pavement or other reasons), a qualified archaeologist shall be present to monitor all grading and excavation activity. Any artifacts and/or sites that are discovered shall be recorded, preserved in situ and/or donated to an appropriate organization or archive, according to the recommendations of the archaeologist. For resources of Native American origin, the geographically and culturally affiliated Native American tribe(s) shall be contacted to request input regarding the disposition of the resource.*
- (b) *If a monitoring archaeologist or a member of the construction team believes that an archaeological resource has inadvertently been uncovered, all work within 50 feet of the discovery shall cease, and a qualified archaeologist shall be notified immediately. Appropriate steps shall be taken, as directed by the archaeologist, to protect the discovery site. The area of work stoppage shall be adequate to provide for the security, protection, and integrity of the archaeological resources in accordance with federal and State Law, and at a minimum shall be 50 feet from the discovery. Vehicles, equipment, and unauthorized personnel shall not be permitted to traverse the discovery site. Any artifacts and/or sites that are uncovered shall be recorded, preserved in situ and/or donated to an appropriate organization or archive, according to the*

*recommendations of the archaeologist. For resources of Native American origin, the geographically culturally affiliated Native American tribe(s) shall be contacted to request input regarding the disposition of the resource.*

- (c) *If human remains are discovered or uncovered during any phase of construction, all ground-disturbing activity within 50 feet of the remains shall be halted and the County Coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours to request the names of the most likely descendent(s), and Public Resources Code Section 5097.98 shall be adhered to in the treatment and disposition of the remains. The approved treatment and disposition of the remains shall be implemented before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.*
- (d) *If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSD shall implement (a) and (b), above, or equally effective measures.*

**Residual Significance:** Less than Significant

No prehistoric resources have been recorded in the Plan Area or surrounding vicinity. However, the CCIC considers the Plan Area to have moderate to high sensitivity for both historic and prehistoric resources. Excavation and grading activities could destroy or disturb surface or subsurface cultural resources, if present, particularly where deeper excavations would occur (e.g., utility lines). The potential damage to or destruction of such resources, if present, would be a significant impact.

No sacred lands have been recorded in the Plan Area. The County notified local tribes of the pending proposed Community Plan, and did not receive any responses or requests for consultations. For these reasons, no impacts on sacred lands or tribal cultural resources are anticipated.

As discussed in Chapter 3, Project Description, buildout of the proposed Community Plan would require new wells and/or water storage facilities and approximately 30 to 35 additional acres of farmland for reclamation. Depending on the location of the improvements, historic or prehistoric archaeological resources could be present. Given the minimal extent of construction activity needed to use existing farmland for reclamation, and the likelihood that infrastructure sites would have been disturbed for past agricultural activities and/or urban development, it is unlikely that archaeological resources would be damaged or destroyed. Nonetheless, if subsurface resources are present, they could be damaged or destroyed by infrastructure construction.

The proposed Community Plan has the following policy and implementation measure regarding archaeological resources:

**Policy OSC-12 Protecting Archaeological Findings**

Disturbance to and/or destruction of archaeological sites and artifacts shall be avoided.

**Implementation Measure OSC-9**

If human remains are discovered, California Health and Safety Code Section 7050.5 states that no

further disturbance shall occur until the County Coroner has made the necessary findings regarding their origin and disposition pursuant to Public Resource Code Section 5097.98. If the Coroner determines that no investigation of the cause of death is required, and if the remains are of Native American origin, the Coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains and any other grave materials.

Mitigation Measure 4.4-1 would implement Policy OSC-10 by ensuring that archaeological resources, if present, are identified prior to disturbance, and treated appropriately. State law requires that, if human remains are discovered, the County Coroner must be notified, as indicated in Mitigation Measure 4.4-1(c), consistent with Implementation Measure OSC-9. If the Coroner determines that the remains are Native American, the most likely descendent must be consulted regarding appropriate re-interment. Mitigation Measure 4.4-1(b) would ensure that archaeological resources, if unexpectedly encountered during construction, are identified before they can be damaged or disturbed by construction activities, and that they are treated appropriately after discovery. Mitigation Measure 4.4-1(d) would ensure that resources were identified and treated appropriately if present where water and wastewater infrastructure, including reclamation areas, are located. Therefore, the impact on archaeological resources would be less than significant with mitigation.

**4.4-2 The proposed Community Plan could result in the loss of historically significant buildings, sites and/or facilities.**

**Applicable Regulations:** CEQA Guidelines Section 15126.4(b)

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-11 and Implementation Measures OSC-4 through OSC-7

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-2:

*Prior to removal or alteration of a building that has been determined to be eligible for listing on the National and/or State historic registers and/or a local list of historically significant buildings, the building shall be recorded pursuant to Secretary of Interior standards, and architectural features and /or artifacts shall be made available to an appropriate museum and/or historical organization.*

*This measure would not apply to LGCS D water and wastewater infrastructure improvements outside of the Plan Area.*

**Residual Significance:** Significant

Le Grand contains residential and other properties that reflect its early settlement and development, as well as its agricultural heritage. These resources provide both information about the community's past and serve as an important element of its present character and identity. Development of the proposed Community Plan could result in the demolition or rehabilitation of buildings over 45 years of age, particularly in the Mixed-Use designation. The loss of or substantial alteration to a building that would be eligible for listing on the National and/or California Registers would be a significant impact.

The proposed Community Plan contains the following policy and implementation measures regarding historic resources:

**Policy OSC-11 Protecting Historic Places**

Buildings and sites shall be protected that are found to be eligible for listing on the National Register of Historic Places or the California Register of Historic resources, or that are determined to be of historic significance to the community of Le Grand and/or Merced County.

**Implementation Measures**

- OSC-4 The County of Merced shall undertake an inventory of historic resources in the Le Grand Community Plan Area to determine and map sites, buildings, or structures of federal, state, or local significance.
- OSC-5 The County of Merced shall promote, assist, and / or facilitate the registration of qualified historic sites, buildings or structures in the National Register of Historic Places, State Register of Historic Resources and / or inclusion in the California Inventory of Historic Resources.
- OSC-6a Prior to completion of a historic resource inventory, projects that may involve the remodeling, demolition of buildings, or structures 45 years or older shall be evaluated by a qualified professional for historic significance and recommendations prior to approval.
- OSC-6b Buildings and structures determined to be of historic significance shall be preserved to the extent practical. The property shall be preserved on site, and recommendations of an architectural historian to ensure maintenance of its historic significance shall be implemented. Renovation of the property shall follow Secretary of the Interior Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, and incorporate adaptive reuse practices.
- OSC-7 If preservation proves impractical, the property shall be recorded with Secretary of Interior standards prior to demolition.

These measures would ensure that, over time, a comprehensive list of historic properties in the Le Grand community is developed. The inventory and listing on the appropriate historic register would ensure that significant historic properties are evaluated and recognized, and, if appropriate, preserved. These tools would also provide a record of Le Grand's past and historical resources.

Until the list of historic properties is complete, potentially significant historic structures could be destroyed to make room for new development and/or altered to accommodate changes in land use, particularly in the older community core. Implementation Measures OS 7a and 7b would ensure that historic properties are identified and evaluated prior to completion of the historic properties list. Further, identified historic resources would be preserved in place, where feasible. Mitigation Measure 4.4-2 would further ensure that an appropriate record was made of any significant historic structure prior to its demolition and/or alteration. These measures should protect many of the historic resources in the community. However, it is possible that one or more historically significant resources would need to be destroyed or altered in order to implement the proposed Community Plan. In some cases, particularly where the resource is not unique, well-preserved, and/or of primary historic significance, relocation and/or recordation may be adequate mitigation. If recordation would not fully offset the loss of a historic resource, however, the impact would remain significant, even after mitigation.

Water and wastewater improvements would not require the demolition or alteration of historic buildings, so no impact would occur for these facilities.

#### **4.4-3 The proposed Community Plan could result in the loss of paleontological resources.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-3:

- (a) *If paleontological resources (e.g., fossils) are discovered during construction, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery. After cessation of excavation the contractor shall immediately contact the County. The potential paleontological resource(s) during construction shall be evaluated by a qualified paleontologist. If it is determined that the project could damage a unique paleontological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines. If avoidance is not feasible, the paleontologist shall develop a treatment plan in consultation with the County. The contractor shall not resume work until authorization is received from the County.*
- (b) *If and when LGCSD constructs water or wastewater infrastructure, including expanded reclamation area, needed to serve the proposed Community Plan, the LGCSD shall implement (a) and (b), above, or equally effective measures.*

**Residual Significance:** Less than Significant

The Plan Area and surrounding vicinity, including areas likely to be considered for expanded reclamation area and/or other off-site water or wastewater infrastructure, is underlain by geologic formations (Modesto and Riverbank) that have yielded paleontological resources elsewhere in the county. Such resources, if present in the Plan Area, could be damaged or destroyed during excavation and grading. This would be a significant impact.

However, it is not likely that paleontological resources would be uncovered during development of the Plan Area or during installation of off-site water or wastewater infrastructure, given the relatively small number of sites that have been found in Riverbank and Modesto Formations within eastern Merced County and the extent of disturbance that has already occurred within the Plan Area due to agriculture and development of the community. Further, the type of development that would be undertaken would not, for the most part, require extensive excavation, because most buildings would be only one or two stories, and many would be on slab foundations. Nonetheless, excavation would be required for pipelines and other features. Mitigation Measure 4.4-3 would ensure that if paleontological resources are uncovered during construction, all work would cease until the resource(s) could be evaluated by a qualified paleontologist, and provisions made for the appropriate disposition of the resource. The measure would protect such resources from destruction, so the impact would be less than significant with mitigation.

### **Cumulative Impacts and Mitigation Measures**

The cumulative setting for cultural resources includes Merced County for historic period resources, and the portions of San Joaquin Valley identified as the territory of the local Native American community for prehistoric archaeological resources. Historic resources tend to be more highly concentrated within cities and urban communities. However, even within the urbanized areas of the county, the majority of the historic resources have not been surveyed for significance under local, State, or federal criteria.

#### **4.4-4 The proposed Community Plan would contribute to the cumulative loss of archaeological resources in Merced County and the Central Valley.**

**Applicable Regulations:** Public Resources Code Sections 5097 and 21084.1; Health and Safety Code Sections 7052 and 7050.5

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-12 and Implementation Measure OSC-9

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-4:

*Implement Mitigation Measure 4.4-1.*

**Residual Significance:** Less than Significant

Based upon previous cultural resource surveys and research, the area that comprises Merced County and the San Joaquin Valley has been inhabited by prehistoric peoples for thousands of years. As discussed in Impact 4.4-1, the Plan Area is considered sensitive for archaeological resources, although none have been recorded there. Similarly, other urban communities and cities in the San Joaquin Valley could be located in areas that have the potential to contain both prehistoric and historic archaeological resources that would be vulnerable to damage or destruction as development occurs throughout the Valley. This would be a significant cumulative impact.

The contribution of the proposed Community Plan to the loss of significant archaeological resources would be reduced by Mitigation Measure 4.4-1, which requires that steps be taken prior to construction to identify such resources, and ensures that if such resources are unexpectedly encountered during construction, they are identified before they can be damaged or disturbed by construction activities, and that they are treated appropriately after discovery. With these protections, the contribution of the proposed Community Plan to the cumulative loss of archaeological resources would be less than considerable.

#### **4.4-5 The proposed Community Plan would contribute to the cumulative loss of historic resources in Merced County and the Central Valley.**

**Applicable Regulations:** CEQA Guidelines Section 15126.4(b)

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-9 and Implementation

Measures OSC-5 through OSC-7

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-5:

*Implement Mitigation Measure 4.4-2.*

**Residual Significance:** Significant

Development pressure throughout the San Joaquin Valley has resulted in redevelopment of downtown areas, and the conversion of rural and agricultural properties to urban and suburban uses. In some cases, older buildings have been demolished, or the areas around them have been developed, so that their original context is altered. As development continues, historic resources will continue to be destroyed or altered. As a result, information about the history of the Central Valley could be irretrievably lost, and the character of historic areas will continue to change. This is a significant cumulative impact.

The proposed Community Plan would contribute to the regional cumulative loss of and alteration to historic resources, if it results in the loss or substantial alteration of historic resources within the Le Grand community. The extent to which the loss or alteration of historic resources would occur cannot be determined at this time, because there is not yet a list of historic structures or specific development proposals. As discussed in Impact 4.4-1, the proposed Community Plan contains an applicable policy and implementation measures that would ensure that historic resources are identified, pertinent information is recorded, and that they are preserved, where practical. Nonetheless, given the anticipated extent of new development and the likelihood of some redevelopment within the Downtown core, some historic resources could be lost and/or substantially altered under the proposed Community Plan. Because the extent of the loss would depend on the nature and number of resources that would potentially be affected, this is a potentially considerable contribution to the cumulative loss and alteration of historic resources.

#### **4.4-6 The proposed Community Plan would contribute to the cumulative loss of paleontological resources in Merced County and the Central Valley.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.4-6:

*Implement Mitigation Measure 4.4-3.*

**Residual Significance:** Less than Significant

Paleontological resources are known to occur within Merced County, and elsewhere in the San Joaquin Valley. The 2030 General Plan provides for additional development in urban communities, and, to a lesser extent, rural communities and other areas. Those areas where fossils have been found in the past are considered most likely to contain paleontological

resources, but there is potential for such resources to occur throughout much of the county. Excavation and grading in areas with geologic formations that are able to contain paleontological resources could result in the damage or destruction of fossils and related resources, including fossils of large vertebrates. This would be a significant cumulative impact.

As discussed in Impact 4.4-3, the Plan Area does contain geologic formations that have yielded paleontological resources in other locations throughout the county. Therefore, there is the potential that construction of the proposed Community Plan could damage or destroy such resources, if they are present in the Plan Area. Mitigation Measure 4.4-3 would ensure that such resources are identified and protected if encountered during construction. With this measure, the project contribution to the cumulative impact on paleontological resources would not be considerable.



## **4.5 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE**

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## 4.5 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

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### INTRODUCTION

This section evaluates the proposed Community Plan's greenhouse gas (GHG) emissions and impacts to global climate change. The environmental setting presents background and terminology with respect to climate change and provides a description of the existing environment within the vicinity of the Plan Area. The regulatory setting provides a description of applicable federal, State, and local regulatory policies related to climate change and GHGs. The impact assessment section evaluates the potential for the proposed Community Plan to result in impacts associated with the generation of GHG emissions that directly or indirectly impact the environment or the potential to conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHGs. Finally, feasible mitigation measures intended to reduce impacts to climate change are prescribed, where appropriate, to avoid or lessen the significant impacts of the proposed Community Plan. The analysis of impacts in this section was prepared based on review of available reports and information provided.

### ENVIRONMENTAL SETTING

Gases that trap heat in the atmosphere are called GHGs. The main concern with GHGs is that increases in GHG concentrations in the Earth's atmosphere is causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature.

The principal GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different Global Warming Potentials (GWPs) and CO<sub>2</sub> is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO<sub>2</sub> equivalents (CO<sub>2</sub>e). For example, SF<sub>6</sub> is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF<sub>6</sub>, while comprising a small fraction of the total GHGs emitted annually world-wide, is a much more potent GHG with 22,800 times the GWP as CO<sub>2</sub>. Therefore, an emission of one metric ton (MT) of SF<sub>6</sub> could be reported as an emission of 22,800 MT of CO<sub>2</sub>e.<sup>1</sup> Large emission sources are reported in million metric tons (MMT) of CO<sub>2</sub>e.<sup>2</sup>

Global warming can affect California specifically by reducing snow pack, increasing sea level rise, increasing the number of extreme heat days per year, high ozone days, wildfires, and drought years. Globally, climate change has the potential to impact numerous environmental resources through potential changes related to future air and ocean temperatures, and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects<sup>3</sup>:

- Higher maximum temperatures and more hot days over nearly all land areas;

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1 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp., 2007.

2 A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

3 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2001: Working Group I: The Scientific Basis*. Last revised 2001.

- Higher minimum temperatures, fewer cold days, and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global sea level rise, ocean acidification, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

California produced 441.5 MMTCO<sub>2</sub>e in 2014.<sup>4</sup> This is a decrease from levels between 2000 and 2011 where emissions ranged from a low of 450.97 in 2009 to a high of 492.86 in 2004.<sup>5</sup> Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2014, accounting for approximately 37 percent of total GHG emissions in the state. This sector was followed by the industrial sector (24 percent) and the electric power sector (including both in-state and out-of-state sources) (20 percent).<sup>6</sup>

### Existing GHG Emissions

Le Grand is an unincorporated community located in Merced County, approximately twelve miles east of the City of Merced and eight miles north of the City of Chowchilla. The closest highway is Highway 99, approximately 6 miles west of Le Grand. Le Grand Road and Santa Fe Avenue are the primary roadways that connect Le Grand to other communities. Most of the Plan Area is located west of Santa Fe Avenue.

Le Grand is a small, agriculturally-based community surrounded by rural agricultural operations typical of Merced County, including orchards, row crops, and grazing land. The present adopted Le Grand Community Plan Area is approximately 458 acres and includes 497 residential units and approximately 234,660 square feet of commercial, industrial, institutional and recreational buildings. Table 4.5-1 shows the existing onsite emissions based on a 2016 baseline.

## REGULATORY SETTING

### Federal

#### Clean Air Act

The principal air quality regulatory mechanism at the federal level is the Clean Air Act (CAA) and in particular, the 1990 amendments to the CAA which established the National Ambient Air Quality Standards (NAAQS). The federal CAA does not specifically regulate GHG emissions; however, the U.S. Supreme Court has determined that GHGs are pollutants that can be regulated under the federal CAA. There are currently no federal regulations that set ambient air quality standards for GHGs.

<sup>4</sup> California Air Resources Board, *California Greenhouse Gas Emission Inventory 2016 Edition*.

<sup>5</sup> California Air Resources Board (CARB), *California Greenhouse Gas Inventory for 2000-2012 — by Category as Defined in the 2008 Scoping Plan*, March 24, 2014.

<sup>6</sup> California Air Resources Board, *California Greenhouse Gas Emission Inventory 2016 Edition*.

**TABLE 4.5-1  
Existing Onsite Emissions**

	<i>MT/year</i>			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Area	609	46	1	656
Energy	2,885	3	14	2,902
Mobile	9,432	16	0	9,448
Waste	199	294	0	493
Water	140	21	19	180
Total Plan Area				13,679
Service Population				1,992
Annual emissions per service population				6.87
Note: Employee population estimated based on inventory of existing non-residential square footage and standard rates for employees per square foot.				
Source: Refer to Calculation summaries and CalEEMod Output Sheets, Appendix E.				

### **Fuel Efficiency Standard**

The federal government sets emission standards for construction equipment. The first federal standards (Tier 1) were adopted in 1994 for all off-road engines over 50 horse power (hp) and to be phased in by 2000. In 1998, a new standard was adopted that introduced Tier 1 for all equipment below 50 hp and introduced the Tier 2 and Tier 3 standards. Phase in for Tier 2 and Tier 3 standards for all equipment was to be phased in by 2008. Tier 4 efficiency requirements are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068 [originally adopted in 69 Federal Register 38958 (June 29, 2004)], and were most recently updated in 2014 [79 Federal Register 46356]). Emissions requirements for new off-road Tier 4 vehicles are to be completely phased in by the end of 2015.

### **State**

#### **Executive Order S-1-07**

Executive Order (EO) S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of this order, California Air Resources Board (CARB) approved a regulation to implement the Low Carbon Fuel Standard (LCFS), which would reduce GHG emissions from the transportation sector in California by about 16 MMT by 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

#### **Executive Orders S-3-05 and B-30-2015**

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established EO S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

In 2015, Governor Brown issued EO B-30-2015 to establish a GHG reduction target of 40 percent below 1990 levels by 2030. These orders are only applicable to “state agencies with jurisdiction over sources of greenhouse gas emissions” (Order B-30-2015 Section 2). There is currently no implementation strategy for these Executive Orders (i.e., a plan, similar to the AB 32 Scoping Plan, which apportions GHG reductions by economic sector/activity/region).

The emphasis of the EOs is the continuing reduction in GHG emissions over time in order to limit the effects of climate change. A project is considered consistent with the provisions of the EOs if it meets the general intent in reducing County emissions to facilitate the achievement of County and State adopted goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent, if it will further the objectives and not obstruct their attainment.<sup>7</sup>

### Assembly Bill 32

In response to the 2006 Executive Order, the California Legislature adopted AB 32, the Global Warming Solutions Act of 2006, which requires CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels. AB 32 required CARB to adopt and enforce programs and regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions. In December 2007 CARB adopted 427 MMT CO<sub>2</sub>e as the statewide GHG emissions limit equivalent to the statewide levels for 1990. This is approximately 28 percent below forecasted 2020 “business-as-usual” emissions of 596 MMT of CO<sub>2</sub>e, and about 10 percent below average annual GHG emissions during the period of 2002 through 2004.<sup>8,9,10</sup>

CARB published the “Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration” in September 2007.<sup>11</sup> CARB adopted nine Early Action Measures for implementation, including Ship Electrification at Ports, Reduction of High Global-Warming-Potential Gases in Consumer Products, Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency), Reduction of Perfluorocarbons from Semiconductor Manufacturing, Improved Landfill Gas Capture, Reduction of Hydrofluorocarbon-134a from Do-It-Yourself Motor Vehicle Servicing, Sulfur Hexafluoride Reductions from the Non-Electric Sector, a Tire Inflation Program, and a LCFS.

By January 1, 2011, CARB was required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 permitted the use of market-based compliance mechanisms to achieve those reductions. AB 32 also required CARB to monitor compliance with and enforce any rule, regulation, order,

7 *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoia Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

8 The Scoping Plan document states “approximately 30 percent from BAU analysis (CARB, 2008 pg. 12). When calculated the percent reduction between the 1990 goal of 427 MMT CO<sub>2</sub>e by 2020 and the 2020 BAU of 596 MMT CO<sub>2</sub>e equals 28.36 [(596 – 427)/596].

9 Updates to these values are discussed under the Climate Change Scoping Plan in Section 3.6.3.2.4 below.

10 California Air Resources Board, *Climate Change Scoping Plan: A Framework for Change*, published December 2008, amended version included errata and Board requested modifications posted May 11, 2009.

11 California Air Resources Board, *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration*, October 2007.

emission limitation, emissions reduction measure, or market-based compliance mechanism that it had adopted.

As of January 1, 2012, the GHG emissions limits and reduction measures adopted in 2011 by CARB became enforceable. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the State's efforts to improve air quality.

### **Climate Change Scoping Plan**

In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) outlining the State's strategy to achieve the 2020 GHG emissions limit.<sup>12</sup> The first update to the AB 32 Scoping Plan was approved on May 22, 2014, by CARB. As part of the proposed Scoping Plan update, the emissions reductions required to meet the 2020 statewide GHG emissions limit were further adjusted.<sup>13</sup> As recently described by the California Governor in the 2015 Executive Order "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32).<sup>14</sup>

### **Senate Bill 97**

SB 97, enacted in August 2007, required the Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. On April 13, 2009, the OPR submitted proposed amendments to the Natural Resources Agency in accordance with SB 97 regarding analysis and mitigation of GHG emissions. As directed by SB 97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

### **Senate Bill 375**

SB 375, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs); the targets require a seven to eight percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each Metropolitan Planning Organization (MPO). SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Merced County Association of Governments (MCAG), work with local jurisdictions in the development of sustainable communities strategies (SCS), as incorporated in the Regional Transportation Plan (RTP) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. MCAG's reduction target for per capita vehicular emissions is five percent by 2020 and ten percent by 2035.<sup>15</sup>

12 California Air Resources Board, *Climate Change Scoping Plan: A Framework for Change*, published December 2008, amended version included errata and Board requested modifications posted May 11, 2009.

13 California Air Resources Board, *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework*, February 2014.

14 Brown, Edmund G. Jr, *New California Goal Aims to Reduce Emissions 40 Percent Below 1990 levels by 2030*, accessed at <https://www.gov.ca.gov/news.php?id=18938>, December 5, 2016.

15 California Air Resources Board, *Proposed SB 375 Greenhouse Gas Targets: Documentation of the Resulting Emission Reductions based on MPO Data*, August 9, 2010.

In September 2014, the MCAG adopted the 2014 RTP with Amendment 1 adopted in May 2016.<sup>16</sup> MCAG's RTP includes a commitment to reduce emissions from transportation sources by promoting compact and infill development and investing in alternative transportation modes in order to comply with SB 375. Goals of the SCS that are applicable to the proposed Community Plan include:

1. Increase public transit and carpooling/vanpooling and bicycling/walking to exceed population growth;
2. Prioritize infill and growth in existing communities; and
3. Prioritize vanpools and ridesharing.

In August 2018, the MCAG adopted the 2018 RTP.<sup>17</sup> Ultimately this Plan seeks to ensure that the Merced County transportation system will continue to operate efficiently over the next 25 years. The Plan includes comprehensive improvements to the regional and local transportation networks and has a focus on infill development in downtowns and centers in close proximity to jobs and services. In addition, the Plan emphasizes transportation investments in active transportation facilities to improve bicycle and pedestrian mobility.

### **Local**

The Plan Area is located within the County of Merced. As such, this analysis considers the plans, policies, and standards from this jurisdiction.

### **Merced County General Plan**

The following policies from the General Plan<sup>18</sup> are relevant to the proposed Community Plan:

#### **Policy AQ-1.1: Energy Consumption Reduction**

Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.

#### **Policy AQ-1.2: Business Energy Reduction Strategies**

Encourage all businesses to: replace high mileage fleet vehicles with more efficient and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.

#### **Policy AQ-1.5: Climate Action Plan**

Prepare a Climate Action Plan that includes an inventory of 1990 and 2010 greenhouse gas emissions, determines project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPC, and identify strategies to achieve State emission reduction targets.

#### **Policy AQ-1.7: Heat Island Effect Reduction**

Require increased tree canopy and reflective surface materials in order to reduce the heat island effect (i.e., increased temperatures due to heat radiation off paved surfaces and rooftops).

#### **Policy AQ-1.8: Climate Change Adaptation**

Prepare appropriate strategies to adapt to climate change based on peer-reviewed scientific findings of the potential impacts.

16 Merced County Association of Governments (MCAG). 2014. *Regional Transportation Plan 2014-2040 Sustainable Communities Strategy*. Adopted September 25. Amended May 19. 2016.

17 Merced County Association of Governments (MCAG), *Regional Transportation Plan Sustainable Communities Strategy for Merced County*, adopted September 25, 2014; amended May 19. 2016.

18 Merced County, *2030 Merced County General Plan*, December 10. 2013.

**Policy AQ-1.9: Interagency Coordination**

Coordinate with cities, regional, State, and Federal agencies and organizations to collaborate on a comprehensive approach to planning for climate change.

**Policy AQ-1.10: Public Awareness**

Increase public awareness about climate change and encourage county residents and businesses to become involved in activities and lifestyle changes that will aid in reduction of greenhouse gas emissions.

**Policy AQ-1.11: Truck-Related Development**

Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements is required as part of the permit approval.

**Policy AQ-2.5: Innovative Mitigation Measures**

Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the San Joaquin Valley Air Pollution Control District, project applicants, and other interested parties.

**Policy AQ-2.7: Air District Best Performance Standards**

Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by the district.

**Policy AQ-3.2: Clean Fleet Vehicles**

Require vehicle replacement practices that prioritize the replacement of older higher emission vehicles and the purchasing of the lowest emission technology vehicles, consistent with cost-effective management of the program.

**Policy AQ-3.3: Teleconferencing**

Use teleconferencing in lieu of employee travel to conferences and meetings when feasible.

**Policy AQ-3.5: Purchasing Preferences**

Institute environmentally-responsible purchasing, including giving preference to products that reduce or eliminate indirect greenhouse gas emissions and promote recycling.

**Policy AQ-4.1: Decrease Vehicle Miles Traveled**

Require diverse, higher-density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.

**Policy AQ-4.3: Public Transport Use Incentives**

Prepare incentives and programs to encourage use of public transit and decrease vehicle miles traveled.

**Policy AQ-4.4: Transportation Alternative**

Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and dropoff locations, and biking paths/storage.

**Policy AQ-4.5: Public Education and Awareness**

Support programs that educate the public regarding the impact of individual transportation, lifestyle, and land use decisions on air quality.

**Policy AQ-4.6: Non-Motorized Transportation**

Encourage non-motorized transportation corridors within and between communities.



## IMPACTS AND MITIGATION MEASURES

### Method of Analysis

Pursuant to full disclosure and according to OPR's CEQA Guidelines Section 15064.4(a), which states, "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project," the construction and operational emissions associated with the proposed Community Plan are quantified using the following methodology.

The methodology used to analyze the proposed Community Plan's contribution to global climate change includes evaluating the proposed Community Plan's total net annual GHG emissions (construction and operational) against the proposed GHG emissions efficiency threshold based on per service population for projects (4.6 MT CO<sub>2</sub>e, and 3.0 MT CO<sub>2</sub>e).

GHG emissions relate to an inherently cumulative impact because no single project makes a significant contribution to global climate change.

### Construction Emissions

Construction emissions for the proposed Community Plan were estimated using the most recent version of the California Emissions Estimator Model (CalEEMod), version 2016.3.2, as applicable. Modeling was based on project-specific data provided by the County, where available. Where project-specific information was not available (for example, the age and fuel efficiencies of the vehicle fleet) default model settings and/or reasonable assumptions based on other similar projects were used to estimate GHG emissions. Modeling assumptions, calculations, and input and output files are provided in Appendix E.

CalEEMod estimates the emissions of CO<sub>2</sub> and CH<sub>4</sub>, as well as the resulting total CO<sub>2</sub>e emissions associated with construction-related GHG sources, such as off-road construction equipment, material delivery trucks, soil haul trucks, and construction worker vehicles. Based on current practice and the fact that GHG emissions are a cumulative, rather than project specific impact, the total construction emissions for the project will be amortized over a 30-year period<sup>19</sup> and added to the operational emission estimates.

### Operational Emissions

Operational emissions were also estimated using the most recent version of CalEEMod. Operational GHG emissions associated with the proposed Community Plan include both direct and indirect sources. Direct sources of emissions include vehicle trips, natural gas consumption, and landscape maintenance. Indirect sources of emissions include those that result in off-site emissions occurring from the project's operations, such as electricity and water consumption, and solid waste disposal.

The analysis estimates emissions from area, energy, mobile, waste, and water sources. Area sources produce those emissions that result from the application of architectural coating (standard building maintenance), the use of consumer products on-site, and the use of landscaping equipment. Energy sources include the consumption of natural gas and electricity as part of the annual project operations. Mobile sources include all vehicle trips (patron, employee, and vendor) associated with the project operation. Waste sources include those that produce the emissions associated with the collection and disposal of solid waste generated in

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<sup>19</sup> The 30-year amortization is based on the typical lifetime of a landuse project once it is operational and is not a reflection of the amount of time it will take the project to be constructed. Because GHG emissions are cumulative, the total GHG emissions associated with construction is divided over the 30-year operational lifetime of the project then added to the operational emissions. This provides average operational emissions over the lifetime of the project.

the Plan Area. Finally, water emissions are those emissions associated with the energy used to transport and treat potable water consumed and wastewater generated by annual operations.

Long-term emissions of GHGs associated with the proposed Community Plan, including mobile- and area-source emissions, were modeled according to the size and the type of proposed land uses. Mass mobile-source emissions were modeled based on the daily vehicle trips that result from the proposed Community Plan as provided by the project specific traffic study.<sup>20</sup>

The total construction and operational emissions are compared to the 4.6 MT CO<sub>2</sub>e and 3.0 MT CO<sub>2</sub>e efficiency thresholds. If the emissions exceed the efficiency threshold, emission reductions measures are recommended.

### **Thresholds of Significance**

Based on the size and scope of the project, an impact would be considered significant if the proposed Community Plan:

- Generates GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Merced County has not established significance thresholds with respect to GHG emissions. Additionally, while Merced County is working on a climate action plan, one has not been completed or adopted. Merced County is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD also has not adopted significance thresholds; however, it has published Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects (SJVAPCD Guidance). According to the SJVAPCD Guidance, the District identifies a tiered approach for determining significance from GHG emissions as follows:

Tier 1: Project Exemption from CEQA

Tier 2: Project complies with an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions;

Tier 3: The project achieves the 29 percent GHG Emissions Reduction Target by using approved Best Management Practices (BMPs).

Tier 4: GHG emissions are quantified and then mitigation is applied to reduce GHG emissions to 29 percent below Business-as-Usual (BAU).

With respect to this project, the Tier 1 approach cannot be used as the proposed Community Plan is not exempt from CEQA. With respect to Tier 2, neither the State, nor the County of Merced has a qualified (CEQA verified and adopted) Climate Action Plan or other plan for reducing GHG Emissions. Therefore, Tier 2 cannot be used for determining significance with GHG emissions.

In light of the Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (CBD vs. CDFW), the use of either Tier 3 or Tier 4 as significance thresholds also are not recommended for determining significance. The California Supreme Court considered the CEQA issue of determining the significance of GHG emissions in its decision regarding CBD vs. CDFW. The Court questioned a common CEQA approach to GHG analyses for development projects that compares project emissions to the reductions from BAU

<sup>20</sup> KD Anderson and Associates, Inc., *Traffic Impact Analysis for Le Grand Community Plan Area*. August 7, 2018.

that will be needed statewide to reduce emissions to 1990 levels by 2020, as required by AB 32. The Court upheld the BAU method as valid in theory but concluded that the BAU method was improperly applied in the case of the Newhall project because the project target was incorrectly deemed consistent with the statewide emission target of 29 percent below BAU for the year 2020. In other words, the Court said that the percent below BAU target developed by the AB 32 Scoping Plan is intended as a measure of the GHG reduction effort required by the State as a whole, and it cannot necessarily be applied to the impacts of a specific project in a specific location. The Court provided some guidance to evaluating the cumulative significance of a proposed land use project's GHG emissions but noted that none of the approaches could be guaranteed to satisfy CEQA for a particular project. The Court's suggested "pathways to compliance" could include:

1. Use a geographically specific GHG emission reduction plan (e.g., climate action plan) that outlines how the jurisdiction will reduce emissions consistent with State reduction targets, to provide the basis for streamlining project-level CEQA analysis, as described in CEQA Section 15183.5.
2. Use the Scoping Plan's BAU reduction goal but provide substantial evidence to bridge the gap between the statewide goal and the project's emissions reductions.
3. Assess consistency with AB 32's goal in whole or part by looking to comply with regulatory programs designed to reduce GHG emissions from particular activities; as an example, the Court points out that projects consistent with an SB 375 SCS may need to reevaluate GHG emissions from automobiles and light trucks.
4. Rely on existing numerical thresholds of significance for GHG emissions, such as those developed by an air district.

As discussed previously, because there is not an existing qualified Climate Action Plan for the County, compliance pathway #1 is not a viable method for determining significance for this project.

Regarding compliance pathway #2, the Court acknowledged that "a business-as-usual comparison based on the Scoping Plan's methodology may be possible," and that "a lead agency might be able to determine what level of reduction from business as usual a new land use development at the proposed location must contribute in order to comply with statewide goals." However, in this case there is not sufficient information to assess whether the project's emissions can be compared with the state target of 29 percent below BAU by 2020. Therefore, this approach is not applicable to this project.

Compliance pathway #3 requires the analysis to show how regulatory programs or performance-based standards apply to a project's emissions, but this type of analysis can be difficult, especially if some GHG-emitting elements of projects are covered by such standards and others are not. Transportation emissions in particular are not regulated by the Scoping Plan because local government retains control over the location and density of residential and commercial development. Therefore, this approach is not applicable to this project.

Compliance pathway #4 is the most straightforward approach to analysis. Although no formal significance threshold for GHG emissions associated with development-type land uses has been adopted by the County or SJVAPCD at this juncture, Section 15064.7(c) of the State CEQA Guidelines states "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies..." Both the Bay Area Air Quality Management District (BAAQMD) and South Coast Air Quality Management District (SCAQMD) have proposed efficiency thresholds per service population for projects. The BAAQMD published a threshold of 4.6 metric tons carbon dioxide

equivalents (MTCO<sub>2</sub>e) per year per service population for projects.<sup>21</sup> In 2009 the SCAQMD proposed the same 4.6 MTCO<sub>2</sub>e threshold<sup>22</sup> and in 2010 they proposed a revised threshold of 4.8 MTCO<sub>2</sub>e.<sup>23</sup>

The 4.6 MTCO<sub>2</sub>e threshold was derived by the BAAQMD and SCAQMD by taking the 2020 statewide GHG reduction target for land use of 295,530,000 MTCO<sub>2</sub>e/year and dividing it by the total estimated statewide population plus employment (64,331,584). In 2010 the SCAQMD suggested that instead of the using the statewide employment values that the employment values for land use only should be used in determining GHG emissions. This would change the service population (population plus employment) to 61,201,421. Dividing the GHG reduction target by the revised service population results in a per service population threshold of 4.8.

In addition, in 2010 the SCAQMD proposed a 2035 threshold of 3.0 MTCO<sub>2</sub>e per year per service population to be consistent with the reduction target of reducing GHG emissions to 40 percent below 1990 levels by 2035. The 40 percent below 1990 goals is consistent with the current State goals to reduce emissions; however, the SCAQMD goal is set five years after the currently adopted State goals of reaching this level of reduction by 2030.

Because these thresholds are based on the statewide GHG emissions reduction targets, they would be valid throughout the state and not restricted to either the SCAQMD or BAAQMD's jurisdiction, and also represent a statewide efficiency measure and not one based on local GHG emissions.

Applying similar methodology to Unincorporated Merced County the threshold for 2020 would be 14.2 MT CO<sub>2</sub>e annually (2,260,000 MTCO<sub>2</sub>e/year divided by 127,844 population plus 37,300 jobs).<sup>24,25,26</sup> While there is not enough information to identify a 2035 threshold specific for the project, a 2030 threshold (consistent with the new State reduction target date) of 6.7 MTCO<sub>2</sub>e could be used as an interim threshold (1,657,333 MTCO<sub>2</sub>e/year divided by 152,500 population and 95,600 jobs).<sup>27,28,29</sup> This threshold determination is provided in Appendix E. However, there are some inconsistencies in the determination of these thresholds. While the 1990 target and population are taken from the same source (Merced County General Plan Revised Draft Background Report), the employment statistic is taken from the 2030 Merced County General Plan Draft PEIR. The population in the Draft PEIR is inconsistent with the population stated in the Draft Background Report and therefore employment numbers may not be consistent with the assumptions used in the Draft Background Report (there are no employment values provide in the Draft Background Report).

21 Bay Area Air Quality Management District (BAAQMD, Revised Draft Options and Draft Justification Report, October 2009.

22 South Coast Air Quality Management District (SCAQMD), Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #14, November 19, 2009.

23 South Coast Air Quality Management District, Minutes for the GHG CEQA Significance Threshold Working Group # 15. September 28, 2010.

24 Merced County, Merced County General Plan Revised Draft Background Report, December 2013, Chapter 12 Climate Change.

25 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Chapter 16 Population and Housing.

26 Merced County, Merced County General Plan Revised Draft Background Report, December 2013, Chapter 2 Demographics and Economics.

27 Merced County, Merced County General Plan Revised Draft Background Report, December 2013, Chapter 12 Climate Change.

28 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Chapter 16 Population and Housing.

29 Merced County, Merced County General Plan Revised Draft Background Report, December 2013, Chapter 12 Climate Change.

Additionally, the difference in efficiency thresholds between the SCAQMD/BAAQMD thresholds and the Merced County specific threshold is a result of the heavy agricultural uses within the Merced County. Agriculture results in a significant amount of GHG emissions (64.9 percent of 2005 emissions within Merced County).

The new growth in the County is trending away from agriculture uses which emits a large amount of GHG emissions but has a relatively low employment base. As the percentage of GHG emissions is reduced at a greater rate than the percentage of labor, the per service population emissions would decrease. Therefore, an efficiency threshold that is not dominated by agriculture emissions would be more applicable to the County. Because Merced County does not have a qualified greenhouse gas reduction plan, there are inconsistencies with the background information used to determine County specific thresholds, the County is heavily agricultural compared to the non-agricultural uses within the proposed Community Plan and additional proposed growth, and because the SCAQMD/BAAQMD thresholds are more conservative, this analysis uses the 4.6 MT CO<sub>2</sub>e 2020 and 3.0 MT CO<sub>2</sub>e 2035 efficiency thresholds. However, as the state reductions are required to reach the 40 percent goal by 2030, for the purposes of this project the 3.0 MT CO<sub>2</sub>e efficiency threshold will be used as the 2030 threshold to be consistent with State requirements.

#### **Cumulative Impacts and Mitigation Measures**

An individual project in and of itself could not alter the climate globally, so climate change impacts are considered only from a cumulative perspective.

#### **4.5-1 The proposed Community Plan would generate GHG emissions, either directly or indirectly, that would contribute to cumulative increases in greenhouse gas emissions and climate change.**

**Applicable Regulations:** AB 32, SB 97, SB 375

**Significance:** Significant

**Mitigation:** Mitigation Measure 4.5-1:

*Prior to approval of a small lot tentative map or, for non-residential development, a use permit, the applicant shall provide a detailed analysis of anticipated GHG emissions attributable to that project. Where individual project emissions would exceed 4.6 MT CO<sub>2</sub>e annually (prior to 2020) or 3.0 MT CO<sub>2</sub>e annually (prior to 2030), measures shall be identified to reduce project emissions below the target level or by a minimum of 15 percent. Or, if a certified Climate Action Plan has been adopted by the County, the applicant shall demonstrate that the project is consistent with the CAP. If a project can not achieve the targets, then it shall still implement measures to reduce project emissions to the extent feasible for that project. Measures to reduce project GHG emissions may include, but are not limited to the following:*

- (a) **Climate Action Plan Compliance:** *The project may comply with a locally adopted qualified Climate Action Plan if one has been adopted prior to the implementation of the individual development.<sup>30</sup>*
- (b) **Implement Appendix J of the Final Staff Report – Climate Action Plan:**

<sup>30</sup> While the SJVAPCD has adopted a Climate Action Plan, it is based on the 29 percent reduction from BAU which was contested by recent court cases and invalidated for project compliance. Therefore, unless SJVAPCD updates or revises the Climate Action Plan with respect to the new court decisions, it is not recommended that the current SJVAPCD Climate Action Plan be used for compliance determination.

*Addressing GHG Emission Impacts under CEQA<sup>31</sup>, or a newer version as applicable, to the reduce emissions to below the regional thresholds.*

- (c) **Energy Conservation.** *Build homes and businesses within the community to be 20 percent more efficient than 2013 Title 24 requirements or the current Title 24 requirement, whichever is more stringent.*
- (d) **Area Source Emissions Reductions:** *Implement the following to reduce GHG Area source emissions:*
  - i. *No residential development shall include a fireplace.*
  - ii. *For commercial and residential development, electrical outlets shall be provided on the exterior of all buildings.*
- (e) **Water Conservation:** *Incorporate the following measures into residential and commercial development as applicable.*
  - i. *Install low-flow bathroom faucets*
  - ii. *Install low-flow kitchen faucets.*
  - iii. *Install low-flow toilets and showers.*
  - iv. *Use water-efficient irrigation systems.*
- (f) **TDM Program.** *Develop a TDM Program for onsite workers. Individual employers would be responsible for funding and overseeing the trip reduction/TDM programs. It is suggested that Community businesses work together to promote and enhance the VMT offsets that would occur from TDM Program implementation. TDM strategies may include, but are not limited to, the following:*
  - i. *Establishment of carpool, buspool, or vanpool programs;*
  - ii. *Cash allowances, passes or other public transit subsidies and purchase incentives;*
  - iii. *Computerized commuter rideshare matching services;*
  - iv. *Guaranteed ride-home program for ridesharing;*
  - v. *Encourage telecommuting and alternative work schedules where feasible; and*
  - vi. *Designation of a community transportation coordinator for the local businesses.*
- (g) **Recycling Requirement.** *To the maximum practical extent, recyclable materials, from operation and construction activities, will be reused or recycled.*

**Residual Significance:** Significant

The proposed Community Plan would generate GHG emissions from the construction and operation of the proposed land uses. Direct sources of GHGs associated with the proposed Community Plan would consist of mobile sources from on-site construction equipment, haul trucks, and delivery and worker vehicle trips, as well as trips generated by new development after operation begins. Indirect GHG emissions would be associated with electrical and water

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31 San Joaquin Valley Air Pollution Control District, *Final Staff Report- Climate Action Plan: Addressing GHG Emissions Impacts Under CEQA*. December 17, 2009.

consumption, solid waste generation, and area sources associated with the proposed land uses.

### **Construction**

Annual emissions from the overall operations anticipated to occur are provided in Table 4.5-2. Because there are no development projects proposed at this time, and the timing of development will vary according to market conditions and other factors, the analysis assumes that a maximum of 10 percent would be built annually. Assumptions and modeling output are included in Appendix E.

TABLE 4.5-2 Construction GHG Emissions MT/yr				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2017	435	3	0	437
Total Project Emissions				8,749
Amortized Emissions				292
Source: Refer to Calculation summaries and CalEEMod Output Sheets, Appendix E.				

As shown in Table 4.5-2, the proposed Community Plan's estimated GHG emissions during construction would result in a total of 8,749 MT CO<sub>2</sub>e emitted during the entire construction timeframe. The total emissions are based on a 20-year buildout scenario and conservative construction assumptions. This results in a 292 MT CO<sub>2</sub>e amortized emission. Amortized emissions divide the total construction emissions for the project by an anticipated 30-year project lifetime (i.e., how long the project is anticipated to be in operation after construction is concluded). Because GHG impacts are cumulative in nature, the amortized construction emissions are added to the annual operational emissions to provide a total annual emissions estimate. The total emissions estimate is then compared to the 2020 and 2030 thresholds, shown in Table 4.5-3 below.

### **Operation**

Annual emissions from the operations anticipated to occur at project buildout are provided in Table 4.5-3. As shown, the proposed Community Plan's total estimated GHG emissions, including amortized construction emissions, would exceed both the 2020 and 2030 thresholds. Because GHG emissions are cumulative, emissions from construction are included with the overall project emissions for compliance with the applicable threshold. Because the majority of the project would be built subsequent to 2020, the 2030 threshold is the most appropriate for which to determine significance. Therefore, without mitigation, GHG emissions from the project have the potential to be significant.

Implementation of Mitigation Measure 4.5-1 would reduce GHG emissions. However, because the type and extent of measures that could be implemented will be dependent on the individual developments within the Plan Area, the total amount of reductions toward the program level Community Plan analysis cannot be quantified at this time. Furthermore, it may not be feasible for all projects to achieve the reduction targets. For example, the ability of a business to affect employee vehicle miles traveled would depend in part on the number of employees, where they live, and the availability of regional programs such as transit. For example, low-income housing may not be able to afford improvements at the level necessary to achieve the targeted reductions. Ultimately, the County will address GHG emissions more regionally, as called for in

TABLE 4.5-3 Unmitigated Project GHG Emissions MT/yr				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2020 Emissions Comparison				
Amortized Construction				292
Operational Emissions				
Area	271	0	1	273
Energy	2,285	3	11	2,299
Mobile	9,069	14	0	9,083
Waste	178	263	0	441
Water	111	18	17	146
Total Operational				12,241
Maximum Project Emissions				12,533
Service Population <sup>1</sup>				2,381
Emissions per service population				5.26
Threshold (2020)				4.6
Exceeds Threshold				Yes
2035 Emissions Comparison <sup>2</sup>				
Amortized Construction				292
Operational Emissions				
Area	271	0	1	273
Energy	2,018	3	11	2,032
Mobile	6,881	10	0	6,891
Waste	178	263	0	441
Water	98	18	17	133
Total Operational				9,769
Maximum Project Emissions				10,061
Service Population <sup>1</sup>				2,877
Emissions per service population				3.50
Threshold (2030)				3
Exceeds Threshold				Yes

<sup>1</sup> Service population is the total number of residents plus employees.

<sup>2</sup> The buildout year for the project is 2035, however because the technology to reach the 2050 goal is not currently available, the 2030 threshold is used to determine significance. Since the project is significant with respect to the 2030 threshold, it would be assumed to be significant with respect to any future year thresholds as well.

Source: Refer to Calculation summaries and CalEEMod Output Sheets, Appendix E.



General Plan Policy AQ-1.5, which will develop countywide strategies for achieving the GHG targets.<sup>32</sup> Compliance with those strategies should reduce the GHG impacts to a less-than-significant level, but the timing and requirements of such strategies are unknown.

Because the feasibility of achieving the emissions reduction targets by individual projects is uncertain at this time, and future requirements through a CAP or similar plan are unknown, the project contribution toward cumulative GHG emissions is considered significant and unavoidable.

**4.5-2: The proposed Community Plan could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.**

**Applicable Regulations:** AB 32, SB 97, SB 375

**Mitigation:** Mitigation Measure 4.5-2:

*Implement Mitigation Measure 4.5-1.*

**Residual Significance:** Significant

**Scoping Plan**

The CARB Scoping Plan lays out numerous reduction strategies that will be achieved at the State level, like the Low Carbon Fuel Standard that would change the make-up of the fuel used to reduce GHG emissions. These types of policies are beyond the ability of the project to implement. The Scoping Plan identified renewable energy and energy efficiency reduction strategies are designed for projects that have a significant amount of long-term energy consumption and structure development. The project would implement energy efficiency and renewable energy to the extent needed to reduce emissions or to the extent feasible for each individual development, as required by Mitigation Measure 4.5-1. Therefore, the proposed Community Plan would not hinder the implementation of the CARB Scoping Plan, and the project would result in less than significant impacts.

**AB 32, EO S-3-05, and EO B-30-15**

The adopted AB 32 Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems. EO S-3-05 and EO B-30-15 establish the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 emission levels,
- By 2020, reduce GHG emissions to 1990 emission levels,
- By 2030, reduce GHG emissions to 40 percent below 1990 levels, and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

As discussed in the analysis of Impact 4.5-1, the proposed Community Plan would exceed the per-service population threshold of 4.6 MT CO<sub>2</sub>e/service population-year, demonstrating the project would not be consistent with the AB-32 goal of reducing GHG emissions to 1990 levels by the year 2020.

<sup>32</sup> Merced County, *2030 Merced County General Plan*, December 10, 2013.

As discussed in the Significance Thresholds section above, and demonstrated in the analysis of Impact 4.5-1, the project cannot demonstrate consistency with EO S-3-05's 2030 reduction goal of 40 percent below 1990 levels.

The analysis does not demonstrate the project's consistency with EO S-3-05 or EO B-30-15 targets of reducing GHG emissions to 80 percent below 1990 levels by 2050. The project will be built out between 2030 and 2050 and as the project cannot meet the 2030 reduction goal, it also would not meet the 2050 goal, or an interim year goal designed to keep the reductions on track for the 2050 goal. Additionally, current technology is not available for projects to reduce emissions to the 2050 level. Therefore, requiring a project to comply with a threshold well beyond the current technology is impractical, particularly when that project could be built out long before the technology catches up to the reduction requirements. The State is working to produce an updated Scoping Plan that will address state wide reductions beyond 2020 and may provide a mechanism to analyze projects to the year 2050. However, until such time, there is no existing technology that will allow a project to demonstrate reductions to 2050 levels.

The project cannot demonstrate compliance with the EO S-3-05 and EO B-30-15 requirement to reduce emissions to 40 percent below 1990 levels by 2030, even with the implementation of the identified mitigation. Therefore, the proposed Community Plan impacts would be significant and unavoidable.

***Merced County General Plan***

The Merced County General Plan has several policies that specifically identify measures to reduce GHG emissions. The project would comply with the policies outlined in the regulatory section to the extent applicable to the project and as outlined in Mitigation Measure 4.5-1. Therefore, the proposed Community Plan would be consistent with the Merced County General Plan policies and this impact would be less than significant.

## **4.6. LAND USE**

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### INTRODUCTION

This section addresses the compatibility of the land uses within the Plan Area, compatibility of the urban uses of the proposed Community Plan with the surrounding land uses, consistency of the proposed Community Plan with County General Plan land use policies, and consistency with Local Agency Formation Commission (LAFCO) policies regarding revisions to the Community Plan and Le Grand Community Services District (LGCS D) boundaries.

No comments received in response to the Notice of Preparation (NOP) specifically addressed the land use diagram or planning policies or changes to the Plan Area and/or LGCS D boundaries..

As discussed in Chapter 5, Environmental Checklist, the proposed Community Plan would not divide the existing community or interfere with implementation of an applicable habitat conservation plan or natural community conservation plan. Therefore, these issues are not addressed in this section.

### ENVIRONMENTAL SETTING

#### **Existing Land Uses**

Le Grand is an unincorporated community located in Merced County, approximately 12 miles east of the City of Merced (see Figure 3-1 in Chapter 3) and eight miles north of the City of Chowchilla. The closest highway is Highway 99, approximately 6 miles to the west of Le Grand. Le Grand Road and Santa Fe Avenue are the primary roadways that connect Le Grand to other communities. Most of the Plan Area is located west of Santa Fe Avenue (see Figure 3-2 in Chapter 3).

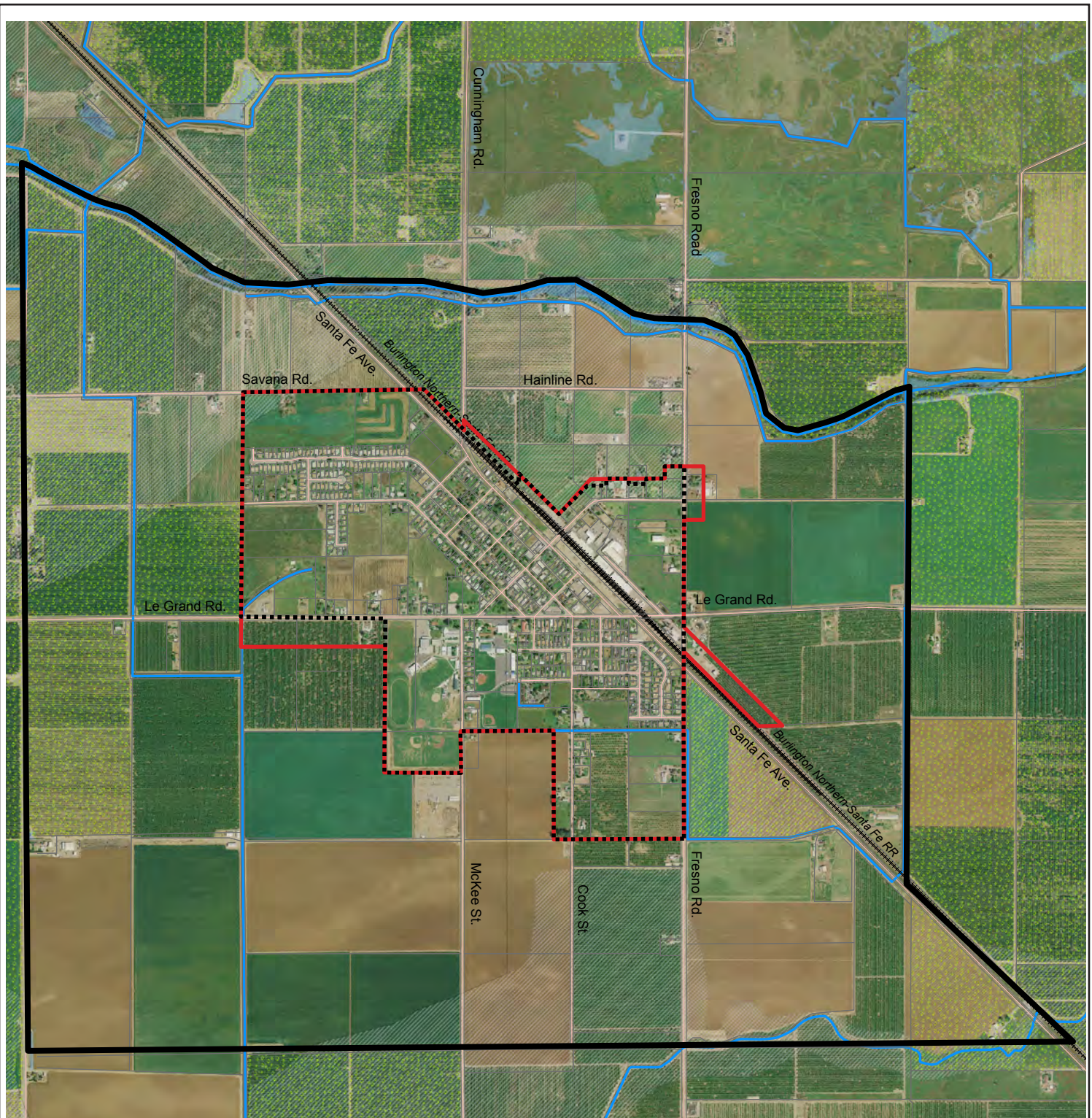
The Burlington Northern-Santa Fe Railroad (BNSF) runs along the northeast corner of the Plan Area, parallel to Santa Fe Avenue.

Le Grand is a small, agricultural-based community surrounded by rural agricultural operations typical of Merced County, including orchards, row crops, and grazing land. The existing Le Grand Community Plan boundaries encompass approximately 458 acres. The Proposed Project would reduce the size of the Community Plan to 430 acres.

The Le Grand community serves largely as a bedroom community for families working in the City of Merced and those working in agricultural operations. The predominant residential land uses are single-family homes. The community core has higher densities of residential development, with larger lot and rural residences located outside the core. Commercial uses, including retail and office, are also located primarily in the community core. The majority of developed and undeveloped land within the Plan Area is located west of the BNSF rail line. Figure 4.6-1 provides an aerial view of existing land use patterns.

Approximately 57 percent (248 acres) of the proposed Plan Area is developed with urban uses. Of the undeveloped area, 111 acres are identified as Prime Farmland. There are no agricultural easements or Williamson Act properties within the Le Grand community, although there are numerous Williamson Act properties in the surrounding area (see Section 4.1, Agricultural Resources).





- Le Grand Community Plan Area Boundary
- - - - - Existing Boundary
- - - - - Proposed Boundary
- Study Area
- Natural Waterways and Canals



SOURCE: Merced County Planning And Community Development Dept., 2018.

0 1,000 2,000 3,000 4,000

Scale In Feet

4.6-2

**Figure 4.6-1  
Plan Area  
And Vicinity**



There are three schools in Le Grand located adjacent to one another and close to the existing Le Grand Community Park and Le Grand Elementary Sports Park. These park spaces provide a focus for public activity in the community.

There are also a number of agricultural-related businesses located in and near the Plan Area. The largest single private source of employment in Le Grand is Live Oak Farms, an agricultural storage and packing business. There are several commercial trucking operations located in and near Le Grand. Three large almond processing plants are located approximately 5 miles south of Le Grand. There are also a small number of local commercial businesses in the community, including a health care center, a general store, post office, and convenience store/gas station, as well as restaurants and services.

### **Land Use Designations and Zoning**

Existing land use designations within the Plan Area include Rural, Agricultural, Low, Medium and High Density Residential<sup>1</sup>, General Commercial, Commercial-Transition, Industrial, Institutional, and Recreation. Current land use designations are shown in Figure 4.6-2. Existing zoning is shown in Figure 4.6-3. Under the proposed Community Plan, the land uses would be similar, but there would not be Rural Residential or Agricultural Residential uses, and two areas would be designated Urban Reserve (see Figure 3-3 and Table 3-1 in Chapter 3, Project Description). In addition, a Mixed-Use designation has been added to the land uses in the Community Plan, replacing the Commercial-Transition designation and some areas designated General Commercial.

As shown in Figure 3-3 in Chapter 3, Santa Fe Avenue and Jefferson Street would continue to serve as the core commercial areas. Industrial uses would be designated along the railroad corridor, reflecting current conditions. Denser residential uses and commercial and mixed uses would continue to be located in the community core, primarily in the area between Adams Street and Madison Street. With the exception of the High Density Residential designation north of the high school and a Medium Density Residential area southeast of the elementary school, the areas south and west of the community core would be designated for Low and some Very Low Residential uses. The area east of the rail line would be designated Very Low Density Residential, which would require 1-acre minimum parcels, resulting in a development pattern similar to existing conditions in this area. Several parcels would be designated Institutional, reflecting current uses, including the three schools, the Veteran's Memorial Hall, a corporation yard and the Fire Station.

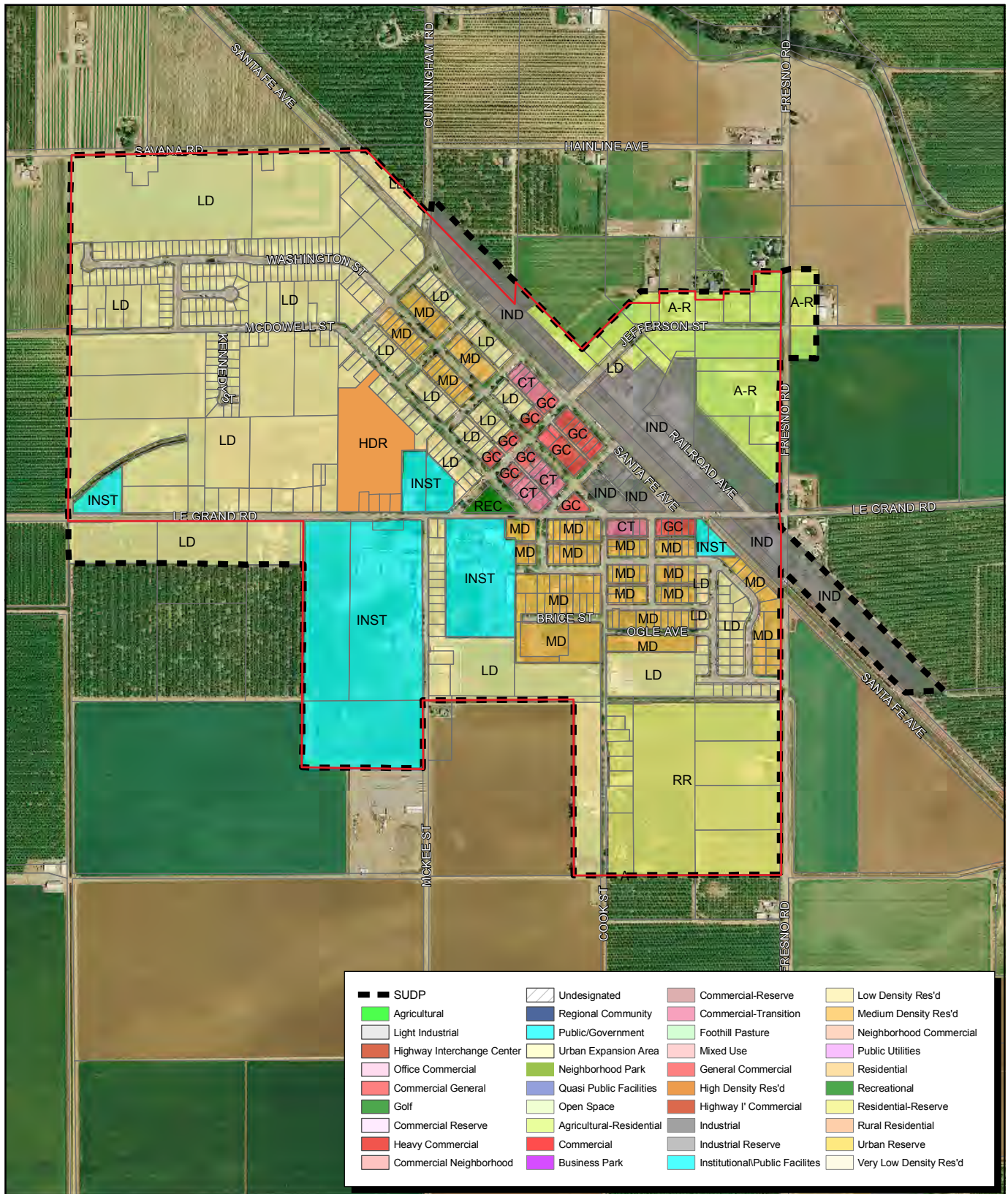
### **Surrounding Land Uses**

The area immediately surrounding Le Grand is primarily agricultural, supporting cultivated crops, including orchards, field crops and other agricultural operations. A substantial amount of land outside of the Plan Area is designated Prime Farmland. There are also a large number of parcels under Williamson Act contracts within one mile of the Plan Area, although none occur within the Plan Area. There are no dairies or concentrated animal feeding operations (CAFOs) located within ½ mile of the Plan Area.

### **Le Grand Community Services District Boundaries**

The Le Grand Community Services District (LGCSD) Sphere of Influence does not include two relatively large portions of the Plan Area, as shown in Figure 4.6-4. In order to provide services to those portions of the Plan Area, they must be incorporated into the LGCSD Sphere and ultimately annexed to the LGCSD. In addition, the area south of Le Grand Road and west of the high school is proposed to be taken out of the Community Plan area, and will therefore need to

<sup>1</sup> Although not shown in Figure 4.6-2, the Merced County Board of Supervisors re-designated and rezoned a 10-acre parcel north of the Le Grand High School for High Density Residential uses.



— Existing Community Plan Boundary  
 — Proposed Community Plan Boundary

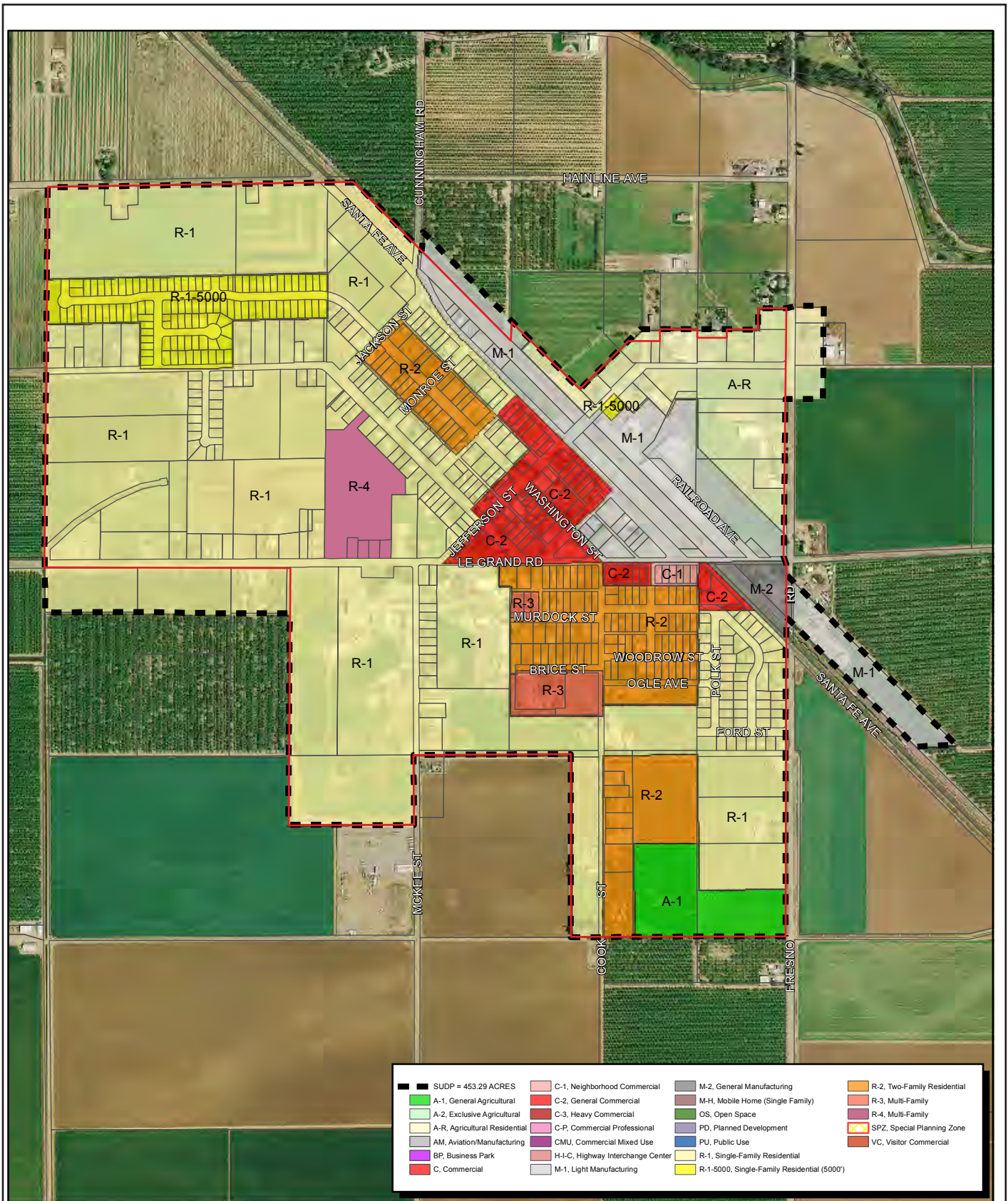


0 600 1,200 1,800 2,400  
 Scale In Feet

SOURCE: Merced County  
 Community And Economic  
 Development Department, 2018.

**Figure 4.6-2**  
**Existing Land Use**  
**Designations**





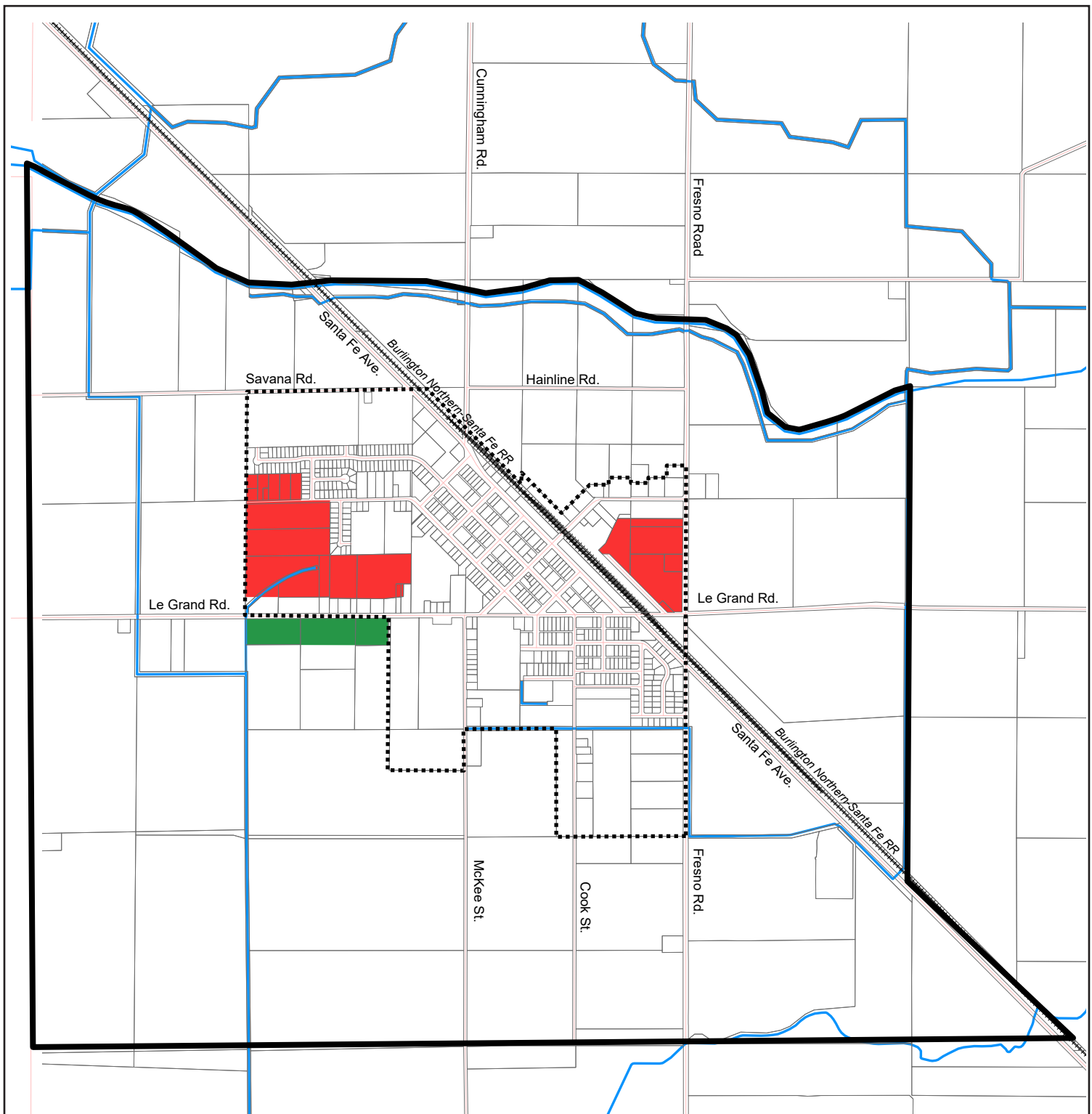
■ Existing Community Plan Boundary  
 ■ Proposed Community Plan Boundary

0 600 1,200 1,800 2,400  
 Scale In Feet

SOURCE: Merced County  
 Community And Economic  
 Development Department, 2018.

**Figure 4.6-3**  
**Existing Zoning**





- Areas To Be Annexed To Le Grand Community Services District
- Area To Be Removed From LGCSD Sphere
- Proposed Community Plan Boundary
- Study Area
- Natural Waterways and Canals

0 1,000 2,000 3,000 4,000  
 Scale In Feet

**Figure 4.6-4**

**Le Grand Community  
 Services District  
 SOI Expansion Area**

be removed from the LGCSD Sphere. These revisions to the LGCSD Sphere would be subject to approval by the Merced County LAFCO.

As discussed in Chapter 3, Project Description, buildout of the proposed Community Plan would require additional water supply (groundwater wells) and storage, and generate additional wastewater. The LGCSD wastewater treatment plant (WWTP) has the capacity to treat the additional wastewater, but would require additional disposal area for treated effluent (reclamation). The LGCSD would need to acquire approximately 30 to 35 additional acres of farmland for reclamation. This additional acreage would likely be located outside of the LGCSD Sphere of Influence (SOI) and boundaries, in which case the LAFCO action would also be required to include reclamation areas within the LGCSD boundaries.

## **REGULATORY SETTING**

### **Federal Regulations**

There are no federal laws or regulations affecting the land use and agriculture issues analyzed in this EIR.

### **State Regulations**

#### **Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000**

The Cortese-Knox-Hertzberg Act governs reorganization of cities and districts. Section 56001 of the Act requires that a LAFCO be formed in every county. Each LAFCO reviews and approves annexation to and reorganization of cities and urban services districts, in order to encourage orderly growth and development essential to the social, fiscal, and economic wellbeing of the State. Specific elements established by the Act encourage orderly development patterns by discouraging urban sprawl and preserving open-space and prime agricultural lands.

In order to implement the requirements listed above, LAFCOs have the specific authority to review the following actions:

- Annexations to, or detachment from, cities or districts,
- Formations or dissolution of districts,
- Incorporation or disincorporation of cities,
- Consolidation or reorganization of cities and districts,
- Establishment of subsidiary districts, and
- Development of, and amendments to, spheres of influence.

With respect to the proposed Community Plan, LAFCO would need to approve the Sphere expansion to include two portions of the Plan Area in the LGCSD service area before the LGCSD could provide water or wastewater service to those areas.

### **Local Regulations**

#### **Merced County General Plan**

The Merced County General Plan Land Use Element identifies appropriate land uses for all unincorporated areas of the county. This element provides the policy context for Merced County to achieve its vision for both rural and urban land use. This element includes a description of the goals, policies, and standards for future land use, development, community design, energy efficiency, and agriculture/resource protection in unincorporated Merced County.

Community plans serve as a bridge between the countywide goals, policies, and implementation programs in the General Plan and the specific needs of each unincorporated community. Community plans supplement the General Plan to specifically address a community's needs based on its unique physical, demographic, and economic characteristics. Development within Urban Communities must be consistent with both the General Plan and the Community Plan.

The 2030 Merced County General Plan Land Use Diagram identifies two rural land use designations and six urban land use boundaries. Each of these boundaries has a unique purpose and specific policies guiding their future growth and development. The Plan Area is designated an Urban Community.

#### Urban Communities

Urban Communities are intended to accommodate all classifications of urban land use. Each Urban Community has a boundary line that is recognized as the ultimate growth boundary for the community over the life of the General Plan or the individual Community Plan.

The Urban Communities designation includes areas in unincorporated Merced County that have a range of housing densities, commercial uses, public sewer and/or water infrastructure, public services, and employment-generating land uses. (Note: these areas were known under the previous General Plan as "Specific Urban Development Plans."). Urban Communities have five main purposes that are the main components of the Urban Centered Concept:

- To ensure future growth occurs in an orderly and logical manner;
- To ensure land is used efficiently;
- To reduce the conversion of productive agricultural land to urban uses;
- To ensure the County's planning efforts are complementary to those of the cities; and
- To ensure future urban development occurs where adequate public infrastructure and services are available.

#### Urban Communities Policies

The goals and policies applicable to the Urban Communities designation are divided into five subsections: growth and development; community character and design; residential development; commercial, office, and mixed-use development; and business park and industrial development. The Land Use Element states that these Urban Communities policies are purposely general in nature. Therefore, this EIR section does not identify every policy noted under this designation. However, these policies generally seek to ensure that there is a wide range of housing types, promote jobs to housing balance, promote smart growth, preserve and enhance historic character, ensure adequate public facilities, and direct new growth away from productive agricultural land.

#### Land Use Element Policies

The General Plan Land Use Element also includes the following land use goal and policies that apply to the proposed Community Plan. The following Countywide Growth and Development goal and policies apply to the entire County.

**Goal LU-1: Create a countywide land use pattern that enhances the integrity of both urban and rural areas by focusing urban growth towards existing or suitably located new communities.**

#### **Policy LU-1.1: Countywide Development**

Direct urban development to areas within adopted urban boundaries of cities, Urban Communities, and Highway Interchange Centers in order to preserve productive agriculture, limit

urban sprawl, and protect natural resources.

**Policy LU-1.4: Urban Communities**

Continue to support compact Urban Communities through the efficient use of land to reduce conflicts with agricultural and open space areas, and minimize public service costs.

**Policy LU-1.5: New Urban Communities**

Consider the establishment of new Urban Communities in areas off of productive agricultural land (as defined in the General Plan Glossary) which satisfy the policy requirements under Goal LU-5.F, in order to accommodate projected future growth.

**Policy LU-1.7: Compact Development**

Promote compact development in urban communities that supports pedestrian activity and transit ridership.

**Policy LU-1.8: Innovative Development**

Promote flexibility and innovation through the use of planned unit developments, development agreements, community plans, specific plans, mixed-use projects, and other innovative development and planning techniques.

**Policy LU-1.10: Orderly Community Growth**

Require the orderly, well planned, and balanced growth of the unincorporated communities consistent with the limits imposed by local infrastructure, services, public facilities, and their ability to assimilate growth.

**Policy LU-1.11: Infrastructure Equity**

Ensure that new development does not erode current levels of County service and that demands on public facilities and services from new development do not result in an unreasonable and inequitable burden on existing residents and property owners.

**Merced County Code**

The Merced County Code (MCC) provides performance standards to ensure compatibility between land uses by setting limits, whether generic or quantitative, for dust, heat, electrical disturbances, fumes, vapors, odor, noise, lighting and so forth.

**LAFCO**

Under the proposed Community Plan, the Community Plan boundaries would be revised to remove approximately 28 acres. In order to provide water and wastewater services to the entire Plan Area, the LGCSO SOI would need to be revised to include the portions shown in Figure 4.6-2 that are not presently within the LGCSO boundaries. Changes to the LGCSO boundaries must be approved by the Merced County LAFCO.

The Merced County LAFCO has established the following goals:

1. Planned, well ordered, efficient development patterns;
2. Governmental services are delivered efficiently and effectively;
3. The need to provide for urban development is balanced with the conservation of open space and prime agricultural lands;
4. Urban land use patterns maximize the opportunity for local jurisdictions to provide their fair share of regional housing needs for all income levels.

The following Merced County LAFCO policies are used to encourage the orderly development of land in the County and to preserve prime agricultural land.

Agricultural Policies

Objective I.A Prime agricultural land is protected and conserved while ensuring there are adequate areas for efficient and orderly growth.

Policy 1: In determining whether a City or Special District Annexation would affect prime agricultural land, the Commission shall apply the definition of “prime agricultural land” established under Section 56064 of the Cortese/Knox/Hertzberg Reorganization Act of 2000:

- a. Land that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:
- b. Land that, if irrigated, qualifies for rating as Class I or Class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not the land is actually irrigated, provided that irrigation is feasible.
- c. Land that qualifies for rating 80 through 100 Stories Index Rating.
- d. Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Handbook on Range and Related Grazing Lands, July, 1967, developed pursuant to Public Law 46, December 1935.
- e. Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.
- f. Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred (\$400) per acre for three of the previous five calendar years.

Policy 2: At the time of adoption of a sphere of influence for a city or urban service district, efforts to direct growth away from large concentrations of prime agricultural land shall be demonstrated, recognizing that some conversion of prime lands may be inevitable.

Annexation Policies

Objective III. B: Urban service district annexations reflect a planned, logical and orderly progression of urban expansion and promote efficient delivery of urban services.

Policy 1: Annexation boundaries should form a logical and efficient urban development pattern.

Implementation: Utilize the following criteria in the review of annexation requests:

1. The proposed annexation boundary is appropriate in relation to existing district boundaries.
2. Avoid the creation of islands, corridors, peninsulas or other undesirable boundary characteristics that lead to service inefficiencies and potential land use conflicts.
3. Proximity of the annexation to existing developed or developing areas within the district. Annexations shall be contiguous with existing district boundaries unless it can be demonstrated to be orderly, logical or appropriate under special circumstances.
4. Evaluate any alternatives to the annexation which would be more consistent with orderly growth, open space protection and public service efficiency goals of LAFCO.
5. The existence of any social or economic communities of interest within the proposed annexation territory including the relationship between any adjacent or nearby cities or special districts which provide urban services that may affect the territory.
6. The use of natural or physical features (such as canals or roads) as annexation boundaries is encouraged over use of property lines. All annexation requests that do not

conform to existing lines of assessment or property lines, shall be justified by the proponent.

Policy 2: Annexation proposals should be consistent with and implement the County General Plan and district Sphere of Influence policies:

Implementation: Utilize the following criteria in the review of annexation requests:

1. Consistency of the proposal with County General Plan and Community Plan policy including planned land use designation, densities and other land use and development policy.
2. Consistency with planned phasing of growth and improvements as defined in the County General Plan and Community Plan.
3. Consistency with planned phasing of growth and improvements as defined in the County's General Plan and/or district Sphere of Influence Report.
4. Consistency with adopted open space and conservation policies of the County.
5. The annexation territory is designated for urban land uses in the County General Plan, when the annexation area is proposed for urban development.

Policy 3: Public services shall be available to all annexed land in an efficient and orderly manner.

Implementation: Utilize the following criteria in the review of annexation requests:

1. Adequacy of governmental services for both existing and proposed land uses within the annexation territory.
2. The ability to provide needed public services and facilities as demonstrated in the "plan for services", including the sufficiency of revenue sources for those services.
3. Timely availability of water supplies adequate for projected needs as specified in Section 56668(k) of the Cortese-Knox-Hertzberg Act of 2000.
4. Demonstration that public services will not be provided to annexing territory to the detriment of territory already within the District.

Policy 4: Promote a balance of housing for persons and families of all income levels.

Implementation: Utilize the following criteria in the review of annexation requests:

- a. The extent to which the proposal will assist the County in achieving its fair share of the regional housing needs as determined by the Merced County Association of Governments or the Housing Element of the Merced County General Plan.

Policy 5: Analysis of agricultural or open space impacts from an annexation will be minimized when the Commission can make a finding that these resources were fully addressed during establishment of the District's Sphere of Influence and the annexation is consistent with any related sphere policy to protect these resources.

Policy 6: Utilize considerations consistent with the Cortese-Knox-Hertzberg Act of 2000 when evaluating agricultural and open space impacts on an individual annexation level.

Implementation: Utilize the following criteria in the review of annexation requests:

1. Consider the amount of existing vacant land within the District that is available for similar

types of development to the proposed annexation. Make a comparison of existing vacant and available land to the amount of land needed to accommodate growth needs over a ten year period as established in the County's General Plan or other official projection such as that adopted by the Merced County Association of Governments. The district must provide evidence why the consideration of existing vacant land is not appropriate based on such factors as location, limitations to infrastructure, development constraints, agricultural viability, economic market conditions, or unique characteristics of the annexation project.

2. If the annexation involves the conversion of prime agricultural land or identified valuable open space land, consider alternatives to the annexation that avoid or reduce the impacts.
3. If annexation will result in urban development adjacent to existing agricultural lands, consider measures to minimize potential conflicts such as land use transitions or buffers and "right to farm" notification to future residents.

Typically, the issues listed above would be addressed within a County General Plan or Community Plan, then, at the time of a proposed Sphere amendment and/or boundary change(s), LAFCO would review whether the changes meet the above criteria. LAFCO would need to adopt findings for each of the criteria and indicate whether the changes conform to State and Merced County LAFCO policies. If LAFCO finds that the County General Plan or Community Plan does not satisfy the criteria in accordance with State and local LAFCO policies, the changes would not be approved.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The land use analysis evaluates whether the proposed Community Plan is consistent with applicable land use plans, specifically the General Plan Land Use Element and LAFCO policies. The analysis also examines land uses proposed within the Plan Area to determine whether they would be compatible with existing and proposed land uses. The extent to which County regulations and proposed Community Plan policies would address potential incompatibilities is considered in the analysis.

The proposed Community Plan does not include any specific development projects. In order to determine the potential impacts of the proposed Community Plan, the EIR assumes, at buildout, the land uses and levels of development shown in Chapter 3, Project Description (see Table 3-1 and Figures 3-3 and 3-4). If the proposed Community Plan is adopted, proposals for new development would need to demonstrate that they are consistent with the land use designations and policies of the adopted Community Plan. As such, this impact discussion evaluates categories of land uses as they relate to the existing site and proposed land use designations.

### **Standards of Significance**

For the purposes of this EIR, land use impacts are considered significant if the proposed Community Plan would:

- Result in land use designations that could result in incompatible uses;
- Be inconsistent with Merced County General Plan land use policies; or
- Be inconsistent with LAFCO guidelines.

### **Project-Specific Impacts and Mitigation Measures**

#### **4.6-1 The proposed Community Plan could result in incompatible land uses located in**

**proximity to one another within the Plan Area.**

**Applicable Regulations:** Merced County Zoning Ordinance Chapter 18.41

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Community Design Guidelines, Policies N-1 and N-2, Implementation Measure N-2

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.6-1:

*Implement Mitigation Measures 4.7-5 (Noise Sources).*

**Residual Significance:** Less than Significant

The proposed Community Plan update is intended to guide development in the Plan Area through 2035. The proposed Community Plan provides for increases in residential, industrial, and commercial development, accompanied by services needed to serve anticipated growth. The proposed Community Plan would require amending the County General Plan and provide policies to ensure that the Community Plan is implemented as envisioned by Le Grand residents and the County. The proposed Community Plan would revise the Land Use and Zoning Map for the Plan Area, as shown in Figures 3-3 and 3-4 of Chapter 3, Project Description. The proposed Community Plan also provides updated population data, infrastructure and school information, road cross sections, sidewalk priorities, bicycle paths, new policies, and community character/design guidelines.

The proposed Community Plan is projected to increase the community population to a total of approximately 3,679 residents, an increase of approximately 207 percent, assuming buildout of the Plan Area at the current average household size (3.36 persons per household based on the 2010 Census). While buildout of the proposed Community Plan would eventually increase the land use density and intensity compared to existing conditions, implementation of the proposed Community Plan would involve relatively minor changes to the type of land uses and the placement of land uses relative to existing conditions. As stated above, there would continue to be a mix of commercial and residential uses within the community core, particularly between Adams Street and Madison Street. The zoning would be changed to Mixed-Use or Mixed-Use Vertical in this area, replacing the Commercial-Transition zone and some General Commercial parcels. The Mixed-Use designations allow for both residential, retail, professional and similar uses within the same parcel. The Mixed-Use Vertical designation specifies that along Jefferson and Santa Fe Avenue, commercial and office uses must be located on the first floor. Residential uses could be located above the commercial spaces or elsewhere on the parcel.

Industrial uses would continue to be located along the rail line and Santa Fe Avenue. There would be no change in the location of Institutional uses (e.g., schools, fire station) or Recreational uses.

While the land use designations are similar to those that currently exist, there are areas where existing and/or proposed land uses could be considered incompatible with each other, unless aspects of those proposed land uses could be considered disruptive or annoying (e.g., dust and odor) are minimized through design standards and/or other appropriate regulations. Incompatibilities exist when different land uses are located in proximity with one another, and one or both of the proximate land uses allows for activities that are sensitive to disruption, or are



the cause of disruptions. Typical disruptions of residential uses would be noise, odor, use of potentially hazardous materials, differences in the mass and height of buildings, light, and reflective materials. Residential development can disrupt non-residential uses through complaints about noise, odor, or other operational factors. Therefore, residential development, which is considered “sensitive” to potential disruptions, is usually separated from uses that create those disruptions, such as dairies, industrial uses, and large commercial uses.

As shown in Figure 3-3 (see Chapter 3), the proposed Community Plan would locate residential uses of varying densities next to each other. For example, land designated High Density Residential would be bordered by Low Density Residential parcels. The residential land use pattern would be similar to existing conditions, and residential uses are generally compatible with one another.

The non-residential uses are generally located as needed to serve their intended use. Retail and other commercial uses would be located along Santa Fe Avenue and in the Mixed-Use area located within the community core along Jefferson Street. These land uses are typically more active, with loading docks, delivery vehicles, HVAC systems, and other features that can create noise, light and other activities that are disruptive to residences, particularly at night. The Community Character Design Guidelines of the proposed Community Plan establishes guidelines and development standards within the Plan Area. Building heights, landscaping and setback requirements are provided. These guidelines and standards would provide buffers, barriers, and transitions between sensitive uses and potentially disruptive activities. The standards and guidelines should result in compatible features with regard to use, noise, design character, and outdoor activities. For example, the design guidelines for General Commercial development address potential conflicts through the use of screening (9.2.4, 9.2.6), and cut-off lighting fixtures (9.2.4). The proposed Community Plan also calls for the use of landscaping to reduce potential visual, light and glare conflicts (Mixed-Use Design Guideline 9.3.6), and for loading and delivery facilities to be located to avoid noise and circulation conflicts when located adjacent to residential properties (Mixed-Use Design Guideline 9.3.1). The Merced County Code also contains regulations that address potential disruptions, such as requirements for exterior lighting to be hooded and directed away from adjoining parcels (Section 18.41.060).

Industrial uses are concentrated in the area on either side of the rail line and Santa Fe Avenue. Industrial uses would be bordered to the east by Very Low Residential uses. Due to the larger parcel size (minimum of one acre), residential development in this area will have more flexibility than higher density residences with respect to creating distance and screening from adjacent industrial operations. In addition, the proposed Community Plan guidelines call for the use of landscaping along property lines to provide screening, and for potential disruptive activities to be placed inside of buildings (Industrial Design Guideline 9.4.6).

Potential disruptions from noisy activities such as loading docks and HVAC systems, are addressed by Mitigation Measure 4.7-5 in Chapter 4.7, Noise.

Compliance with the Merced County Code, the proposed Community Plan Design Guidelines, and Mitigation Measure 4.7-5 would ensure that commercial, mixed-use, industrial and public (institutional) uses are compatible with adjacent residential uses. Therefore, this would be a less-than-significant impact.

#### **4.6-2 The proposed Community Plan could result in land uses that are incompatible with the area surrounding the Plan Area.**

**Applicable Regulations:** Merced County Right to Farm Ordinance, Merced County Animal Confinement Ordinance, General Plan Policies AG-3.1: Right-to-Farm Ordinance, Policy AG-

3.2: Agricultural Buffer, Policy AG-3.3: Agricultural Buffer Standards, Policy AG-3.4: Residential Buffers from Agriculture, Policy AG-3.5: Home Site Clustering, Policy AG-3.7: Public Facility Locations, Policy AG-3.9: New Confined Animal Facility Location Requirements, and Policy AG-3.10: New Adjacent Residences.

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies L-9, LU 17 and OSC-9; Implementation Measure OSC-2

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None

**Residual Significance:** Less than Significant

The proposed Community Plan would not expand the Plan Area boundaries; to the contrary, the Plan Area would be reduced by approximately 28 acres, which would remain in agricultural uses. As such, the proposed Community Plan would not directly encroach on adjacent land uses located along the Plan Area edges. Agricultural uses surrounding Le Grand would continue to be active and extend for many miles in every direction.

Land uses immediately surrounding the Plan Area are primarily agricultural, including cultivated crops, orchards and other agricultural operations. Beyond the immediate area, farmland supports a diversity of agricultural activities including row crops, nut and fruit orchards, and dairies.

Agricultural operations often produce noise, odor, and slow traffic that non-rural residents find annoying or disruptive. Pesticide and herbicide use can also be a nuisance or even a health threat if the pesticide or herbicide drifts into residential areas. Agricultural parcels located near existing urban uses, specifically residential uses, can have limited long-term viability for active agricultural activities due to urban edge conflicts, stemming largely from the nuisance effects of routine agricultural operations on residential neighbors due to noise, dust, odors, traffic, and the application of herbicides and pesticides. These conflicts could increase costs to the agricultural operations, and, combined with rising land values for residential development, encourage the conversion of farmland to urban or other non-agricultural uses.

For the most part, land uses along the Plan Area edges would be compatible with adjacent agricultural uses. The Urban Reserve areas would remain in agricultural uses for the foreseeable future. Industrial and General Commercial areas are generally compatible with agricultural uses, because they involve similar features with regard to noise, traffic, odor, safety, and dust. In Le Grand, Industrial uses include agricultural-related business, and Policies LU-9 and LU-17 promote opportunities for new businesses and industry that rely on local agricultural products. Very Low-Density Residential development is low intensity and on large lots and often includes small farm activities. The elementary and high schools are located adjacent to agricultural land but play/sport fields and undeveloped areas buffer the classroom and administrative buildings from agricultural activities.

There are only a few areas where urban-density residential development would abut adjacent agricultural uses—the westernmost boundaries where Low Density Residential development is proposed, the Low Density Residential area north of Le Grand Road, the already-developed Low Density Residential area west of Fresno Street and south of Santa Fe Avenue and the Medium Density Residential area east of Cook Street. In these areas, residential land uses

could result in conflicts with the existing agricultural operations that dominate the exterior edges of the Plan Area.

The 2030 Merced County General Plan and the proposed Community Plan both include policies and programs specifically designed to minimize urban edge conflicts between agricultural and residential land use. Proposals for new development in the Plan Area would need to demonstrate that they are consistent with land use policies and ordinances, such as the Merced County Right-to-Farm, the Merced County Confined Animal Ordinance, and General Plan Policy AG-3.4: Residential Buffers from Agriculture, before being approved and constructed.

In addition, the Merced County Confined Animal Ordinance states that new single-family residences, not a part of an existing animal confinement facility, are prohibited within 1,000 feet of an existing facility. Further, the Merced County Right-to-Farm ordinance specifically states that residents moving into areas where there are existing agricultural activities, “should be prepared to accept inconvenience or discomfort from normal, necessary agricultural operations.”

The Merced County Agricultural Commissioner enforces laws related to pesticide use, which would minimize residents from exposure to pesticides.

Any new development in these areas would need to provide a 200-foot buffer from adjacent agricultural lands, as required by proposed Community Plan Policy OSC-9 and Implementation Measure OSC-2.

Compliance with the Right to Farm Ordinance, Confined Animal Facilities regulations, the Merced County General Plan, regulations regarding pesticide use, and the proposed Community Plan policies and implementation measures would ensure that potential incompatibilities with agricultural land are minimized or even eliminated. Therefore, residents of the Plan Area would not be subjected to annoyances or nuisances that would be considered unacceptable, or likely to lead to health hazards.

For the above reasons, the potential for conflicts between land uses within the Plan Area and those of surrounding area is considered a less-than-significant impact.

#### **4.6-3 The proposed Community Plan could be inconsistent with General Plan goals and policies.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Land use plan; Community Design Guidelines

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The determination of consistency with the County’s General Plan can only be made by the Board of Supervisors. The policies that would guide development of the proposed Community Plan are found in the Land Use Element of the General Plan, which addresses land use patterns and types of development. The relevant goals, objectives and policies are reproduced

in the Regulatory Setting, above. The relationship of the proposed Community Plan to those General Plan components is discussed below.

The 2030 General Plan directs urban development to cities, Urban Communities, such as Le Grand, and Highway Interchange Centers in order to preserve agricultural and natural resources, and limit urban sprawl (see for example, Policy LU-1.1). The proposed Community Plan would further this goal and policy approach by providing for urban uses within the Le Grand community at densities similar to those envisioned in the General Plan. The proposed Community Plan would not create a new urban area or expand the existing urban community boundaries (Policy LU-1.5). (Note that the Plan Area boundaries would be reduced by eliminating 28 acres on the edges that the County has determined are more appropriately maintained under agricultural zoning). The proposed Community Plan provides for compact development with higher densities at the core of the Plan Area, an enhanced bicycle and pedestrian network within the Plan Area, and transit facilities, all of which would support pedestrian activity and transit ridership (Policy LU-1.7). The mix of land uses would provide flexibility for a variety of project types (Policy LU-1.8). The proposed Community Plan can be served with local water and wastewater systems through the extension of water and sewer lines that would be funded by new development, so there would not be an inequitable burden placed on existing residents and property owners (Policies LU-1.10 and LU-1.11). The proposed Community Plan includes implementation measures that, in combination with existing County ordinances, would minimize conflicts with surrounding agricultural uses (Policy LU-1.4).

Consistent with General Plan policies addressing development within Urban Communities, development within the Plan Area would be served through connections to the existing public water and sewer system. The proposed Community Plan includes a wide range of residential and non-residential uses and densities, and promotes a number of smart growth principles, including walkable neighborhoods, a mix of densities, development within an existing community, infill, and a range of housing choices. The Industrial and General Commercial uses would provide employment opportunities within the community and in proximity to existing and future housing. The proposed Community Plan includes Community Design Guidelines (Chapter 9 of the Plan) that provide for visual continuity throughout the Plan Area and distinctive architectural styles within neighborhoods; set standards for roadway design; and identify community gateways. Typical residential densities would range from 0 to 25 units per acre, which would provide for a variety of housing choices. Commercial development is proposed along major transportation corridors and within the community core. In addition, a large mixed-use area in the community core would provide for a mix of housing and proximity to commercial development. As discussed in Impact 4.6-1, standards and guidelines of the proposed Community Plan would ensure that appropriate setbacks, barriers and landscape treatments are provided between residential and non-residential uses. The Land Use Map, policies, implementation measures, and design guidelines of the proposed Community Plan would ensure consistency with the General Plan goals and policies for Urban Communities.

Because the proposed Community Plan would be consistent with General Plan Land Use and Urban Communities policies, this impact would be less than significant.

#### **4.6-4 The proposed Community Plan could be inconsistent with Merced County LAFCO policies.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

### **Proposed Community Plan Boundaries**

The existing Community Plan boundaries encompass 453 acres. The proposed Community Plan boundary adjustment would reduce the Plan Area by 28 acres. As shown in Figure 3-2, the area south of Le Grand Road and west of the high school would be removed from the Plan Area, along with two segments east of Fresno Road. During development of the proposed Community Plan, the County concluded that these areas would be more appropriately retained as agricultural land, so they are proposed to be removed from the Plan Area and rezoned Agriculture. The proposed Community Plan would still be able to accommodate anticipated growth through 2035 without development of these areas.

### **La Grand Community Services District Sphere and Boundaries**

The LGCSO would need to expand its boundaries to incorporate portions of the Plan Area (see Figure 4.6-4). In addition, the LGCSO may need to acquire additional reclamation areas to accommodate buildout of the proposed Community Plan. These areas would also need to be included within the LGCSO Sphere of Influence and boundaries. In order to undertake such actions, LAFCO would need to make a determination that the proposed Community Plan is consistent with its policies. Therefore, a brief discussion of the relationship of the proposed Community Plan to relevant LAFCO objectives and policies is provided below.

#### Agricultural Policies

The proposed Sphere expansion area does contain some land that would be considered prime agricultural land, including Prime Farmland and orchards (see Section 4.1, Agricultural Resources and Figure 4.3-1 in Section 4.3, Biological Resources). However, most of the annexation area is designated Farmland of Local Importance (see Figure 4.1-1 in Section 4.1). Approximately 80 percent of the Plan Area is classified Class 1 (rated 80 to 100) on the Storie Index; however, most of this land is already developed.

The proposed Community Plan would implement General Plan policies that direct development to urban areas, such as the Le Grand Community Plan Area, thereby protecting agricultural lands outside of urban areas from premature conversion. Most of the orchards in the Plan Area are already within the LGCSO service area, and are located within the two areas designated Urban Reserve, and would therefore not be developed under the proposed Community Plan. There are orchards in the Sphere expansion area north of Le Grand Road that are planted in orchards; however, this area is already zoned Low Density Residential and therefore subject to development. Further, these orchards are proximate to the community core and existing residential development, and therefore the area would be a logical extension of community development.

Future reclamation areas would likely be located on existing farmland that is considered prime agricultural land. As discussed in Impact 4.1-1 in Section 4.1, Agricultural Resources, the reclamation areas would continue to be used for crops, so farmland would not be adversely affected.

#### Annexation Policies

The proposed Sphere expansion area is the logical extension of District boundaries (Policy 1). The proposed Sphere expansion area is located entirely within the existing Plan Area

boundaries, and contiguous with the existing LGCSD boundaries. Annexation would not create an island, corridor, or peninsula, and because it is adjacent to developed areas, the extension of services would be efficient.

There are no alternatives to service from the LGCSD. For the west Sphere expansion area, proposed land uses would range in density from 5 to 25 units per acre, which would not be efficient or appropriate for individual wells or septic systems. The east Sphere expansion area is proposed to be designated Very Low Density Residential (VLDR) with one-acre parcel minimums. Depending on size and physical characteristics, parcels in this area may be appropriately served by wells and septic systems. However, in some cases urban water supply and/or sewer service may be more appropriate. These VLDR parcels are adjacent to land designated for industrial use, which would be served by LGCSD, and so the extension of water or sewer to the VLDR area may be more efficient.

There are no other water or sewer service districts, cities, or urban communities in the vicinity of the Sphere expansion area or Plan Area that could provide these services to the Plan Area as an alternative.

The proposed Sphere expansion area would conform with parcel boundaries and the existing and proposed Community Plan boundaries.

The proposed land uses for the Sphere expansion area are consistent with General Plan policies, (see Impact 4.6-3) and land use designations, and the adopted Community Plan (Policy 2).

The proposed Community Plan recognizes the need for the extension of services to new development areas (Policy 3). The LGCSD, which would provide both water and wastewater services, has identified water and sewer infrastructure needed to serve the entire Plan Area, including the Sphere expansion area. In addition to extended water and sewer lines, new wells, potentially a water storage tank and lift stations, ultimate buildout of the Plan Area would require an expansion of reclamation area for the LGCSD Wastewater Treatment Plant. These improvements are discussed in more detail in Section 4.9, Utilities of this ADEIR. The proposed Community Plan includes policies and implementation measures to ensure that the required infrastructure improvements are timed to coincide with growth within the Plan Area, including the requirement that new development projects provide can and will serve letters from the LGCSD. Therefore, sewer and water service would be available as needed by new development, including the Sphere expansion area. In addition, the Water Supply Assessment (WSA) prepared for the proposed Community Plan (Appendix H) concludes that the LGCSD would have adequate water supply to serve buildout of the proposed Community Plan.

The Sphere expansion area is part of the proposed Community Plan, which provides for a mix of housing types and non-residential development (Policy 4). By providing Very Low-, Low-, Medium-, and Mixed-Use housing with densities of 0 to 33 units per acre, the proposed Community Plan ensures that housing needs will be met for a range of income levels. The proposed Community Plan retains the designation and zoning of 10 acres for High Density Residential development, as called for in the County's Housing Element.

The effects of the proposed Community Plan, which encompasses the proposed Sphere expansion area, on agriculture and open space have been documented in this Draft EIR (Policy 6). Most of the land within the District's boundaries has already been developed, and the undeveloped areas would not be adequate to accommodate growth in the community through 2035. As discussed above, the proposed Community Plan provides for orderly and efficient expansion of development entirely within the existing Community Plan boundaries, consistent

with General Plan direction to direct growth to Urban Areas. The two largest areas in the Plan Area that are Prime Farmland are proposed to be designated Urban Reserve, which would ensure that they are not converted to urban uses under the proposed Community Plan.

The proposed Community Plan contains measures to minimize conflicts where agricultural lands would be adjacent to urban development, including a 200-foot buffer from agricultural lands adjacent to the Community Plan boundaries (Implementation Measure OSC-2). In addition, the County has adopted a Right-to-Farm ordinance to ensure that new residents are prepared to accept the inconveniences or disturbances that can be associated with agricultural activities (see Impact 4.1-3 in Section 4.1, Agricultural Resources).

As indicated by the above discussion, the proposed Community Plan appears to be generally consistent with the objectives and policies that LAFCO will use in its consideration of boundary expansions. However, the determination of consistency must be made by the LAFCO board when it considers changes to the service district boundaries.

### **Cumulative Impacts and Mitigation Measures**

There are no cumulative impacts associated with land use compatibility and plan consistency. The analysis of land use compatibility addresses the effects of locating different uses adjacent to or near each other. That analysis considers existing and future uses, so there are no additional impacts to consider under the cumulative scenario. Plan consistency is a project-specific analysis that is unaffected by cumulative conditions.

## 4.7 NOISE

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### INTRODUCTION

This section discusses the existing noise and vibration environment in the Plan Area, and evaluates the potential effects on the noise environment related to development within the proposed Community Plan Area. Topics addressed in this section include noise-generating land uses, both traffic-related and stationary, exposure of new residents to existing noise sources, and construction noise. The Plan Area is not located in the vicinity of an airport, nor is it included within an airport land use plan. Therefore, these issues are not discussed in this section.

To quantify existing noise levels within the Plan Area, noise surveys were conducted, existing acoustical literature was consulted, and accepted traffic noise modeling algorithms were used.

No comments on noise were received in response to the Notice of Preparation (NOP).

Supporting data from the noise analysis prepared for this Draft Environmental Impact Report (DEIR) can be found in Appendix F.

### ENVIRONMENTAL SETTING

#### Noise Fundamentals

##### **The Decibel**

Noise is simply described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Discussing sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel (dB) scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are compared to the reference pressure and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB.

##### **A-Weighting**

To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment for community exposures. All sound levels expressed in this section are A-weighted sound levels, unless noted otherwise. Definitions of acoustical terminology are provided in Appendix F-A.

##### **Community Noise**

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the day-night

average noise descriptor, and shows very good correlation with community response to noise for the average person.

The  $L_{dn}$  is based upon the average noise level over a 24-hour day, with a +10 dB weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

### **Perception of Loudness**

The perceived loudness of sounds and corresponding reactions to noise are dependent upon many factors, including sound pressure level, duration of intrusive sound, frequency of occurrence, time of occurrence, and frequency content. Within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. Figure 4.7-1 shows examples of noise levels for several common noise sources and environments.

### **Sound Propagation**

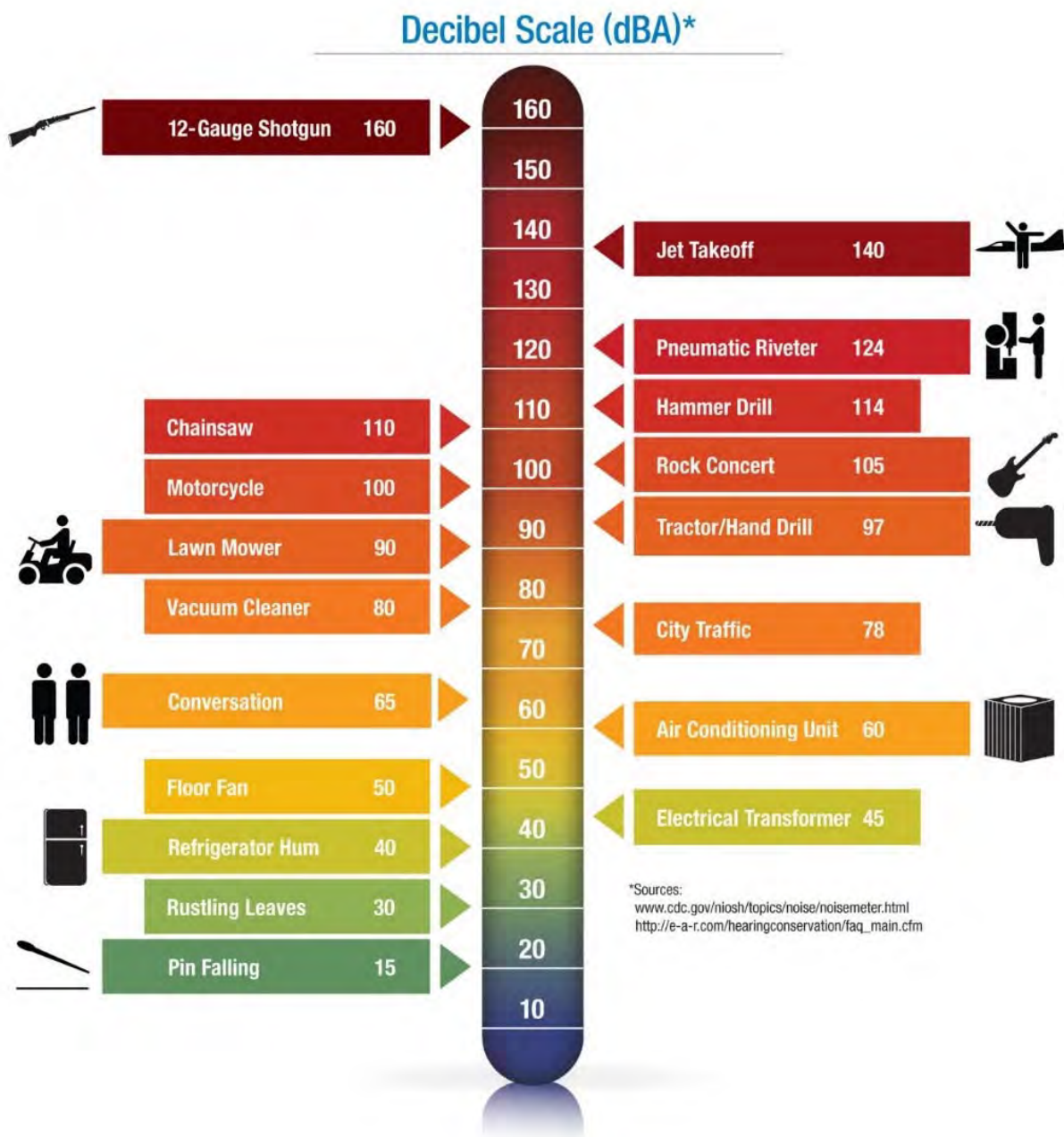
It is commonly understood that sound decreases with distance. But the propagation of sound is dependent on considerably more variables than distance alone. Those variables include the type of noise source (point, moving point, or line sources), the directionality of the noise source, the frequency content of the source (low frequency sound is absorbed in the atmosphere at a slower rate than high-frequency sound and therefore “carries” farther), atmospheric conditions (wind, temperature, humidity, gradients), ground type (e.g., dirt, grass fields, concrete), shielding (structures, noise barriers, topography), and vegetation.

### **Vibration Fundamentals**

According to the Federal Transit Administration Noise and Vibration Impact Assessment Guidelines (FTA-VA-90-06), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

The effects of ground-borne vibration include detectable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for normal transportation projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

Train wheels rolling on rails create vibration energy that is transmitted through the track support system into the ground, creating vibration waves that propagate through the various soil and rock strata to the foundations of nearby buildings. The vibration propagates from the foundation throughout the remainder of the building structure. The maximum vibration amplitudes of the floors and walls of a building often will be at the resonance frequencies of various components of the building.



**Figure 4.7-1**  
**Typical A-Weighted Sound Levels of Common Noise Sources**

SOURCE: Bollard Acoustical Consultants, Inc. (BAC), 2018.

The vibration of floors and walls can cause perceptible vibration, rattling of items such as windows or dishes on shelves, or a rumble noise. The rumble is the noise radiated from the motion of the room surfaces. The room surfaces act like a giant loudspeaker causing what is called ground-borne noise.

Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground might be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. In addition, the rumble noise that usually accompanies the building vibration is perceptible only inside buildings. Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (inches/second).

### **Existing Noise and Vibration Environment in the Plan Area**

The community of Le Grand is relatively small, with existing land uses consisting primarily of low-density residential uses surrounded by rural agricultural operations. There are three schools - Le Grand Union High School, Granada High School (a small continuation school) and Le Grand Elementary School (all located on East Le Grand Road). The community also contains limited commercial uses, which primarily consist of local retail business and government-related services. Finally, the community also contains light industrial uses, which are primarily related to agricultural product storage and processing. The existing ambient noise environment in the Plan Area is primarily defined by local traffic and by railroad operations on the Burlington Northern Santa Fe (BNSF) railroad tracks.

To quantify existing noise and vibration levels within the Plan Area, noise surveys were conducted, existing literature was consulted, and accepted modeling algorithms were utilized. The existing noise and vibration environment within the Plan Area is described below.

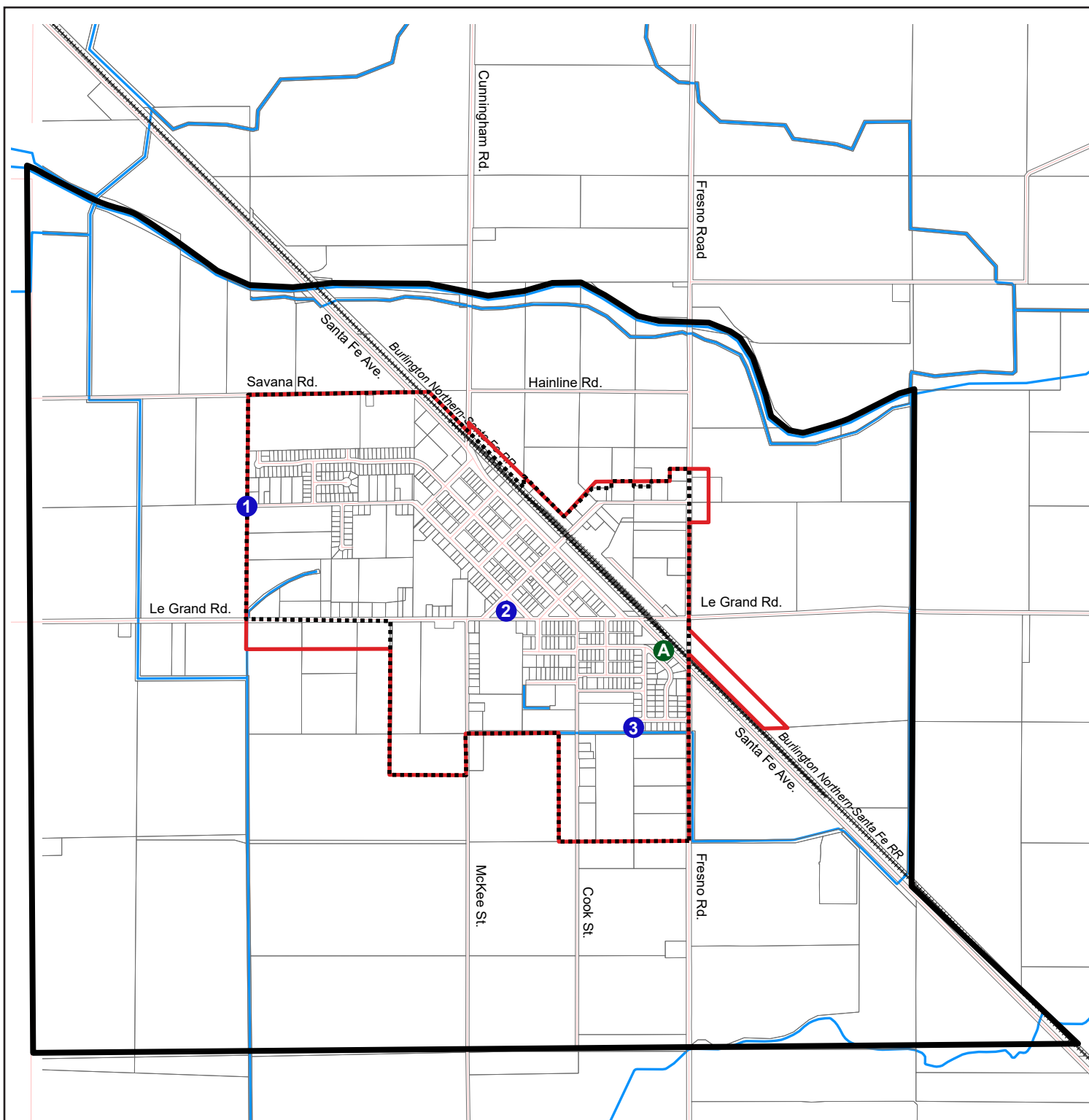
### **General Ambient Noise Level Survey**

To quantify the existing ambient noise environment in the Plan Area, short-term ambient noise surveys were conducted at three locations on May 13, 2011. In addition, long-term (continuous) noise monitoring was conducted on May 12, 2011, at one location near the railroad tracks to document railroad activity noise in the community. The locations of the short and long-term noise measurement sites are shown on Figure 4.7-2.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement surveys. The meters were calibrated before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The results of the long-term noise measurements are shown numerically and graphically in Appendices F-B and F-C, and are summarized in Table 4.7-1. Photographs of the noise measurement sites are provided in Appendix F-D.

The noise level meters were programmed to record the maximum and average noise level at each site during the survey. The maximum value, denoted  $L_{\max}$ , represents the highest noise level measured. The average value, denoted  $L_{\text{eq}}$ , represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period.

The ambient noise survey results indicate that the measured daytime ambient noise levels within the Plan Area vary depending on proximity to roadways and the railroad tracks. Specifically, noise levels at Site A, which had exposure to both railroad noise and Santa Fe Avenue noise, registered very high ambient noise levels, whereas sites more removed from those sources (Sites 1-3) registered lower ambient noise levels. The ambient conditions in the



① Short-Term Noise Level Measurement Locations

Ⓐ Long-Term Noise Level Measurement Locations

Le Grand Community Plan Area Boundary

— Existing Boundary

..... Proposed Boundary

— Study Area

— Natural Waterways and Canals



SOURCE: Bollard Acoustical  
Consulting, Inc., 2018.

0 1,000 2,000 3,000 4,000

Scale In Feet 4.7-5

**Figure 4.7-2**

## Noise Measurement Sites

**TABLE 4.7-1  
Ambient Noise Monitoring Results**

Site <sup>1</sup>	Location <sup>2</sup>	Measured Sound Level, dBA		
		Average (L <sub>eq</sub> )	Maximum (L <sub>max</sub> )	Day/Night (L <sub>dn</sub> )
1	West end of McDowell Street	47	68	--
2	Park opposite Le Grand Elementary School	59	73	--
3	West of Polk/Ford Streets intersection	47	69	--
A	Marshall Street: 24-hour location	70 D / 67 N	97 D / 93 N	79

Notes:

1 Sites 1-3 were monitored on a short-term basis (15-minute samples), whereas Site A was monitored continuously for a 24-hour period.

2 Noise measurement locations are shown on Figure 4.7-2.

3 Detailed long-term noise measurement results are shown in Appendices F-B and F-C.

Source: Bollard Acoustical Consultants, Inc., 2018.

Le Grand area are consistent with those typically found in smaller towns that contain major traffic or railroad corridors. A separate assessment of specific existing traffic and railroad noise levels follows.

### Existing Traffic Noise Environment

#### Traffic Noise Prediction Methodology

To predict existing and future traffic noise levels, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The Model was used in conjunction with the Calveno reference noise emission curves, and accounts for vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the Plan Area, and is generally considered to be accurate within 1.5 dB if the input variables are properly accounted for. The FHWA Model was developed to predict hourly L<sub>eq</sub> values for free-flowing traffic conditions. To calculate L<sub>dn</sub>, average daily traffic (ADT) volume data are manipulated based on the assumed day/night distribution of traffic on the project roadways.

#### Existing Traffic Noise Environment in the Plan Area

The FHWA Model was used with traffic data provided by the transportation consultant, KD Anderson and Associates, to predict existing traffic noise levels in the project vicinity. Table 4.7-2 shows the predicted existing traffic noise levels at a reference distance of 100 feet from the roadway centerlines, as well as the distances to the unshielded L<sub>dn</sub> contours. The FHWA Model Inputs for baseline conditions are provided in Appendix F-E.

### Existing Railroad Noise Environment

The BNSF railroad tracks bisect the Plan Area, as shown on Figure 4.7-2. Observations of railroad activity within the Plan Area indicate that railroad warning horns are used as trains approach the at-grade crossings, located at Le Grand Road, Jefferson Street and Cunningham Road, in the Plan Area.

To quantify railroad noise exposure within the Plan Area, continuous noise level measurements were conducted at the location denoted Site A on Figure 4.7-2. The purposes of the noise level measurements were to determine the approximate number of daily railroad operations on these

**TABLE 4.7-2  
Existing Traffic Noise Levels and Distances to Traffic Noise Contours**

Roadway	Segment	L <sub>dn</sub> , dB <sup>1</sup>	Distance to L <sub>dn</sub> Contour, feet		
			70	65	60
Santa Fe Avenue	North of Savana Road	59	18	39	84
Savana Road	West of Santa Fe Avenue	44	2	4	8
Cunningham Road	North of Santa Fe Avenue	53	7	15	33
Fresno Road	North of Le Grand Road	43	2	4	8
Santa Fe Avenue	South of Jackson Street	53	7	15	33
Washington Street	North of Jefferson Street	47	3	6	13
Jefferson Street	West of Santa Fe Avenue	51	6	12	26
McDowell Street	North of Jefferson Street	47	3	7	14
Le Grand Road	West of Santa Fe Avenue	50	5	10	21
Le Grand Road	East of Fresno Road	50	5	10	22
Minturn Road	South of Le Grand Road	57	13	28	60
Santa Fe Avenue	South of Fresno Road	56	11	24	52
Notes:					
1 L <sub>dn</sub> is computed at a standardized distance of 100 feet from the roadway centerline.					
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2018.					

tracks, to quantify typical sound exposure levels (SEL) for railroad passages, and to calculate railroad noise levels in terms of day/night average levels (L<sub>dn</sub>).

The results of the railroad noise measurements are shown in Table 4.7-3. Table 4.7-3 also shows the computed L<sub>dn</sub> for the 24-hour period monitored. A detailed analysis of the single-event data indicated that there was an average of approximately 37 trains per day on these railroad tracks. In addition, the railroad operations were essentially randomly distributed throughout the day and nighttime hours (68% day / 32% night). The approximate distances to the 60 and 65 dB L<sub>dn</sub> railroad noise contours were computed from the measurement results and those distances are shown in Table 4.7-3.

### Existing Agricultural Noise Environment

There are active agricultural uses adjacent to the Plan Area, and agricultural operations will continue to occur on adjacent properties into the foreseeable future. As a result, agricultural-related equipment and processes contribute to the existing ambient noise environment in the Plan Area. Due to the wide array of equipment types and conditions under which that equipment is used in the agriculture industry, noise generated by agricultural processes varies substantially. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions.

Due to the seasonal nature of the agricultural industry, there are often extended periods of time when no noise is generated on properties that are actively being farmed, followed by short-term

<b>TABLE 4.7-3</b> <b>Burlington Northern Santa Fe Railroad Noise Measurement Results</b>					
Date	# Trains Per Day	Mean SEL @ 125 ft., dBA	Computed L <sub>dn</sub> @ 100 ft., dBA	Distance to Existing L <sup>dn</sup> Contours, feet	
				60 dB	65 dB
May 12, 2011	37	107	80	2,303	1,069
Notes: 1 The noise level measurement site is shown on Figure 1 (Site A). The site was approximately 125 feet from the center of railroad tracks. 2 The number of apparent railroad operations was estimated from an analysis of single-event noise level data collected over the monitoring period. Events were considered to be railroad operations if they met criteria for event duration, maximum level, and SEL.					
Source: Bollard Acoustical Consultants, Inc., 2018.					

periods of intensive mechanical equipment usage and corresponding noise generation.

Due to this high degree of variability of agricultural activities, it is not feasible to reliably quantify the noise generation of agricultural uses in terms of noise standards commonly used to assess impacts of other noise sources. However, these uses generate short-term periods of elevated noise during all hours of the day and night and possess the potential to generate adverse public reaction during intensive farm-related activities.

### Industrial and Other Noise Sources

Approximately 22 acres of Industrial-designated land uses are provided within the Plan Area. The majority of the industrial land is located along the railroad tracks between Le Grand Road and Jefferson Street. Relative to the adjacent railroad operations, noise generated by these uses is considered inconsequential at the nearest existing noise-sensitive land uses.

Approximately 8 acres of General Commercial land uses are provided within the Plan Area. The existing commercial uses include a restaurant, laundromat, historic railroad depot, and auto repair business. Activities that have the potential to generate noise above a background level (such as auto repair) are encouraged to locate along the Santa Fe Avenue corridor, away from residential uses.

### Existing Ambient Vibration Environment

The only substantive source of vibration identified within the Plan Area is the BNSF Railroad. The nearest existing sensitive land uses (residences) are located approximately 100 feet from those railroad tracks. At that distance, railroad vibration levels were subjectively evaluated as being imperceptible to very faint by noise analyst.

## REGULATORY SETTING

### Federal

There are no federal noise regulations pertaining to the proposed Community Plan.

### State

The State regulates noise levels for multifamily residential development in areas experiencing



noise levels over 60 dBA  $L_{dn}$ . The State Building Code (Title 24) requires that acoustical studies be conducted prior to construction at residential building locations where the exterior noise levels exceed 60 dBA  $L_{dn}$ . The studies must include measures that would limit the noise levels in any habitable room to 45 dBA  $L_{dn}$ .

## **Local**

### **Merced County General Plan**

The Health and Safety Element of the 2030 Merced County General Plan (MCGP) contains the State required contents for a noise element and it provides acceptable noise environment guidelines for a variety of land use types. The following noise level standards have been developed in order to quantify noise impacts in the County. Table 4.7-4 (MCGP Table HS-1), shows the noise level standards for noise-sensitive areas affected by traffic, railroad, or airport noise sources in the County. Table 4.7-5 (MCGP Table HS-2), shows the interior and exterior noise level standards for noise-sensitive areas affected by existing non-transportation noise sources in the County.

#### **Policy HS-7.1: Noise Standards for New Land Uses**

Require new development projects to meet the standards shown in Tables HS-1 & HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.

#### **Policy HS-7.2: Acoustical and Groundborne Vibration Analysis Requirements**

Require development project applicants to prepare an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels shown in Table HS-1 & HS-2.

Require an analysis of groundborne vibration for proposed residential and other sensitive projects (including but not limited to hospitals and schools) located within 1,000 feet of a rail line with at least 30 operations per day or an existing industrial groundborne vibration source. The acoustical and groundborne vibration analysis shall:

- a) Be the responsibility of the applicant;
- b) Be prepared by qualified persons experienced in the fields of environmental noise and groundborne vibration assessment and architectural acoustics;
- c) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions;
- d) Estimate projected future (20 year) noise levels relative to the standards shown in Table HS-1 & HS-2 at the property line of the proposed use, and, as applicable, estimate project future groundborne vibration levels using a maximum vibration standard of 70 VdB;
- e) Recommend appropriate mitigation to achieve compliance with the adopted policies and standards in this element, including setbacks from groundborne vibration sources causing adverse levels of vibration; and
- f) Estimate interior and exterior noise, and groundborne vibration exposure after the prescribe mitigation measures have been implemented at the property line.

#### **Policy HS-7.3: Existing Rural Sources**

Discourage new noise sensitive land uses in rural areas with authorized existing noise generating land uses.

**TABLE 4.7-4**  
**Noise Standards for New Uses Affected by Traffic, Railroad, and Airport Noise**  
**(General Plan Table HS-1)**

<b>New Land Use</b>	<b>Sensitive<sup>1</sup> Outdoor Area - L<sub>dn</sub></b>	<b>Sensitive Interior<sup>2</sup> Area - L<sub>dn</sub></b>	<b>Notes</b>
All Residential	65	45	3
Transient Lodging	65	45	3,4
Hospitals & Nursing Homes	65	45	3,4,5
Theaters & Auditoriums	----	35	4
Churches, Meeting Halls, Schools, Libraries, etc.	65	40	4
	65	40	4
Office Buildings	65	45	4
Commercial Buildings	----	50	4
Playgrounds, Parks, etc.	70	----	
Industry	65	50	4
<b>Notes:</b> 1. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied. 2. Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions. 3. Railroad warning horn usage shall not be included in the computation of L <sub>dn</sub> . 4. Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses. 5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.			

**Policy HS-7.4: New Noise or Groundborne Vibration Generating Uses**

Require new commercial and industrial uses to minimize encroachment on incompatible noise or groundborne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or groundborne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.

**Policy HS-7.5: Noise Generating Activities**

Limit noise generating activities, such as construction, to hours of normal business operation.

**Policy HS-7.6: Multi-Family Residential Noise Analysis**

Require noise analyses be prepared for proposed multi-family, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party walls shall be common to different owners/occupants to assure compliance with the State of California Noise Insulation Standards.

**Policy HS-7.7: Noise or Vibration Impacted Residential Area Monitoring**

Consider any existing residential area "noise or vibration impacted" if the exposure to exterior noise exceeds the standards shown in Table HS-2 or if groundborne vibration levels exceed 70VdB. Identify and evaluate potential noise or groundborne vibration impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

**TABLE 4.7-5**  
**Non-Transportation Noise Standards**  
**(General Plan Table HS-2)**  
 Median ( $L_{50}$ )/Maximum ( $L_{max}$ )<sup>1</sup>

Outdoor Area <sup>2</sup>			Interior <sup>3</sup>	
Receiving Land Use	Daytime	Nighttime	Day or Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5,6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	---	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6
Notes: 1. These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient. 2. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied. 3. Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions. 4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours. 5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients. 6. The outdoor activity areas of these uses (if any), are not typically used during nighttime hours. 7. Where median ( $L_{50}$ ) noise level data is not available for a particular noise source, average ( $L_{eq}$ ) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source operates for at least 30 minutes. If the source operates less than 30 minutes the maximum noise level standards shown shall apply.				

#### **Policy HS-7.8: Project Design**

Require land use projects to comply with adopted noise and vibration standards through proper site and building design, such as building orientation, setbacks, natural barriers (e.g., earthen berms, vegetation), and building construction practices. Only consider the use of soundwalls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.

#### **Policy HS-7.9: Transportation Project Construction/Improvements**

Require transportation project proponents to prepare all acoustical analysis for all roadway and railway construction projects in accordance with Policy HS-7.2; additionally, rail projects shall require the preparation of a groundborne vibration analysis in accordance with Policy HS-7.2. Consider noise mitigation measures to reduce traffic and/or rail noise levels to comply with Table HS-1 standards if pre-project noise levels already exceed the noise standards of Table HS-1 and the increase is significant.

The County defines a significant increase as follows:

<u>Pre-Project Noise Environment (<math>L_{dn}</math>)</u>	<u>Significant Increase</u>
Less than 60 dB	5+ dB
60-65 dB	3+ dB
Greater than 65 dB	1.5+ dB

**Policy HS-7.10: Aircraft Noise**

Prohibit new noise-sensitive development within the projected future 60 dB  $L_{dn}$  noise contours of any public or private airports.

**Policy HS-7.11: Train Whistle Noise**

Support improvements to at-grade crossings in urban areas in order to eliminate the need for train whistle blasts near or within communities.

**Policy HS-7.12: New Project Noise Mitigation Requirements**

Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.

**Policy HS-7.13: Noise Exemptions**

Support the exemption of the following noise sources from the standards in this element:

- a) Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.
- b) Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.
- c) Activities associated with County-permitted temporary events and festivals.

**Policy HS-7.14: Transportation Noise Mitigation Program**

Adopt a countywide transportation noise mitigation program to reduce transportation noise levels at existing sensitive land uses.

**Policy HS-7.15: New Project Groundborne Vibration Mitigation Requirements**

For residential projects within 1,000 feet of a rail line with at least 30 operations per day, or an existing industrial or commercial groundborne vibration source, require new residential projects to include appropriate groundborne vibration mitigation measures to reduce groundborne vibration levels to less than 70 VdB within structures. However, if a groundborne vibration-generating use is proposed adjacent to lands zoned for residential uses, then the groundborne vibration-generating use shall be responsible for mitigating its groundborne vibration generation to a state of compliance with the 70 VdB standard at the property line of the generating use in anticipation of the future residential development.

**Merced County Code**

Section 18.41, Performance Standards, of the County Code exempts construction activities from noise limits, while limiting construction activities to the daytime hours between 7:00 a.m. and 6:00 p.m. (Section 18.41.07.C.1.a). In addition, all construction equipment must be properly muffled and maintained to minimize noise levels (Section 18.41.07.C.1.a). This ordinance also

limits operational noise from mechanical equipment, buzzers, bells, loudspeakers, and other noise generating devices. Noise levels from properties adjacent to residential development are not allowed to exceed 65 dBA  $L_{dn}$  or 75 dBA  $L_{max}$  at the property line (Section 18.41.A). Noise adjacent to non-residential land uses is not to exceed 70 dBA  $L_{dn}$  or 80 dBA  $L_{max}$  (Section 18.41B).

### **Right-to Farm Ordinance**

Merced County has a Right-to-Farm ordinance that requires that new residents be notified that noise and other inconveniences, or discomforts associated with agricultural activities could occur on occasion in the agricultural area (Section 17.08.080).

## **IMPACTS AND MITIGATION MEASURES**

### **Standards of Significance**

For purposes of this EIR, impacts would be considered significant if the proposed Community Plan would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the Merced County General Plan (Tables 4.7-4 and 4.7-5) or Noise Ordinance;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Pursuant to MCGP Policy HS 7.15, excessive groundborne vibration is defined as levels exceeding 70 VdB;
- A substantial permanent increase in ambient noise levels within the Plan Area, as follows:

<u>Pre-Project Noise Environment (<math>L_{dn}</math>)</u>	<u>Significant Increase</u>
Less than 60 dB	5+ dB
60-65 dB	3+ dB
Greater than 65 dB	1.5+ dB

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

Because the Plan Area is not located within two miles of a public airport or the vicinity of a private airstrip, the last two issues are not addressed in this section.

### **Method of Analysis**

#### **Traffic Noise Impact Assessment Methodology**

In order to assess noise impacts due to proposed project-related traffic increases on the local roadway network resulting from development within the Plan Area, traffic noise levels are predicted at a representative distance for both existing and future, project and no-project

conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level that would result from the proposed Community Plan could exceed the 1.5 to 5 dB significance threshold, as identified in the Merced County General Plan (Policy HS-7.9).

Traffic data were provided by KD Anderson & Associates, Inc., the consultant that prepared the traffic analysis for this Draft EIR (see Section 4.8, Transportation and Circulation). To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The FHWA model is based upon the Calven reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly  $L_{eq}$  values for free-flowing traffic conditions. To predict traffic noise levels in terms of  $L_{dn}$ , it is necessary to adjust the input volume to account for the day and night distribution of traffic.

Tables 4.7-6 and 4.7-9 (see Impacts 4.7-1 and 4.7-7, respectively) show the predicted increases in traffic noise levels on the local roadway network for existing and future (cumulative) conditions that would result from the project. These tables are provided in terms of  $L_{dn}$  at a standard distance of 100 feet from the centerlines of the Plan Area roadways. The data from Tables 4.7-6 and 4.7-9 were used to determine the project-related increase in noise anticipated to result from the increase in traffic volumes on the local roadways.

To assess traffic noise impacts at new proposed noise-sensitive land uses, the noise contour distances shown in Table 4.7-7 for cumulative plus project conditions were used, because they represent the ultimate foreseeable condition for future residences.

#### **Railroad Noise Impact Evaluation Methodology**

Railroad noise impacts were evaluated by comparing calculated railroad noise contours in Table 4.7-3 with the applicable Merced County General Plan noise criteria. Specifically, where residential uses are proposed within the 65 dB  $L_{dn}$  railroad noise contour distance shown in Table 4.7-3, noise impacts were identified.

#### **Construction Noise Impact Evaluation Methodology**

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 4.7-8 (see Impact 4.7-3), ranging from 70 to 95 dB at a distance of 50 feet. Pile driving activities would generate even higher noise levels.

#### **Project-Specific Impacts and Mitigation Measures**

##### **4.7-1 The proposed Community Plan would increase traffic noise in the existing community.**

**Applicable Regulations:** General Plan Policy HS-7.1

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** None available

**Residual Significance:** Significant

The proposed Community Plan would increase traffic on the existing roadway network, exposing existing sensitive receptors, such as residences, to higher noise levels than occur at present. Development within the Plan Area would generate increased traffic on the local roadway network. As shown in Table 4.7-6, the project-related change in traffic noise levels is predicted to range from increases of 0.0 dB to 6.6 dB relative to existing conditions.

<b>TABLE 4.7-6</b> <b>Existing and Existing Plus Project Traffic Noise Levels at 100' of Centerline</b>					
Roadway	Segment	Day/Night Average Level, dB (L <sub>dn</sub> )			
		Existing	Existing + Project	Change	Substantial Increase?
Santa Fe Avenue	North of Savana Road	58.9	61.3	2.4	No
Savana Road	West of Santa Fe Avenue	43.9	43.9	0.0	No
Cunningham Road	North of Santa Fe Avenue	52.7	53.4	0.7	No
Fresno Road	North of Le Grand Road	43.4	50.0	<b>6.6</b>	<b>Yes</b>
Santa Fe Avenue	South of Jackson Street	52.8	54.1	1.3	No
Washington Street	North of Jefferson Street	46.5	49.5	3.0	No
Jefferson Street	West of Santa Fe Avenue	51.3	53.7	2.4	No
McDowell Street	North of Jefferson Street	47.3	50.4	3.1	No
Le Grand Road	West of Santa Fe Avenue	49.8	52.3	2.5	No
Le Grand Road	East of Fresno Road	50.2	50.6	0.4	No
Minturn Road	South of Le Grand Road	56.7	58.2	1.5	No
Santa Fe Avenue	South of Fresno Road	55.8	56.3	0.5	No
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2018.					

Pursuant to MCGP Policy HS-7.9, a substantial increase in traffic noise levels is defined as 1.5 to 5 dB, depending on the pre-project noise environment. Analysis of the Table 4.7-6 data indicate that the traffic noise level increases resulting from the proposed Community Plan are predicted to be significant on one roadway segment – Fresno Road, north of Le Grand Road (increase from 43.4 to 50.0 dB, or 6.6 dB).

Where existing residences are affected by project-related traffic noise level increases, it is generally infeasible to develop mitigation measures that could reduce the impact, because conventional traffic noise attenuation measures, such as setbacks and the construction of solid noise barriers, cannot be used. Because the residences are already constructed, additional setbacks between the residences and the roadways cannot be provided without moving either the residence or the roadway, and clearly both are infeasible on a community-wide basis. Noise barriers are often a viable alternative for new residences, but not for existing residences where driveway openings and other obstacles would either prevent their construction or render them ineffective.

Noise-reducing asphalt has been shown to provide an approximate 4 dB reduction in traffic noise relative to conventional asphalt pavement. However, this measure would be infeasible due to the costs associated with its installation. Therefore, this impact is considered significant and unavoidable.

#### **4.7-2 Future residences and other noise sensitive land uses would be exposed to transportation noise.**

**Applicable Regulations:** State Building Code Title 24

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.7-2:

*Prior to approval of a residential building permit for projects located in areas estimated to experience noise levels above 65 dB  $L_{dn}$  due railroad operations, an acoustical study shall be submitted demonstrating that interior noise levels will not exceed 45 dBA  $L_{dn}$ . Noise barriers, site planning, improvement to building facades and/or other effective measures may be used to achieve the required noise levels.*

**Residual Significance:** Less than Significant

The distances to the 65 dB  $L_{dn}$  contours for Plan Area roadways are provided in Table 4.7-7, with the distances to the 65 dB  $L_{dn}$  railroad noise contours shown in Table 4.7-3. Any proposed residential uses located within the 65 dB contours shown in Tables 4.7-3 or 4.7-7, or any other proposed noise-sensitive land uses located within the critical noise contours for that use, could be exposed to noise levels that exceed County standards.

After analysis of the proposed Community Plan Land Use Map (Figure 3-3 in Chapter 3, Project Description), it was determined that all sensitive areas proposed within the Community Plan Area were outside of the 65 dB  $L_{dn}$  traffic noise contours. In many cases, such as Santa Fe Avenue south of Jackson Street, the 65 dB  $L_{dn}$  contour would be located within the road right-of-way, so noise levels at adjacent uses would meet County standards.

There are sensitive areas that could be exposed to noise levels above 65 dB  $L_{dn}$  from train noise:

- Very Low Density Residential (VLDR) parcels at the northeastern boundary of the proposed Plan Area;
- Low Density Residential (LDR) parcels in the north, south, and central areas of the proposed Plan Area;
- Mixed-Use (MU) parcels centrally located within the proposed Plan Area;
- Mixed-Use Vertical (MUV) parcels centrally located within the proposed Plan Area;
- Institutional parcels in the central and southeastern areas of the proposed Plan Area;
- General Commercial (GC) parcels in the central and north areas of the proposed Plan Area; and



**TABLE 4.7-7**  
**Distances to Cumulative Plus Project Noise Contours**

Roadway	Segment	Distance from Centerline to Noise Contour, feet		
		70 dB	65 dB	60 dB
Santa Fe Avenue	North of Savana Road	28	61	131
Savana Road	West of Santa Fe Avenue	2	4	9
Cunningham Road	North of Santa Fe Avenue	8	17	37
Fresno Road	North of Le Grand Road	5	10	22
Santa Fe Avenue	South of Jackson Street	10	21	44
Washington Street	North of Jefferson Street	4	9	20
Jefferson Street	West of Santa Fe Avenue	9	19	41
McDowell Street	North of Jefferson Street	5	11	23
Le Grand Road	West of Santa Fe Avenue	7	15	31
Le Grand Road	East of Fresno Road	5	11	24
Minturn Road	South of Le Grand Road	17	36	78
Santa Fe Avenue	South of Fresno Road	13	27	58
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2018.				

- Urban Reserve (UR) parcels at the southeastern boundary of the proposed Plan Area.

It should be noted that Industrially zoned parcels proposed within the Plan Area were also found to be located within the 65 dB  $L_{dn}$  railroad noise contours, but are typically not considered to be noise-sensitive.

Noise reduction measures could include setbacks, berms, landscaping, and/or soundwalls. For example, commercial parcels could place parking and landscaping closest to the road. Soundwalls are discouraged, but are allowed if setbacks required to achieve the County standards would exceed 50 feet (Implementation Measures N.1.2a and N.1.2b). These measures would be adequate to ensure that exterior noise levels meet County standards. However, in some cases, interior noise levels may exceed the County standard of 45 dB  $L_{dn}$ . Standard construction typically reduces interior noise by at least 15 dB, which may not be adequate if the exterior noise levels exceed 60 dB  $L_{dn}$ . In addition, soundwalls or other barriers might not reduce noise levels at second stories as effectively as at ground floors. Mitigation Measure 4.7-2 would ensure that interior noise levels would meet County standards. Because new development would meet County standards, the impact would be less than significant with mitigation.

#### **4.7-3 The proposed Community Plan would generate construction noise near noise-sensitive areas.**

**Applicable Regulations:** Zoning Ordinance, Section 18.41.07.C.1.a

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.7-3:

- (a) *The following specific noise control measures shall be implemented as appropriate for construction projects occurring within the Plan Area near existing noise-sensitive receptors:*
- *All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed “package” equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.*
  - *All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.*
  - *Electrically-powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.*
  - *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.*
  - *The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.*
  - *No project-related public address or music system shall be audible at any adjacent receptor.*
- (b) *If and when the Le Grand Community Services District (LGCSD) installs water and/or wastewater infrastructure needed to serve proposed Community Plan development, Mitigation Measures 5.7.3(a) or equally effective measures shall be implemented to address noise and vibration at nearby residences.*

**Residential Significance:** Less than Significant

Activities associated with construction within the Plan Area would result in elevated noise levels in the immediate area. Activities involved in construction will typically generate maximum noise levels ranging from 70 to 95 dB  $L_{max}$  at a distance of 50 feet, as indicated in Table 4.7-8. Construction activities are temporary in nature and typically occur during normal daytime hours. However, when construction occurs in areas proximate to sensitive uses, such as schools and residences, the noise can be disruptive to daily activities. As shown in Figure 3-3 in Chapter 3, Project Description, there are a number of areas where new development would occur near schools and residences.

The County Zoning Ordinance limits construction hours to 7 a.m. to 6 p.m., and requires that all construction equipment be properly muffled and maintained (Zoning Ordinance Section

**TABLE 4.7-8  
Typical Construction Equipment Noise**

<b>Equipment Description</b>	<b>Maximum Noise Level at 50 feet, dBA</b>
Auger drill rig	85
Backhoe	80
Bar bender	80
Chain saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete batch plant	83
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flat bed truck	84
Front end loader	80
Generator (25 kilovolt-amperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Hydra break ram	90
Impact pile driver (diesel or drop)	95
Jackhammer	85
Mounted impact hammer (hoe ram)	90
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85
Scraper	85
Soil mix drill rig	80
Tractor	84
Vacuum street sweeper	80
Vibratory concrete mixer	80
Vibratory pile driver	95

Source: Bollard Acoustical Consultants, Inc., 2018.

18.41.070). People are less likely to be disturbed by construction noise during the day, and mufflers would reduce equipment noise. Mitigation Measure 4.7-3 requires additional methods for minimizing construction noise, and would reduce the construction noise impact within the Plan Area to a less-than-significant level.

The proposed Community Plan could also require the installation and/or expansion of water and wastewater infrastructure outside of the Plan Area (see Section 4.9, Utilities). However, there are few residences or other sensitive uses located in areas outside of the Plan Area where such infrastructure would be installed (e.g., in proximity to the Le Grand CSD wastewater treatment plant). Any upgrades to pipelines would occur in single locations for only short periods of time. Compliance with Mitigation Measure 4.7-3(b) would ensure that construction noise associated

with off-site infrastructure improvements would be less than significant.

**4.7-4 New residential development within the Plan Area could be exposed to vibration from the BNSF railroad.**

**Applicable Regulations:** General Plan Policy HS-7.15

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The BNSF railroad track transects the Plan Area, and approximately 37 trains per day travel on the tracks. Trains can generate vibration levels that create disturbances and, at higher levels, damage buildings. During noise monitoring, the vibration levels experienced from train passes were noted (at approximately 125 feet from the tracks) and were subjectively found to be imperceptible to very faint. Therefore, it is not expected that vibration from the tracks would be noticeable in most of the Plan Area. The proposed Community Plan provides for residential development in proximity to the tracks (as close as approximately 100 feet). Merced County General Plan Policy HS-7.15 requires that residential projects within 1,000 feet of a rail line with at least 30 operations per day include appropriate measures to reduce groundborne vibration levels to less than 70 VdB within structures. Residential projects within the Plan Area would be required to provide documentation that vibration levels would not exceed 70 VdB at project residences, and to include appropriate attenuation measures where needed. Compliance with this policy would ensure that residences are not subjected to substantial vibration, so this impact would be less than significant.

**4.7-5 The proposed Community Plan would result in uses that could generate excessive non-vehicular noise.**

**Applicable Regulations:** General Plan Policy HS-7.1 and Table HS-2; Zoning Ordinance Section 18.41.07

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies N-1 and N-2

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** Mitigation Measure 4.7-5:

*New businesses that have outdoor noise sources (e.g., loading docks, HVAC systems) adjacent to residential areas shall demonstrate that the residential outdoor areas will be protected from noise by one or a combination of the following and/or equally effective measures:*

- i) Mechanical equipment associated with the commercial uses shall be shielded from view of adjacent residential uses by building parapets or located within*

*mechanical equipment rooms;*

*and/or*

- ii) Commercial loading docks located within 300 feet of existing or proposed residences shall be positioned in areas shielded from view of those residences by intervening commercial buildings;*

*and/or*

- iii) Solid noise barriers shall be constructed at the boundary of the commercial uses of sufficient height to intercept line of sight between heavy trucks and the affected area of the residential use;*

*and/or*

- iv) Truck deliveries shall be limited to daytime hours (7 am – 10 pm)*

*and/or*

- v) Signs shall be posted prohibiting idling of delivery trucks to 10 minutes or less.*

**Residual Significance:** Less than Significant

The proposed Community Plan does not allow for heavy industry. The Industrial (IND) land use designation allows for light industrial and manufacturing land uses that are directly associated with local commercial agriculture (primarily related to storage and processing of products). The General Commercial (GC) land use designation allows for retail, service, office, and entertainment uses. These uses can have external operations and/or equipment that produces relatively high noise levels, such as commercial loading docks, delivery trucks, and HVAC systems. For the most part, these uses would not be near residential uses, and are encouraged to locate along the Santa Fe corridor away from such uses. However, vacant parcels designated for General Commercial and Industrial uses have been identified adjacent to residential areas within the proposed Plan Area. Because noise associated with these types of uses can be a potential source of annoyance at noise-sensitive areas, this impact is considered significant.

Mitigation Measure 4.7-5 would protect residences from excessive noise levels by requiring that new business take steps to limit noise levels, construct barriers between the source of noise and residences, and/or other effective measures. These businesses would also be required to demonstrate that noise levels at the property line would not exceed the standards shown in General Plan Table HS-2 (Table 4.7-5 in this DEIR) and Section 18.41.70 of the Zoning Ordinance. Compliance with these measures would ensure that residences and other sensitive users would not be exposed to excessive noise from commercial operations, so the impact would be less than significant with mitigation.

Schools can also be a source of noise, particularly during games and outdoor activities. The school sites within the Plan Area are surrounded primarily by existing residential development. The proposed Community Plan would increase the number of students at these schools, which could increase noise. Although the project does not propose new Institutional (school) uses within the Plan Area, renovations, maintenance, and/or expansion of the existing facilities is possible. The types of noise at these schools would be related to outdoor play and daytime sports activities; such noise would occur intermittently during the daytime, when it would not be considered a nuisance. In addition, daytime playground and outdoor school activities are exempt from County General Plan noise policies (Policy HS-7.13). Finally, Policy N-2 of the Community Plan requires that new residential development within ¼ mile of Le Grand High

School shall provide noise attenuation measures to ensure that noise from school activities would not be disruptive or exceed County standards, based on a noise study. For these reasons, noise associated with schools would be considered less than significant.

#### **4.7-6 Noise-sensitive uses could be exposed to noise from agricultural operations.**

**Applicable Regulations:** Right-to-Farm Ordinance; Confined Animal Ordinance; General Plan Policies AG-3.2, AG-3.4 and AG-3.9

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Policy OSC-7

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

Agricultural operations can also generate noise, and the Plan Area is surrounded by orchards and agricultural fields. The proposed Community Plan designates residential land uses adjacent to active agricultural operations in several locations. Any new development in these areas would need to provide a 200-foot buffer from adjacent agricultural lands, as required by the Le Grand Community Plan Policy OSC-7 and General Plan Policy AG-3.4. In addition, the Merced County Confined Animal Ordinance states that new single-family residences, not a part of an existing animal confinement facility, are prohibited within 1,000 feet of an existing facility. There are no such facilities located within 1,000 of the Plan Area boundaries at present, and General Plan Policy AG-3.9 prohibits new facilities within one-half mile of an urban community boundary, so no confined animal facilities could be constructed within 1,000 feet of the Plan Area in the future. These measures would ensure that noise associated with agricultural operations would not be significant by maintaining separation between agricultural activities and land uses that might be sensitive to noise generated by agricultural activities. Further, the Merced County Right-to-Farm Ordinance specifically states that residents moving into areas where there are existing agricultural activities, “should be prepared to accept inconvenience or discomfort from normal, necessary agricultural operations,” which would ensure that future residents acknowledge and find acceptable the potential agricultural noise. For these reasons, this impact would be less than significant.

#### **Cumulative Impacts and Mitigation Measures**

The only noise levels likely to be affected by cumulative development outside of the Plan Area would be related to traffic. The land surrounding the proposed Plan Area is expected to remain in agriculture, and there would be no residential, commercial, or industrial development outside of and in proximity to the Plan Area. Therefore, the non-traffic noise environment would not change over time, and there would not be a cumulative impact different from the project-specific impacts discussed above. Cumulative noise impacts associated with locating new development in proximity to roadways are addressed in Impact 4.7-2.

#### **4.7-7 The proposed Community Plan would contribute to cumulative increases in traffic noise levels on local roadways.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** None

**Additional Mitigation:** None available

**Residual Significance:** Significant

Future development within the Plan Area would generate increased traffic on the local roadway network. As noted in Table 4.7-9, the project-related change in traffic noise levels is predicted to range from an increase of 0.0 dB to an increase of 6.5 dB over levels that would exist without the proposed Community Plan.

Pursuant to MCGP Policy HS-7.9, a substantial increase in traffic noise levels is defined as 1.5 to 5 dB, depending on the pre-project noise environment. Analysis of the Table 4.7-9 data indicates that the traffic noise level increases resulting from the proposed Community Plan are predicted to be significant on one roadway segment – Fresno Road, north of Le Grand Road (increase from 43.5 to 50.0 dB, or 6.5 dB).

Because there are existing residential uses along this roadway segment, the proposed Community Plan's contribution to cumulative traffic noise levels is deemed considerable. As discussed in Impact 4.7-1, conventional measures for reducing traffic noise are not typically feasible in areas that are already developed. Therefore, this impact is considered significant and unavoidable.

<b>TABLE 4.7-9</b> <b>Cumulative and Cumulative Plus Project Traffic Noise Levels at 100' of Centerline</b>					
Roadway	Segment	Day/Night Average Level, dB (L <sub>dn</sub> )			
		Cumulative	Cumulative + Project	Change	Substantial Increase?
Santa Fe Avenue	North of Savana Road	59.7	61.7	2.0	No
Savana Road	West of Santa Fe Avenue	44.1	44.1	0.0	No
Cunningham Road	North of Santa Fe Avenue	52.9	53.6	0.7	No
Fresno Road	North of Le Grand Road	43.5	50.0	<b>6.5</b>	<b>Yes</b>
Santa Fe Avenue	South of Jackson Street	53.5	54.7	1.2	No
Washington Street	North of Jefferson Street	46.7	49.6	2.9	No
Jefferson Street	West of Santa Fe Avenue	52.2	54.3	2.1	No
McDowell Street	North of Jefferson Street	47.5	50.5	3.0	No
Le Grand Road	West of Santa Fe Avenue	50.0	52.4	2.4	No
Le Grand Road	East of Fresno Road	50.4	50.7	0.3	No
Minturn Road	South of Le Grand Road	56.9	58.3	1.4	No
Santa Fe Avenue	South of Fresno Road	56.0	56.5	0.5	No
Source: FHWA-RD-77-108 with inputs prepared by KD Anderson & Associates, 2018.					



## **4.8 TRANSPORTATION AND CIRCULATION**

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## 4.8 TRANSPORTATION AND CIRCULATION

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### INTRODUCTION

This section describes the existing regional and local transportation system that serves the Le Grand community, and planned improvements to that system. The proposed Community Plan would increase traffic in Le Grand and the surrounding area. These traffic impacts are evaluated in this section. Transit service and pedestrian and bicycle circulation are also evaluated.

No comments regarding traffic were made in response to the Notice of Preparation (NOP).

Supporting documentation for the traffic analysis is provided in Appendix G.

### ENVIRONMENTAL SETTING

This section provides an overview of the existing transportation system and planned improvements to that system.

#### Transportation Study Area

The materials that follow describe traffic conditions at intersections in Le Grand based on the quality of traffic flow occurring during peak a.m. and p.m. commute hours (i.e., 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), as well as the Level of Service (LOS) on area roads based on daily traffic volumes.

#### **Study Area Streets**

The characteristics of the streets serving the Le Grand area are described in the text that follows. The current Merced County General Plan (MCGP) and Community Plan differentiate streets classifications based on their physical characteristics and function. The Plan Area circulation system is comprised of Major Collector, Minor Collector, and Urban Local Road. Key streets are addressed below.

**Santa Fe Avenue** is designated a Major Collector in the MCGP north of Le Grand and a Minor Collector south of Le Grand. The road is a Major Collector within the Le Grand Community Plan area north of Le Grand Road and a Minor Collector to the south. Santa Fe Avenue runs parallel to the Burlington Northern Santa Fe (BNSF) railroad through Merced County from the Stanislaus County line to Madera County and is an important element of the local circulation systems in the communities it traverses. Santa Fe Avenue lies on the west side of the BNSF railroad. Within Le Grand, Santa Fe Avenue is a two-lane road with no auxiliary turn lanes. Intermittent sidewalks, curbs, and gutters exist in some locations where development has occurred.

**Le Grand Road** is an east-west road that extends east from an interchange on State Route (SR) 99 for about eight miles to Le Grand and continues beyond the community to its terminus near the Mariposa County boundary. Le Grand Road is classified as a Major Collector in the MCGP west of Le Grand and a Minor Collector the east. The Community Plan designated Le Grand Road as a Major Collector west of Santa Fe Avenue and a Minor Collector to the east. Within the community Le Grand Road is a two-lane facility without auxiliary lanes. Sidewalks and gutters exist in limited locations, primarily adjoining the community's elementary and high school along the south side of

**Le Grand Road.** Le Grand Road crosses the BNSF railroad at a controlled, at-grade crossing at the southern end of Le Grand's commercial area.

**Jefferson Street** connects Le Grand Road and Santa Fe Avenue through the center of the Plan Area. Jefferson Street is designated as a Major Collector west of Santa Fe Avenue and is a Minor Collector street to the east. Jefferson Street is a two-lane facility without auxiliary turn lanes. Sidewalk and curb are generally available in the area west of Santa Fe Avenue. The eastern portion of Jefferson Street crosses the BNSF railroad at a controlled, at-grade crossing.

**McDowell Street** is designated an Urban Local Road in the Le Grand Community Plan. McDowell Street extends northerly from an intersection on Le Grand Road through the west side of the Plan Area before turning to the west and to the eastern boundary of the developed portion of the Plan Area. McDowell Street is a two-lane facility without auxiliary turn lanes. Sidewalks are generally present in the southern end of McDowell Street and where development has occurred along the western end. Traffic calming features (i.e., undulations) have been installed at three mid-block locations on McDowell Street.

**Washington Street** is a north-south Urban Local Road that lies between and parallel to Santa Fe Avenue and McDowell Street from Le Grand Road to its existing terminus at the western end of the community. Intermittent sidewalks exist in the southern portion of Washington Street and have been installed with recent development on the western end. Traffic calming features (i.e., undulations) have been installed at mid-block locations north of Jefferson Street and north of Jackson Street.

**Cunningham Road** is a designated Minor Collector in the MCGP. This two-lane road extends north from Santa Fe Avenue and continues north to an intersection on SR 140 east of Planada. Cunningham Road crosses the BNSF railroad at a controlled crossing roughly 80 feet from Santa Fe Avenue.

**Jackson Street** is an Urban Local street that connects McDowell Street and Santa Fe Avenue at the northern end of the core area of Le Grand. Jackson Street is a two-lane roadway with no auxiliary turn lanes. A sidewalk has been installed on the north side of the street, west of Washington Street.

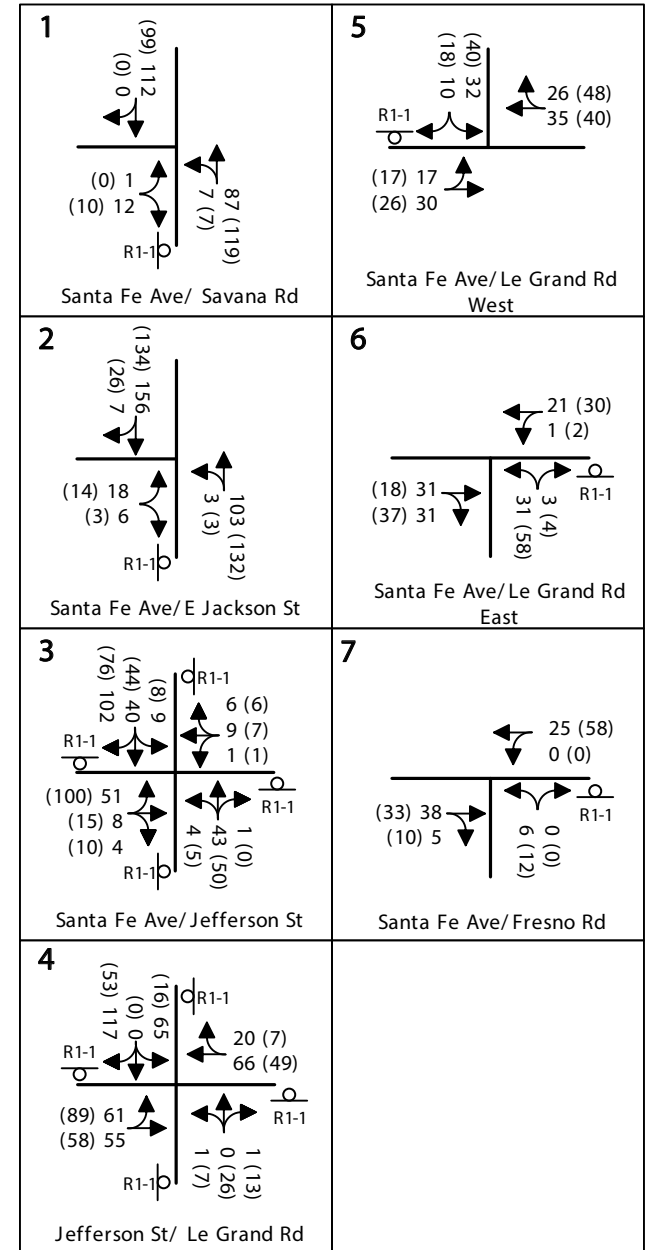
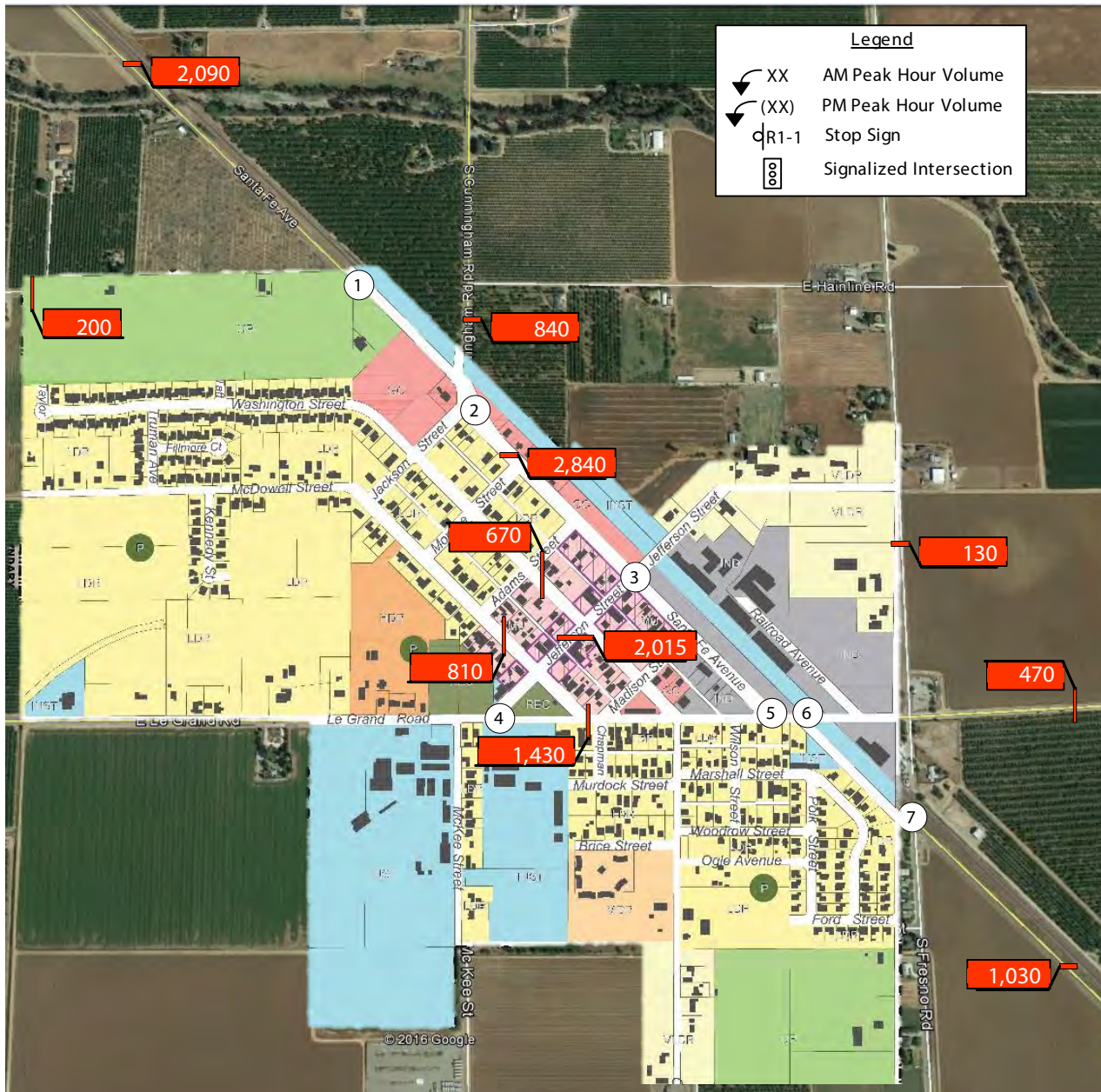
**Fresno Road** is a Local north-south road that extends from Santa Fe Avenue south towards Buchanan Hollow Road and north from Le Grand Road parallel to Cunningham Road to Childs Avenue.

### Study Intersections

Potential study intersections were identified in consultation with Merced County Public Works staff. Seven existing intersections were identified for peak hour traffic volume counts and Levels of Service (LOS) analysis based on their current importance within the Plan Area circulation system or based on the proximity to future development. The study intersections are described below and are shown in Figure 4.8-1.

**Santa Fe Avenue/Savana Road intersection.** This intersection on Santa Fe Avenue is controlled by a stop sign on the eastbound Savana Road approach. There are no auxiliary left-turn lanes. There are no marked crosswalks at this intersection, although it is legal to cross from any corner.

**Santa Fe Avenue/Jackson Street intersection.** This intersection is controlled by a stop



**Figure 4-8-1**  
Existing Traffic Volumes  
And Lane Configurations

sign on the eastbound Jackson Street approach. There are no left-turn lanes at the intersection. There are no marked crosswalks, but a street light exists on the southwest corner.

**Santa Fe Avenue/Jefferson Street intersection.** This intersection is controlled by an all-way stop. Each approach is a single lane. There are no handicap ramps, and crosswalks are marked on the western and northern legs of the intersection. A street light exists on the southwest corner.

**Santa Fe Avenue/Le Grand Road (west).** This “tee” intersection is controlled by a stop sign on the southbound Santa Fe Avenue approach. There are no auxiliary turn lanes, but the intersection’s broad corners accommodate truck turns. There are no crosswalks or street lights at the intersection.

**Santa Fe Avenue/Le Grand Road (east).** The two Santa Fe Avenue intersections on Le Grand Road are offset roughly 180 feet. This “tee” intersection is controlled by a stop sign on the northbound Santa Fe Avenue approach. Each approach is a single lane. The BNSF crossing on Le Grand Road is roughly 60 feet from the intersection. There are no crosswalks striped across the intersection, but a street light exists on the southwest corner.

**Santa Fe Avenue/Fresno Road.** This “tee” intersection is controlled by a stop sign on the Fresno Road approach. Each approach is a single lane. There are no marked crosswalks or handicap ramps. A street light exists on the southwest corner.

**Le Grand Road/Jefferson Street Intersection.** This all-way stop controlled intersection is on the west side of Le Grand adjoining Le Grand Elementary School. Each approach has a single travel lane, and the southern leg is an exit from the school site. Crosswalks exist on the legs of the intersection and handicap ramps are in place on the northern corners. The intersection’s skewed alignment results in a relatively long pedestrian crossing distance on Jefferson Street. Street lights are present on the northern corners.

### **Existing Traffic Volumes**

To determine existing traffic volumes and obtain more information about traffic conditions in the study area, traffic counts were taken during the morning and evening peak traffic periods at the study intersections. Daily traffic volume counts were also conducted on study area roadways. With one exception, these counts were made in September 2011 when the Community Plan update process began. The Santa Fe Avenue/Jackson Street intersection was counted in November 2016. Merced County Public Works staff reviewed the traffic volumes in comparison with available recent data and concluded that the 2011 counts still represent current conditions in the study area. Figure 4.8-1 identifies the a.m. and p.m. peak hour traffic volumes used for this analysis as well as the 24-hour traffic volumes used to evaluate roadway segments.

### **Existing Level of Service**

#### **Intersection Analysis Methodology**

Levels of Service were calculated using the methodology contained in the Transportation Research Board’s *Highway Capacity Manual 2010 (HCM 2010)*. At signalized intersections and intersections controlled by stop signs on all approaches, the overall LOS for intersections is based on the average length of delays for all motorists at the intersections. Table 4.8-1 presents the ranges of average vehicle delay associated with each LOS for signalized intersections.

**TABLE 4.8-1**  
**Level of Service Definitions**

<b>Level of Service</b>	<b>Signalized Intersection</b>	<b>Unsignalized Intersection</b>	<b>Roadway (Daily)</b>
A	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq 10.0$ sec	Little or no delay. Delay $\leq 10.0$ sec/veh	Completely free flow.
B	Uncongested operations, all queues clear in a single cycle. Delay $> 10.0$ sec and $\leq 20.0$ sec	Short traffic delays. Delay $> 10$ sec/veh and $\leq 15$ sec/veh	Free flow, presence of other vehicles noticeable.
C	Light congestion, occasional backups on critical approaches. Delay $> 20.0$ sec and $\leq 35.0$ sec	Average traffic delays. Delay $> 15$ sec/veh and $\leq 25$ sec/veh	Ability to maneuver and select operating speed affected.
D	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay $> 35.0$ sec and $\leq 55.0$ sec	Long traffic delays. Delay $> 25$ sec/veh and $\leq 35$ sec/veh	Unstable flow, speeds and ability to maneuver restricted.
E	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach (es). Delay $> 55.0$ sec and $\leq 80.0$ sec	Very long traffic delays, failure, extreme congestion. Delay $> 35$ sec/veh and $\leq 50$ sec/veh	At or near capacity, flow quite unstable.
F	Total breakdown, stop-and-go operation. Delay $> 80.0$ sec	Intersection blocked by external causes. Delay $> 50$ sec/veh	Forced flow, breakdown.

Sources: 2010 *Highway Capacity Manual*, Transportation Research Board (TRB) Special Report 209.

Different methodology is employed for assessing LOS at un-signalized intersections where some approaches are not controlled. At stop-sign-controlled un-signalized intersections (side street stop or one-way stop T intersections), the average delay and LOS can be determined for each individual movement that must yield the right of way. Impact analysis is based on the length of the average delay for the movements where motorists experience the longest delay, which is typically a left turn made from the stop-sign-controlled approach to the intersection. It should be noted that overall intersection average LOS at un-signalized intersections is better, often much better, than LOS on the worst single movement.

Existing Levels of Service at each intersection are shown on Table 4.8-2. As shown, because existing traffic volumes are relatively low on most Plan Area streets, the Levels of Service at all intersections meet Merced County's minimum standards. Table 4.8-2 also indicates that signals are not warranted at any study area intersections.

### **Roadway Segment Analysis Methodology**

The Level of Service on study area roadway segments can be determined based on daily traffic volume using applicable thresholds adopted by local agencies. The MCGP Update EIR provides information for County roads and State highways. Table 4.8-3 identifies the applicable standards for the roads evaluated in this analysis.

**TABLE 4.8-2**  
**Existing Intersection Level of Service**

Intersection	Control	Existing Conditions				Signal Warranted?
		AM Peak Hour		PM Peak Hour		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave/Savana Road Northbound left turn Eastbound left+right turn	EB Stop	7.5 9.1	A A	7.5 8.9	A A	No
2. Santa Fe Ave/Jackson Street Northbound left turn Eastbound left+right turn	EB Stop	7.7 10.8	A B	7.6 10.5	A B	No
3. Santa Fe Ave/Jefferson Street	All-Way Stop	7.8	A	8.2	A	No
4. Le Grand Road/Jefferson Street	All-Way Stop	9.2	A	8.1	A	No
5. Santa Fe Ave/Le Grand Rd (west) Eastbound left turn Southbound left+thru+right turn	SB Stop	7.4 9.6	A A	7.5 9.5	A A	No
6. Santa Fe Ave/Le Grand Rd (east) Westbound left turn Northbound left+right turn	NB Stop	7.4 9.5	A A	7.3 9.3	A A	No
7. Santa Fe Ave/Fresno Road Westbound left turn Northbound left+right turn	NB Stop	- 9.0	- A	- 9.2	A A	No
Source: KD Anderson & Associates, 2018.						

Source: KD Anderson & Associates, 2018.

**TABLE 4.8-3**  
**Roadway Segment Level of Service Thresholds**

Road	Area	Facility	Flow	Median	Maximum Daily Volume at Level of Service				
					A	B	C	D	E
Collector	Suburban	2-lanes	n.a.	undivided	-	-	1,900	7,600	10,100
Arterial	Suburban	2-lanes	interrupted	undivided	-	2,200	11,000	13,900	14,900

Notes:

Collector designation is applicable to all study area collector street classifications.

The Merced County General Plan has no threshold for designated local streets; the Collector streets thresholds were used for Local streets.

Source: Merced County General Plan, 2013.

Table 4.8-4 identifies the current daily traffic volumes on study area roads, as well as the corresponding LOS. As noted, all study roadways carry volumes that satisfy the Merced County minimum standard (i.e., LOS D or better).

### **Transit Service**

Generally, transit options in Merced County include an intercity fixed-route bus, Dial-a-Ride countywide public bus service and various private charter services. The fixed-route bus service, "The Bus", is operated by the Merced Regional Transit System, and Route P (Planada Commuter) serves the Planada – Le Grand area. Route P originates at the downtown Merced Transportation Center on 16<sup>th</sup> Street and follows SR 140 to Planada. Designated stops are at the Felix Tores Housing center north of Planada, El Galio Market, and Library/Golden Valley Health Center. The route then continues to Le Grand via Santa Fe Avenue before reversing course

**TABLE 4.8-4**  
**Existing Daily Traffic Volumes and Level Of Service**

Road	Location	Class	Existing	
			Average Daily Traffic (ADT)	Level of Service (LOS)
Santa Fe Avenue	North of Savana Road	Major Collector	2,090	C
Savana Road	West of Santa Fe Ave	Local	200	C
Cunningham Road	North of Santa Fe Ave	Minor Collector	840	C
Fresno Road	North of Le Grand Road	Local	130	C
Santa Fe Avenue	South of Jackson Street	Major Collector	2,840	C
Washington Street	North of Jefferson	Local	670	C
Jefferson Street	West of Santa Fe Ave	Major Collector	2,015	C
McDowell Street	North of Jefferson Street	Local	810	C
Le Grand Road	West of Santa Fe Ave	Major Collector	1,430	B
Le Grand Road	East of Fresno Road	Minor Collector	470	C
Minturn Road	South of Le Grand Road	Minor Collector	2,080	C
Santa Fe Avenue	South of Fresno Road	Minor Collector	1,030	C

Source: KD Anderson & Associates, 2018.

and returning to Merced. Route P arrives in Le Grand six times on weekdays and three times on Saturdays and Sundays.

The Merced County Association of Governments (MCAG) *FY 2016-2017 Unmet Transit Needs Analysis and Recommendations Report* provides information regarding current transit utilization on the Planada-Le Grand route. However, no information specific to Le Grand is available.

### **Bikeway**

Typically, bicycle facilities fall within three categories:

**Class I (Mixed Use Bike trail or bike path):** A completely separated facility designated for the use of bicycles. The facility is separated from any street or highway by a physical space, berm, fence, or other barrier.

**Class II (Bike lane):** A lane within a street or roadway designed for the one-way use of bicycles. It is an on-street facility with signs, striped lane markings, and pavement legends.

**Class III (Bike Route):** Any on-street right-of-way recommended for bicycle travel where automobiles and bicycle share the road.

At present, there are no designated bike facilities within the Plan Area.

### **Pedestrian Facilities**

Sidewalks exist in various locations throughout Le Grand, as sidewalks have been provided sporadically as the community has developed over the years. Sidewalks are generally present in the Plan Area core, in the newer residential areas and near schools. In older areas there are often no sidewalks and portions of collector roadways have few sidewalks with many gaps and undeveloped adjacent parcels.



### **Rail Facilities**

The BNSF Railroad tracks extend through the Plan Area from northwest to the southeast. The BNSF rail line provides both freight and passenger (Amtrak) rail services. At-grade crossings exist on Cunningham Road, Jefferson Street and Le Grand Road. These crossings are actively controlled with crossing arms, but the roads lack adequate pedestrian facilities near the crossings.

Existing industrial facilities paralleling the BNSF rail line are served by railroad spurs. No access to passenger rail service is provided in the Plan Area. The nearest Amtrak passenger station is located in the City of Merced.

## **REGULATORY SETTING**

### **Federal**

There are no specific federal regulations pertaining to development of the proposed Community Plan.

### **State**

There are no specific State regulations pertaining to development of the proposed Community Plan, because there are no State highways or other facilities within or near the Plan Area.

### **Local**

#### **Merced County General Plan**

The Circulation Element of the 2030 Merced County General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following traffic, bike, transit, pedestrian, and rail policies apply to the proposed Community Plan.

#### **Policy CIR-1.5: County Level of Service Standards**

Implement a Countywide roadway system that achieves the following level-of-service (LOS) standards during peak traffic periods:

- a) For roadways located within rural areas: LOS "C" or better.
- b) For roadways located outside Urban Communities that serve as connectors between Urban Communities: LOS of "D" or better.
- c) For roadways located within Urban Communities: LOS of "D" or better.

Based on this guidance the minimum standard on all study area intersections in the Plan Area is LOS D.

#### **Policy CIR-1.6: Level of Service "E" Exception**

Allow a level of service "E" or worse only on a minor component of the circulation system (such as a left-turn movement from a local roadway) if the major component of the circulation system (such as a through movement on a collector or arterial roadway) would be significantly compromised in the process of improving the level of service of the minor component.

#### **Policy CIR-1.22: Complete Streets**

Require new urban streets within Urban Communities to be designed and constructed to not only accommodate automobile, truck, and bus traffic, but to also serve all users, including pedestrians, bicyclists, and transit passengers of all ages and abilities. This includes:

- Creating multi-modal street connections in order to establish a comprehensive, integrated, and connected transportation network;
- Minimizing curb cuts along non-local streets;

- Consider planting street trees adjacent to curbs and between the street and sidewalk to provide a buffer between the pedestrian and the automobile, where appropriate;
- Constructing sidewalks on both sides of streets, where feasible;
- Coordinating with other agencies and cities to ensure connections are made between jurisdictions; and,
- Incorporating traffic calming devices such as roundabouts, bulb-outs at intersections, and traffic tables.

**Policy CIR-1.23: At-Grade Railroad Crossing Guidelines**

Work with California Public Utilities Commission (CPUC) and the affected railroads to monitor the effects of development, and implement necessary and applicable design improvements at railroad crossings.

**Policy CIR-3.1: Multi-Modal Transportation**

Encourage multi-modal transportation opportunities within Urban Communities.

**Policy CIR-3.2: Transit Improvements**

Continue to support transit efforts by the Merced County Association of Governments, Dial-A-Ride, UC Merced Transit, other public entities, private social service providers, and other various private charter services to improve and expand public transit throughout the County.

**Policy CIR-4.2: Bicycle Lanes and Pedestrian Paths**

Require all new or major reconstructed streets within Urban Communities to accommodate travel by pedestrians and bicyclists, except where pedestrians and bicyclists are prohibited by law from using a given facility or where the costs of including bikeways and walkways would be excessively disproportionate to the need or probable use.

**Policy CIR-4.4: Bicycle Lane Standards**

Ensure that the design and construction of bicycle lanes is consistent with Caltrans criteria and standards.

**Policy CIR-4.6: Multi-Use Trails**

Encourage the development of multi-use corridors (such as hiking, equestrian, and mountain biking) in open space areas, along power line transmission corridors, utility easements, rivers, creeks, abandoned railways, and irrigation canals.

**Merced County Bike Plan**

MCAG has updated the Merced County Regional Bicycle Plan. The Plan, adopted by the County in June 2003 and updated in 2008, provides a comprehensive long-range view for the development of an extensive regional bikeway system that provides connectivity throughout the Merced region. In the vicinity of Le Grand, Santa Fe Avenue has been identified as a component of a Regional Bike Plan, with Class II bike lanes planned on Santa Fe Avenue from Le Grand Road to the Merced County line.

**Short Range Transit Plan**

MCAG adopted the 2017/18-2021/22 Short Range Transit Plan (S RTP), which provides a detailed business plan to guide and expand The Bus transit program over a five-year period. The S RTP identifies a number of changes and improvements to transit service, such as replacing busses, new scheduling software, mobile ticketing, and bus stop improvements. No specific changes are identified for the route that serves Le Grand.

**IMPACTS AND MITIGATION MEASURES**

**Method of Analysis**

For the purpose of this traffic analysis, the proposed project is defined as the development of the future land uses and circulation system that are anticipated to be developed under the

proposed Community Plan.

### **Planned Circulation System**

The Circulation Diagram for the proposed Community Plan identifies local circulation system improvements that are consistent with previous long range planning for the community, but does not include new major routes or road realignments.

### **Future Land Use Assumptions**

The amount of traffic on Le Grand's local roads and collector streets is dependent on the amount of new traffic accompanying planned development, as well as regional through traffic increases on the routes that serve both Le Grand and other communities. The nature and quantity of new land uses anticipated in Le Grand over the life of this updated Community Plan was quantified by the lead consultant. A total of 620 new single and multi-family residences are assumed, and the Community Plan provides for additional retail commercial, newly integrated Mixed-Use, and Industrial uses. It should be noted that there have been slight adjustments to the anticipated number of units and non-residential square footage since the traffic analysis was prepared. For example, the Community Plan now calls for up to 608 new residential units. However, these changes are minor, and would not alter the conclusions of the traffic analysis.

### **Characteristics of Development**

#### **Trip Generation**

Estimating the number of vehicle trips associated by new development and assigning those trips to the study area street system is required to determine the amount of vehicular traffic that would be added to the street system. The first step in this process is identification of applicable trip generation rates for the land uses assumed under the proposed Community Plan.

For this analysis, peak hour generation rates were derived from information presented in the Institute of Transportation Engineers (ITE) publication *Trip Generation* (9<sup>th</sup> Edition). However, the Community Plan describes non-residential land uses in general terms, and various types of businesses could be created within these land use categories. Thus, it was also necessary to develop composite trip generation rates for the broad land use categories that reflect the characteristics of various permitted uses. Table 4.8-5 presents trip generation rates utilized in this study.

Table 4.8-6 presents the number of trips that could be generated by new individual uses at buildout of the proposed Community Plan. As shown, a total of 9,910 gross daily trips are anticipated, with 891 "gross" trips during the a.m. peak hour with 1,000 "gross" trips being generated during the p.m. peak hour.

#### **Trip Distribution**

Trips generated by residential and non-residential trips are inter-related. A portion of the trips "produced" by new residences would be one end of a new trip that is "attracted" to new non-residential use. In order to avoid double counting new trips, it is necessary to identify the relationship between land uses in order that the "internal" trips that would remain within the Plan Area are not counted twice. Similarly, a share of the trips generated by retail uses is often attracted from the stream of traffic passing the site, and these "pass-by" trips do not represent new trips on the Plan Area street system.

As shown in Table 4.8-5, 34% of the retail trips were considered to be pass-by trips during the a.m. and p.m. peak hours, respectively. These pass-by trips were attracted from traffic passing the site on the adjacent street system. Accounting for pass-by traffic build out of the proposed

**TABLE 4.8-5  
Trip Generation Rates**

Use	Description	Unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
LDR	Single Family Detached (210)	Dwelling	9.52	25%	75%	0.75	63%	37%	1.00
MDR									
MU-res	Apartments (220)	Dwelling	6.65	20%	80%	0.51	65%	35%	0.62
GC	Shopping Center (820)	ksf	42.70	62%	38%	0.96	48%	52%	3.71
NC									
MU-Retail									
I	Industrial (110)	Ksf	6.97	88%	12%	0.92	12%	88%	0.97
MU-office	Office (710)	Ksf	11.03	88%	12%	1.56	17%	83%	1.49
INST	Elementary School (520)	Student	1.29	55%	45%	0.45	49%	51%	0.15
INST	Middle / Jr. High School	Student	1.62	55%	45%	0.54	49%	51%	0.16
INST	High School	Student	1.71	68%	32%	0.43	47%	53%	0.13
Source: KD Anderson & Associates, 2018.									

**TABLE 4.8-6  
Trip Generation Forecasts**

Use	Description	Unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
VLDR	Single Family Detached (210)	399 du's	3,798	75	224	299	251	148	399
LDR									
MDR									
HDR	Apartments (220)	221 du's	1,470	23	90	113	89	48	137
	<i>Residential Subtotal</i>	<i>620 du's</i>	<i>5,268</i>	<i>98</i>	<i>314</i>	<i>412</i>	<i>340</i>	<i>196</i>	<i>536</i>
GC	Shopping Center (820) 25%	60.3 ksf	2,575	36	22	58	107	117	224
MU-Retail		4.0 ksf	171	3	1	4	7	8	15
	Total Retail		2,746	39	23	62	114	125	239
	Pass-by (Average rate for Shopping Centers)	34%	934	13	8	21	39	43	82
	Net New		1,812	26	15	41	75	82	157
I	Industrial (110)	120.0 ksf	836	97	13	110	14	102	116
	Automobiles	(75%)	(627)						
	Heavy Trucks	(25%)	(209)						
MU -office	Office (710) 75%	11.9 ksf	131	16	3	19	3	15	18
INST	Elementary School	287 students	370	71	58	129	21	22	43
INST	Middle / Jr. High School	143 students	232	42	35	77	11	12	23
INST	High School <sup>1</sup>	191 students	327	56	26	82	12	13	25
	<i>Non Residential Subtotal</i>		<i>4,642</i>	<i>321</i>	<i>158</i>	<i>479</i>	<i>175</i>	<i>289</i>	<i>464</i>
	<b>Gross Total</b>		<b>9,910</b>	<b>419</b>	<b>472</b>	<b>891</b>	<b>515</b>	<b>485</b>	<b>1,000</b>
	<b>Less Retail Pass-by</b>		<b>934</b>	<b>13</b>	<b>8</b>	<b>21</b>	<b>39</b>	<b>43</b>	<b>82</b>
	<b>Net New Trips</b>		<b>8,976</b>	<b>406</b>	<b>464</b>	<b>870</b>	<b>476</b>	<b>442</b>	<b>918</b>
	<b>New Heavy Truck Trips<sup>2</sup></b>		<b>289</b>						

## Notes:

1. Does not include new trips generated in Planada which will be assigned to the study area under cumulative conditions

2. Heavy truck trips are 1% of all non-industrial traffic plus truck trips associated with Industrial uses (80+209 = 289 or 3.3% of all new project trips.

There have been slight adjustments to the anticipated number of units and non-residential square footage since the traffic analysis was prepared. For example, the Community Plan now calls for up to 608 new residential units. However, these changes are minor, and would not alter the conclusions of the traffic analysis.

Source: KD Anderson & Associates, 2018.

Le Grand Community Plan is anticipated to generate a total of 8,976 “new” daily trips, 870 “new” trips during the a.m. peak hour and a total of 918 “new” trips during the p.m. peak hour.

The share of these trips that would be attracted to other new uses, would end at existing locations in Le Grand or would be “exported” to other areas of Merced County was determined in consultation with Merced county staff based on review of MCAG regional travel demand forecasting model data and staff’s knowledge of the southern Merced County area. Table 4.8-7 summarizes the distribution assumptions made for this analysis.

<b>TABLE 4.8-7 Trip Distribution Assumptions</b>			
<b>Direction</b>	<b>Route</b>	<b>Percent of Total</b>	
		<b>Residential</b>	<b>Non-residential</b>
Northwest	Santa Fe Avenue to Planada	22%	18%
North	Cunningham Rd/Fresno Rd	2%	4%
East	Le Grand Road	<1%	<1%
Southeast	Santa Fe Avenue	<1%	3%
South	Minturn Road to SR 99	13%	9%
West	Le Grand Road to SR 99	22%	25%
Internal		40%	61%
Source: KD Anderson & Associates, 2018.			

### **Trip Assignment**

The trips associated with development of the future land uses in the Plan Area were assigned to the local area street system manually using the TRAFFIX assignment model. The peak hour trips generated by new development were distributed onto the adjacent street system on both a local and regional basis. Residentially generated trips were distributed to non-residential destinations in proportion to the relative size of the destination.

The assignment accounted for the effects of schools. During the morning hours the number of trips to and from Plan Area schools comprised a significant portion of the residential trip generation.

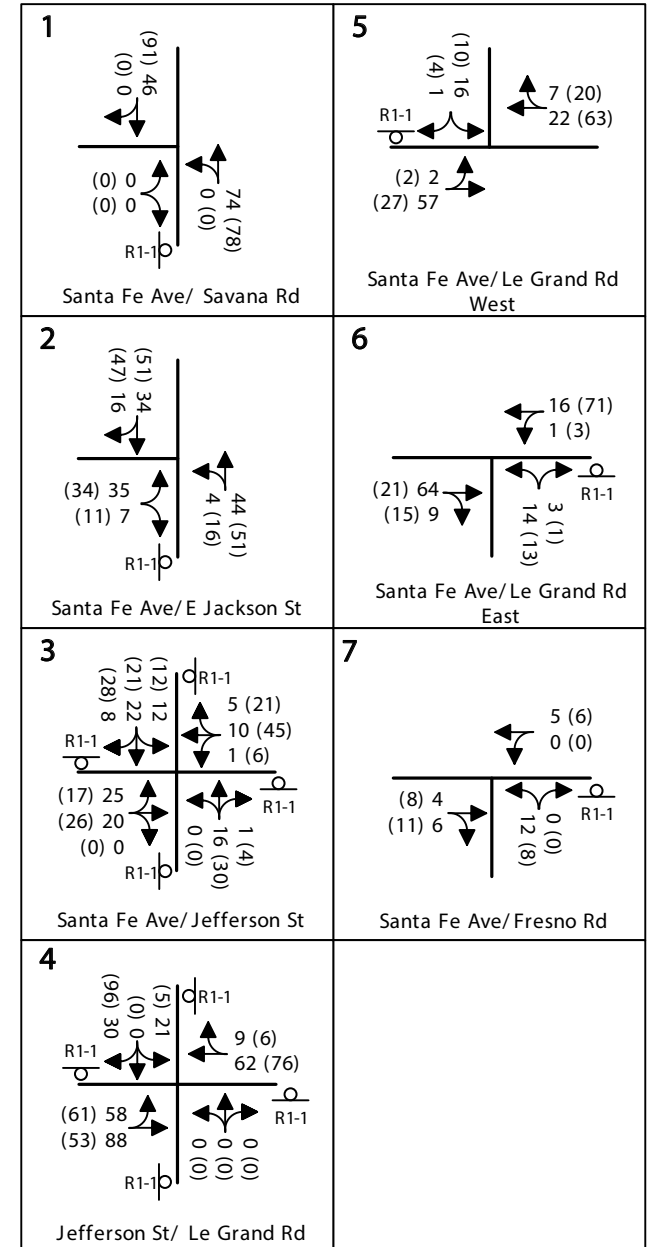
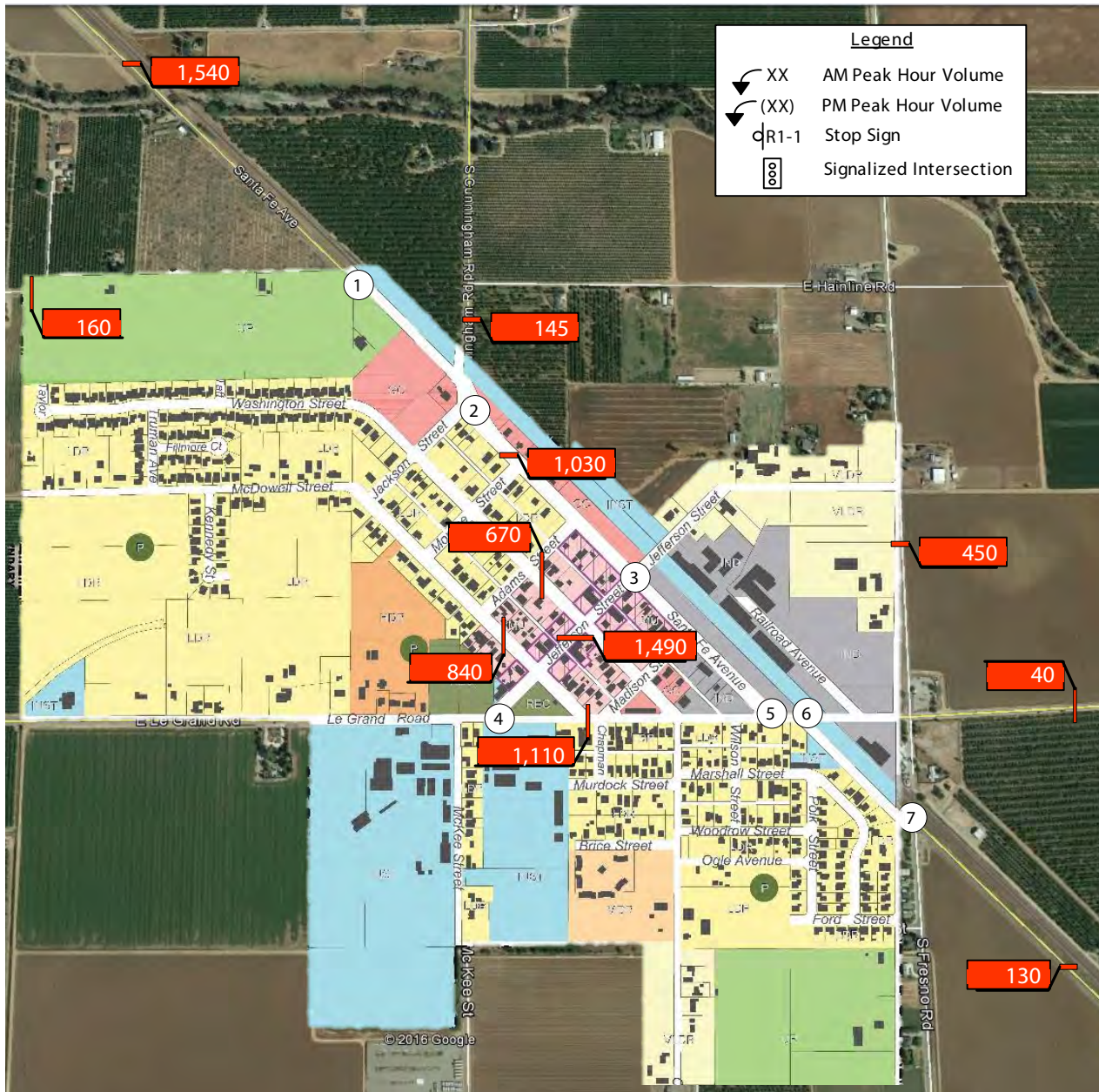
The TRAFFIX assignment accounted for the relative time between origins and destinations considering both existing and planned travel patterns. The TRAFFIX model was used to generate peak hour forecasts utilizing expected distribution. Figure 4.8-2 presents the trips estimated to result from development of the proposed Community Plan.

### **Standards of Significance**

The proposed Community Plan would have a significant impact if it could cause:

#### **Roads**

- LOS at a signalized intersection, or on a street segment or at a signalized intersection, to degrade from LOS A, B, C, or D to LOS E or F;
- Substantially increases intersection delay at signalized intersections already operating at LOS E or F; and/or



**Figure 4-8-2**  
**All Le Grand Growth Alone**  
**Traffic Volumes And Lane Configurations**

- Cause a roadway segment to operate at LOS E or F or, for roadway segments that would operate at LOS E or F without the project, substantially increase traffic.

#### Transit

- Transit demand in excess of current or anticipated system capacity;
- Hazards at existing or anticipated transit stops; and/or
- Interference with the ability of transit providers to deliver service to the community.

#### Bike

- Interference with or elimination of an existing designated bikeway;
- Interference with implementation of a proposed bikeway; and/or
- Unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

#### Pedestrian

- Unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle conflicts; and/or
- Interference with the implementation of an adopted plan for pedestrian facilities.

#### Rail

- Traffic volumes across a railroad in excess of the capacity of the roadway or if the operation of an adjoining intersection would likely result in queuing that extended to a crossing.

### **Project-Specific Impacts and Mitigation Measures**

#### **4.8-1 The proposed Community Plan would increase traffic at local intersections.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Implementation Measure CIR-3

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

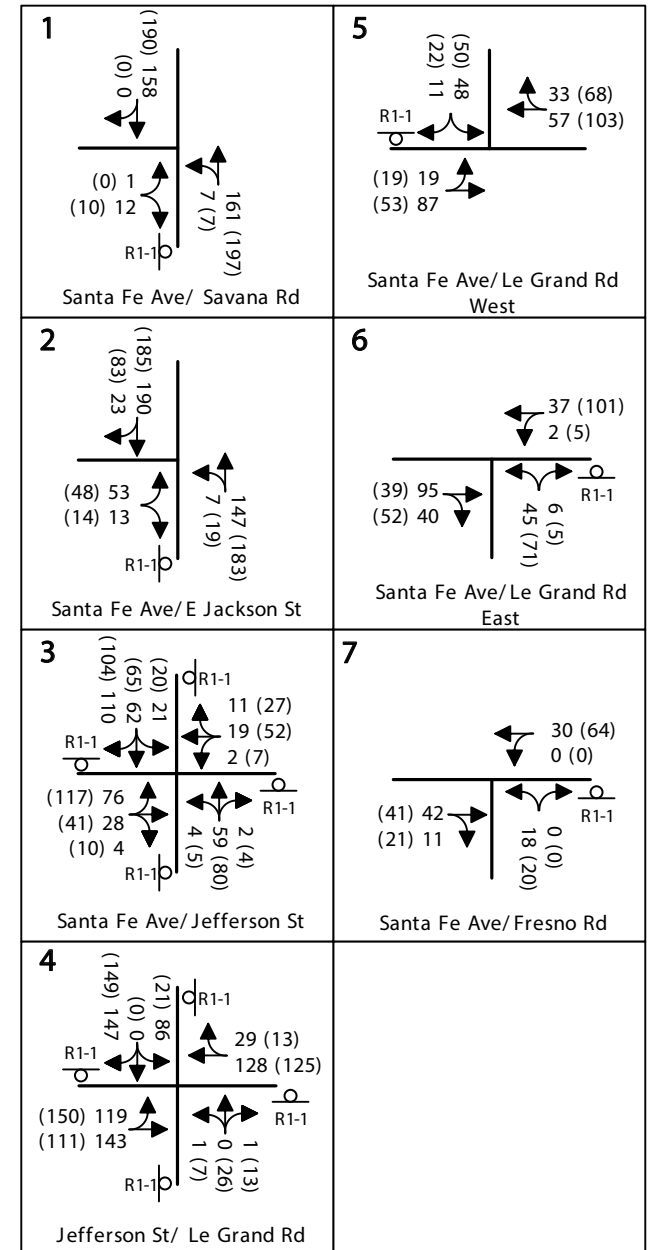
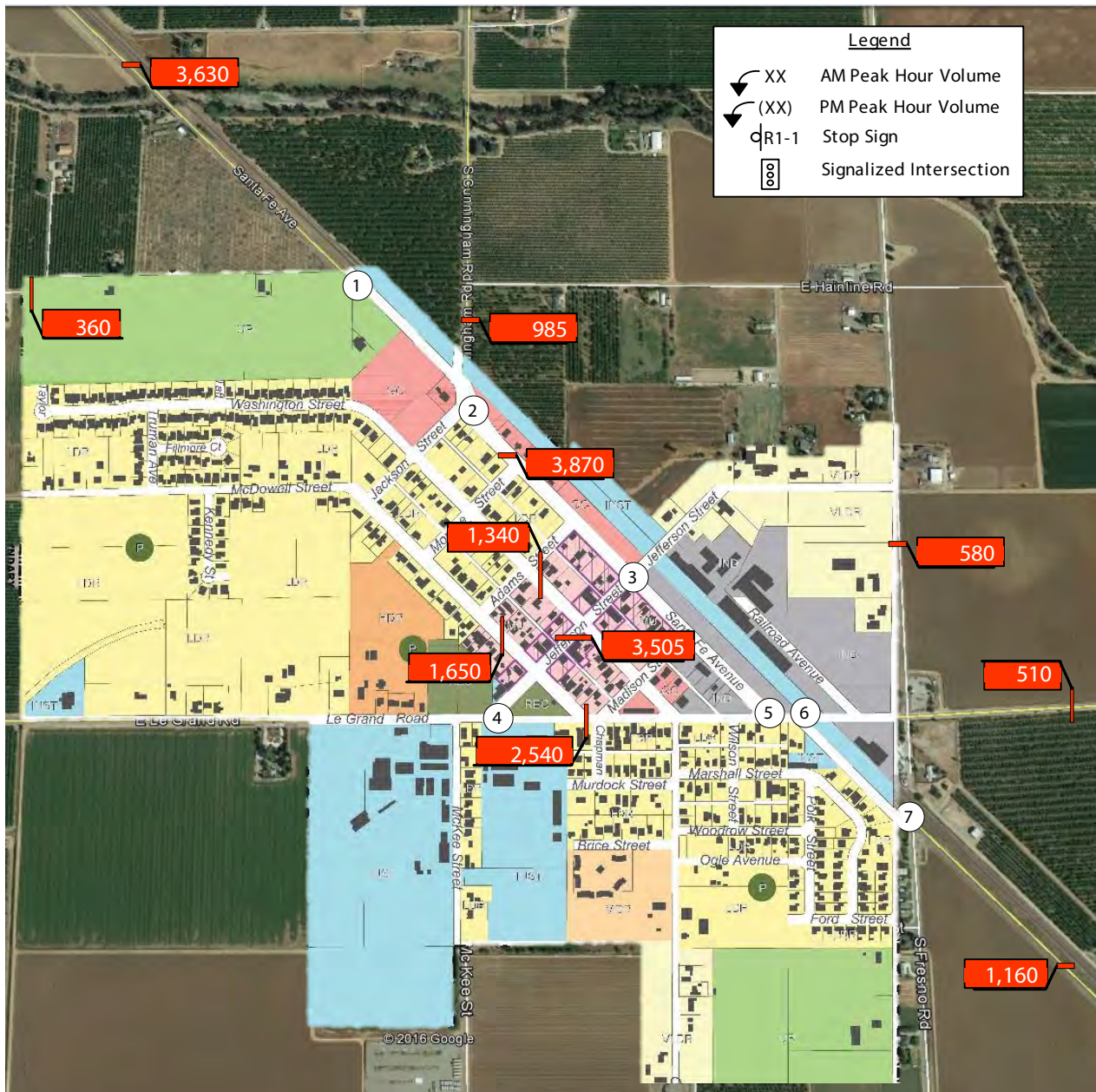
**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The proposed Community Plan would increase the amount of development in the Plan Area. Residential, commercial, and mixed-use development would generate substantially more traffic, increasing congestion on local roadways.

The amount of traffic on Plan Area arterial and collector streets is dependent on the amount of new traffic accompanying planned development, as well as regional through traffic increases on routes that serve both Le Grand and other communities. Figure 4.8-3 presents resulting a.m. and p.m. peak hour “Existing plus Project” traffic volumes at study intersections. These volumes have been used to identify peak hour Levels of Service at study intersections and on roadway segments. Table 4.8-8 summarizes the peak hour Levels of Service projected for study intersections under “Existing plus Project” conditions with implementation of the proposed Community Plan. As shown in Table 4.8-8, all intersections would operate at LOS A or B with





**Figure 4-8-3**  
**Existing Plus Le Grand Plan Buildout**  
**Traffic Volumes And Lane Configurations**

**TABLE 4.8-8  
Existing Plus Project  
Intersection Level of Service**

Intersection	Control	Existing Conditions								Signal Warranted?
		AM Peak Hour				PM Peak Hour				
		Existing		Existing Plus Project		Existing		Existing Plus Project		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave / Savana Road NB left turn EB left+right turn	EB Stop	7.5 9.1	A A	7.6 9.5	A A	7.5 8.9	A A	7.7 9.5	A A	No
2. Santa Fe Ave / Jackson Street NB left turn EB left+right turn	EB Stop	7.7 10.8	A B	7.8 12.8	A B	7.6 10.5	A B	8.0 12.9	A B	No
3. Santa Fe Ave / Jefferson Street	All-Way Stop	7.8	A	8.6	A	8.2	A	9.4	A	No
4. Le Grand Road / Jefferson Street	All-Way Stop	9.2	A	13.4	B	8.1	A	9.9	A	No
5. Santa Fe Ave / Le Grand Rd (west) EB left turn SB left+thru+right turn	SB Stop	7.4 9.6	A A	7.5 10.7	A B	7.5 9.5	A A	7.7 10.5	A B	No
6. Santa Fe Ave / Le Grand Road (east) WB left turn NB left+right turn	NB Stop	7.4 9.5	A A	7.6 10.2	A B	7.3 9.3	A A	7.4 10.3	A B	No
7. Santa Fe Ave / Fresno Road WB left turn NB left+right turn	NB Stop	- 9.0	- A	- 9.1	- A	- 9.2	- A	- 9.5	- A	No
Source: KD Anderson & Associates. 2018.										

Source: KD Anderson & Associates, 2018.

the edition of proposed Community Plan traffic. Therefore, the impact on study area intersections would be less than significant.

#### **4.8-2 The proposed Community Plan would increase traffic volumes on local roadways.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Implementation Measure CIR-3

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

Table 4.8-9 identifies the volume of traffic added to Plan Area streets by the proposed project on a daily basis and the resulting LOS. As shown, all segments would operate at LOS B or C with the additional traffic, so the impact would be less than significant.

#### **4.8-3 The proposed Community Plan would increase demand for transit services.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies C-1, C-11 and C-12, and Implementation Measures CIR-3 and CIR-11

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None Required

**Residual Significance:** Less than Significant

Development under the proposed Community Plan would increase the population of the community and increase the number of employment opportunities in the community. It is likely than an incremental increase in the demand for transit services would occur. However, based on current transit ridership information, it is unlikely that growth in Le Grand would result in the demand for ridership in excess of the current system capacity. Le Grand Community Plan Policy C-1 requires that new streets and the redesign or expansion of existing streets accommodate transit. Le Grand Community Plan Goal C-6 and Policies C-11 and C-12 promote support for enhanced transit options, and Figure 5.17 of the proposed Community Plan suggests that transit stops could be developed along current The Bus routes. Implementation Measure CIR-11 calls for analyzing existing community transit routes and stops to ensure proper location adjacent to high activity land uses, community trails and other bicycle facilities. CIR-3 calls for formulation of a Bridge and Thorough Fare fee program to fund circulation improvements in the Plan Area.

It is unlikely that development in the community would result in safety impacts at existing or anticipated transit stops, nor would development in Le Grand interfere with the ability of transit providers to deliver service to the community. Therefore, the impacts of implementing the Le

**TABLE 4.8-9  
Existing Plus Project  
Daily Traffic Volumes**

Road	Location	Existing		Existing Plus Project		
		ADT	LOS	ADT		LOS
				Project	Total	
Santa Fe Avenue	North of Savana Road	2,090	C	1,540	3,630	C
Savana Road	West of Santa Fe Avenue	200	C	0	200	C
Cunningham Road	North of Santa Fe	840	C	145	985	C
Fresno Road	North of Le Grand Road	130	C	465	595	C
Santa Fe Avenue	South of Jackson Street	2,840	C	1,025	3,865	C
Washington Street	North of Jefferson	670	C	670	1,340	C
Jefferson Street	West of Santa Fe Avenue	2,015	C	1,490	3,505	C
McDowell Street	North of Jefferson Street	810	C	840	1,650	C
Le Grand Road	West of Santa Fe Avenue	1,430	B	1,130	2,560	C
Le Grand Road	East of Fresno Road	470	C	40	510	C
Minturn Road	South of Le Grand Road	2,080	C	880	2,960	C
Santa Fe Avenue	South of Fresno Road	1,030	C	130	1,160	C
Source: KD Anderson & Associates, 2018.						

Grand Community Plan on transit are less than significant.

#### **4.8-4 The proposed Community Plan would increase demand for bicycle facilities.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies C-1, C-8, C-9 and C-10 and Implementation Measures CIR-3, CIR-6 and CIR-7

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.8-4:

*Merced County shall create bicycle facilities on major collector streets in the Plan Area-- Santa Fe Avenue, Le Grand Road and Jefferson Street.*

**Residual Significance:** Less than Significant

Development under the proposed Community Plan would not hinder or eliminate an existing designated bikeway, nor interfere with implementation of a proposed bikeway.

Development under the proposed Community Plan would increase the number of bicycle riders in the community, either as local commute activity, as shopping trips to new retail opportunities or as part of travel between Plan Area residences and school. Because the volume of traffic on Le Grand streets would increase, the probability of conflict between automobiles and bicyclists would also increase on those streets where facilities for bicycles are unavailable. Policies C-1, C-9, and C-10, as well as Implementation Measures CIR-3 (funding for circulation improvements in the Plan Area, CIR 5 (traffic calming measures), CIR-6 (striped bike lanes), and CIR-7 ("green" bike lanes) would work together to establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the community. Ultimately, the Community Plan calls for Class II bike lanes on Jefferson Street, Santa Fe Avenue and Le Grand Road, which would reduce the possibility of conflicts on these major streets. However, because specific funding has not been identified for these improvements, the timing of these improvements is not known. Safety conflicts could still occur prior to construction of the improvements. This is a significant impact.

Mitigation Measure 4.8-4 would ensure that bike lanes are funded and constructed on major roads, which would minimize the potential for vehicle/bike conflicts. New development adjacent to these roads would be required to provide the bike lanes along their frontages, and Bridge and Thoroughfare fees (per Implementation Measure CIR-3) and other funds would be used to install bike lanes where there is no designated new development. Therefore, with mitigation, this impact would be less than significant.

#### **4.8-5 The proposed Community Plan would increase demand for pedestrian facilities.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Policies C-1, C-7 and C-8, and

## Implementation Measures C-6 and C-7

**Significance after Mitigation in the proposed Community Plan:** Significant**Additional Mitigation:** Mitigation Measure 4.8-5:

*Merced County shall complete sidewalk improvements on key streets, including the following:*

- *Installation of sidewalks at the following locations:*
  - *West side of Santa Fe Avenue along the commercial frontage;*
  - *North side of Jackson from Washington Street to Santa Fe Avenue;*
  - *East side of Washington north of Jackson Street;*
  - *West side of Santa Fe Avenue from Jackson Street to Monroe Street;*
- *Rehabilitation of crosswalks at Santa Fe Avenue/Jefferson Street intersection;*
- *Improved pedestrian route across Jefferson Street railroad crossing; and*
- *Installation of pedestrian crossing on Le Grand Road near the schools.*

**Residual Significance:** Less than Significant

Development under the proposed Community Plan would not hinder or eliminate an existing pedestrian facility. Because Policies C-1 and C-7 work to establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the community, development under the Community Plan would not interfere with implementation of a proposed pedestrian facility.

Development under the Le Grand Community Plan would result in additional pedestrians walking along the community's streets. With increased traffic volumes and intermittent existing pedestrian facilities, safety conflicts between motor vehicles and pedestrians are likely at locations near activity centers, such as community schools and new retail areas along Santa Fe Avenue. Ultimately, the Community Plan calls for sidewalks on Le Grand's streets and prioritizes sidewalks on those streets. Locations noted in the proposed Community Plan include those where the possibility of conflicts is the greatest, primarily Le Grand Road near the two schools and Santa Fe Avenue, in addition to Jackson Street and Washington Street, near future commercial areas. However, because specific funding for these improvements has not yet been identified, safety conflicts could still occur. This would be a significant impact.

The proposed Community Plan calls for sidewalks on several major streets and prioritizes areas where sidewalks should be installed, including sidewalks that would be needed to remedy existing deficiencies (see Figure 3-8 in Chapter 3, Project Description). Implementation Measure CIR-5 also calls for implementing traffic calming measures along major roads. The priority sidewalk map is intended to be used by the County to pursue Active Transportation Program (ATP) grant funding, and to apply for "Measure V" funds, which was passed by County voters in the 2016 General Election and provides a ½ cent sales tax for transportation improvements, including complete streets, such as sidewalks and bike paths. Mitigation Measure 4.8-5 (b) requires that sidewalks be constructed along the roads that would carry the most vehicular and pedestrian traffic, particularly near schools and commercial areas. This would be achieved in several ways. First, new development would be required to provide frontage improvements along development parcels, including sidewalks. Even with these new sidewalks, there would be gaps without any sidewalks. All new development would be required to pay its proportionate share toward roadway improvements, including sidewalks, which would be incorporated into the Bridge and Thoroughfare program called for by Implementation Measure CIR-3. These fee funds in combination with ATP and Measure V funds (if received)

would be used to complete the sidewalks along the major street sections that would be primary pedestrian routes. In addition, Mitigation Measure 4.8-5 installation of sidewalks and pedestrian crossings, which, along with traffic calming measures, would minimize the potential risk of pedestrian/vehicle conflicts. Therefore, the impact would be less than significant with mitigation.

**4.8-6 The proposed Community Plan could result in conflicts with the railroad tracks.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation included in the proposed Community Plan:** Implementation Measure CIR-12

**Significance after Mitigation in the proposed Community Plan:** Significant

**Additional Mitigation:** Mitigation Measure 4.8-6:

*Implement Mitigation Measure 4.8-5.*

**Residual Significance:** Less than Significant

The three existing railroad crossings in the Plan Area are in relatively close proximity to intersections that will carry increased traffic in the future as the area develops, and conflicts between the operation of intersections and adjoining crossings could occur. However, the traffic volume increases projected to accompany build out of the Community Plan are relatively low, and each location is equipped with crossing guard arms. As noted in the discussion of pedestrian impacts, the Jefferson Street railroad crossing could see increased foot traffic as development east of the railroad proceeds. Implementation Measure CIR-12 calls for the County to work with the BNSF to improve railroad crossings at Le Grand Road, Jefferson Street, and Cunningham Road to allow for enhanced pedestrian and bicycle access across the tracks. Mitigation Measure 4.8-5 further requires improved pedestrian crossings on Jefferson Street, which would minimize the potential conflicts with the rail crossing. Therefore, this impact would be less than significant with mitigation.

### **Cumulative Impacts and Mitigation Measures**

This section evaluates the proposed project contribution to cumulative increases in traffic and transit demand. The demand for pedestrian and bicycle facilities would be primarily limited to those residing in the Plan Area. Therefore, there would be no cumulative impact on bicycle and pedestrian facilities.

### **Regional Traffic Growth**

#### **Historic Growth Trends**

Because Santa Fe Avenue and Le Grand Road are regional facilities, through traffic growth on those roads is the primary “non-Le Grand” component in the cumulative traffic analysis. However, little information is available regarding historic growth trends on these roads. In addition, because trips associated with Le Grand are the main contributor to the traffic volume on these roads, historical records may not be an indicator of traffic volume increases that are not related to Le Grand.

#### **Planada Area Growth**

An important consideration in forecasting future traffic volumes is the relationship between future residential development in Planada and Le Grand High School. Because Planada



students are expected to continue to attend Le Grand High School into the foreseeable future, additional trips by school buses, parents and students will occur on Santa Fe Avenue, Jefferson Street, and Le Grand Road.

The number of trips added is dependent on the number of new residences and the share of students who are expected to be bussed. The recently-adopted Planada Community Plan Update indicates that 1,342 new dwelling units could be accommodated in the community, and that these residences could result in 489 more high school students. Roughly 60% of Planada's high school students are bussed to Le Grand High School today. Assuming that this ratio remains and that average automobile occupancy for students in automobiles is 1.5 students per vehicle, then roughly 130 additional vehicles would travel to Le Grand in the morning. Half would typically return to Planada and the other half would continue on as a trip to parent employment or as a parked student vehicles. Thus, traffic related to future Planada students could represent 390 daily trips between the communities.

#### MCAG Year 2035 Traffic Model

To provide an alternative forecast, an approach was taken that employed the Merced County Association of Governments (MCAG) regional traffic model. For this analysis, the proposed land use plan was isolated in the Year 2035 and Year 2010 traffic models. In each case the model's "select link" function was employed to identify the traffic growth on study area roads that was unrelated to the community of Le Grand. The difference in this increment between Year 2010 and Year 2035 was assumed to be the growth increment that could be added to the Existing volumes to create the Year 2035 without Project scenario, while the increment can be added to Existing Plus Project volumes to create Year 2035 plus proposed Community Plan conditions.

Because the approach using the MCAG model yielded a growth increment, it represented a more conservative approach than use of the historic growth trends that implied zero background growth. The forecasts which follow are based on use of the MCAG growth increment.

Figure 4.8-4 presents Year 2035 a.m. and p.m. peak hour traffic volumes at study intersections assuming that no development proceeds in the Plan Area, while Figure 4.8-5 presents peak hour traffic volumes assuming that the proposed Community Plan is implemented and development proceeds. Year 2035 Without Project volumes were created by interpolating peak hour traffic volume increased from the directional daily background growth increment. Year 2035 Plus Project volumes were created by superimposing Le Grand trips onto the Without Project condition.

#### **4.8-7 The proposed Community Plan would contribute to cumulative increases in traffic congestion.**

**Applicable Regulations:** None

**Significance:** Less than Significant

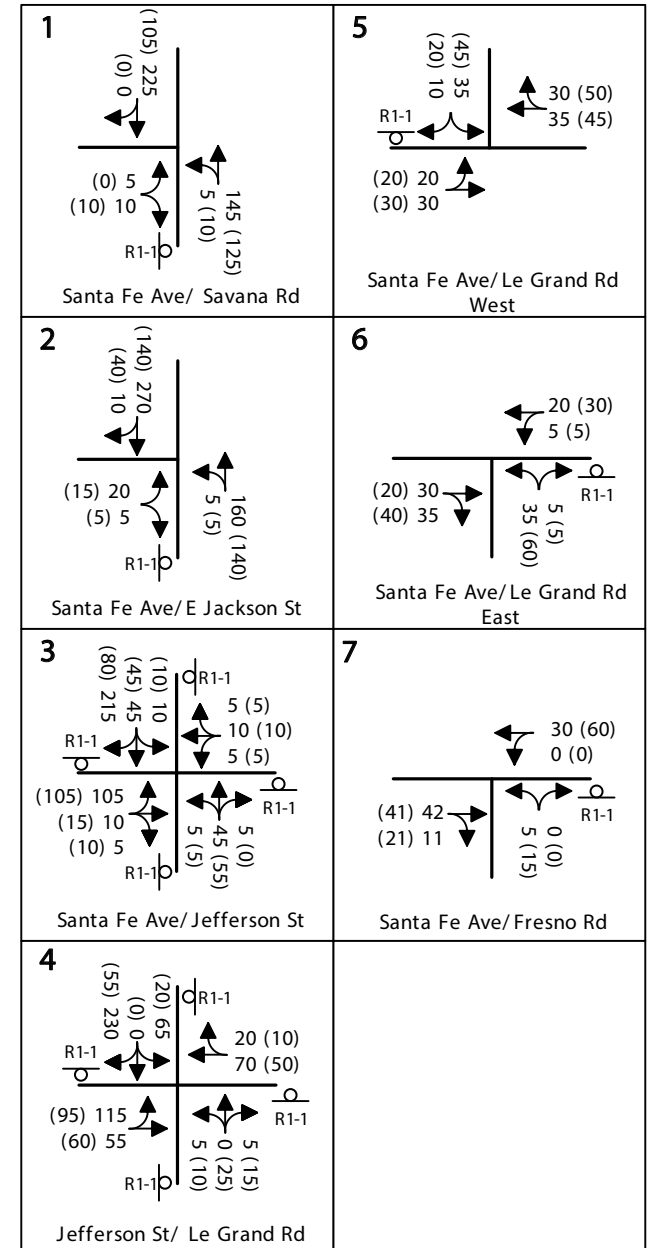
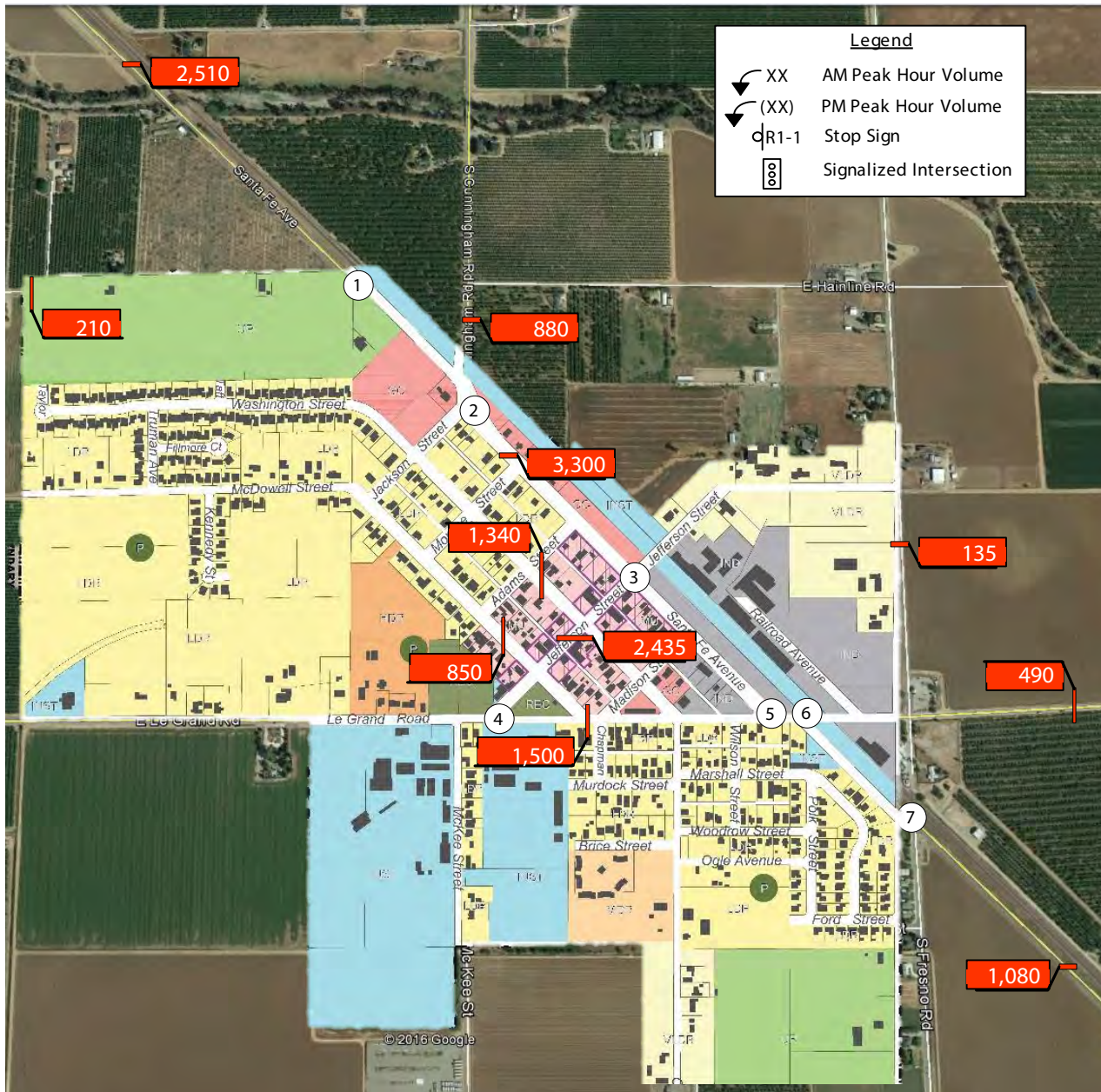
**Mitigation included in the proposed Community Plan:** Implementation Measure CIR-3

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

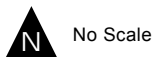
**Additional Mitigation:** None required

**Residual Significance:** Less than Significant



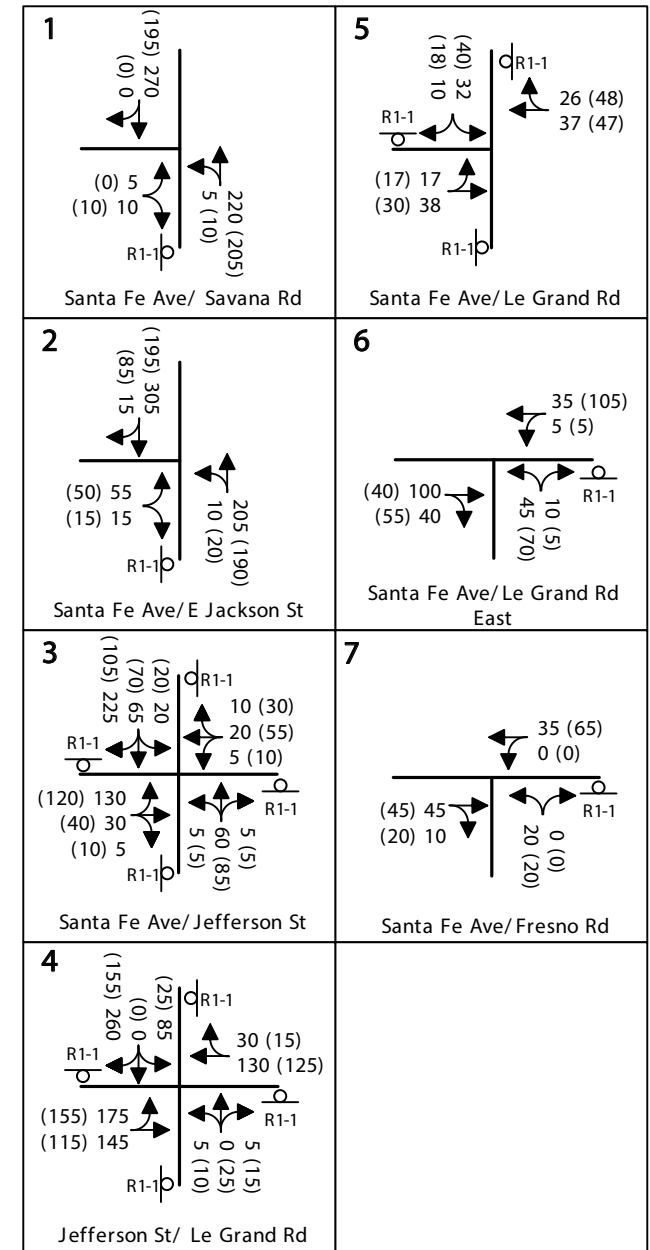
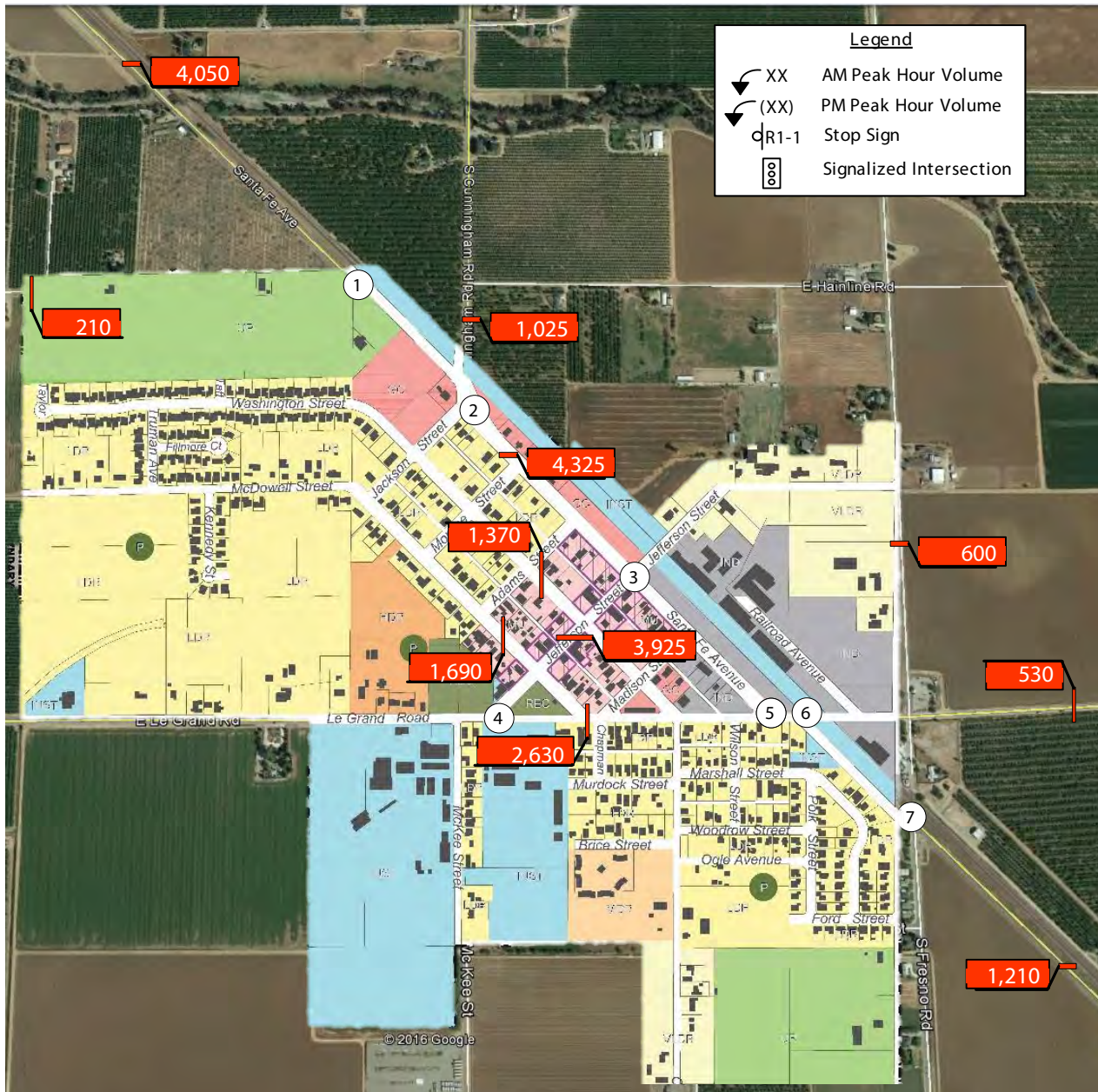


**Figure 4-8-4**  
**Year 2035 With No Le Grand Development**  
**Traffic Volumes And Lane Configurations**



SOURCE: KD Anderson & Associates, Inc., 2018.





**Figure 4-8-5**  
**Year 2035 With Le Grand Development**  
**Traffic Volumes And Lane Configurations**

Table 4.8-10 summarizes the peak hour LOS projected for study intersections under Year 2035 conditions with and without implementation of the proposed Community Plan.

As shown, under cumulative conditions, all study area intersections would operate at LOS C or better with or without the addition of proposed Community Plan traffic. Therefore, the cumulative impact would be less than significant, and the project contribution to cumulative intersection impacts would not be considerable.

**4.8-8 The proposed Community Plan would contribute to cumulative increases in traffic volumes on local roadways.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Implementation Measure CIR-3

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required.

**Residual Significance:** Less than Significant

Table 4.8-11 identifies Year 2025 traffic volumes on study area roads with and without the growth indicated in Le Grand under the proposed Community Plan. As indicated the Levels of Service on all roads operate at LOS B or C. Thus the increase in traffic congestion on local roadways would be a less-than-significant impact, and the project contribution would not be considerable.

**4.8-9 The proposed Community Plan would contribute to cumulative increases in demand for transit services.**

**Applicable Regulations:** None

**Significance:** Less than Significant

**Mitigation included in the proposed Community Plan:** Policies C-1, C-11 and C-12, and Implementation Measures CIR-3 and CIR-11

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

As discussed in Impact 4.8-3, the proposed Community Plan would increase demand for transit services. Development throughout Merced County would also increase the demand for transit. The proposed Community Plan provides measures to ensure that transit service is available to serve Le Grand residents (see Impact 4.8-3), so the proposed Community Plan would not contribute substantially to cumulative demand for transit. Therefore, the proposed Community Plan contribution to the cumulative increase in transit demand would be less than considerable.

**TABLE 4.8-10**  
**Year 2035**  
**Cumulative Intersection Level of Service**

Intersection	Control	Year 2035 Conditions								Signal Warranted?
		AM Peak Hour				PM Peak Hour				
		No Project		Plus Project		No Project		Plus Project		
		Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	Avg Delay (sec/veh)	LOS	
1. Santa Fe Ave / Savana Road NB left turn EB left+right turn	EB Stop	7.8 10.5	A B	8.0 11.3	A B	7.5 9.0	A A	7.7 9.6	A A	No
2. Santa Fe Ave / Jackson Street NB left turn EB left+right turn	EB Stop	8.1 13.3	A B	8.3 17.0	A C	7.7 10.6	A B	8.0 13.2	A B	No
3. Santa Fe Ave / Jefferson Street	All-Way Stop	9.2	A	10.4	B	8.3	A	9.6	A	No
4. Le Grand Rd / Jefferson Street	All-Way Stop	11.6	B	22.3	C	8.2	A	10.1	B	
5. Santa Fe Ave / Le Grand Rd (west) EB left turn SB left+thru+right turn	SB Stop	7.4 9.7	A A	7.5 10.9	A B	7.5 9.7	A A	7.7 10.6	A B	No
6. Santa Fe Ave / Le Grand Rd (east) WB left turn NB left+right turn	NB Stop	7.4 9.4	A A	7.6 10.3	A B	7.4 9.4	A A	7.4 10.3	A B	No
7. Santa Fe Ave / Fresno Road WB left turn NB left+right turn	NB Stop	- 9.0	- A	- 9.2	- A	- 9.3	- A	- 9.5	- A	No
Source: KD Anderson & Associates, 2018.										

**TABLE 4.8-11  
Year 2035  
Cumulative Daily Traffic Volumes**

Road	Location	Existing		Year 2035 Without Project				Year 2035 Plus Project		
		ADT	LOS	Average Daily Traffic			LOS	Average Daily Traffic		LOS
				Planada HS Students	Regional Growth	Total		Project	Total	
Santa Fe Ave	North of Savana Rd	2,090	B	320	100	2,510	C	1,540	4,050	C
Savana Rd	West of Santa Fe Ave	200	C	0	10	210	C	0	210	C
Cunningham Rd	North of Santa Fe	840	C	0	40	880	C	145	1,025	C
Fresno Rd	North of Le Grand Rd	130	C	0	5	135	C	465	600	C
Santa Fe Ave	South of Jackson St	2,840	C	390	140	3,370	C	1,025	4,395	C
Washington St	North of Jefferson	670	C	0	30	700	C	670	1,370	C
Jefferson St	West of Santa Fe Ave	2,015	C	390	100	2,505	C	1,490	3,995	C
McDowell St	North of Jefferson St	810	C	0	40	850	C	840	1,690	C
Le Grand Rd	West of Santa Fe Ave	1,430	B	0	70	1,500	B	1,130	2,630	C
Le Grand Rd	East of Fresno Rd	470	C	0	20	490	C	40	530	C
Minturn Rd	South of Le Grand Rd	2,080	C	0	100	2,180	C	880	3,060	C
Santa Fe Ave	South of Fresno Rd	1,030	C	0	50	1,080	C	130	1,210	C
Source: KD Anderson & Associates, 2018.										

## **4.9 UTILITIES**

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### INTRODUCTION

This section describes existing and proposed water, wastewater, stormwater, and solid waste systems associated with the proposed Community Plan. Impacts on these utilities that could result from the proposed Community Plan were identified by comparing existing and planned service capacity and facilities against anticipated demand associated with project implementation. The discussion also summarizes the regulations, policies, and programs that apply to utilities in the Plan Area.

No comments regarding utilities were received in response to the Notice of Preparation (NOP).

### WATER SUPPLY

A Water Supply Assessment (WSA) was prepared by QK, Inc. in February 2017 and provides the basis of the following setting and impact analysis. The WSA is provided in Appendix H.

#### Environmental Setting

Potable water is provided to the Le Grand community by the Le Grand Community Services District (LGCSD). The LGCSD service area covers approximately 370 acres, including much of the Plan Area. The District has 492 water connections. Portions of the Plan Area are not included in the LGCSD boundaries and would have to be annexed and approved by the Merced County Local Agency Formation Commission (LAFCO) prior to receiving service (see Figure 4.6-4 in Section 4.6, Land Use).

The following description of groundwater character in the LGCSD service area and groundwater demand are drawn primarily from the Water Supply Assessment (WSA), which can be found in Appendix H.

#### **Merced Groundwater Basin**

The California Department of Water Resources (DWR) has divided the state into 10 hydrologic regions that have been further divided into basins and subbasins. The Plan Area and LGCSD's service area are located within DWR's San Joaquin River Hydrologic Region. The District draws its groundwater supply from the Merced Groundwater Basin (MGWB), which is a subbasin within the San Joaquin Valley Groundwater Basin.<sup>1</sup>

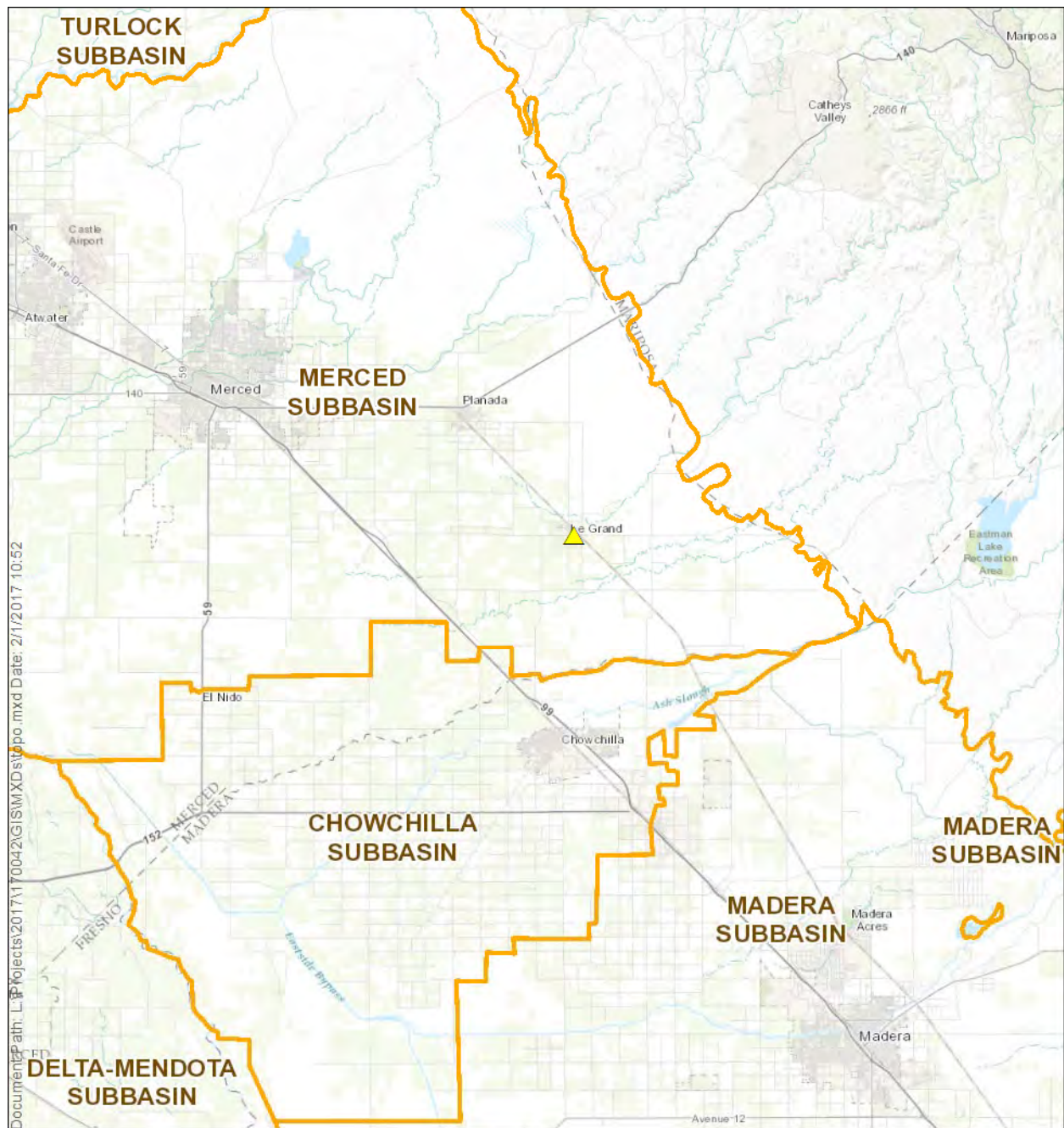
The boundaries of the MGWB are characterized and mapped by DWR. The MGWB is located on the eastern side of the San Joaquin Valley, entirely within Merced County, and is generally described as the eastern half of Merced County (see Figure 4.9-1). The northern border of MGWB includes lands south of the Merced River between the San Joaquin River on the west and the crystalline basement rock of the Sierra Nevada foothills on the east. The MGWB boundary on the south is the Chowchilla River and the Madera-Merced County boundary line, or the boundary of the Chowchilla Water District, and the western boundary is the San Joaquin River.<sup>2</sup>

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1 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 13.

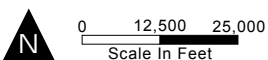
2 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 13.





▲ Le Grand

**Figure 4.9-1**  
**Merced Groundwater**  
**Subbasins**



SOURCE: Merced County Community And  
Economic Development Department, February 2017.



There are three groundwater aquifers in the Merced Region subbasin: an unconfined aquifer, a confined aquifer, and an aquifer in consolidated rocks. An unconfined aquifer is an aquifer in which groundwater is not under pressure. The unconfined aquifer occurs in unconsolidated deposits above and east of the Corcoran Clay, which underlies the western half of the subbasin at depths ranging from about 50 to 200 feet, except in the western and southern parts of the area where clay lenses occur and semi-confined conditions exist. A confined aquifer is an aquifer in which groundwater is contained under pressure. The confined aquifer occurs in unconsolidated deposits below the Corcoran Clay and extends downward to the base of fresh water. The aquifer system in consolidated rocks occurs under both unconfined and confined conditions.<sup>3</sup>

The community of Le Grand is located near the southeastern border of the subbasin. Groundwater depths are approximately 170 to 200 feet below ground surface.

#### Basin Overdraft

Portions of the San Joaquin River Hydrologic Region have been in a state of overdraft for many years. The Merced subbasin groundwater levels have declined on average approximately 14 feet since 1980, with most of the decline occurring between 1980 and 1996, so the subbasin is classified as in a state of mild long-term groundwater level decline. The 2013 Integrated Regional Water Master Plan (IRWMP) characterized the Merced subbasin as being generally in overdraft, and in 2015, DWR classified the Merced subbasin as being in a state of critical overdraft.

Water levels in the Le Grand area remained essentially the same during the period of 2000 through 2010.<sup>4</sup> Water levels dropped approximately 60 to 80 feet during the past four years, but have since recovered.<sup>5</sup>

#### Subsidence

Subsidence occurs when a large land area settles due to over saturation or extensive withdrawal of ground water, oil, or natural gas. Land subsidence caused by groundwater extraction is exacerbated by additional pressure on groundwater resources during periods of drought. Merced County is characterized as an area with high potential for subsidence by DWR.<sup>6</sup> However, this characterization is basin-wide, and could over- or under-state the potential for future subsidence on a more localized or site-specific scale. The analysis prepared by DWR did not incorporate local knowledge and/or localized data.<sup>7</sup> The Plan Area is not mapped as within a Large Areas of Subsidence, nor is it listed as a “Reported Subsidence Location” for recent and/or historical subsidence.<sup>8</sup> Similarly, according to the Merced County General Plan (MCGP) Background Report, the Plan Area is not located in or near a mapped subsidence area.<sup>9</sup>

#### **Groundwater Reliability and Sufficiency**

In 1995, DWR estimated the annual yield of the Merced subbasin. The estimated storage

3 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 16.

4 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 18.

5 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 16.

6 According to DWR’s “Figure ES-1: Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California” (DWR, 2014).

7 California Department of Water Resources, *Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California*, <https://www.arccgis.com/home/item.html?id=7228a1e2bf524eb598f22f34ff719127>, accessed October 19, 2016.

8 California Department of Water Resources, Groundwater Information Center Interactive Map Application, <https://gis.water.ca.gov/app/gicima/>, accessed October 19, 2016.

9 Merced County, *2030 Merced County General Plan Background Report*, December 2013, Figure 10-3.

capacity was 21,100,000-acre feet (AF) to a depth of 300 feet and 47,600,000 AF to the base of fresh groundwater. The estimated specific yield for the subbasin was 9.0 percent. These same calculations gave an estimate of 15,700,000 AF of groundwater to a depth of 300 feet as of 1995.<sup>10</sup>

Although a current detailed water budget is not available for this subbasin, DWR has prepared an estimate of groundwater demand based on the 1990 normalized year and a water budget spreadsheet to estimate overall applied water demands, agricultural groundwater pumpage, urban pumping demand and other extraction data. This analysis assumed that natural recharge into the subbasin was approximately 47,000 AF. Values for subsurface inflow had not been determined. There were approximately 243,000 AF of applied water recharge into the subbasin. Annual urban and agricultural extractions were 54,000 AF and 492,000 AF, respectively at the time the analysis was prepared. Other extractions equaled approximately 9,000 AF.<sup>11</sup> These estimates were based on normal precipitation years when surface water is used for agricultural irrigation.<sup>12</sup> Pumping amounts can change year to year due to increases in urban development, or, in the case of agricultural use, the availability of surface water.

The WSA for the proposed Community Plan did not prepare a water budget, instead making a worst-case assumption of decreased storage in the subbasin based on the reported average water level decline from 2012 to 2015. During this period, groundwater withdrawal for agricultural use greatly increased because of drought-related reductions in surface water supplies.<sup>13</sup> The loss in groundwater storage was estimated to have been approximately 760,000 AF in subbasin storage above 300 feet of depth, or approximately 4.5 percent. Because this reduction occurred during a severe drought, it is not characteristic of normal or high rainfall years or even years with a less severe drought. The WSA concludes that, absent incalculable climate change-related recharge, groundwater would remain a reliable source of supply.<sup>14</sup>

### Water Quality

The LGCSD water system is protected against bacterial contamination by a chlorination system. There were no state primary or secondary drinking water standard violations in 2015.<sup>15</sup>

### Current Groundwater Use

Agriculture is the dominant land use in Merced County, representing more than 90 percent of all acreage within the County.<sup>16</sup> As a result, the majority of water used within the Merced subbasin has historically been and continues to be used for agricultural purposes.<sup>17</sup> Pumping amounts can change year to year due to increases in urban development, or, in the case of agricultural use, the availability of surface water. During periods when there are no or few restrictions on surface water allocations, such as drought periods, agricultural use of groundwater declines. In periods when there are restrictions on surface water, such as during drought periods, groundwater use increases. For example, DWR reported in 2004 that 492,000 AF of groundwater were pumped from the MGWB for agricultural uses, compared to 54,000 AF to

10 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 16.

11 California Department of Water Resources, *California's Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin, Merced Subbasin*, February 27, 2004, page 3.

12 QK, Inc., *Le Grand Water Supply Assessment*, February 2017, page 21.

13 QK, Inc., *Le Grand Water Supply Assessment*, February 2017, page 21.

14 QK, Inc., *Le Grand Water Supply Assessment*, February 2017, page 21.

15 QK, Inc., *Le Grand Water Supply Assessment*, February 2017, page 24.

16 Merced County, *2030 Merced County General Plan Recirculated Draft Program Environmental Impact Report*, July 2013, page 6-6.

17 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 18.

meet urban demand.<sup>18</sup> This was a year in which surface supplies for agricultural use were restricted. In contrast, the Merced Integrated Regional Water Management Plan, which covers a number of municipalities and urban water districts including the LGCSD, estimated that in 2015, approximately 107,400 AF of groundwater would be pumped for urban use and agricultural districts would pump approximately 40,000 AF per year.<sup>19</sup> These estimates assumed normal precipitation years in which surface water would be used for agricultural irrigation. The estimate for urban use also predated the reductions in per capita water use in urban areas that resulted from more recent drought-related regulations.<sup>20</sup>

#### LGCS D Groundwater Use

The District serves approximately 490 water connections and its production capacity is approximately 1.7 mgd. District-wide demand is approximately 96 million gallons (mg) or 295-acre feet per year (AFY). The average daily demand is approximately 270,000 gallons per day (gpd), varying from 150,000 gpd during the winter and a peak of 410,000 gpd during a three to four month period in the summer when the food processing industry is in production. Average demand per person is approximately 152 gpd.<sup>21</sup>

Although the LGCS D does not have agricultural customers, the WSA also calculated water used by agriculture in the Plan Area, and estimates that approximately 48 AFY are used to irrigate agricultural land within portions of the Plan Area that would be developed under the LGCP. In addition, the elementary and high schools use their own wells to irrigate approximately 30 acres. The actual amount of water used is not known, but would not change under the LGCP, because there would not be an increase in school acreage.<sup>22</sup>

#### **Water Infrastructure**

The LGCS D has two active groundwater wells, ranging from 400 to 630 feet in depth and capacities of 500 gallons per minute, for a total well capacity of 1,000 gpm.<sup>23</sup> The LGCS D plans to install a third well in the near future. The water distribution system includes 6" to 8" AC pipe, with limited short runs of older 3" to 4" pipe.<sup>24</sup>

Water meters installation is nearly complete in the district.<sup>25</sup>

A water system study was prepared in July 2018 to assess the adequacy of the existing water distribution system and its ability to serve additional development. The study concluded that existing capacity is adequate to meet current maximum day and peak hour demands. However, the maximum day demand combined with a Fire Flow of 1,500 gpm, as recommended by the Merced County Fire Department, would be 1,976 gpm, which existing capacity could not meet. The study recommends that the LGCS D either install two additional wells or one additional well combined with 150,000 gallons of storage to meet this existing demand.<sup>26</sup>

#### **Regulatory Setting**

Water in California is managed by a complex network of federal and State regulations. California administers rights to surface water at the State level, but not rights to groundwater,

18 California Department of Water Resources, *California's Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin, Merced Subbasin*, February 27, 2004, page 3.

19 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 16.

20 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 16.

21 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 23.

22 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 23.

23 QK Inc., *Water System Improvements*, July 2018, page 3.

24 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 23.

25 QK Inc., *Le Grand Water Supply Assessment*, February 2017, page 23.

26 QK Inc., *Water System Improvements*, July 2018, page 2.

which is managed under a variety of authorities including local governments. Major regulatory policies pertaining to domestic water management are summarized below.

## **Federal**

### U.S. Environmental Protection Agency (EPA)

The EPA established primary drinking water standards in the Clean Water Act (CWA) Section 304. States are required to ensure that potable water for the public meets these standards. Standards for 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1986. The U.S. EPA may add additional constituents in the future.

### Safe Drinking Water Act

The U.S. Environmental Protection Agency (US EPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The California Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide.

## **State**

### Drinking Water Quality

The California Department of Health Services (DHS) is responsible for implementing the federal SDWA, as well as California statutes and regulations related to drinking water. As part of their efforts, the DHS inspects and provides regulatory oversight for public water systems within California. In the Sacramento area, the CVRWQCB also has the responsibility for protecting the beneficial uses of the State's waters, including groundwater, and these include municipal drinking water supply, as well as various other uses. Public water system operators are required to monitor their drinking water sources regularly for microbiological, chemical, and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations (CCR) as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants that reflect the natural environment, as well as human activities. Examples of potential primary inorganic contaminants are aluminum and arsenic, while radiological contaminants can include uranium and radium.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor, and appearance, but these are generally non-enforceable guidelines. However, in California secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers. The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that are detected during sampling.

### Urban Water Management Planning Act

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFY, must prepare an Urban Water Management Plan (UWMP). UWMPs represent key water supply planning documents for municipalities and water purveyors in California, and often form the basis of Water Supply Assessments (see below) prepared for individual projects. UWMPs must be updated at least every five years on or before December 31, in years ending in five and zero. The LGCSO does not have 3,000 customers, so it is not required to prepare an UWMP.

### Senate Bill 610 – Water Supply Assessments

Public Resources Code (PRC) Section 21151.9 requires that a Water Supply Assessment (WSA) be prepared for proposed projects as defined in the statute to ensure that long-term water supplies are sufficient to meet the project's demands in normal, single dry and multiple dry years for a period of 20 years. Preparation of a WSA is required if a proposed action meets the statutory definition of a "project", which includes at least one of the following (Water Code Section 20912(a)):

- A proposed residential development of more than 500 dwelling units (du);
  - A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space;
  - A commercial building employing more than 1,000 persons or having more than 250,000 sf of floor space;
  - A hotel or motel with more than 500 rooms;
  - A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
  - A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

The proposed Community Plan includes more than 500 proposed dwelling units, and, therefore, qualifies as a "Project" under Section 10912 (a) of the Water Code. Thus, the County has prepared a WSA as required by these criteria under SB 610 (included as Appendix H).

Completion of a WSA requires collection of water supply data and information relevant to the project in question, an evaluation of current use, a projection of anticipated demand sufficient to serve the project for a period of at least 20 years, delineation of proposed water supply sources, and an evaluation of water supply sufficiency under single year and multiple year drought conditions.

### Senate Bill 221 – Written Verification of Water Supply

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. Senate Bill 221 is designed as a "fail-safe" mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code Section 66473.7 (b) (1) states:

The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.

In other words, as a result of the information contained in the written verification, the city or county may attach conditions to assure there is an adequate water supply available to serve a proposed project as part of the tentative map approval process.

While in most cases, following project certification, additional water supply verification is required to be completed at the Tentative Map stage, prior to adoption of the Final Map, for certain tentative maps. Pursuant to Government Code §66473.7(i), additional water supply verification is *not* required for:

Any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low income households.

#### Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015 and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” (GSA) for that basin (Water Code Section 10723). Le Grand is within the boundaries of the Merced Irrigation-Urban GSA.

Groundwater sustainability agencies will have additional powers under the SGMA to manage groundwater within the basin, including, for example, the power to conduct investigations of the basin, to require registration of groundwater extraction facilities and metering of groundwater extractions, regulate groundwater extractions from individual groundwater wells or wells generally, and to assess fees on groundwater extractions (see generally, Water Code Section 10725 et seq.). SGMA also provides local agencies with additional tools and resources designed to ensure that the state’s groundwater basins are sustainably managed.

SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority (Water Code Sections 10720.7, 10722.4). The Merced subbasin has been rated “high”<sup>27</sup>. All basins designated as high- or medium-priority basins must be managed by a groundwater sustainability agency under a groundwater sustainability plan that complies with Water Code Section 10727 et seq. In lieu of preparation of a groundwater sustainability plan, a local agency may submit an alternative that complies with the SGMA no later than January 1, 2017 (Water Code Section 10733.6).

### **Local**

#### Merced County General Plan

The following General Plan goals, objectives, and policies address water supply.

##### **Policy LU-5.F.4: Water Impacts**

Prohibit new Urban Communities, or the expansion of existing urban communities, if they will negatively impact the water supply of existing users.

##### **Policy W-1.1: Countywide Water Supply**

Ensure that continued supplies of surface and groundwater are available to serve existing and future uses by supporting water districts and agencies in groundwater management and water supply planning; requiring that new development have demonstrated long-term water supply; and

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<sup>27</sup> California Department of Water Resources, CASGEM Groundwater Basin Prioritization Results, May 30, 2014.

assisting both urban and agricultural water districts in efforts to use water efficiently.

**Policy W-1.2: Demonstrating Sufficient Water Supply for New Development**

Require all new development within the adopted service area of a water purveyor to demonstrate adequate quantity and quality of water will be available prior to issuing building permits.

**Policy W-1.4: Groundwater Recharge Projects**

Support implementation of groundwater recharge projects consistent with adopted Integrated Regional Water Management Plans to minimize overdraft of groundwater and ensure the long-term availability of groundwater.

**Policy W-1.5: New Well Guidelines**

Coordinate with the cities and special districts in developing County-wide guidelines regarding the location and construction of new water wells.

**Policy W-1.7: Water Sufficiency Requirement**

Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.

**Policy W-1.9: Water Supply Research and Protection**

Encourage investment into water quality improvement techniques such as desalinization plants and the treatment of urban runoff. Encourage improvements to the drainage systems in the County, including the efforts of the San Joaquin River Flood Control Association, and completion of the San Luis Drain Project or, if it is determined that the San Luis Drain cannot be completed as designed, the removal and elimination of the drain in Merced County.

**Policy W-1.10: Groundwater Overdraft Protection**

Where a water supply source is nearby and accessible, encourage large water consumers to use available surface irrigation water (secondary water) for school athletic fields, sports complexes, and large landscape areas.

Merced Integrated Regional Water Management Plan

The MIRWMP is the most recent comprehensive technical information available on groundwater conditions and groundwater management needs in the MGWB. The MIRWMP is the first integrated regional water management plan for the Merced Region. Through a multiagency, collaborative effort the Plan evaluates the inter-related effects of water supply, water quality, flood management, and wastewater treatment as well as identifies water management strategies.

Merced County Local Agency Formation Commission

As discussed above, water and wastewater service would be provided by the LGCSD. Most of the Plan Area is within the LGCSD Sphere of Influence, but two areas are outside of the District boundaries (see Figure 4.6-4 in Section 4.6, Land Use). In order to provide water and sewer service to this portion of the Plan Area, it must be annexed to the District, which must be approved by the Local Agency Formation Commission (LAFCO). For a discussion of the annexation process and the proposed Community Plan's consistency with LAFCO policies, refer to Section 4.6, Land Use, including Impact 4.6-4.

**Impacts and Mitigation Measures**

**Standards of Significance**

The proposed Community Plan would have a significant effect on water if it would:

- Have insufficient water supplies available to serve the proposed plan from existing entitlements and resources, such that new supplies must be developed;
- Require or result in the construction of new water treatment and/or conveyance facilities, or expansion of existing facilities, the construction of which would cause significant environmental impacts; or
- Substantially deplete groundwater supplies, such that there would be a net deficit in the aquifer volume or a lowering of the groundwater table.

### **Method of Analysis**

This section identifies existing and planned groundwater supplies that will be available to serve the proposed Community Plan, the adequacy of water conveyance infrastructure to serve new development, and the effects of withdrawing additional groundwater from the aquifer. Several reports were used to prepare this section.

The LGCSO prepared a Water Supply Assessment, as required by SB 610, under contract to the County, which will ultimately approve the Water Supply Assessment.<sup>28</sup> That analysis forms the basis of the analysis of the adequacy of existing and planned water supply to serve the increased water demand generated by the proposed Community Plan. The WSA is provided in Appendix H.

QK, Inc., on behalf of the LGCSO, also prepared a preliminary analysis of the water distribution system and its ability to serve the proposed Community Plan, which forms the basis of the analysis of water infrastructure.

The evaluation of impacts of the proposed Community Plan on the existing and future groundwater supplies examines existing groundwater basin characteristics. The cumulative analysis is qualitative, because the changes in the groundwater characteristics will depend on many factors, including the amount of development that occurs in Merced County, the type of agricultural land that is converted to urban uses, the conversion of agricultural land from one type of crop to another, changes in riparian vegetation, future rainfall and climate change.

### **Project-Specific Water Impacts and Mitigation Measures**

#### **4.9-1 The proposed Community Plan would increase demand for domestic water supply.**

**Applicable Regulations:** SB 610 (California Water Code Section 10910-10915)

**Significance:** Less than Significant

**Mitigation Included in the proposed Community Plan:** None

**Significance After Mitigation:** Less than Significant

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<sup>28</sup> Section 10910(b) of the Water Code specifies that the lead agency must prepare the water supply assessment if there is no “public water system” which is defined as a water utility with 3,000 or more service connections. The LGCSO has fewer than 3,000 connections, so the County is responsible for preparing and approving the Water Supply Assessment. In this case, the County has contracted with the LGCSO engineer for technical preparation of the WSA, which will be reviewed and approved by the Board of Supervisors as part of the plan approval process.



**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The proposed Community Plan would increase demand for domestic water from the LGCSO. As shown in Table 4.9-1, buildout of the proposed Community Plan would require approximately 204 million gallons per year, which equates to approximately 626 AFY, an increase of approximately 106 AFY over existing demand. All of this demand would be served by groundwater. Table 4.9-1 shows the estimated water demand and supply for normal, single dry and multiple dry years.

<b>TABLE 4.9-1</b> <b>Groundwater Supply Reliability</b> (million gallons per year)							
Year(s)	Water Supply Source	Normal Water Year	Single Dry Water Year	Multiple Dry Water Year			
				1	2	3	4
2015	98	98	98	98	98	98	98
2020	125	125	125	125	125	125	125
2025	151	151	151	151	151	151	151
2030	177	177	177	177	177	177	177
2035	204	204	204	204	204	204	204
SOURCE: QK, Inc., 2017.							

The WSA concludes that the LGCSO will be able to meet the demand for water through buildout of the proposed Community Plan. No constraints to obtaining the increased groundwater supply, and the WSA states that district engineering design standards are in place to ensure that system reliability is maintained as the groundwater system is expanded. Because the LGCSO water supply will be adequate to serve the buildout of the proposed Community Plan, this impact is less than significant.

#### **4.9-2 The proposed Community Plan would require additional water supply and distribution infrastructure.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation Included in the proposed Community Plan:** Policies PS-1, PS-2 and PS-3 and Implementation Measures PS-3 and PFS-7

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

As discussed in Impact 4.9-1, there will be adequate water supply to serve the proposed

Community Plan. However, the proposed Community Plan would require new water infrastructure, including new wells and the extension of water lines into undeveloped or underdeveloped areas. The proposed Community Plan contains the following policies and implementation measures requiring that public services and utilities be adequate to serve new development:

#### Policies

- PS-1 Development shall provide water, sewer, and storm drainage facilities to serve residents and businesses within the Community.
- PS-2 As new development occurs; developers shall ensure adequate provision of public services.
- PS-3 Development shall finance necessary public facilities and fund their operation through the establishment of development impact fees, facility charges, capital replacement fees and assessments or through other measures identified to obtain adequate public facility construction and operation funding.

#### Implementation Measures

- PFS-3 Collaborate with the Community Service District, School District, Irrigation District, County and State agencies to provide timely and proactive provision of important public facilities and services within the community.
- PFS-7 Work with the Le Grand Community Services District to ensure sufficient water supply and distribution capacity to support the location and expansion of new land uses within the community.

These policies and measures would ensure that water supply and conveyance infrastructure is in place as needed for new development. Each development would be responsible for installing new and/or upgraded water lines needed to serve that development. The upgraded and new water lines would be installed within the Plan Area and would therefore not increase the area to be disturbed.

In addition to water lines, the Water System Improvements Study concluded that additional groundwater wells would be required to serve buildout of the proposed Community Plan. At Buildout of the proposed Community Plan, maximum day water demand be approximately 2,720 gpm, including 1,500 gpm for fire flow, an increase of approximately 745 gpm. This demand could be met by installing three new wells with a capacity of 500 to 750 gpm each, or two new wells and 150,000 gallons of storage.<sup>29</sup>

The location of these proposed wells is not known at this time, but they could be located within or outside of the Plan Area. The actual location would depend on how development proceeds, results of test wells, and the availability of land. Construction of the wells would result in minor impacts similar to those identified throughout this Draft EIR, including ground disturbance that could result in the loss of biological or cultural resources, air pollutants and noise. After construction, the wells would be generally unobtrusive, except if and when the standby generator operates, if located close to a residence. If the wells are sited within the Plan Area, those impacts would be subsumed within the impacts of the proposed Community Plan. Even if one or all wells are located outside of the Plan Area, the impacts would be minimal. The well sites would be a minimum of 100-feet by 100-feet, or less than one-quarter acre each. The well facilities would include a pump pedestal with a concrete apron, above and below ground piping, an approximately 5,000 gallon hydropneumatic tank with concrete foundation, a motor control

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<sup>29</sup> QK, Inc., *Water System Improvements*, July 2018, page 2.

center on a concrete foundation, and a structure for chlorination equipment on a concrete slab. In addition, the well sites may have a standby diesel generator with integral diesel storage tank on a concrete slab.<sup>30</sup> If the wells are located outside of the Plan Area, they would be surrounded by agricultural land, so there would not be sensitive receptors who would be subjected to noise or other nuisances during or after well installation. A water storage tank would require approximately 8.5 acres of land. Construction impacts would be similar to those described throughout this Draft EIR for development within the Plan Area. The loss of up to eight acres of farmland would not be considered substantial, and groundwater wells and water storage tanks are a compatible use within agricultural areas. For these reasons, the installation of new water infrastructure would not result in significant impacts on the environment.

### **Cumulative Water Impacts and Mitigation Measures**

The cumulative context for water supply is the Merced groundwater subbasin.

#### **4.9-3 The proposed Community Plan would contribute to cumulative increases in groundwater withdrawals from the Merced groundwater basin.**

**Applicable Regulations:** SB 610

**Significance:** Less than Significant

**Mitigation Included in proposed Community Plan:** None

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The LGCSD has no surface water entitlements. Therefore, the proposed Community Plan's water demand must be supplied from the MGWB. The subbasin has been determined by the State Department of Water Resources to be in critical overdraft and groundwater levels in the subbasin have been decreasing. As development throughout the eastern County proceeds, including buildout of the City and County of Merced General Plans, additional demands will be placed on groundwater supplies. Eastern Merced County, which relies primarily on groundwater for potable supply, is projected to require an additional 49,355 AFY to meet urban and rural demand (exclusive of agriculture).<sup>31</sup> The proposed Community Plan would contribute to this increase in urban demand (by less than one percent). There are measures available to offset increased groundwater use, such as conjunctive use programs, and Merced County General Plan policies that call for additional studies of programs that could increase water conservation, and alternative sources of water such as water banking and using reclaimed water. Merced Irrigation District (MID) has implemented measures to stabilize groundwater levels, such as conjunctive use and conversion of agricultural supply from groundwater to surface water. One result has been an increase in annual recharge of 60,000 AFY, or about 10 to 20 percent of MID's annual deliveries.<sup>32</sup> Until such programs successfully offset increased groundwater withdrawals, groundwater levels and storage are likely to continue to decline.

30 Garth A. Pecchenino, P.E., Vice President of Technical Services, QK Inc., electronic communication, September 24, 2018.

31 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Table 20-6.

32 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 20-25.

The WSA concludes that groundwater will be available to serve additional demand from buildout of the proposed Community Plan. Nonetheless, this increased demand would contribute to cumulative increases in groundwater withdrawals, and the concomitant decreases in groundwater levels and storage. The proposed Community Plan is estimated to require 626 AFY at buildout, an increase of approximately 112 percent over existing levels. This represents a very small fraction of existing groundwater storage ( $1.5 \times 10^{-6}$ ). The LGCSD has taken measures to reduce water use, such as installation of meters and adoption of water conservation regulations. The District's continued participation in the MIRWMP and that program's effort to support regional water demand management and groundwater replenishment programs and projects would serve to improve groundwater supply recovery within the MGWB. Because the project water demand is such a small portion of overall demand, it would not contribute considerably to cumulative reductions in groundwater levels and/or storage. Therefore, this would be a ***less than significant impact*** under cumulative conditions.

## WASTEWATER

The Le Grand Community Services District (LGCSD) owns and operates the wastewater treatment and disposal facilities located approximately 1.25 miles south of the Plan Area. The LGCSD has 492 sewer connections.

### Existing Wastewater Treatment and Conveyance Facilities

#### **Wastewater Treatment Plant**

WWTP operates under Waste Discharge Requirement Order 97-053, issued by the Central Valley Regional Quality Control Board. Order 97-053 allows for expansion of the WWTP to 0.50 mgd.<sup>33</sup> Such an expansion would require the addition of aerators to Pond 3.<sup>34</sup>

The wastewater treatment plant (WWTP) has an existing capacity of 0.35 million gallons per day (mpg), and treats on average 0.10 mgd. The WWTP consists of aerated lagoons and discharges to 52 acres of agricultural cropland that supports fiber, fodder and seed crops.<sup>35, 36</sup>

The WWTP is in compliance with water quality and waste discharge requirements.<sup>37</sup>

#### **Wastewater Conveyance**

For the most part, the existing sewer system is composed of 6-inch sewer lines located within streets, such as Le Grand Road west of McKee Street, Jefferson Street, McKee Street, and Jackson Street, as well as others. Sewer lines also run through two alleys between Jackson Street and Le Grand Road. There is a lift station at McKee Street near the southern district boundary.

### Regulatory Setting

Key organizations that regulate wastewater treatment and disposal in California include the

33 QK Inc., *Le Grand Environmental Analysis, Hydrology and Water Supply Utilities and Services Systems*, February 2017, page 29.

34 QK Inc., *Le Grand Community District Utility's Review*, July 2018.

35 QK Inc., *Le Grand Environmental Analysis, Hydrology and Water Supply Utilities and Services Systems*, February 2017, page 29.

36 QK Inc., *Wastewater System Improvements*, July 2018, page 1.

37 QK Inc., *Le Grand Environmental Analysis, Hydrology and Water Supply Utilities and Services Systems*, February 2017, page 41.

United States Environmental Protection Agency and the State Water Resources Control Board (SWRCB). These agencies are responsible for carrying out and enforcing environmental laws enacted by Congress. Local government agencies, including the Merced County Division of Environmental Health, are responsible for establishing and implementing specific design criteria related to individual sanitary sewer systems. Major regulatory policies pertaining to sanitary sewer management are summarized below.

## **Federal**

### U.S. Environmental Protection Agency (EPA)

The EPA Office of Wastewater Management (OWM) supports the federal Clean Water Act by promoting effective and responsible water use, treatment, disposal and management, and by encouraging the protection and restoration of watersheds. The OWM is responsible for directing the National Pollutant Discharge Elimination System (NPDES) permit, pretreatment, and municipal bio-solids management (including beneficial use) programs under the Clean Water Act. The OWM is also home to the Clean Water State Revolving Fund, the largest water quality funding source, focused on funding wastewater treatment systems, non-point source projects, and estuary protection.

### Clean Water Act (CWA)

The CWA is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Section 303 of the CWA requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. The SWRCB and the RWQCBs are responsible for ensuring implementation and compliance with the provisions of the federal CWA.

## **State**

### State Water Resources Control Board (SWRCB)

The SWRCB, in coordination with nine Regional Water Quality Control Boards (RWQCB), performs functions related to water quality, including issuance of wastewater discharge permits (NPDES and WDR) and other programs on stormwater runoff, and underground and above ground storage tanks.

Wastewater treatment discharge requirements are promulgated by the State Water Resources Control Board and implemented by the Regional Water Control Boards (for Le Grand by the Central Valley Regional Board). Such regulations are based on the Basin Plans adopted by the Regional Boards. They enforce State Waste Discharge Requirements (WDR's) and, as appropriate, National Pollutant Discharge Elimination System (NPDES) Permits.

The District's WWTP is located in the San Joaquin River Hydrologic Region and Groundwater Basin. As such, one of the standards and regulatory requirements affecting the District's WWTP is the Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region Sacramento River Basin, and San Joaquin River Basin. The Basin Plan outlines water quality protection objectives within Basin boundaries. The 1994 Basin Plan was last amended by the State Water Board in October 2007. The Basin Plan water quality protection objectives are enforced by the Central Valley Water Board.

## **Title 22 of California Code of Regulations**

Title 22 regulates the use of reclaimed wastewater. In most cases, only disinfected tertiary water may be used on food crops where the recycled water would come into contact with the edible portion of the crop. Disinfected secondary treatment may be used for food crops where the edible portion is produced above ground and will not come into contact with the secondary effluent. Lesser levels of treatment are required for other types of crops, such as orchards, vineyards, and fiber crops. Standards are also prescribed for the use of treated wastewater for irrigation of parks, playgrounds, landscaping and other non-agricultural irrigation. Regulation of reclaimed water is governed by the nine RWQCBs and DHS.

Standards are also prescribed for the use of treated wastewater for irrigation of parks, playgrounds, landscaping, and other non-agricultural irrigation.

## **Local**

### Merced County General Plan

The Merced County General Plan contains the following goals and policies regarding wastewater:

#### **Policy PFS-2.2: Wastewater Treatment and Disposal Capacity**

Require applicants for discretionary projects located within special district boundaries to provide a "Can and Will Serve" letter or other documentation from the appropriate sewer and/or water district demonstrating the commitment of capacity prior to acceptance of the discretionary application as complete. Discretionary applications generally include: general plan amendments, zone changes, conditional use, location and development, tentative subdivision and administrative permit applications.

#### **Policy PFS-2.3: Sewer and Water District Requirement**

Require at the final map or building permit stage for permitted developments proof of approved service from a local sewer and/or water district or approval from the County Health Department for on-site systems outside districts outside urban special districts service boundaries. For discretionary applications, a "Can and Will Serve" letter from the local sewer and/or water district shall be required as part of the application materials. For discretionary applications outside a district, initial clearance for processing must be obtained from the County Health Department for projects utilizing on-site systems.

### Local Agency Formation Commission (LAFCO)

As discussed above, water and wastewater service would be provided by the LGCSO. Most of the Plan Area is within the LGCSO Sphere of Influence, but portions are outside of the District boundaries (see Figure 4.6-4 in Section 4.6, Land Use). In order to provide water and sewer service to this portion of the Plan Area, it must be annexed to the District, which must be approved by the Local Agency Formation Commission. In addition, any changes to the LGCSO boundaries, for example, to encompass lands needed for expansion of treatment facilities, would also be subject to LAFCO. For a discussion of the annexation process and the proposed Community Plan's consistency with LAFCO policies, please see Section 4.6, Land Use, including Impact 4.6-4.

## **Impacts and Mitigation Measures**

### **Standards of Significance**

The proposed Community Plan would have a significant effect on wastewater if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Increase demand for wastewater treatment, conveyance and/or disposal to the extent that expanded and/or new facilities are required; or
- 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.

### **Method of Analysis**

The LGCSD prepared a preliminary evaluation of the wastewater treatment and conveyance system and its ability to serve the proposed Community Plan, which forms the basis of the analysis of wastewater infrastructure.

Most of the Plan Area would be provided wastewater conveyance and treatment services by the LGCSD. The exception is the 32 acres that would be designated Very Low Density Residential, and that could support up to 17 new residential units on minimum one-acre parcels. This land use is not dense enough to make sewer service feasible. Therefore, development in the VLDR area would be served by septic systems. As discussed in Item 6, Geology and Soils, of Chapter 5, the use of septic systems is regulated to protect human health and the environment, so their use would have a less-than-significant impact. Therefore, this issue is not addressed further in this section.

### **Project-Specific Wastewater Impacts and Mitigation Measures**

#### **4.9-4 The proposed Community Plan would increase demand for wastewater treatment and disposal.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation Included in the proposed Community Plan:** Policies PS-1, PS-2 and PS-3 and Implementation Measures PS-3 and PFS-8

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The proposed Community Plan would generate approximately 0.132 mgd of wastewater, which would bring the total wastewater treatment level to 0.232<sup>38</sup>. This amount of wastewater could be accommodated within the current WWTP treatment capacity of 0.35 mgd. According to the Wastewater System Improvements study, additional disposal area would be required to for the treated effluent. The increased annual disposal volume would be approximately 280 acre-feet, which would require an additional 30 to 35 acres of disposal. The disposal area would need to

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38 QK, Inc., *Wastewater System Improvements*, July 2018, page 1.

be farmland with crops that are allowed to be irrigated with treated wastewater. In addition, the main lift station pumping to the WWTP would need to be replaced or upgraded.

The proposed Community Plan includes several policies and implementation measures to ensure that public services and utilities are adequate to serve new development, including:

#### Policies

- PS-1 Development shall provide water, sewer, and storm drainage facilities to serve residents and businesses within the Community.
- PS-2 As new development occurs, developers shall ensure adequate provision of public services.
- PS-3 Development shall finance necessary public facilities and fund their operation through the establishment of development impact fees, facility charges, capital replacement fees and assessments or through other measures identified to obtain adequate public facility construction and operation funding.

#### **Implementation Measures**

- PFS-3 Collaborate with the Community Service District, School District, Irrigation District, County and State agencies to provide timely and proactive provision of important public facilities and services within the community.
- PFS-8 Work with the Le Grand Community Services District to identify the existing treatment capacity of the wastewater facility and construct expansion to accommodate new development.

The above policies and implementation measures would ensure that development projects have in place necessary sewer connections and that funding is identified for necessary infrastructure improvements, including the upgrade or replacement of the existing main lift station and acquisition of additional disposal area. In addition, each project would need to provide a can-and-will serve letter confirming that there will be adequate treatment capacity to serve that project.

The additional reclamation area would be composed of farmland located in proximity to the existing WWTP, which is surrounded on four sides by agricultural land. The LGCSD would need to purchase and/or lease the additional acreage, and remove any crops intended for human consumption, grade and reseed the acreage to be irrigated, and install an irrigation system. A small tail water pond would also be constructed within the reclamation area.<sup>39</sup> The potential impacts associated with these improvements are addressed in the specific sections of this Draft EIR, such as Section 4.1, Agricultural Resources, 4.2, Air Quality, 4.3, Biological Resources, 4.4, Cultural Resources and 4.7, Noise. As discussed in these sections, impacts associated with the additional disposal area would be less than significant and/or could be reduced to a less-than-significant level through mitigation.

Replacing or upgrading the existing lift station would occur within an area that is already disturbed, and construction and installation of the lift station would be of short duration. Therefore, this improvement would not have a significant impact on the environment.

By implementing the above policies and implementation measures, the WWTP improvements would be coordinated with development within the Plan Area so that wastewater treatment capacity would be adequate to serve development as it occurs, and development would not be

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39 Garth A. Pecchenino, P.E., Vice President of Technical Services, QK, electronic communication, September 24, 2018.



allowed to exceed existing capacity. Therefore, the increased demand for wastewater treatment would be a less-than-significant impact.

#### **4.9-5 The proposed Community Plan would require installation of new wastewater conveyance infrastructure and upgrades to the existing system.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation Included in the proposed Community Plan:** Policies PS-1, PS-2 and PS-3 and Implementation Measures PS-3 and PFS-8

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

New development under the proposed Community Plan would connect to LGCSO sewer facilities, and would be responsible for any upgrades needed to provide adequate conveyance facilities. These projects would pay development impact fees and/or connection fees, which would be one source of funding for any necessary expansions.

As discussed in Impact 4.9-4, the main lift station would need to be replaced or upgraded in order to accommodate future development. The only other conveyance infrastructure that would be required would be the installation of sewer lines and lift stations in new development areas.<sup>40</sup>

As discussed above, the proposed Community Plan includes the policies and implementation measures that would ensure that development does not proceed until the infrastructure is in place to convey the additional wastewater. The construction of new sewer lines and lift stations would occur within the Plan Area boundaries, so the analysis of impacts and the identified mitigation measures in this Draft EIR would apply to the construction of these facilities. Because they would be below ground, disturb relatively small areas, and in the case of sewer lines and lift stations in new development areas, would be installed with other Community Plan-related infrastructure, impacts from these facilities would be limited to those resulting from construction, such as temporary disturbances to biological resources, potential damage or destruction to cultural resources, increased air pollutant emissions, and construction noise. These impacts could be reduced to less-than-significant levels with the mitigation measures identified in Sections 4.2, 4.3, 4.4 and 4.7 of this Draft EIR.

Because development would be allowed only after necessary upgrades to the sewer system have been made, and any impacts associated with those upgrades would occur within the Plan Area, the impacts associated with new conveyance facilities would be less than significant.

#### **Cumulative Wastewater Impacts and Mitigation Measures**

The cumulative context for wastewater impacts is the LGCSO service area.

#### **4.9-6 The proposed Community Plan would contribute to a cumulative increase in**

<sup>40</sup> QK, Inc., *Wastewater System Improvements*, July 2018, page 1.

**demand for wastewater conveyance and treatment facilities.**

**Applicable Regulations:** None

**Significance:** Significant

**Mitigation Included in the proposed Community Plan:** Policies PS-1, PS-2 and PS-3 and Implementation Measures PS-3 and PFS-8

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

As discussed above, the proposed Community Plan would require additional facilities to convey and treat wastewater. The LGCSD serves only the community of Le Grand. No development outside of the Plan Area is anticipated to contribute to the generation of wastewater that needed to be conveyed and treated by the LGCSD. Consequently, there would not be a cumulative impact on conveyance and treatment facilities, beyond that needed by development within the Plan Area. The policies and implementation measures discussed in Impacts 4.9-4 and 4.9-5 would ensure that conveyance and treatment facilities would be in place as needed to serve new development. The WWTP would discharge treated effluent to agricultural fields, so there would not be a cumulative effect on surface water. For these reasons, the cumulative impact would be less than significant.

## **STORM DRAINAGE**

### **Environmental Setting**

In most unincorporated communities of Merced County, developers are required to provide their own storm drainage systems on site. Once constructed, the County maintains the storm drainage systems. New subdivisions within the Merced Irrigation District (MID) service area often use MID canals for the discharge of stormwater, although this is not always the case. Improvements to MID canals are required as stormwater discharges increase and must be funded by the benefiting developers of new subdivisions.<sup>41</sup>

Storm drainage for Le Grand is the responsibility of the Merced County. Storm drains discharge to retention and detention ponds. Retention pond discharge is to an MID canal.<sup>42</sup> The County's System Drainage Design Manual sets forth requirements for the design of drainage facilities, including best management practices (BMPs) and Low Impact Development (LIDs).

Less than 10 percent of the Plan Area is in the 100-year floodplain<sup>43</sup> (see Figure 4.9-2).

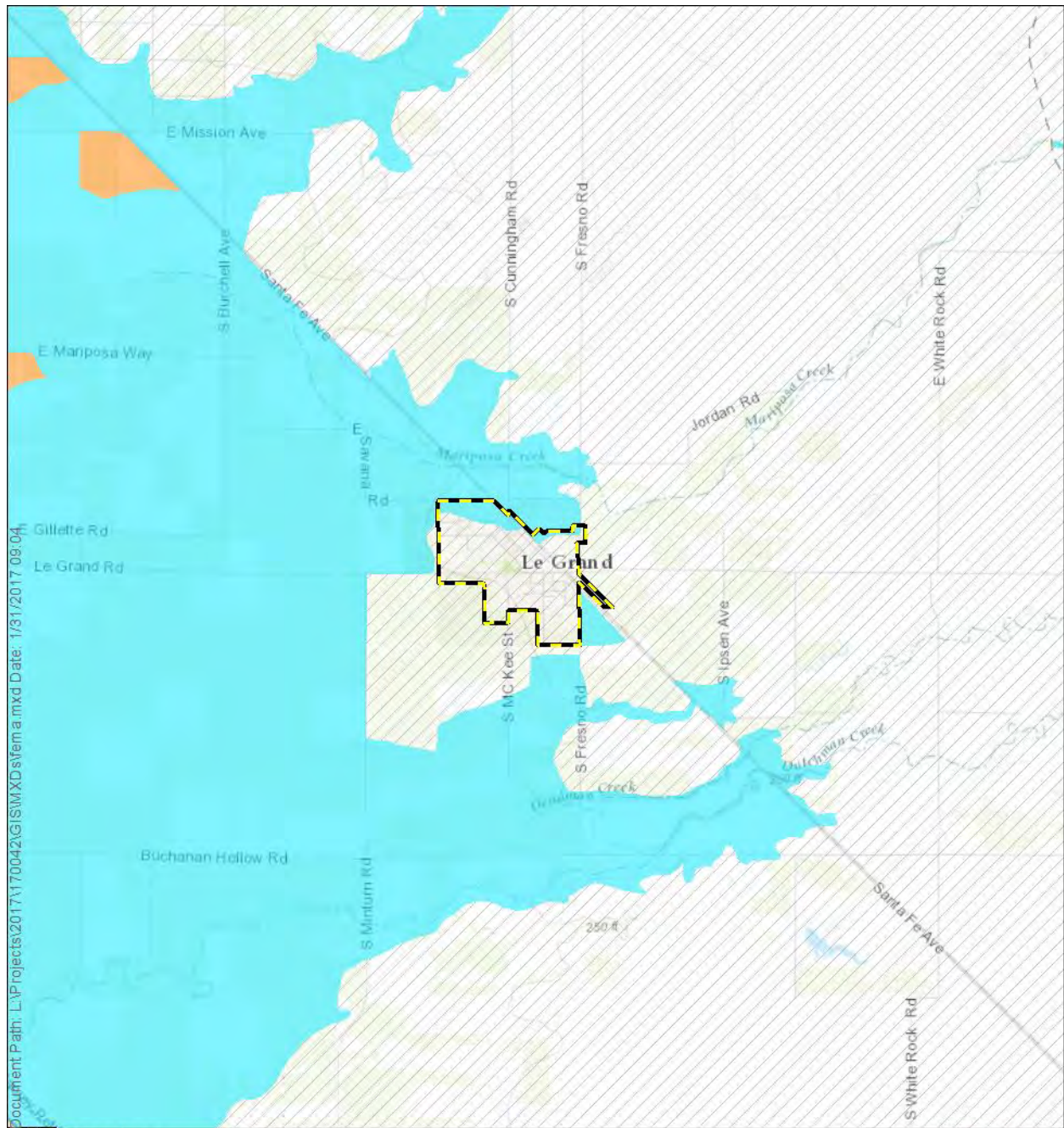
### **Regulatory Setting**





Key organizations that regulate the stormwater industry in California include the EPA and

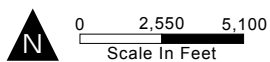
41 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 7-33.

42 QK Inc., *Le Grand Environmental Analysis, Hydrology and Water Supply Utilities and Services Systems*, February 2017, page 29.

43 QK Inc., *Le Grand Environmental Analysis, Hydrology and Water Supply Utilities and Services Systems*, February 2017, page 16.



-  Plan Area
-  1% Annual Chance Flood Hazard
-  0.2% Annual Chance Flood Hazard
-  Area of Minimal Flood Hazard



SOURCE: Merced County Community And Economic Development Department, February 2017.

**Figure 4.9-2  
Le Grand Flood  
Hazard Zones**

SWRCB. These agencies are responsible for carrying out and enforcing environmental laws enacted by Congress. The need to protect the environment has resulted in a number of laws and subsequent regulations and programs. Local government agencies are responsible for establishing and implementing specific design criteria related to storm drain systems. Various federal and State programs related to the control of pollutants in stormwater and floodplain management are also summarized below.

## **Federal**

### Clean Water Act

In 1972, the CWA was amended to provide that the discharge of pollutants to water of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges, including discharges associated with construction activities, under the NPDES program.

### U.S. Environmental Protection Agency (EPA)

In 1990, EPA published final regulations that establish stormwater permit application requirements. The regulations, also known as Phase I of the NPDES program, provided that discharges of stormwater to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge complies with a NPDES permit. Phase II of the NPDES program expanded the requirements by requiring operators of small MS4s in urbanized areas and small construction sites to be covered under a NPDES permit, and to implement programs and practices to control polluted stormwater runoff. The Phase II Small MS4 General Permit was updated in 2013 to require more specific best management practices, water quality protection measures, and program and inspection requirements.

## **State**

### State Water Resources Control Board (SWRCB)

In California, the NPDES stormwater permitting program is administered by the SWRCB through its nine RWQCBs. The SWRCB has established a construction General Permit that can be applied to most construction activities in the State. Construction permittees may choose to obtain individual NPDES permits instead of obtaining coverage under the General Permit, but this can be an expensive and complicated process, and its use is generally limited to very large construction projects that discharge to critical receiving waters. In California, owners of construction projects that will disturb more than one acre may obtain NPDES general permit coverage by submitting Permit Registration Documents (PRDs) including a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP) and fees to be covered under the recently adopted SWRCB Order No. 2009-0009-DWQ (NPDES No. CAS000002). The new California general permit now requires a risk level determination based on site and receiving water characteristics, a range of monitoring, sampling and discharge requirements based on defined risk level and post construction runoff reduction requirements.

## **Local**

### Merced County General Plan

The 2030 General Plan has the following policies that address flooding and drainage.

#### **Policy PFS-3.1: Stormwater Management Plans**

Require stormwater management plans for all Urban Communities to reduce flood risk, protect

soils from erosion, control stormwater runoff, and minimize impacts on existing drainage facilities.

**Policy PFS-3.2: Stormwater Facilities in New Development**

Require that new development in unincorporated communities includes adequate stormwater drainage systems. This includes adequate capture, transport, and detention/retention of stormwater.

**Policy PFS-3.3: Community Drainage Systems**

Encourage development of community drainage systems rather than individual project-level systems, in order to use land more efficiently and protect people, property and the environment in a more comprehensive manner.

**Policy PFS-3.4: Agency Coordination**

Coordinate with the U.S. Army Corps of Engineers and other appropriate agencies to develop stormwater detention/retention facilities and recharge facilities that enhance flood protection and improve groundwater recharge.

**Policy PFS-3.5: Pre-Development Storm Flows**

Require on-site detention/retention facilities and velocity reducers when necessary to maintain pre-development storm flows and velocities in natural drainage systems.

**Policy PFS-3.6: Retention/Detention Facility**

Encourage stormwater detention/retention project designs that minimize drainage concentrations and impervious coverage, avoid floodplain areas, are visually unobtrusive and, where feasible, provide a natural watercourse appearance and a secondary use, such as recreation.

Merced County Drainage Design Standards

The storm water drainage system for any proposed development within the County of Merced must be designed in accordance with the Merced County Department of Public Works Storm Drainage Design Manual. The Storm Drainage Design Manual requires that drainage collection and transmission infrastructure be designed to pass the 5-year, 24-hour storm. In addition, County standards require that increased run-off due to new development be metered to discharge at a rate not to exceed that occurring prior to development from a 2-year storm, unless the flow is first constrained in a basin. When the latter occurs, the maximum rate of discharge is limited to that necessary to empty the basin within 48 hours.

Merced County Code (MCC), Special Flood Hazard Areas

Section 18.34 of the MCC specifies requirements for new development located within a special flood hazard area, based on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). The MCC requires that new construction in a special flood hazard area be adequately anchored, and that construction materials be flood resistant, and that methods to minimize flood damage be used. The lowest floor, including a basement, must be above prescribed elevations.

**Storm Drainage Impacts and Mitigation Measures**

**Standards of Significance**

The proposed Community Plan would have a significant effect related to storm drainage if it would:

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems;
- Place within a 100-year floodplain structures which would impede or redirect flood

flows;

- 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.

### **Method of Analysis**

The analysis of flooding and drainage-related impacts is qualitative, based on review of floodplain maps and the regulations that would apply to development in flood hazard areas.

### **Project-Specific Impacts and Mitigation Measures**

#### **4.9-7 The proposed Community Plan would locate development within the 100-year floodplain.**

**Applicable Regulations:** Section 18.34.040 (Special Flood Hazard Areas)

**Significance:** Less than Significant

**Mitigation Included in the proposed Community Plan:** None

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

Approximately 10 percent of the Plan Area is in a 100-year floodplain. This area is designated for development, including very low and low density residential and general commercial land uses. Building in a floodplain can put buildings and people at risk during flood events. However, any development in the floodplain must comply with the Section 18.34.040 of the MCC, which requires that buildings be elevated so that they would not be within the 100-year floodplain, and that special materials and construction techniques be used to flood proof and protect development in these areas. These measures would ensure that development within the floodplain did not put people at substantial risk of harm. Therefore, the impact would be less than significant.

#### **4.9-8 The proposed Community Plan would increase stormwater runoff entering the Plan Area drainage system.**

**Applicable Regulations:** MS4 General Permit

**Significance:** Less than Significant

**Mitigation Included in the proposed Community Plan:** Policies PS-1, PS-2 and PS-3

**Significance After Mitigation:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

New development under the proposed Community Plan would generate additional stormwater

that would be conveyed through the County's drainage system. Such new development must include a drainage system designed to the County's Storm Drainage Design Manual standards, which would ensure that the storm drainage system is updated as needed to accommodate additional runoff from the project development. In addition, new development must comply with the NPDES General Permit for construction, and the County's Phase II Municipal Separated Storm Sewer System (MS4) permit, which address measures designed to ensure that water quality is not degraded due to runoff. These measures would ensure that the storm drainage system is adequate, and that substantial environmental impacts related to flooding and drainage do not occur as the result of new development. Therefore, this impact would be less than significant.

### **Cumulative Storm Drainage Impacts and Mitigation Measures**

The Le Grand drainage system is self-contained and serves only the Plan Area. The system drains to a basin located within the Plan Area. Stormwater from within the Plan Area will therefore stay within the Plan Area system. Because the drainage system serves only Le Grand, and Le Grand runoff remains contained within the Plan Area, there is no cumulative impact beyond the impact of the project described in Impacts 4.9-7 and 4.9-8.

## **SOLID WASTE**

### **Environmental Setting**

Solid waste services and facilities in Merced County are governed by the Merced County Solid Waste Regional Agency (MCSWRA), which was established through a Joint Powers Agreement between the County and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced. The Merced County Department of Public Services, Solid Waste Management Division, administers solid waste disposal operations in the county.

The MCSWRA owns and operates two active solid waste landfills: The Highway 59 Landfill, located approximately 6 miles northeast of the City of Merced, and the Billy Wright Landfill, located south of Santa Nella. The Highway 59 Facility serves the cities of Merced, Atwater, Livingston, and the unincorporated communities in eastern Merced County. The Billy Wright Landfill primarily serves the cities of Dos Palos, Gustine, Los Banos, and the unincorporated communities of western Merced County.

Le Grand waste is taken to the Highway 59 landfill. The Highway 59 Landfill is a Class III landfill that occupies 610 acres, of which 255 acres are used for disposal. Class III landfills can accept normal municipal waste, but are not permitted to accept hazardous waste, lead-acid batteries, yard waste, whole tires, used motor oil and large appliances. The landfill is permitted to accept 1,500 tons/day (2,190 cubic yards), and has a remaining capacity of 28,025,334 cubic yards.<sup>44</sup> The maximum permitted amount is 30,012,352 cubic yards. The anticipated closure date for the landfill is 2065. The Highway 59 landfill currently accepts municipal solid waste from residential, commercial, and industrial sources; construction waste; organics; and recyclables such as glass, plastic, paper, and metals.

### **Existing Landfill Capacity**

Under SB 1016, each jurisdiction has a disposal target that is the equivalent of 50 percent diversion, and that target is expressed on a per capita basis. If a jurisdiction disposes less than

44 CalRecycle, Solid Waste Information System, Facility/Site Search, Highway 59 Disposal Site (24-AA-0001). Available online at <https://www2.calrecycle.ca.gov/swfacilities/Directory/24-AA-0001/Hwy595yearpermitreviewapplication.pdf>. Accessed August 16, 2018.



its 50 percent equivalent per capita disposal target and is implementing its recycling and related programs, it has met the mandate.

According to the Highway 59 Landfill 5 Year Permit Review Application (February 2016), the Highway 59 Landfill currently has existing capacity. According to the MCSWRA staff<sup>45</sup>, the disposal/diversion goal is 10.7 pounds per person/per day (PPD), and the landfill is currently at 4.9 pounds PPD. For the business sector, the target is 38.8 pounds per employee per day, and it is currently at 17.3 PPD. 10.7 PPD and 38.8 pounds per employee per day are the disposal rates given by the State, while also actively diverting through recycling and composting. According to the MCSWRA staff, currently residents are doing two things: disposing less than target amounts while also recycling and composting. As such, the MCSWRA is reducing the amount of waste that enters that landfill.

### **Landfill Expansion**

The MCSWRA is currently pursuing an expansion project at the Highway 59 Landfill that would add several years of life to the facility. The Valley Fill Plan would use the “valley” between the two former sites that flank the old entrance and scale house. By using the valley between the two former sites as the next landfill phase, the operational life of the Highway 59 facility would be extended by 15 years<sup>46</sup>.

The Valley Fill project would:

- Extend the life of the landfill by approximately 15 years and design capacity by 6,857,000 cubic yards (19%) without expanding the facility boundary;
- Avoid the excavation of 2,468,000 cubic yards of soils which reduces near-term air emissions (dust and diesel emissions) by 98%; and
- Ensure the availability of solid waste disposal capacity in Merced County and accommodates for regional growth for the foreseeable future.

The Valley Fill project would allow MCRWMA to meet projected waste disposal needs for Merced County. Disposal needs are expected to increase from an existing level of 900 average daily tons to approximately 2,125 by 2035 and beyond. The projected increases in peak daily and average tonnage are based on anticipated regional population growth and on measured increases in average and peak daily tonnages accepted at the Highway 59 Landfill over the past several years. This includes an annual countywide growth rate of 1.5 percent and a total population growth of 106,000 between 2015 and 2035 as stated in the San Joaquin Valley Demographic Forecasts 2010 to 2050, which addressed growth in eight counties, including Merced County. The Valley Fill project would incrementally increase the maximum daily tonnage and associated traffic over the next 20 years to accommodate population growth and demand for local solid waste disposal capacity; expand the solid waste disposal footprint by 3 percent (7.8 acres) within the currently active area of the landfill; and increase the height of the existing disposal area by 50 feet to allow continued operation for an additional 11 to 15 years within the currently permitted solid waste facility boundary. The Highway 59 Landfill was projected to reach capacity in 2065. The Valley Fill project would extend the operational life of the landfill to sometime between 2076 and 2080. The project would ensure the availability of solid waste

45 Jennifer Halpin, Staff Services Analyst, MCSWRA, Personal communication between Nisha Chauhan and, email correspondence on November 7, 2016.

46 Merced County Association of Governments. Highway 59 Landfill Valley Fill Project. Available online at: <http://www.mcagov.org/233/Valley-Fill-Project>. Accessed November 8, 2016.



disposal capacity in Merced County and beyond for the foreseeable future, while accommodating additional demands for disposal resulting from regional growth<sup>47</sup>.

The MCSWRA certified the EIR and approved the Valley Fill Project in May 2016. At the time that this Draft EIR was prepared, the Valley Fill Project was awaiting State approval.<sup>48</sup>

## **Regulatory Setting**

### **Federal**

#### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), Subtitle D, contained in Title 42 of the United States Code (USC) § 6901 et seq. 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, groundwater monitoring, and closure of landfills. The U.S. Environmental Protection Act (EPA) waste management regulations are codified in Volume 40 of the Code of Federal Regulations (CFR) pts. 239-282. The RCRA Subtitle D is implemented by Title 27 of the Public Resources Code (PRC), approved by the EPA.

### **State**

#### California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30), established the California Integrated Waste Management Board (now CalRecycle), and established priorities for source reduction, recycling and composting, and environmentally safe transformation and land disposal for CalRecycle and local agencies. AB 341 Solid Waste: Diversion (2011), further described below, amended this act by requiring CalRecycle to issue a report to the Legislature that included strategies and recommendations that would enable the state to divert 75 percent of solid waste generated from disposal by January 1, 2020; require businesses that meet specific thresholds to arrange for recycling services by January 1, 2012; streamline the amendment process for non-disposal facility elements; and allow a solid waste facility to modify their existing permit under specified circumstances.

#### Assembly Bill 341

In an effort to reduce greenhouse gas emissions from disposing of recyclables in landfills, AB 341 (PRC, Division 30, Chapter 476) requires local jurisdictions to implement commercial solid waste recycling programs. Businesses that generate four cubic yards or more of solid waste per week or multifamily dwellings of five units or more must arrange for recycling services. Jurisdictions' commercial recycling programs must include education, outreach and monitoring of commercial waste generators and report on the process to CalRecycle. Jurisdictions may enact mandatory commercial recycling ordinances to outline how the goals of AB 341 will be reached. For businesses to comply with AB 341, they must arrange for recyclables collection through self-haul, subscribing to franchised haulers for collection, or subscribing to a recycling service that may include mixed waste processing that yields diversion results comparable source separation.

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47 Merced County Regional Waste Management Authority. Findings of Fact and Statement of Overriding Considerations for the Highway 59 Landfill Valley Fill Project Environmental Impact Report. Available online at: <http://www.mcagov.org/DocumentCenter/View/738>. Accessed November 8, 2016.

48 Jerry Lawrie, Environmental Resource Manager, MCSWRA, Personal communication, September 6, 2018.

Senate Bill 1016

The purpose of the SB 1016 per capita disposal measurement system (PRC, Division 30, Chapter 343] is to make the process of goal measurement as established by AB 939 simpler, more timely, and more accurate. SB 1016 builds on AB 939 compliance requirements by implementing a simplified measure of jurisdictions' performance. SB 1016 accomplishes this by changing to a disposal-based indicator--the per capita disposal rate--which uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities.

In order for the California Department of Resources Recycling and Recovery (CalRecycle) and jurisdictions to more properly focus on successful program implementation, SB 1016 shifts from the historical emphasis on using calculated generation and estimated diversion to using annual disposal as a factor when evaluating jurisdictions' program implementation.

Assembly Bill 1826

In order to further reduce greenhouse gas emissions from disposing of organics materials in landfills, AB 1826 (PRC, Division 30, Part 3, Chapter 727) requires businesses to recycle their organic waste beginning on April 1, 2016, depending on the amount of solid waste they generate per week. Similar to AB 341, jurisdictions are required to implement an organic waste recycling program that includes the education, outreach and monitoring of businesses that must comply. Organic waste refers to food waste, green waste, landscaping and pruning waste, nonhazardous wood waste, and food-soiled paper that is mixed with food waste.

**Local Regulations**Merced County General Plan

The policies in this section focus on the collection and safe disposal of solid waste generated in Merced County, as well as the recycling, composting, and an overall reduction of waste. The following General Plan goals, objectives, and policies found in the Public Facilities and Services Element would apply to development of the proposed Community Plan.

**Public Facilities and Services Element**

**Goal PFS-4:** Ensure the safe and efficient disposal and recycling of solid and hazardous waste generated in the County.

**Policy PFS-4.3: Spill Site Development**

Prohibit development on sites identified by Federal, State, or local agencies as spill sites or hazardous waste areas unless approved cleanup occurs prior to development.

**Policy PFS-4.5: Solid Waste Service Availability**

Require all new development to adequately provide solid waste storage, handling, and collection through the development review and permitting process.

**Policy PFS-4.6: Solid Waste Reduction**

Support and promote feasible waste reduction, recycling, and composting efforts.

**Policy PFS-4.7: Composting and Green Waste Facilities**

Encourage the proper siting and operation of composting and green waste facilities in rural areas of the County.

**Solid Waste Impacts and Mitigation Measures****4.9-9 The proposed Community Plan would generate additional solid waste.**

**Applicable Regulations:** AB 1826

**Significance:** Less Than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** Less than Significant

The proposed Community Plan would generate additional solid waste due to the projected population increase associated with buildout. Waste would be generated by both construction activities, new residents, new businesses and additional public services, such as schools.

Currently, Merced County residents generate, on average, 5 pounds of waste per day. In addition, an average of 10 pounds of solid waste per employee is generated in the County<sup>49</sup>. Assuming that these rates continue into the future, the proposed Community Plan would result in an increase of approximately 2,500 tons per year of solid waste, or approximately 18,000 cubic yards per year. County recycling programs, AB 1826, which requires businesses to recycle organic waste, and other waste reduction efforts would continue to reduce the amount of waste per person that needs to be landfilled. Nonetheless, the total amount of waste generated within Le Grand would increase as the result of the proposed Community Plan.

The Highway 50 Landfill currently has a remaining capacity of almost 28 million cubic yards. According to MCSWRA staff, existing capacity would last until 2050, even without the Valley Fill project. Therefore, there would be adequate capacity to accept the additional solid waste generated by the proposed Community Plan under existing conditions, and the increased waste generated by the project would result in a less-than-significant impact.

#### **4.9-10 The proposed Community Plan would contribute to cumulative increases in solid waste generation.**

**Applicable Regulations:** AB 1826

**Significance:** Less Than Significant

**Mitigation included in the proposed Community Plan:** None

**Significance after Mitigation in the proposed Community Plan:** Less than Significant

**Additional Mitigation:** None required

**Residual Significance:** None

The MCSWRA is responsible for ensuring that the cumulative solid waste disposal capacity needs of its member jurisdictions are met over time through expansion of existing landfill

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<sup>49</sup> Cal Recycle, Jurisdiction Diversion/Disposal Rate Summary (2007-Current), accessed at <file:///Users/adriennegraham/Documents/work/le%20grand/admin%20record/utilities/MCSWRA%20diversion%20rates%202007-16.webarchive>, August 16, 2018.

capacity, creation of new landfill capacity, and/or deployment of waste conversion technology that substitutes for landfill disposal capacity. The MCSWRA recently approved expansion plans for the Highway 59 Landfill. The expansion is intended to provide waste management services to accommodate future growth in the landfill's service area, which includes Merced County, until at least 2035. The expansion would extend the life of the landfill by approximately 15 years and design capacity by 6,857,000 cubic yards. In addition to the additional landfill capacity, the MCSWRA is implementing several waste diversion strategies that would reduce the amount of waste from entering the landfill.

The need for the Highway 59 Landfill expansion was based on regional population growth projections for Merced County. As such, the MCSWRA has already evaluated and addressed long-term landfill capacity for cumulative development. Because planned expansion of the Highway 59 Landfill will be able to accommodate growth within its service area, the increases in solid waste would be a less-than-significant cumulative impact. The proposed Community Plan would increase the amount of solid waste that requires land filling, but not beyond the levels anticipated during planning for expansion of the Highway 59 landfill. Therefore, the project contribution to cumulative solid waste impacts would not be considerable.

## **5. ENVIRONMENTAL CHECKLIST**

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## 5.0 ENVIRONMENTAL CHECKLIST

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### INTRODUCTION

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed Community Plan. For this checklist, the following designations are used:

**Potentially Significant Impact:** An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified and no mitigation is available to reduce the impact to a less-than-significant level, an Environmental Impact Report (EIR) must be prepared. Potentially significant impacts are addressed in detail in Chapter 4 of this Draft EIR.

**Less-than-Significant Impact with Mitigation Incorporated:** Impacts that would be reduced to a less-than-significant level by feasible mitigation measures identified in this Environmental Checklist.

**Less-than-Significant Impact:** Any impact that would not be considered significant under CEQA relative to existing standards.

**No Impact:** The project would not have any impact.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>1. AESTHETICS.</b> <b>Except as provided in Public Resources Code Section 21099, would the project:</b>				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a. There are no roads or features within the Plan Area that are specifically designated as scenic resources in the Merced County General Plan. However, the General Plan does state that rural and agricultural landscapes provide the primary scenic resources in Merced County.<sup>1</sup> The primary roads for vehicles passing through Le Grand are Le Grand Road and Santa Fe Avenue. The views from these roads would not change substantially. Currently, as viewers travel toward or away from Le Grand, the views are of agricultural lands, including fields and orchards. Within Le Grand, the primary views from these roads are of small-scale commercial development and single-family homes. Along Santa Fe Avenue, the railroad tracks and long, low-profile agricultural production buildings are also visible. Within the community, views from Le Grand Road include single-family homes, fields, orchards, the elementary and high schools, parks, recreation facilities and community buildings. Agricultural land is visible within the Plan Area along the community boundaries, and also within the Plan Area east of McDowell Street and north of Le Grand Road (see Figure 4.6-1 in Section 4.6, Land Use). The proposed Community Plan would develop this agricultural land with commercial and residential

<sup>1</sup> Merced County, *2030 Merced County General Plan*, December 10, 2013, page NR-8.

land uses. While this development would change the views of specific parcels, it would not substantially alter the visual character of the views because the new development would be contiguous with existing development. Industrial development would be located along the railroad tracks and adjacent to Santa Fe Avenue, which would be consistent with existing views of this area. Le Grand would continue to look like a small rural town, and the surrounding views of agricultural lands would not be impeded or altered. Therefore, this impact is considered *less than significant*.

- b. There are no State highways in or near Le Grand, so the proposed Community Plan would not alter views from any State highway, including scenic highways. Therefore the project would have *no impact* on scenic resources within a State scenic highway.
- c. Le Grand is a small rural community with a variety of housing types, schools, small retail stores and several agricultural production facilities. The predominant land uses in Le Grand are low-density residential subdivisions, which are concentrated in several areas, including the areas north of McDowell Street, between McDowell Street and Santa Fe Avenue, and south of Le Grand Road between the high and elementary schools and Santa Fe Avenue. Most homes are one- or two-stories tall.

Commercial buildings are also low in scale, typically small one-story buildings interspersed with residential homes along Santa Fe Avenue, Jefferson Street and Le Grand Road.

There are a number of visually distinctive features within the Plan Area. The Burlington Northern Santa Fe (BNSF) rail line transects the Plan Area on a diagonal and is clearly visible from adjacent areas and from Santa Fe Avenue. Single-story agricultural processing buildings, silos and parking are located along the rail line within the Plan Area. Several community facilities are located near Le Grand Community Park. The park itself is a triangle formed by Jefferson Street, Le Grand Road and McDowell Street. Lawn, picnic tables and trees are visible from the surrounding roads, and two small buildings and additional shelters are visible from McDowell Street. A large missionary-style church is visible from the intersection of McDowell Street and Le Grand Road. Traveling on Le Grand Road, the Le Grand High School is clearly visible to the south, with parking and lawn in the foreground, and classrooms and the gym in the background. To the north, Le Grand Community Sport Park is visible from Le Grand Road, including basketball courts, lawns, a play structure and community building in the foreground, and a baseball diamond, lawn and a solar array in the background. Farther east, the Le Grand Elementary School is visible to the south, including parking lot, a two-story auditorium and one-story administration and classroom buildings.

Views from publicly accessible areas, such as regional and local roads beyond the developed portions of the Plan Area are primarily of agricultural lands, including field crops and orchards, as well as rural residences and horse properties. There are no natural features, such as a lake, rivers or woodlands, visible from the Plan Area. The closest major stream is Mariposa Creek to the north. This stream is located entirely outside of the Plan Area, runs generally east-west, and is crossed by Santa Fe Avenue, Cunningham Road and Fresno Road. The creek has a narrow band of trees and other riparian vegetation on either side.

The proposed Community Plan would extend development primarily on parcels that are orchards or fields. Non-residential development would be concentrated along the BNSF line and Santa Fe Avenue, and would be a continuation of the existing development in



these areas. The Mixed-Use designation in the downtown area would allow the continued mix of commercial, business, and residential uses. The Very Low, Low, Medium, and High-Density Residential areas would be an extension of existing housing areas. Although the community would become more developed, the visual quality of a small town rural town in the Central Valley would not change substantially.

Chapter 9 of the proposed Community Plan, *Community Design*, establishes design guidelines for development and redevelopment within the Plan Area that encourage “enhancement of the existing rural, small town character.” The Community Plan states that, while guidelines are not always required, “project applicants should demonstrate that they comply with the intent of the design guidelines, where applicable.” New development must also comply with the applicable development standards identified in the Merced County Code (MCC).

The design guidelines in Chapter 9 of the proposed Community Plan are provided for both residential and nonresidential development, and address a wide range of issues, including site orientation, building form and massing, colors, materials, accessory structures, landscaping, and open space. The commercial and industrial design guidelines address architectural character, building elements and articulation, parking, lighting, screening, and signage. The commercial and mixed-use design guidelines also incorporate pedestrian-friendly elements, such as pedestrian-scale buildings, internalized parking lots and a pedestrian network of sidewalks and trails. Mixed-use buildings are to be a maximum of three stories, and should use wood, brick and stone as the main construction materials. All sides of buildings are expected to have appropriate details, materials and finishes. These guidelines would ensure that new buildings would be compatible with existing residential and commercial buildings, and of a scale consistent with a small, rural community. Therefore, the new development would be visually compatible with the existing community.

The proposed Community Plan would expand urban uses into areas that are still agricultural. For example, under the proposed Community Plan, the orchards north of Le Grand Road and east of Le Grand High School would ultimately be developed with single-family homes. Some of these areas are visible from public areas, such as roadways. Where urban uses extend to the Plan Area edges, such as along the eastern boundary north of Le Grand Road, new edges would be created between agricultural operations outside the Plan Area and residential development. The agricultural uses surrounding the community would continue to be active and to extend for many miles in every direction. The community would continue to be surrounded by agricultural uses, rather than blending into another developed area, so the existing rural, agricultural character would be retained.

New and expanded water, wastewater, and storm drainage facilities would be required to serve new development under the proposed Community Plan, but these facilities would not substantially degrade or alter the visual quality of the Plan Area or vicinity. Conveyance lines would be located underground, so they would not alter the visual character of the Plan Area. If a water storage tank is constructed within the Plan Area, it would be of similar height (24”) and mass as a two-story home or multifamily building, so it would not stand out. If constructed outside the Plan Area, it would be visually consistent with other agricultural infrastructure, such as grain silos (which are much taller than two-stories). Detention basins would be incorporated into new development areas, and would be at or below grade, so they would not interrupt views. The expansion of the reclamation area would occur on nearby agricultural fields. These fields would continue

to be used for crops, so their visual character would not be substantially altered. For these reasons, project-related utilities infrastructure would not substantially alter or degrade the scenic quality of the Plan Area and surrounding area.

Because development would be an extension of and visually compatible with the existing community, and the proposed Community Plan Design Guidelines include design and landscaping guidelines intended to ensure that commercial and industrial uses are visually compatible with adjacent residential uses, the proposed Community Plan would not substantially degrade the visual quality of the Plan Area or its surroundings. Therefore, this would be a ***less-than-significant impact***.

- d. Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare can be created from reflective building materials, such as windows or metallic architectural features. The proposed Community Plan would not include the type of development that typically generates extensive glare. Therefore, the proposed Community Plan would not substantially increase the amount of glare in the project vicinity.

Construction of the proposed Community Plan would create additional light sources such as building and street lighting. Artificial lighting from urbanized uses alters the rural landscape and, in sufficient quantity, “lights up” the nighttime sky and reduces the visibility of astronomical features, such as stars and comets. Unshielded lighting from project uses could be visible from surrounding areas. The Merced County Code includes the following lighting standards (Section 18.41.060):

Exterior lighting shall be designed and maintained in a manner so that glare and reflections are contained within the boundaries of the parcel, and shall be hooded and directed downward and away from adjoining properties and public rights-of-way. The use of blinking, flashing or unusually high intensity or bright lights shall not be allowed. All lighting fixtures shall be appropriate to the use they are serving, in scale, intensity and height.<sup>2</sup>

These standards must be implemented by new development within the Plan Area, and would ensure that new development does not include light that spills over onto adjacent properties. Downward-directed light would also minimize the extent of “up-lighting” and the effect on night skies. For these reasons, impacts from light and glare would be ***less than significant***.

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<sup>2</sup> Merced County, *Merced County Code*, Title 18, Zoning, Chapter 18.41.060, Lighting.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
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**2. AGRICULTURE AND FORESTRY RESOURCES:**

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- |  |                                     |                          |                          |                                     |
|--|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program in the California Resources Agency, to non-agricultural use?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| c. 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))? | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Result in the loss of forest land or conversion of forest land to non-forest use?   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

**Discussion**

a, b.,

- e. Approximately 65 percent of the Plan Area is developed. Farmland makes up approximately one-third of the Plan Area. There are approximately 111 acres of Prime Farmland in the Plan Area, which is considered Important Farmland, and 38 acres of

Farmland of Local Importance, which is not Important Farmland for purposes of CEQA. The proposed Community Plan would result in the conversion of approximately 48 acres of Important Farmland to urban uses within the Plan Area (the remaining 63 acres of Prime Farmland would be designated Urban Reserve, and would therefore not be developed). Some of the agricultural land outside of the Plan Area is under Williamson Act contract and/or preservation easements. The development of residential uses near agriculture areas could increase the potential for conflicts, because residents could find the noise, pesticide application, odors and other aspects of farming annoying or intrusive. As a result, agricultural operations could be subject to pressure to limit or relocate activities, which would reduce the agricultural productivity and viability in the vicinity of the Plan Area. The conversion of agricultural land and potential increase in conflicts between agricultural operations and urban uses is considered a ***potentially significant impact***, and is addressed in detail in Section 4.1 of Chapter 4 of the Draft EIR.

- c., d. The Plan Area does not contain any forest, so there would be ***no impact*** on forest lands.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>3. AIR QUALITY</b>				
<i>Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations:</i>				
<i>Would the project:</i>				
a. Conflict with or obstruct implementation of the applicable air quality plan?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. 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?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a-c. Air quality is monitored, evaluated, and regulated by federal, State, regional, and local regulatory agencies and jurisdictions, including the United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). The EPA, CARB, and the SJVAPCD develop rules and/or regulations to attain the goals or directives imposed by legislation. Both State and regional regulations may be more, but not less, stringent than federal regulations.

Under the proposed Community Plan, new development would be constructed throughout the Plan Area. In some cases, existing buildings and hard surfaces would need to be removed prior to construction. Development sites would need to be graded and in some cases excavated to support construction. These activities would produce air pollutants, including PM<sub>2.5</sub>, fine particulate matter, and PM<sub>10</sub>, respirable particulate matter. In addition, criteria air pollutants would be generated through the use of diesel powered construction equipment. The use of paints would generate reactive organic gases (ROG). Once constructed, the proposed Community Plan would generate air pollutant emissions due to increased traffic, heating and cooling, electrical use, and commercial operations. Emissions generated by the proposed Community Plan could be significant locally and on a regional level. This is a **potentially significant impact** and is addressed in Section 4.2 of this Draft EIR.

- d. The urban uses that exist within the current Le Grand community and that are proposed in the Plan Area are unlikely to generate substantial odors. However, the Plan Area is surrounded by agricultural operations, which could generate odors considered noxious to residents. Exposure to substantial odors from these activities is considered ***potentially significant***, and is evaluated in Section 4.2 of this DEIR.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>4. BIOLOGICAL RESOURCES.</b>				
<i>Would the project:</i>				
a. 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, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. 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 wildlife nursery sites?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

**Discussion**

a-d. The Plan Area has been largely disturbed due to agricultural activities and urban

development. Nonetheless, there are areas that could provide habitat for special-status species and sensitive habitats, such as riparian habitat and wetlands. For example, the open fields and annual grasslands could provide foraging habitat for raptors and nesting habitat for burrowing owls. Buildings and trees could provide roosting habitat for certain bat species. Much of these potential habitat areas would be developed under the proposed Community Plan. These are ***potentially significant impacts*** and are addressed in Section 4.3 of this Draft EIR.

- e. New development that would be allowed under the proposed Community Plan would be consistent with all current Merced County General Plan goals and policies related to biological resources, as discussed in Section 4.3 of this Draft EIR. The County does not have any adopted ordinances or programs for protection of biological resources in the unincorporated areas of the county. Therefore, new development within the Plan Area would result in no conflicts with local policies or ordinances protecting biological resources, and ***no impact*** would occur.
- f. No adopted Habitat Conservation Plans, Natural Conservation Community Plans, or other approved local, regional, or State Habitat Conservation Plans have been adopted for the Plan Area or immediate vicinity. Therefore, new development within the Plan Area would not conflict with such plans and there would be ***no impact***.



Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>5. CULTURAL RESOURCES.</b>				
<i>Would the project:</i>				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries.	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a.-c. Merced County is in an area that was the territory of the Penutian-speaking Northern Valley Yokuts. According to the Central California Information Center (CCIC), the Plan Area has a moderate to high sensitivity for prehistoric and historic archaeological resources and historic buildings and structures. Excavation and grading during construction could damage or destroy these archaeological resources, as well as human remains if any are present. Redevelopment of existing developed areas, particularly the mixed-use area, could result in the demolition or substantial reconfiguration of potentially historic buildings or structures. These are **potentially significant impacts** and are addressed in Section 4.4 of this Draft EIR.

Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>6. Energy.</b> <i>Would the project:</i>				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a. Appendix F of the CEQA Guidelines requires that EIRs include a discussion of potential energy impacts, with “particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.”<sup>3</sup>

Appendix F provides a list of environmental impacts that may be included in an EIR:

- C1. The project’s energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project’s life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- C2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- C3. The effects of the project on peak and base period demands for electricity and other forms of energy.
- C4. The degree to which the project complies with existing energy standards.
- C5. The effects of the project on energy resources.
- C6. The project’s projected transportation energy use requirements and its overall use of efficient transportation alternatives.

As discussed below, the proposed Community Plan would not result in the wasteful or inefficient use of energy. Because the project is a community-wide plan, the focus is on community-wide construction and operations energy use.

### **Energy Consumption**

As stated on page I-3 of the Draft EIR, the proposed Community Plan EIR is a program EIR that addresses the overall impacts of the proposed Community Plan. No specific

<sup>3</sup> CEQA Guidelines, *Appendix F: Energy Conservation, I. Introduction.*

projects are currently under consideration. Therefore, the actual energy use associated with the Community Plan buildout cannot be estimated at this time. However, assumptions and calculations used in the traffic, air quality and greenhouse gas emissions analyses can be used to estimate potential energy use. ESA, the firm that prepared the greenhouse gas and air quality analyses for the Draft EIR, used these assumptions to calculate fuel consumption, electricity use and natural gas use for the proposed Community Plan (see Appendix I). This information is compared to existing and projected energy use in the County. The policies, regulations and mitigation measures that would reduce energy use are also described.

#### Electricity and Natural Gas

The 2030 Merced County General Plan EIR reported that the largest consumers of electricity in Merced County were agriculture and water pumping (31%), followed by residential uses (27%), industry (21%), and commercial uses (18%).<sup>4</sup>

In 2015, total annual electrical use in Merced County was approximately 2,926 million kilowatt hours (kWh). Residential use was approximately 719 million kWh, about 25 percent of the total, and non-residential use was approximately 2,208 million kWh. Non-residential electrical use in the County has been decreasing in recent years. For example, in 2010, non-residential electricity consumption was 2,737 million kWh, and total use was 3,396 million kWh. Residential electrical use has increased by approximately 9 percent since 2010.<sup>5</sup>

The proposed Community Plan is estimated to generate approximately 7.7 MWh per year, or 7,700 kWh. This represents an increase of less than 1/100<sup>th</sup> percent over existing electrical use in the County.

Natural gas consumption in Merced County was 127 million therms in 2015.<sup>6</sup> New development under the proposed Community Plan is estimated to consume approximately 25.69 MBTUs (0.25 therms) of natural gas per year at buildout, an increase of 114 percent over existing consumption within the Plan Area and an increase of 0.20 percent countywide.

Merced County has adopted a number of projects and programs to reduce energy consumption within the County in all sectors.<sup>7</sup> For the largest electricity user, agriculture and water pumping, the General Plan supports development of renewable energy facilities, such as ethanol, co-generation, solar and wind facilities that support agricultural-related practices and/or use agricultural waste (Policy LU-2.7). Efforts to reduce green house gas emissions from agricultural operations, such as installation of renewable energy technologies and development of efficient structures, are encouraged (Policy AQ-1.3), and would have the additional benefit of reducing energy use. To the extent that agricultural uses can reduce their energy use, the county's overall energy consumption will be reduced.

4 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Figure 2022-2.

5 California Energy Commission, Energy Consumption Database, *Electrical Consumption by County*, accessed at <http://ecdms.energy.ca.gov>, March 10, 2017.

6 California Energy Commission, Energy Consumption Database, *Gas Consumption by County*, accessed at <http://ecdms.energy.ca.gov>, March 10, 2017.

7 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 22-17.

The County General Plan also contains numerous policies intended to reduce energy uses in residential and commercial sectors, which would be developed within the Le Grand community. New residential subdivision lots and new commercial, office, industrial and public buildings are required to be oriented and landscaped to enhance natural lighting and solar access (Policy LU-9.1). Green building design and technology are required of new development within Urban Communities, such as Le Grand (Policy LU-5B.10). The County has also committed to working with local energy providers to promote energy conservation programs and incentives to existing residential development, especially low-income households (Housing Element Policy 6.3), which could reduce existing energy use within Le Grand. Other policies encourage the use of sustainable building practices (Policy LU-9.2), retrofitting of existing buildings with energy and water efficient technologies (Policy LU-9.3), and use of solar, wind and other renewable energy resources, as well as water conservation and water recycling systems (which in turn reduce energy needed to treat and convey water) in residential buildings (Housing Element Policy 6.5). Programs aimed at reducing energy use include a free weatherization program sponsored by the Merced County Community Action Agency and the California HERO program, which provides assistance to lower-income groups in the unincorporated County for solar power. These Countywide policies and programs would apply to the community of Le Grand, including new development under the proposed Community Plan, and would should reduce the amount of energy used per capita for new development, as well as reducing existing energy use.

In addition to complying with County policies, all development under the proposed Community Plan must comply with State building codes, which are administered at the County level. The State first adopted energy efficiency requirements in 1976. The most recent update, the 2016 CALGreen Code, requires compliance with energy efficiency standards for residential and nonresidential buildings based on a State mandate to reduce California's energy demand. The code identifies energy efficiency requirements for new buildings, additions to existing buildings and alterations to existing buildings. Required energy efficiency measures address indoor and outdoor lighting, water heating, heating and air conditioning, pool and spa systems, and appliances, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs. The most significant efficiency gains for residential development are improvements for attics, walls, water heating and lighting.<sup>8</sup> New development within the Community must comply with these standards.

Mitigation Measure 4.5-1 in Section 4.5, Greenhouse Gas Emissions and Climate Change, would further reduce energy use from new development. This measure is intended to reduce greenhouse gas emissions, which are typically due to energy consumption. Prior to approval, each new tentative map or non-residential conditional use permit must demonstrate that it will meet the identified GHG targets or reduce emissions of GHG by 15 percent. Among the ways in which the targets can be achieved are constructing buildings that are 20% more efficient than required by Title 24 and increasing water efficiency in bathroom and kitchen fixtures and landscape irrigation [Mitigation Measure 4.5-1(c) and (e)]. Such measures would further reduce the amount of electricity and/or natural gas that would be consumed by new development.

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<sup>8</sup> California Energy Commission, *Building Energy Efficiency Standards for Residential and Non Residential Buildings, Title 24, Part 6, and Associated Administrative Regulations in Part 1*, June 2015.

## Fuel Consumption

### *Construction*

Construction of the proposed Community Plan would require the use of fuels (primarily gasoline and diesel) for operation of construction equipment (e.g., dozers, excavators, generators, and trenchers), construction vehicles (e.g., dump and delivery trucks), and construction worker vehicles. For the construction of the proposed Community Plan, it is estimated there would be approximately 39,723 gallons of diesel fuel in a single year, and 794,450 gallons through buildout. Gasoline use is estimated to be 3,825 gallons per year and 76,473 gallons through buildout.

Construction activities are temporary and would not result in a long-term increase in demand for fuel. As discussed below, on-road transportation is estimated to use substantially more diesel fuel and gasoline than construction activities. Similar to automobiles, diesel fuel engines, such as generators, have become more efficient due to changes in regulation. Mitigation Measure 4.2-1 in Section 4.2, Air Quality, of the Draft EIR, requires that onsite construction equipment use Tier 3-rated engines or engines with similar or more strict emissions. These engines are also likely to be more fuel-efficient.

### *Transportation*

Operational transportation of the proposed Community Plan would require the use of fuels (primarily gasoline and diesel) for personal automobiles, delivery vehicles and multi-passenger vehicles.

According to the 2030 Merced County General Plan EIR, in 2005 gasoline use in the unincorporated county was 58,082,450 gallons per year. Diesel use was 52,859,300 gallons per year.<sup>9</sup>

The 2030 General Plan EIR also projected that fuel use would increase to 112,730,250 gallons per year of gasoline and 88,946,850 gallons per year of diesel in 2030.<sup>10</sup> The 2030 projections assumed development of the adopted Le Grand Community Plan.

On an annual basis, the proposed Community Plan at buildout is estimated to increase fuel consumption by 50,205 gallons of diesel fuel and 1,003,159 gallons of gasoline under existing conditions.

The proposed Community Plan has a number of components that would reduce fuel use by reducing reliance on the personal automobile. As discussed in Chapter 3 of the Draft EIR, the proposed Community Plan provides for a mix of land uses within the Plan Area, which provides for more efficient transportation patterns. The proposed Community Plan provides for commercial land uses in proximity to residential development, so that residents do not need to outside of the Plan Area to meet their need for groceries, other household goods and similar items. The industrial and commercial land uses would support employment-generating opportunities. To the extent that employees of Plan Area businesses lived within the Plan Area, they would have relatively short commutes, and could choose to walk or bike to work. Schools would be located in proximity to residential uses as well, allowing students

9 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Appendix E, page 3-4.

10 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Appendix E, page 3-4.

to walk or bike to school from much of the Plan Area. Sidewalks would be installed along one or both sides of key streets in the Plan Area (see Figure 5.16 in the proposed Community Plan). Policy C-12 calls for transit routes and stops in or adjacent to high-activity land uses.

One of the options for reducing GHG emissions is for new non-residential projects to develop a Transportation Demand Management (TDM) program for employees [Mitigation Measure 4.5-1(f)]. TDM strategies could include, among other things, carpool or vanpool programs, public transit subsidies and/or computerized rideshare matching services. These measures are intended to reduce vehicle miles traveled, which would in turn reduce fuel consumption.

#### Effects on Utilities

Electrical and natural gas services are provided to the Plan Area by Pacific Gas & Electric (PG&E). As of 2015, renewable resources (e.g., wind, geothermal, biomass, solar and small hydro) provided 30% of electricity generated by PG&E.<sup>11</sup>

As discussed above, the proposed Community Plan would increase demand for electricity and natural gas within Merced County by less than 1 percent. While new development would require the extension of local electrical and gas facilities, such as connections to transmission lines, no major improvements or development of new supplies have been identified for either baseline or peak usage. PG&E will review development proposals as they are submitted to determine what, if any, project-specific improvements are needed.

#### **Summary**

The proposed Community Plan would increase consumption of electricity, natural gas, and fuels. This increase would be relatively modest compared to energy use in the County as a whole, because the proposed Community Plan would accommodate a small portion of countywide population, and because new development would be composed primarily of residential and commercial land uses. The increased energy use is largely within levels anticipated in the 2030 General Plan, because the proposed Community Plan would have similar land uses as the adopted Community Plan. The increase in energy demand is not anticipated to require large-scale improvements to increase energy supply or provide transmission lines. Local, project-specific improvements will be identified as new development proposals are submitted. The proposed Community Plan incorporates elements that would reduce vehicle fuel use, including alternative transportation modes, such as pedestrian, bicycle and transit facilities. Further, all new development would comply with the State building energy efficiency codes and General Plan policies that would reduce energy demand. For these reasons, the proposed Community Plan would not result in the wasteful, unnecessary or inefficient consumption of energy. Therefore, this impact would be ***less than significant impact***.

- b. As discussed above, the proposed Community Plan would comply with State and County energy-related policies and regulations. There are no plans at present for specific renewable resource projects in or near the Plan Area, so the proposed Community Plan would not interfere with such facilities. For these reasons, this would be a ***less-than-significant impact***.

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<sup>11</sup> Pacific Gas & Electric, Clean Energy Solutions, accessed at [https://www.pge.com/en\\_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page](https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page), March 10, 2017.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>7. GEOLOGY AND SOILS.</b>				
<i>Would the project:</i>				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion, or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soils, as defined in Table 18-1-13 of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## **Discussion**

a.i-iii,

- c. Like much of California, Merced County is subject to seismic activity, although the risk associated with seismic hazards is low, due to the distance between developed areas and active earthquake faults. According to the Merced County General Plan, the only fault known to be located within the county is the “Ortogonalita” fault, which bisects the Coast Range in a northwesterly direction. This fault has not been active in recorded history, but it could become active again. This is the only fault identified in the county that is on the Alquist - Priolo Earthquake Fault Zoning Map.<sup>12</sup>

There are several faults outside of but near the county, including the San Andreas, 15 miles to the west of Merced County, the Hayward and Calaveras faults to the northwest, the White Wolf, Garlock and Sierra Nevada faults to the south, and the Bear Mountain Fault Zone, approximately 5 miles east of the county.<sup>13</sup>

The Plan Area is in an area with a “maximum expectable earthquake intensity” of “II: Moderate severity moderate probable damage”.<sup>14</sup> Because of the distance from known, active faults, in most earthquakes only weaker, masonry buildings would be damaged, although shaking could be felt in very infrequent earthquakes.<sup>15</sup>

Liquefaction is a phenomenon whereby granular soil (i.e., silt and sand) is transformed from a solid state into a liquid state (quicksand) as a result of an increase in pore-water pressure due to an earthquake. Liquefaction would most likely occur in water-saturated silts, and in sands and gravels having low to medium density. Due to the density of the soil and the relatively low potential for seismic shaking to occur in this area, the potential for soil liquefaction is considered low.

Construction contractors are required to comply with the California Building Code (Title 24) to ensure that a project is designed and constructed to meet applicable seismic safety standards. Compliance with applicable seismic safety standards would identify appropriate features to be incorporated into project design to minimize risk of damage from liquefaction. The proposed Community Plan would be required to comply with the UBC, which contains seismic safety requirements and construction and design standards to reduce risks associated with subsidence and liquefaction. Therefore, impacts associated with seismic risk, including fault rupture, seismic ground shaking, seismic ground failure due to the liquefaction of soils, would be considered **less than significant**.

- a.iv. The Plan Area and surrounding areas are relatively flat, with a few slopes adjacent to drainages and canals. The Plan Area does not contain any steep slopes or other features that could result in landslide or mudflow hazards. Therefore, risks to people from landslides or mudflows would not result due to implementation of the proposed Community Plan, and **no impact** would occur.

12 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 10-5.

13 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 10-5.

14 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, Figure 10-5.

15 California Geologic Survey, *Earthquake Shaking Potential for California*, 2008.



- b. Earthdisturbing activities could result in erosion during construction. However, as discussed in Item 10(a)(ci)(d), below, new development would be required to obtain and comply with the State General Construction Activity Stormwater Permit, which requires use of Best Management Practices (BMPs) to prevent eroded soils and other contaminants from entering surface waters. Because the proposed Community Plan would be required to comply with erosion reduction and sediment control measures, it would not result in substantial erosion. Therefore, this is a ***less-than-significant impact***.
- d. Soil characteristics, such as expansive soils, which increase and decrease in volume in response to changes in water content, could create a geologic hazard. Geologic and soil conditions can vary from site to site.

The Merced County Code (Section 16.16, Building Code) incorporates the International Building Code (IBC), as amended by the State government. The IBC contains provisions to ensure that buildings are designed and sited properly to protect against geologic and unstable soils condition. Compliance with the MCC would require that appropriate features are incorporated into building design to minimize risk of damage due to geological hazards, including expansive soils. In order to determine which measures are necessary for a particular site, a geotechnical evaluation would be conducted. Compliance with the County Building Code would ensure that risks associated with geologic and soils hazards would be minimized, so this is considered a ***less-than-significant impact***.

- e. Most new development would connect to the Le Grand Community Services District, which provides wastewater service to the Plan Area, rather than use systems. The exception is the 32 acres that would be designated Very Low Density Residential (VLDR), located in the southeast corner of the Plan Area. This land use is not dense enough to make sewer service feasible. Therefore, development in the VLDR area would be served by septic systems. As shown in Table 3-3 of Chapter 3, up to 17 new units could be developed under this designation on parcels of a minimum of one acre. All new septic systems must comply with the County's minimum design standards as set forth in the Minimum Design Standards—Operation and Maintenance Site Evaluation for Onsite Disposal Systems, which specifies standards for site size, soil characteristics, disposal field size, separation distances, and design. These standards would ensure that the septic systems were adequate to serve individual parcels, and that human health and the environment would be protected. Therefore, the impact would be ***less than significant***.
- f. The Plan Area is underlain by geologic formations (Modesto and Riverbank) that have yielded only limited paleontological resources in eastern Merced County. Nonetheless, if such resources are present in the Plan Area, they could be damaged or destroyed during excavation and grading. This is a ***potentially significant impact***, and is addressed in Section 4.4 of this Draft EIR.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>8. GREENHOUSE GAS EMISSIONS.</b>				
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion**

- a., b. The proposed Community Plan would not generate enough greenhouse gas (GHG) emissions to influence global climate change on its own. However, the proposed Community Plan would incrementally contribute to the global impact through its GHG emissions combined with the cumulative increase of all other anthropogenic sources of GHGs. This is a ***potentially significant impact*** and is addressed in Section 4.5 of this Draft EIR.

Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>9. HAZARDS AND HAZARDOUS MATERIALS.</b>				
<i>Would the project:</i>				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. 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, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

- a. Implementation of the proposed Community Plan would involve construction of a variety of buildings and facilities. Construction would require site preparation activities, such as

excavation and grading at the Plan Area. During construction, oil, diesel fuel, gasoline, hydraulic fluid, and other liquid hazardous materials would be used. If spilled, these substances could pose a risk to the environment or human health.

The predominant land use within the Plan Area, residential, would involve the use of some hazardous materials, primarily for cleaning and landscaping. However, the amounts used would be relatively small and would be unlikely to be harmful. Similarly, commercial, office and retail uses would use small amount of common cleaning and landscaping materials.

Industrial land uses typically have businesses that use more hazardous materials than residential uses. For example, the Industrial designation allows for light industrial manufacturing uses that are directly associated with local commercial agriculture, such as storage and processing of agricultural products and repair and maintenance of equipment used for transportation of locally produced, stored or processed agricultural commodities. Such activities already occur within the Plan Area in proximity to the rail line. Other, non-agricultural manufacturing, processing or storage activities are only allowed when it can be demonstrated that they would generate a clear benefit to the community through the creation of additional employment opportunities. Such uses could involve the use of some hazardous materials. The majority of the Industrial-designated land would be located east of Santa Fe Avenue, although a small portion would be located west of Santa Fe Avenue, between Madison Street and Le Grand Road, where there are adjacent residential neighborhoods.

The design and construction of projects under the proposed Community Plan would comply with the County's Building Code, which incorporates the International Building Code as amended by the State Building Code and the California Fire Code (CFC). Laws and regulations that govern the use and storage of hazardous materials include, but are not limited to, Chapter 6.95 of the California Health and Safety Code (inventory and emergency response), Title 8 of the Code of California Regulations (CCR) (workplace safety), and Titles 22 and 26 of the CCR (hazardous waste). Delivery of hazardous materials to the site and along public roadways would be required to comply with Title 49 of the Federal Code of Federal Regulations (CFR), as monitored and enforced by the California Highway Patrol (CHP) and California Department of Transportation (Caltrans). In addition, storage of all flammable materials at construction sites would be subject to the regulations of Title 19 of the CCR and the Uniform Fire Code. In addition, as discussed in Item 8(a)(c)(f), below, contractors would have to prepare Stormwater Pollution Prevention Plans that ensure that soil and contaminants do not enter surface waters.

The proposed Community Plan Design Guidelines also address the siting and design of industrial land uses. For example, the Design Guidelines state that buildings adjacent to residential units should be buffered by a minimum 20-foot wide landscape strip consisting of a combination of walls, berms, and native and/or drought resistant landscaping. Further, activities that could disturb neighbors should be undertaken within buildings. These Design Guidelines would reduce the potential exposure to hazardous substances by providing distance and/or barriers between industrial and residential development.

Assuming compliance with the applicable laws and regulations discussed above, potential exposure of people to hazardous materials associated with the proposed Community Plan would be a ***less-than-significant impact***.

- b,d. No properties in the vicinity of Le Grand are on the Cortese List.<sup>16</sup> There are several sites in Le Grand that are on the list of Leaking Underground Storage Tanks, which is kept by the Central Valley Regional Water Quality Control Board. All of these cases are closed. There are no active cases of leaking underground storage tanks.<sup>17</sup> There are no past and current landfills or other waste facilities located in proximity to the project site.<sup>18</sup>

Although no other contaminated or potentially contaminated sites have been identified in the records search, there could be contamination present in areas that were occupied by facilities that used hazardous materials in the past, prior to current regulatory levels. If construction workers or occupants of nearby properties are exposed to hazardous materials, their health could be affected. General Plan Policy HS-5.4 requires that new development proposals protect soils, surface water, and groundwater from hazardous materials contamination. According to the General Plan, this policy would protect residents in new development from soil, surface or groundwater contamination by avoiding site development in locations with pre-existing contamination issues or that have not been remediated.<sup>19</sup> Furthermore, it is County practice to review site plans for all development proposals on a case-by-case basis, which would further minimize the potential for siting sensitive land uses near potential hazards. State law, General Plan policy and County site plan review procedures would ensure that sensitive uses are not sited in or near sources of hazardous materials contamination. Therefore, this impact would be ***less than significant***.

- c. The Le Grand school sites are generally surrounded by residential development and agricultural land uses. Under the proposed Community Plan, additional residential development would occur to the north of the high school and east of the elementary school. Agricultural land would remain to the west and south of the schools. Therefore, it is unlikely that a facility that could result in hazardous air emissions or the handling of hazardous materials, substances or waste in sufficient amounts to adversely affect human populations would be located adjacent to a school. There would be land designated Industrial approximately 800 feet to the east of the elementary school, on Le Grand Road, and farther east on either side of the rail line (see Figure 3-3 in Chapter 3, Project Description). While the specific projects that could be developed are not known at this time, the uses that would be allowed in the Industrial designation would be limited to agriculturally-related processing, storage and transportation facilities, which are typically would not involve the use of extensive, highly toxic materials. Furthermore, as discussed above, hazardous materials use would be subject to federal, State, and County regulations designed to protect human health from exposure to hazardous materials. Therefore, this would be a ***less-than-significant impact***.
- e. The Plan Area is not within an airport land use plan or within two miles of a public airport or private airport. The proposed Community Plan would not result in an air safety hazard

16 State of California, Department of Toxic Substances Control, *Hazardous Waste and Substances List (Cortese List)*, [https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site\\_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM,COLUR&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SIT E+LIST+\(CORTESE\)](https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM,COLUR&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SIT E+LIST+(CORTESE)), accessed July 12, 2018.

17 State of California Water Resources Quality Control Board, GeoTracker, [https://geotracker.waterboards.ca.gov/map/?global\\_id=T0604700017](https://geotracker.waterboards.ca.gov/map/?global_id=T0604700017), accessed July 12, 2018.

18 State of California Water Resources Quality Control Board, GeoTracker, [https://geotracker.waterboards.ca.gov/map/?global\\_id=T0604700017](https://geotracker.waterboards.ca.gov/map/?global_id=T0604700017), accessed July 12, 2018.

19 Merced County, *2030 Merced County General Plan Draft Program Environmental Impact Report*, November 2012, page 12-17.

for people residing or working in the Plan Area. Therefore, there would be **no impact**.

- f. The proposed Community Plan would not close or reduce existing roadways and would expand the circulation network within the Plan Area. Therefore, it would not result in any adverse changes to existing emergency access, nor would it prevent the implementation of future emergency plans. Therefore, **no impact** would occur.
- g. Wildland fire hazards exist in varying degrees throughout Merced County. The foothills and large rangelands in the eastern and western portions of the county are located within State Responsibility Areas, and served by the California Department of Forestry and Fire Protection (CalFire).<sup>20</sup> The Plan Area is in a local response area, not a very high danger area.<sup>21</sup> Nonetheless, portions of the Plan Area contain grasses, and the Plan Area will continue to be surrounded by agricultural operations, which, if non-irrigated grasslands, can present a fire risk. Factors contributing to rapid spread of urban fires are poor building construction, lack of built-in fire protection, such as sprinklers, highly flammable contents, delay in detection and alarm, inadequate fire protection equipment and lack of sufficient water supply. All new construction under the proposed Community Plan must comply with current California Fire Code and County standards, which would minimize potential risks by requiring smoke alarms and sprinkler systems in all residential buildings. As discussed in Item 15a, below, the Merced County Fire Department, which maintains a station in the Plan Area, will be able to serve new development. The Plan Area is relatively flat, and has multiple routes into and out of the community, which would aid with evacuation, should it become necessary. Compliance with State and county requirements will ensure that direct and indirect fire risks are reduced to a **less-than-significant** level.

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20 Merced County, 2030 Merced County General Plan Draft Program Environmental Impact Report, November 2012, page 12-2 and Figure 12-1.

21 California Department of Forestry and Fire Protection, Fire Resource Assessment Program, *Fire Hazard Severity Zones in SRA*, November 7, 2007; California Department of Forestry and Fire Protection, Fire Resource Assessment Program, *Draft Fire Hazard Severity Zones in LRA*, September 21, 2007.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>10. HYDROLOGY AND WATER QUALITY</b>				
<i>Would the project:</i>				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. 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; or	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion**

a,, ci.,

d.. Construction

Grading and excavation activities within the Plan Area could expose soil to increased

rates of erosion during construction periods. If this results in increased turbidity in local waterways and rivers, it could have adverse effects on fish and wildlife habitat and other established beneficial uses.

Because activities associated with new development under the proposed Community Plan would disturb more than one acre of land, contractors would be required to obtain and comply with the State General Construction Activity Stormwater Permit. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ. The General Permit is intended to ensure compliance with State water quality objectives and water protection laws and regulations, including those related to waste discharges.

General Permit applicants are required to prepare a stormwater pollution prevention plan (SWPPP), and retain it at the construction site. The stormwater quality management program addresses project construction, and specifies control measures and BMPs designed to minimize sedimentation and release of products used during construction into surface waters. The General Permit requires permittees to implement specific sampling and analytical procedures to determine whether the BMPs used at the construction site are effective. With implementation of these State requirements, construction impacts would be ***less than significant***, because water quality would be protected through the permitting process.

#### Operation

The proposed Community Plan would convert approximately 86 acres of farmland to urban uses. While some of the new uses would include permeable surfaces (e.g., parks and landscaping), the conversion to urban uses would substantially increase impervious surface area, which in turn would increase runoff from roadways and other surfaces that could contain oil and grease, heavy metals and chemicals. These constituents could reach the local drainage system, and, ultimately, the San Joaquin River. Runoff from landscaped areas could contribute chemicals from fertilizers, pesticides and herbicides.

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the California Water Act (CWA) to regulate municipal and industrial discharges to surface waters. The purpose of the NPDES program is to establish a comprehensive storm water quality program to manage urban storm water that minimizes pollution of the environment. As a member of the Merced Storm Water Group (MSWG), Merced County has prepared a Storm Water Management Program (SWMP) under the NPDES Phase II General Permit for small municipal separate sewer systems (MS4). SWMP programs include public education and outreach, illicit discharge detection and elimination, construction site stormwater runoff controls and development of post-construction stormwater management goals for new and redeveloped area. Specific actions to control certain regulated pollutants (per Section 303(d)) are also required. In 2013, the Phase II permit was updated to include more specific Best Management Practices (BMPs), water quality protection measures, and inspection requirements. All new development must comply with the MS4 water quality requirements, which would protect water quality in local streams and drainages and downstream receiving waters, including during flood events. Therefore, the impact on water quality of project operations would be ***less than significant***.

A seiche is a periodic oscillation of a lake or other enclosed body of water typically brought about by an earthquake or wind event. There are no lakes or other enclosed water bodies in or near the Plan Area, so there is no potential for a seiche to occur there.



The Plan Area is not located in an area in which a tsunami could directly or indirectly affect Plan Area development. Therefore, there would be no impact associated with tsunami or seiche events.

- b.,e. As discussed in Section 4.9 of this Draft EIR, the proposed Community Plan would not in and of itself lower the aquifer. However, the proposed Community Plan in combination with other development that draws from the Merced Groundwater Basin, could affect the aquifer, which would be a ***potentially significant impact***. Please see Section 4.9 for more discussion.

As discussed in Item a., ci., above, the proposed Community Plan would comply with water quality regulations, and would therefore not conflict with a water quality control plan.

- cii-iii. The proposed Community Plan would increase impervious surface area over existing conditions, due to the construction of buildings, streets and parking lots. Approximately 86 acres of undeveloped land, which is mostly permeable surface, would be converted to urban uses, which are composed primarily of impervious surfaces, with the exception of parks and landscaped areas. If runoff from new urban areas is not controlled, then the existing drainage system could be overwhelmed, resulting in localized flooding. This would be considered a ***potentially significant impact*** and is discussed in Section 4.9 of this EIR.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>11. LAND USE AND PLANNING.</b> <i>Would the project:</i>				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a. The proposed Community Plan would not expand the Plan Area boundaries. There are no natural features that currently divide the Plan Area. The BNSF rail line transects the Plan Area, with at-grade crossings on Cunningham Road, Jefferson Street, and Le Grand Road. The proposed Community Plan would not remove any of these crossings, or otherwise create impediments to travel through the Plan Area. Therefore, ***no impact*** would occur under the proposed Community Plan.
- b. If approved, the proposed Community Plan would be adopted as part of the County's General Plan. Any inconsistencies with the General Plan would be considered a ***potentially significant impact***, and are evaluated in Section 4.6, Land Use, and other applicable sections of the Draft EIR.

Section 4.6 of this Draft EIR addresses land use issues related to compatibility of various land uses within proximity to one another, consistency with County General Plan land use policies, and consistency with LAFCO annexation policies as they pertain to the annexation of the eastern most portion of the Plan Area to the LGCSD.

Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>12. MINERAL RESOURCES.</b> <i>Would the project:</i>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a. The primary mineral resources in Merced County are sand and gravel. Approximately 24,320 acres of aggregate resources have been mapped within the county.<sup>22</sup> The majority of the Plan Area is designated MRZ-3b SG, areas containing inferred mineral occurrences of undetermined mineral resource significance, and MRZ-3a SG6, which represents areas known to contain occurrences of underdetermined mineral resources significance, including parts of post-Modesto alluvium. MRZ-3b SG areas in eastern Merced County are generally older and more weathered, so they can require more processing than younger deposits.<sup>23</sup> MRZ-3a SG6 areas are likely to be too fine or contain too much clay to be useful as concrete aggregate.<sup>24</sup> Small areas of the Plan Area are designated MRZ-3a SG7, which contains fine-to coarse-grained overbank, terrace and fan deposits of the Modesto Formation, and MRZ-3a SG8, which has similar deposits over the Riverbank Formation. While these zones can be mined for concrete aggregate, there is no history of mining from these formations within Merced County. No other evidence of mining in the Plan Area has been identified by the State Department of Mines and Geology.<sup>25</sup> While there could be aggregate resources in the Plan Area, it has not been a subject to mining in the past. Conversion of approximately 117 acres of land that might have aggregate resources would not substantially reduce the amount of the resource available in the County. Therefore, the proposed Community Plan would not affect the availability of a known mineral resource, and the impact would be ***less than significant***.
- b. The Plan Area is not delineated on as a locally-important mineral resource recovery site in the County's General Plan.<sup>26</sup> Therefore, ***no impact*** would occur.

22 Merced County, 2030 Merced County General Plan Draft Program Environmental Impact Report, November 2012, page 10-5.

23 California Department of Conservation, Department of Mines and Geology, *Mineral Land Classification of Merced County, California*, 1999, page 23 and plates.

24 California Department of Conservation, Department of Mines and Geology, *Mineral Land Classification of Merced County, California*, 1999, page 22 and plates.

25 California Department of Conservation, Department of Mines and Geology, *Mineral Land Classification of Merced County, California*, 1999, page 22 and plates.

26 Merced County, 2030 Merced County General Plan Draft Program Environmental Impact Report, November 2012, Figure 10-3.

Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>13. NOISE.</b> <i>Would the project result in:</i>				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

### Discussion

- a. The proposed Community Plan provides for residential and other development, which would generate traffic. Therefore, the proposed Community Plan would increase traffic noise levels. In addition, the proposed Community Plan would increase the number of residents living in proximity to noise from traffic on surface streets. There are several land uses in the Community Plan that could generate stationary sources of noise, including parks and schools. Exposing sensitive receptors, such as existing residents, to such increases in noise is considered a **potentially significant impact**, and is addressed in Section 4.7 of this EIR.
- b,. During construction of the proposed Community Plan, groundborne noise and/or vibration from construction activities could disturb occupants of existing residences and other highly noise-sensitive land uses. This is considered a **potentially significant impact**, and is addressed in Section 4.7 of this EIR.
- c. The Plan Area is not located in the vicinity of an airport, nor is it included within an airport land use plan. It is not located in the vicinity of a private airstrip. Therefore, development of residential uses would not expose people living in this area to excessive noise levels due to proximity to an airport, and **no impact** would occur.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>14. POPULATION AND HOUSING.</b>				
<i>Would the project:</i>				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

- a. The proposed Community Plan would increase both residential and non-residential development, which would also increase the community's population. The increase in population is not, in and of itself, an environmental impact. The environmental effects of this population growth are evaluated in Chapter 4 of this DEIR and in this Checklist. For a discussion of how the proposed Community Plan could induce additional growth, please see Chapter 7, CEQA Considerations, of this EIR.
- b. The proposed Community Plan could result in the removal of some residences to accommodate new development, although such removal is not required. The proposed Community Plan provides for a substantial increase in the total number of dwelling units, far greater than the number that might be removed. Therefore, no housing would need to be constructed elsewhere simply to offset housing that is removed. Therefore, this would be a ***less-than-significant impact***.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>15. PUBLIC SERVICES</b>				
<i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>				
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a. The Merced County Fire Department (MCFD) provides fire, rescue, emergency services management, and emergency medical services to all unincorporated areas of Merced County, including Le Grand, through a contract with the California Department of Forestry and Fire Protection (CalFire). However, support staff are Merced County employees. The MCFD also provides fire protection services to the cities of Gustine, Dos Palos, and Livingston.<sup>27</sup> The MCFD also has mutual aid agreements with the fire departments of Atwater, Merced and Los Banos.

The MCFD is divided into 4 battalions. Each fire station is staffed 24 hours a day by full time professional staff, which is augmented by paid on-call firefighters. The Department also includes a Fire Prevention Bureau, Mobile Equipment Management and the County Coordinator of the State Office of Emergency Services.<sup>28</sup>

MCFD responds to calls by using all components of its network. For example, if a fire engine from the closest station is unavailable, then an engine from the next closest station will be dispatched.<sup>29</sup>

Ambulance services are provided by Riggs Ambulance, which has a staff of approximately 60 to 65 employees who are certified Emergency Medical Technicians and paramedics.<sup>30</sup>

27 Merced County Fire Department, <https://www.co.merced.ca.us/349/About-the-Department>, accessed July 16, 2018.

28 Merced County Fire Department, <https://www.co.merced.ca.us/349/About-the-Department>, accessed July 16, 2018.

29 Merced County, *Merced County General Plan Background Report*, December 2013, page 7-58.

30 Merced County, *Merced County General Plan Background Report*, December 2013, page 7-58.

The proposed Community Plan would be served by Fire Station 84, which is the only fire station located within the Plan Area. Fire station 84 is located on the corner of Santa Fe Drive and Jefferson Street. The fire station is staffed 24 hours a day by a full-time Fire Captain or Fire Apparatus Engineer and emergency response is augmented with volunteer firefighters. This station also provides mutual aid response to Mariposa County.<sup>31</sup> In 2015, there were 362 calls for fire protection services, an average of approximately 30.2 calls per month.

The MCFD is funded through a percentage of Merced County's property tax revenues allocated specifically for fire protection, and which is separate from property taxes available to the general fund. At present, approximately 8% of the General Fund is allocated towards fire protection.<sup>32</sup> Capital improvement costs are supplemented by development fees. As these revenues fluctuate, so does the budget of the MCFD. In 2009 the County amended its Fire Facilities Impact fees to: \$673 per single family unit, \$607 per multi-family unit, and \$0.31 per square foot to \$0.73 per square foot for commercial uses, depending on density and type.<sup>33</sup>

The 1999 Merced County Fire Master Plan defines fire level of service in terms of five land use categories within Merced County. These categories are Heavy Urban, Urban, Rural, Outlying, and Basic level of service. Each land use category has its own response requirements. According to the Merced County Fire Master Plan, the Le Grand Community Plan Area fire level of service is characterized as Heavy Urban and Urban.<sup>34</sup> The MCFD aims to achieve the following performance objectives for these fire level of service categories, as follows:

- Heavy Urban: Apply extinguishing agent to all fires within seven minutes of dispatch; have full first alarm assignment in operation within 10 minutes; and control 90 percent of all fires with first alarm assignment.
- Urban: Apply extinguishing agent to all fires within 10 minutes of dispatch; have full first alarm assignment in operation within 15 minutes; and control 90 percent of all fires with the first alarm assignment.

The anticipated average response time for the Le Grand Fire Station is 7 minutes from initial dispatch.<sup>35</sup>

The County Fire Department is preparing a new facility plan for County fire stations. Many of the fire stations in the county are older and require updating and upgrading, including improvements to achieve or maintain compliance with the Americans with Disabilities Act (ADA) and the provision of facilities for female staff.<sup>36</sup> Plans would include upgrading the Le Grand station to meet ADA standards and accommodate two staff fire fighters.<sup>37</sup>

The Insurance Services Office (ISO) recommendation is for cities to have a first

31 Mark Lawson, Division Chief, Merced County Fire Department, personal communication, September 7, 2018.

32 Mark Lawson, Division Chief, Merced County Fire Department, personal communication, September 7, 2018.

33 Merced County, *2013/2014 Annual Report, Merced County Impact Fee Funds, Exhibit A, Countywide Fire Fees (excludes Santa Nella), Fee Schedule (Resolution 2009-59)*.

34 Merced County, *Merced County General Plan Background Report*, December 2013, Figures 7-4 and 7-5.

35 Merced County, *SB 244 Analysis: Disadvantaged Unincorporated Communities (Administrative Review Draft)*, May 19, 2016, page 7.

36 Mark Lawson, Division Fire Chief, Merced County Fire Department, personal communication, October 17, 2016.

37 Mark Lawson, Division Chief, Merced County Fire Department, personal communication, September 7, 2018.

responding engine company within 1.5 miles of an urban land use.<sup>38</sup> Station #84 is within 1 mile of the entire Community Plan Area.

The Plan Area is generally considered a low risk area with regard to wildfire hazard.<sup>39</sup>

The proposed Community Plan would increase the population of Le Grand, as well as the number of residential units and commercial space. This growth would increase the number of emergency calls for Station #84. The boundaries of the Plan Area would be slightly reduced, so the fire station would still be within 1 mile of Plan Area development. Therefore, a new station would not be required. Additional staffing and/or fire equipment could be needed to address Community Plan growth. Funds to acquire and/or upgrade new capital facilities (such as fire trucks or fire station improvements) would be collected through the Countywide fire impact fee. Staffing would be addressed through the County's General Fund, which would be augmented by tax revenues from new development.

All new development would be constructed to California Fire Code standards, which includes requirements for automatic sprinkler systems, fire alarm systems, fire and explosion hazards, fire hydrants, hazardous materials use and storage, and other fire-safety requirements.

While equipment and staffing at the existing station could increase (funded by property taxes and development impact fees), if any expansion and/or upgrade to fire station facilities would occur at the existing station site, a new or additional fire station elsewhere in the Plan Area would not be required. Impacts associated with construction activities within the Plan Area are addressed throughout this Draft EIR. The existing station is located in an area that is designated Institutional in the proposed Community Plan. For the most part, surrounding uses would be unaffected by station operations. The station is surrounded primarily by non-residential land uses, with the exception of residences to the south of the station. The residences would be considered a sensitive receptor for noise, such as fire engine sirens. The surrounding areas are designated Mixed Use, which could include residences in the future, and Industrial, which would not be sensitive to siren noise. While the growth of the Plan Area would increase the number of times that vehicles leaving the station with their sirens on, activity levels would still be low enough that this would not be a substantial change in the noise levels near the station.

The proposed implementation measures and the County fire fee would ensure fire protection services are adequate by funding additional facilities and staff. For these reasons, impacts associated with fire protection would be ***less than significant***.

- b. Law enforcement for the Community Plan Area is provided by the Merced County Sheriff's Department (MCSD). The MCSD service area encompasses the entire unincorporated area of the County. There are three Sheriff stations in Merced County (Merced, Los Banos, and Delhi)<sup>40</sup>. Law enforcement duties for the Plan Area are based out of the Sheriff's Department main office located in the City of Merced. The MCSD employs approximately 101 total sworn officers and maintains 22 patrol vehicles and

38 Merced County, *Merced County General Plan Background Report*, December 2013, page 7-59.

39 Merced County, *Merced County General Plan Background Report*, December 2013, Figure 10-17 and Figure 10-18.

40 Merced County Sheriff's Office website, <https://www.co.merced.ca.us/358/Department-Locations>, accessed July 16, 2018.



four unmarked non-patrol vehicles<sup>41</sup>. In addition to the three sheriff facilities, there are two Community Law Enforcement Offices (CLEOs), located in Planada and Winton, which serve as hubs for community volunteer patrols.

In addition to police patrols, the MCSD provides a narcotics task force, an investigation unit, a major crimes unit, a federal drug trafficking task force, and a Special Weapons and Tactics Unit team.<sup>42</sup>

MCSD response time is less than 10 minutes for emergency calls and approximately 30 minutes for non-emergency calls. MCSD maintains a service ratio of approximately one officer per 1,000 residents in unincorporated areas.<sup>43</sup>

The California Highway Patrol (CHP) office handles all traffic enforcement and automobile accident investigations for the unincorporated parts of Merced County. The office employs 37 patrol officers, four sergeants, one lieutenant, one captain, three clerks, one clerical supervisor, 22 dispatchers, and two dispatch supervisors. The Merced CHP coverage area is patrolled by six to 10 officers throughout the day.<sup>44</sup>

The proposed Community Plan would increase the community's population from 1,659 residents (per the 2010 census) to approximately 3,678 residents. These residents and the additional mixed-use and non-residential development would increase demand for law enforcement, but would not expand the MCSD service area. Based on the existing law enforcement service ratio of approximately one officer per 1,000 residents in unincorporated areas, it is anticipated that Le Grand would result in the need for approximately two additional law enforcement staff.

The County has the option of increasing General Fund monies for the MCSD as demand for services (and tax revenue from new development) increases. For these reasons, the MCSD will be able to continue to serve the Plan Area and other areas within the County. Therefore, the impact on law enforcement would be ***less than significant***.

- c. The project site is located within the Le Grand Elementary School District for elementary and middle school students and the Le Grand Union High School District for high school students. Both schools are located on Le Grand Road, south of the project site.

Le Grand Elementary School had an enrollment of 401 students in the 2016-17 school year<sup>45</sup>, the majority of whom live in Le Grand. Enrollment levels fluctuate year-to-year and by grade level. The current capacity of the school is approximately 550 students. In addition, the infrastructure (e.g., wiring) is in place for another five or six portable buildings, so the onsite capacity could be expanded to approximately 700 students with just the addition of portable buildings.<sup>46</sup>

Le Grand High School serves three elementary school districts—Le Grand, Planada and Plainsburg. The majority of students live in Planada. In 2015-16, 465 students attended

41 Merced County, *Merced County 2030 General Plan Background Report*, December 2013, page 7-49.

42 Merced County, *Merced County 2030 General Plan Background Report*, December 2013, page 7-49.

43 Merced County, *Merced County 2030 General Plan Background Report*, December 2013, page 7-49.

44 Merced County, *Merced County 2030 General Plan Background Report*, December 2013, page 7-49.

45 Le Grand Elementary School, *2016-17 School Accountability Report Card*, published during 2017-18, page 2.

46 Rosina Hurtado, Superintendent, Le Grand Elementary School District, personal communication, December 13, 2016.

Le Grand High School.<sup>47</sup> Enrollment has dropped in the last dozen years; in 2004 enrollment levels were approximately 615 students.<sup>48</sup> In 2008, the Le Grand Union High School District has prepared a Master Plan that would accommodate enrollment of approximately 1,000 students. With enrollment declining, the District does not have immediate plans to implement the Master Plan.<sup>49</sup> However, voters in the Le Grand district approved a \$4.2 million school facilities bond in June 2014.

The Merced Community College District provides continuing education at facilities located in the cities of Merced and Los Banos. Off-campus classes are held at Delhi High School, Dos Palos High School, Livingston High School, and Mariposa High School.

#### Impacts on Schools

The proposed Community Plan would increase the number of students in the Plan Area. In order to project the number of students that would result from the proposed Community Plan, the number of residential units is multiplied by the number of students per unit. The school districts do not have standard generation rates, so these rates were prepared specifically for this Draft EIR. As noted above, school enrollment has been declining. It is not unusual for school enrollments to ebb and flow as the demographics change within an area, particularly as children living in the same location age. In the case of Le Grand, the decrease in student enrollment is also tied to reductions in the Le Grand population in general. Using existing enrollment data to project the future number of students per household could underestimate the number of students. Therefore, for this analysis, the number of students per household is based on an average of the 2000 and 2010 Census data that reports the number of individuals by age in each household by age. The resulting student generation rates are shown in Table 5-1, which also includes estimates of the number of students that would result from buildout of the proposed Community Plan.

As shown in Table 5-1, at buildout of the proposed Community Plan, grade K-8 enrollment would be 838 students, which is over the existing capacity of the school. In order to serve all of this enrollment, the Elementary School would likely add portable classrooms to house services, such as after school programs, that are currently using classrooms.<sup>50</sup> The campus has the infrastructure to accommodate additional portables to serve a total of 700 students. If enrollment were to exceed this level, the school district has enough space to accommodate additional classrooms.<sup>51</sup> Because they would be located within an area that is already developed, there would be minimal environmental effects from installing and using the additional portable classrooms.

The proposed Community Plan would increase enrollment at the High School by approximately 195 students, which could be accommodated within the existing campus facilities. No expansion of the high school would be needed solely to serve the proposed Community Plan.

47 Le Grand Unified High School District, *School Accountability Report Card 2015-16, Le Grand High School*, published during 2016-17, page 2.

48 Donna Alley, Superintendent, Le Grand Unified High School District, personal communication, November 3, 2016.

49 Donna Alley, Superintendent, Le Grand Union High School District, personal communication, November 3, 2016.

50 Rosina Hurtado, Superintendent, Le Grand Elementary School District, personal communication, December 13, 2016.

51 Scott Borba, Le Grand Union Elementary School District, personal communication, August 14, 2018.

<b>TABLE 5-1</b> <b>Estimated Student Projections</b>			
	Existing	Increased Enrollment Through 2035 <sup>1</sup>	Estimated Total 2035
<b>Le Grand Students</b>			
K-8	401 <sup>2</sup>	437	838
High School	157 <sup>3</sup>	195	352
Total Le Grand Student Enrollments	558	632	1,190
<b>Le Grand High School Total Enrollment</b>			
Le Grand Students	157	195	352
Other Communities <sup>4</sup>	308	489 <sup>6</sup>	797
Total LGHS 2035	465 <sup>5</sup>	684	1,149
Notes: 1. Assumes 0.72 K-8 students and 0.32 high school students per new household in Le Grand, based on generation rates that represent the average of 2000 and 2010 census data for number of people per household by age. Per Table 3-1, up to 608 net new residences could result from Le Grand Community Plan. 2. Existing K-8 students based on 2016-17 enrollment levels. 3. Le Grand High school students calculated based on rates, because only a portion of the high school enrollment comes from Le Grand. 4. Le Grand High School serves Plainsburg and Planada, with the majority of students from Planada. 5. Le Grand Unified High School District, <i>School Accountability Report Card 2015-16, Le Grand High School</i> , published during 2016-17, page 2 6. Buildout assumes a total of 489 high school students from Planada (Source: Planada Community Plan Draft Environmental Impact Report, December 2016).			

Over time, the high school could experience enrollment increases from other growth in their service areas and/or changing demographics, which, in combination with the proposed Community Plan, could result in the need for expanded school facilities. For example, the Planada Community Plan is estimated to add 489 students to Le Grand High School, bringing total enrollment to 1,100. If actual enrollment were to exceed the levels identified in the school Master Plan, then the school would likely use portable buildings to accommodate the additional students.<sup>52</sup> School funding typically has a number of sources, such as property tax, State General Funds, special taxes, school bonds (such as the recent bond passed for Le Grand) and developer fees. The assessment of developer fees is regulated through the State Government Code. Proposition 1A/Senate Bill 50 (Chapter 407, Statutes of 1998) establishes the base amount that developers can be assessed per square foot of residential and non-residential development. If a district meets certain standards, the base adjustment can be adjusted upward a certain amount. Under SB 50, payment of the identified fees by a

52 Donna Alley, Superintendent, Le Grand Union High School District, electronic communication, September 5, 2018.

developer is deemed to be “full and complete mitigation” of impacts on schools resulting from new development. Both Le Grand schools have adequate acreage to support expansion of their facilities within their existing sites. The construction of additional facilities would be subject to CEQA review by the lead district, and the impacts of building new school buildings would be similar to the construction impacts described throughout this Draft EIR. As discussed in Sections 4.2, Air Quality, 4.3, Biological Resources, 4.4, Cultural Resources, and 4.7, Noise, and this chapter, construction impacts would be less than significant and/or could be reduced to less-than-significant levels through applicable regulations and standard mitigation. Because the proposed Community Plan would not result in the need for new school sites, and would pay school mitigation fees, potential impacts due to increased school enrollment would be ***less than significant***.

- d. Le Grand Community Park is the only County park located within Le Grand. There is also a sports park associated with the local elementary school. Both parks are located on Le Grand Road. The sports park is located adjacent to the eastern boundary of the project site. The sports park includes sport fields, a playground, and a community center, as well as open space. Le Grand Community Park is smaller and triangular shaped, with picnic benches, additional seating and cooking spaces.

The County General Plan calls for a minimum of three acres of neighborhood, community, or regional parkland per 1,000 persons (Policy RCR-1.3). County Code Section 17.44 also requires that residential subdivisions with more than five parcels dedicate a minimum of three acres of improved parkland per 1,000 persons residing in the subdivision or pay an in lieu fee. For purposes of calculating the park requirement, the Code specifies that there will be 3.2 persons per single-family dwelling unit and 2.0 persons per multi-family unit.

At present, there are approximately 4 acres of public parks in the Plan Area. While the proposed Community Plan Land Use Map does not include additional park acreage, the Community Plan does require that new development provide parkland at the levels identified in the General Plan (3 acres per 1,000 residents). Figure 6.2 of the proposed Community Plan identifies approximate locations for future parks within proposed residential development. If all new development complies with the General Plan parkland requirement, a minimum of approximately 6 acres of new parkland would be created, for a community-wide total of 10 acres. The proposed Community Plan also contains the following policies regarding parkland:

*Policy OSC-1 Community Outreach*

A comprehensive community outreach program to generate on possible improvements to existing community parks shall be conducted prior to making improvements.

*Policy OSC-2 Community Outreach*

Where a neighborhood park is to be provided as part of a residential (or other private) development, specific opportunities shall be provided to community residents and the Le Grand Municipal Advisory Council to review and comment on the proposed park program and design.

*Policy OSC-3 Recreational Opportunities*

Neighborhood parks shall provide for a range of active and passive recreational opportunities.

*Policy OSC-4 Parking*

Neighborhood parks may be designed to provide fewer parking spaces for vehicles than required by County standards in order to allow more space for recreation and encourage the use of non-motorized transportation.

*Policy OSC-5 Park Fixtures*

Donations for park fixtures shall be solicited from local and national businesses, individuals (including artists), and volunteer organizations.

*Policy OSC-6 Pocket Park Maintenance*

Opportunities shall be explored to encourage direct support for pocket park creation, maintenance, and enhancement by local residents.

In order to achieve the above policies for new parkland, funding would need to be available for land acquisition and improvements. Based on the General Plan, and assuming a buildout population of 3,678, approximately 11 acres of parkland would be required at buildout of the Community Plan, an increase of 7 acres over the amount of existing parkland. As discussed above, County Code Section 17.44 requires that residential subdivisions with more than five parcels dedicate a minimum of three acres of improved parkland per 1,000 persons residing in the subdivision or pay an in lieu fee. The in lieu fees could be used to obtain additional parkland. Because new development must provide additional parkland at levels consistent with the General Plan requirements, the proposed Community Plan would provide for adequate park resources in the Plan Area. Therefore, effects on parks and recreational facilities would be ***less than significant***.

- e. Development of the proposed Community Plan would require increases in other public services as well to accommodate the buildout service population. Expanded facilities within the Plan Area are evaluated programmatically throughout this EIR. Administrative and other services would need to be expanded. Typically, such services are funded through a combination of general fund revenue and fees. New development would pay required taxes and fees, which would increase funding for public services. Therefore, this impact would be ***less than significant***.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>16. RECREATION.</b>				
a. Would the project 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a,b. As stated in Item 15d, the proposed Community Plan would ensure that adequate parkland is provided for new residents. Therefore, the proposed Community Plan would not increase the use of existing parks or recreation facilities to the extent that substantial physical deterioration would occur or be accelerated. New parkland would be located in areas designated for housing development. Therefore, to the extent that new recreational facilities could result in adverse physical effects on the environment due to park construction and operation, such impacts are addressed throughout Chapters 4 and 5 of this Draft EIR. For these reasons, the impact on recreational facilities would be ***less than significant***.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>17. TRANSPORTATION</b>				
<i>Would the project:</i>				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Would the project conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	■	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	■	<input type="checkbox"/>

### Discussion

- a. The proposed Community Plan would increase the number of housing units and the amount of employment-generating uses in the Plan Area, and, therefore, would also increase vehicular, pedestrian and bicycle traffic in the area. The traffic generated by the proposed Community Plan could result in congestion at local intersections and local roadways. This would be considered a ***potentially significant impact***, and is addressed in Section 4.8 of this Draft EIR.
- b. The traffic analysis for the proposed Community Plan and this Draft EIR have been prepared prior to the date at which the provisions of Section 15064.3 are required to be implemented by the County. Therefore, there would not be an impact. However, vehicle miles traveled are discussed in Section 4.5, Greenhouse Gas Emissions and Climate Change.
- c. The proposed Community Plan would not substantially alter the existing street system. New roadways would be constructed to County standards, which are intended to minimize design hazards. Most new roadways would have bike lanes and sidewalks. There would be some farm equipment on roads in the vicinity of the Plan Area, but agricultural traffic would typically be in the rural areas, and would use different road segments from those living within the Plan Area. For these reasons, this would be a ***less-than-significant impact***.
- d. The proposed Community Plan would maintain the existing street pattern within the Plan Area, and extend streets into new development. This could improve the surrounding street system and improve emergency routes and access. Therefore, this would be a ***less-than-significant impact***.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
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## 18. TRIBAL CULTURAL RESOURCES

a ) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

☐☐☒☐

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

☐☐☒☐

### Discussion

a., b. No tribal cultural resources as defined in Public Resources Code Section 21074 have been identified in the Plan Area.<sup>53</sup> The County has not received a request from any tribe for consultation under AB 52.<sup>54</sup> The County also notified six tribes to inform them of the proposed Community Plan, but did not receive any requests for consultation.<sup>55</sup> During preparation of the 2030 Merced County General Plan, the County did not receive any requests for consultation from any tribe, nor comments expressing concerns for sacred lands within the County.<sup>56</sup> For these reasons, it is not anticipated that tribal cultural resources are present in the project area, and the impact would be ***less than significant***.

53 Gayle Totton, M.A., PhD., Associate Governmental Program Analyst, Native American Heritage Commission, written communication to Adrienne Graham, Environmental Consultant, December 12, 2016.

54 Brian Guerrero, Planner III, Merced County Community & Economic Development Department, electronic communication to Adrienne Graham, November 8, 2016.

55 Brian Guerrero, Planner III, Merced County Community & Economic Development Department, electronic communication to Adrienne Graham, November 8, 2016.

56 Merced County, 2030 Merced County General Plan, Draft Program Environmental Impact Report, November 2012, page 9-16.



Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>19. UTILITIES AND SERVICE SYSTEMS.</b>				
<i>Would the project:</i>				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities or the construction or relocation of which could cause significant environmental effects?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years??	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes, and regulations related to solid waste?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## **Discussion**

- a.-e. The proposed Community Plan would increase demand for water, wastewater treatment, and disposal of solid waste. The increased demand is considered a ***potentially significant*** impact, and is addressed in Section 4.9, Utilities, of this Draft EIR.

As discussed in Item 6, Energy, above, the proposed Community Plan would increase demand for electricity and natural gas within Merced County by less than 1 percent. While new development would require the extension of local electrical and gas facilities, such as connections to transmission lines, no major improvements or development of new supplies have been identified for either baseline or peak usage. PG&E will review development proposals as they are submitted to determine what, if any, project-specific

improvements are needed. New electric, gas and telephone/communications lines would be installed within utility trenches, which are typically adjacent to roadways. Because these facilities would be located within the Plan Area, the environmental effects of their installation are included within the evaluation of impacts in Chapter 4 and Chapter 5 of this EIR.

For a discussion of storm drainage, please see Item 8d. This would be considered a ***potentially significant impact*** and is discussed in Section 4.9 of this EIR.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>20. WILDFIRE.</b> <i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

- a-d. The Plan Area is located in a non-wildland/non-urban fire hazard severity zone, and is not located in or near a very high severity zone. The Plan Area is also not within or near a State Responsibility Area.<sup>57</sup> Further, the Plan Area is relatively flat, and does not contain slopes or other factors that would exacerbate wildfire risks, landslides or post-fire slope instability. For these reasons, there would be **no impact**.

For a discussion of fire protection within the Plan Area, please see Items 9g and 15a, above.

<sup>57</sup> Merced County, *Merced County General Plan Background Report*, December 2013, Figure 10-16 and Figure 10-17.

Issues	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
<b>21. MANDATORY FINDINGS OF SIGNIFICANCE.</b>				
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	■	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Discussion**

- a. As discussed under Item 4, Biological Resources, the Plan Area does contain some habitat for several different special-status species. The existing habitat is fragmented and occurs in relatively small segments, because so much of the Plan Area is urbanized or cultivated with crops (e.g., orchards) that do not provide habitat for special-status species. Implementation and mitigation measures identified in Section 4.3 would ensure that special-status species were not directly harmed, and that there would be compensation for habitat that was lost as a result of the proposed Community Plan. With mitigation, the habitat would not be substantially reduced, no species would be made to fall below a self-sustaining level, and the number and range of special status species would not be reduced. There are also several known potentially significant historic properties, primarily associated with the railroad, in the Plan Area, along with a

number of buildings that would be considered potentially historic based on their age (see Section 4.4, Cultural Resources, for more details). There is the potential for archeological resources to be present. Implementation measures identified in Section 4.4 would ensure that significant historic and prehistoric resources are properly identified and treated. With implementation of mitigation measures identified, impacts on biological and archaeological resources would be less than significant. However, impacts on historic resources could remain **significant** (see Section 4.4 of this Draft EIR).

- b. The proposed Community Plan would contribute to the cumulative increase in traffic, as well as the resulting degradation of air quality, generation of greenhouse gases, and increases in traffic noise (see Sections 4.2, 4.5, 4.7, and 4.8 of this Draft EIR). In addition, the proposed Community Plan would contribute to the cumulative loss of farmland (see Section 4.1). The proposed Community Plan would also contribute substantially to cumulative impacts on biological or cultural resources because these resources are relatively sparse throughout the Plan Area. Identified mitigation would result in no net loss of special-status species, and protect archeological and historic resources. The proposed Community Plan development would comply with measures, so it would not contribute to cumulative degradation of water quality, which would be protected by the use of BMPs in the Plan Area and throughout the watershed. The proposed Community Plan's contributions to cumulative impacts associated with agriculture, air quality, greenhouse gas emissions, biological resources, cultural resources, noise, and traffic are considered **potentially significant**, and are evaluated in Chapter 4 of this EIR.
- c. As discussed throughout this Checklist, potential impacts on human beings that could occur as a result of the proposed Community Plan are less than significant or could be reduced to less-than-significant levels with mitigation, except for cumulative air quality, which is a **potentially significant impact**, and is evaluated in Chapter 4 of this EIR.

## **6. ALTERNATIVES ANALYSIS**

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### INTRODUCTION

The primary purpose of the alternatives evaluation in an EIR, as stated in Section 15126.6(a) of the CEQA Guidelines, is to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain 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." Further, the Guidelines state that "the discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly [Section 15126.6(a)]. An EIR must describe a range of reasonable alternatives to the proposed Community Plan that could feasibly attain most of the basic objectives of the project.

The following alternatives are evaluated in this chapter:

1. **No Action/No Development:** Assumes no additional development in the Plan Area. Neither the proposed Community Plan nor existing zoning would be implemented and no further construction would occur in the Plan Area.
2. **No Project/No Action:** Assumes buildout of the existing land uses and zoning. While the existing land use designations and zoning are similar to the proposed Community Plan, there are differences in the amount and densities of residential and non-residential development, and the size of the Plan Area.
3. **Reduced Footprint:** The development footprint would be reduced with a corresponding increase in Urban Reserve compared to the proposed Community Plan. There would also be an increase in residential densities on some parcels, but overall there would be a decrease in new residential units and non-residential square footage.
4. **Reduced Densities with Similar Footprint:** Alternative 4 would have a development footprint similar to the proposed Community Plan, but would provide for substantially less residential and commercial development.

In addition to the description provided for each alternative, this chapter provides a comparative analysis of the potential environmental effects resulting from each alternative, and the extent to which each alternative would support the project objectives of the proposed Community Plan.

### GUIDELINES FOR SELECTION OF ALTERNATIVES

The requirement that an EIR evaluate alternatives to a Proposed Project or alternatives to the location of a Proposed Project is a broad one, since the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding entirely, the environmental impacts of the proposed Project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. Further, the Public Resources Code and the CEQA Guidelines direct that the EIR need "set forth only those alternatives necessary to permit a reasoned choice." The CEQA Guidelines provide definition for "a range of reasonable alternatives" and, thus, limit the number and type of

alternatives that may need to be evaluated in a given EIR. According to the CEQA Guidelines:

The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project.<sup>1</sup>

In the context of CEQA, "feasible" is defined as:

Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors.<sup>2</sup>

Further, the following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control.<sup>3</sup> Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative."<sup>4</sup>

### **Significant and Unavoidable Impacts**

The following significant and unavoidable impacts could result from development of the proposed Community Plan:

- Cumulative loss of special-status species habitat (Impact 4.3-7);
- Loss of historically significant buildings, sites and/or facilities (Impact 4.4-2);
- Cumulative loss of historic resources in Merced County and the Central Valley (Impact 4.4-5);
- Emission of greenhouse gasses, contributing to global climate change (Impact 4.5-1);
- Conflict with applicable plan, policy or regulation for the reduction of GHG emissions (Impact 4.5-2);
- Increased traffic noise in the existing community (Impact 4.7-1); and
- Cumulative increase in traffic noise (Impact 4.7-6).

These impacts cannot be avoided entirely if any development is to occur in the Plan Area, because the majority of vacant land in the Plan Area provides habitat for various species, and any new development would generate traffic-related air pollutants and noise. Therefore, the alternatives analysis focuses on reducing the amount of land that is converted to urban uses, and the level of residential and non-residential development.

### **Project Objectives**

The proposed Community Plan identifies the following principles for development of the Plan Area. For purposes of this EIR, these principles are considered the project objectives.

#### **A. Land Use Principle**

Preserve and enhance the character of Le Grand as a small, neighborhood based, agricultural community, with a strong community core, while encouraging local growth of

<sup>1</sup> State of California, CEQA Guidelines, Section 15126.6(f).

<sup>2</sup> State of California, Public Resources Code, Section 21061.1.

<sup>3</sup> State of California, CEQA Guidelines, Section 15126.6(f)(1).

<sup>4</sup> State of California, CEQA Guidelines, Section 15126.6(d)(f)(3).



employment opportunities, retail, service businesses, and a range of housing types.

**B. Circulation Principle**

Improve upon the existing community roadways to facilitate a wide array of mobility options for pedestrians, bicyclists, automobiles, and transit that provide for the safe movement of vehicles, people, and agricultural products.

**C. Recreation Principle**

Integrate a tiered network of community, neighborhood, and pocket parks, connected via a bike and pedestrian system, to promote an active, healthy lifestyle.

**D. Open Space and Conservation Principle**

Reduce conflicts between urban land uses, agricultural land uses, and natural resources through the provision of buffers adjacent to agricultural land and natural resources, thereby preserving the long-term viability of agriculture and open space.

**E. Noise Principle**

Minimize conflicts between noise-sensitive and noise-generating land uses for existing and future land uses through siting, buffering, and other identified business practices.

**F. Public Facilities, Services, and Safety Principle**

Emphasize public safety and provision of adequate community facilities in the design of new development within the community.

**G. Community Design Principle**

Build upon the existing character of Le Grand by encouraging use of traditional building materials, prohibiting incompatible design features, and encouraging enhanced landscaping.

## **ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER ANALYSIS**

The following alternatives were considered briefly, but were not evaluated in detail because they would not achieve most of the project objectives and/or reduce impacts of the proposed Community Plan.

### **All Residential Alternative**

An all-residential alternative would meet the project objective to provide a range of housing, but would result in an unbalanced community that did not promote economic vitality. In addition, non-residential development is typically more suited to areas adjacent to transportation corridors, such as Santa Fe Avenue and the BSNF rail line. Also, an all-residential development pattern would tend to have more severe traffic and air quality impacts, as it would increase the distance that residents must drive for goods and services and employment.

### **All Employment Alternative**

The proposed Community Plan is intended, in part, to meet the demand for a range of housing types within the community (Principle A). An all-employment alternative would not meet this objective, and, like the “all residential” alternative, would likely increase impacts on air quality, noise and traffic.

### **Develop Proposed Urban Reserve**

The proposed Community Plan places 63 acres in Urban Reserve, approximately 15 percent of

the Plan Area. If this land were designated for development, a comparable amount of acreage could elsewhere be placed in Urban Reserve, thereby lessening the impact on, for example, raptor foraging habitat. However, most of the Urban Reserve acreage is Prime Farmland, and preservation of productive agricultural lands is a long-standing County policy. Switching the Urban Reserve acreages would simply exchange one impact (loss of foraging habitat) for another (loss of Prime Farmland).

### **Off-Site Alternative**

The purpose of the project is to provide a plan to guide development in the community of Le Grand through 2035. Therefore, the proposed Community Plan must cover the existing Le Grand community. An off-site alternative would not occur in Le Grand, so it would not meet any project objectives. Furthermore, the General Plan directs development toward incorporated cities and Urban Communities, such as Le Grand. The creation of new communities, as would likely be required with an offsite alternative, is discouraged, and would likely increase impacts relative to developing within the existing community, due to the need for new and/or extended infrastructure, such as roads and utilities.

## **ALTERNATIVES TO THE PROPOSED PROJECT**

Each of the four alternatives is described below, followed by a discussion of the extent to which the impacts of the alternative would be similar, more severe than or less severe than the impacts of the proposed Community Plan. A comparison of the relative impacts of the proposed Community Plan and alternatives is provided in Table 6-4 at the end of this chapter. As allowed by CEQA, only significant impacts are addressed, and the analysis is less detailed than the analysis of Proposed Project impacts found in Chapters 4 and 5.

### **Alternative 1: No Project/No Development**

#### **Description**

Under the No Project/No Development Alternative, no additional development would occur in the Plan Area and no future construction would occur. No additional roadway improvements would be constructed and no additional schools or parks would be built.

#### **Relationship of Alternative 1 to Project Objectives**

The No Project/No Development Alternative would not meet any of the project objectives, including encouraging local growth of employment opportunities and service and retail businesses, providing a range of housing types, improving the existing roadways to facilitate a safe and wide range of options for pedestrians, bicyclists, automobiles and transit, and promoting an active and healthy lifestyle by creating an integrated network of parks that are connected by a bicycle and pedestrian system.

## **Environmental Analysis**

### **Impacts Identified as Being the Same or Similar to the Proposed Project**

Alternative 1 would not have any impacts that are the same or similar to the Proposed Project.

### **Impacts Identified as Being Less Severe than the Proposed Project**

Under the No Project/No Development alternative, there would be no impacts on the environment, because no new development would occur within the Plan Area. The existing farmland would remain unaltered, as would biological and cultural resources. Because no additional traffic would be generated, this alternative would not result in increased greenhouse gas (GHG) emissions, so the significant and unavoidable GHG impacts would not occur. The

cumulative losses of biological habitat and historic resources would not occur. The mitigation measures included in Chapter 4 of this EIR would not be required.

#### Impacts Identified as Being More Severe than the Proposed Project

Alternative 1 would not have any impacts that are more severe than the Proposed Project.

### **Alternative 2: No Project/No Action**

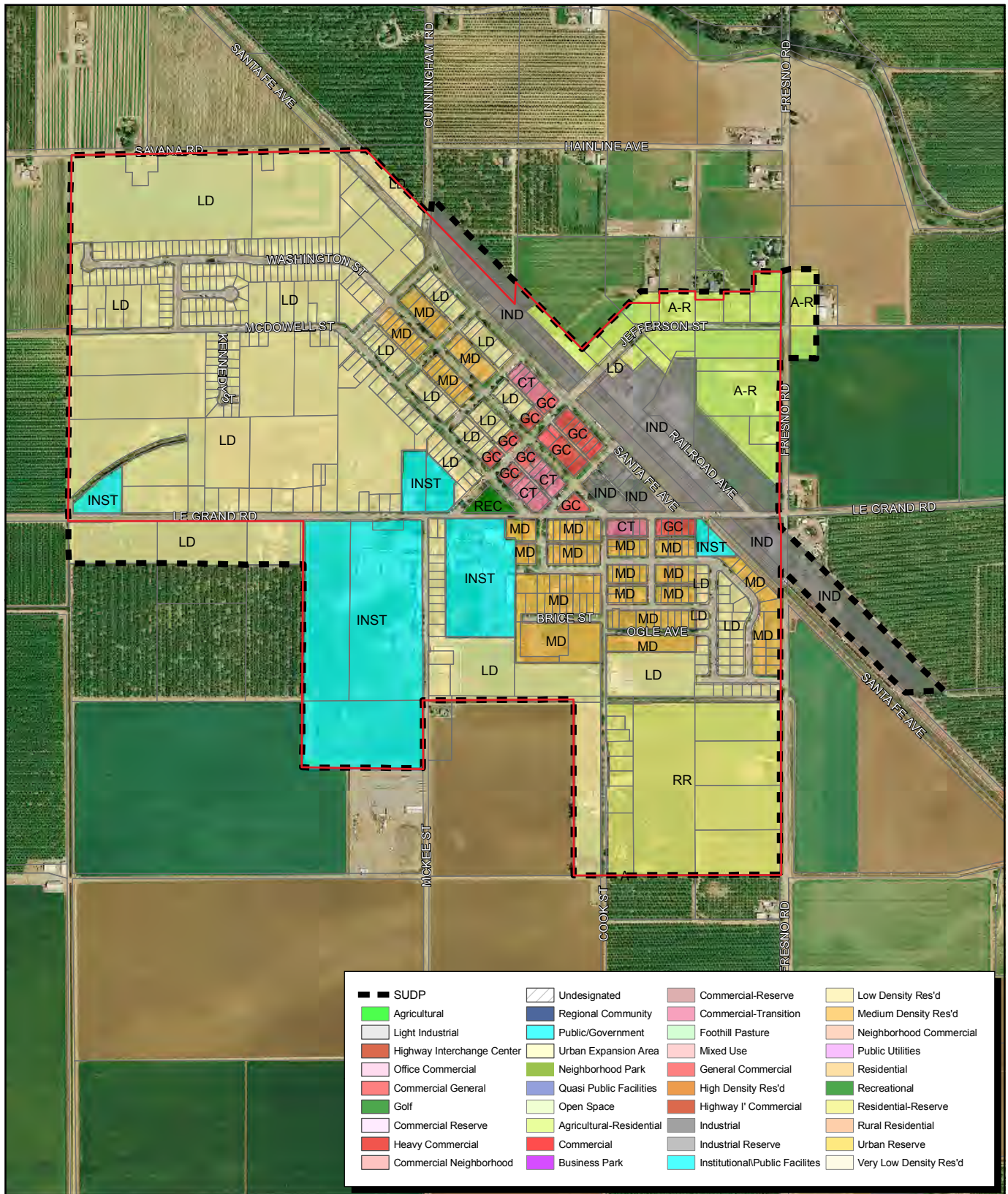
CEQA requires that a second type of “No Project” alternative be evaluated, herein called the “No Project/No Action” alternative. The purpose of the No Project/No Action alternative is to allow decision makers to compare the impacts of the proposed Community Plan with the impacts of not approving the project [CEQA Guidelines Section 15126.6(e)(1)]. In the case of a revision to an existing land use plan, such as the General Plan or a Community Plan, the No Project/No Action alternative is the continuation of the existing plan [CEQA Guidelines Section 15126.6(e)(3)(A)]. For the purposes of this EIR, the No Project/No Action alternative is the development that would occur under the existing land use designations and zoning.

#### **Description**

Under the No Project/No Action alternative, the proposed Community Plan would not be adopted, but new development could occur under the existing General Plan designations and zoning (shown in Figure 6-1). The existing land use designations are similar to the proposed Community Plan, although some terminology differs. For example, the existing land uses include Agricultural Residential (AR) but no Very Low Density (VLDR), while the proposed Community Plan has VLDR designations but no AR. Both are intended to support single-family homes on large lots, and both require that parcels be a minimum of one acre. The existing designations also include Rural Reserve, which is essentially the same as Urban Reserve—in both cases it is assumed that the designated land would remain rural until some future date.

As shown in Table 6-1 and Figure 6-1, the existing Le Grand Community Plan boundaries include approximately 28 additional acres than the proposed Community Plan, 458 acres compared to 430 acres. Similar to the proposed Community Plan, residential designations are the predominant land use, particularly Low Density Residential. Under Alternative 2, there could be up to 293 gross acres of residential development. This acreage includes roads, canals and similar infrastructure, while these facilities are not included in the 205 acres designated for residential uses in the proposed Community Plan. Nonetheless, the amount of potential new residential development would increase by approximately 28 percent under the existing land use designations (811 new dwelling units, compared to 608 under the proposed Community Plan). In addition, substantially more acreage is designated for Industrial and commercial uses under existing designations. The amount of Industrial square footage would increase from approximately 255,000 to 306,000 square feet, or 20 percent, and General Commercial would increase from approximately 80,000 to 98,000, an increase of 22 percent. However, there would be only 9,148 of nonresidential square footage in the Commercial Transition zone, compared to 68,000 square feet within the Mixed-Use designation of the proposed Community Plan. In total, there would be about a 7.7 percent increase in new non-residential uses under Alternative 2.

Circulation for Alternative 2 would be very similar to the Proposed Project, although the proposed improvements to streets, including traffic calming, sidewalks and bicycle circulation may not occur. Water and wastewater would continue to be provided by the Le Grand Community Services District (LGCSO). Parkland would also be similar, with 4 acres of parkland (one of the existing two-acre parks is designated Institutional under the existing land use designations but the actual use is the same).



— Existing Community Plan Boundary  
 — Proposed Community Plan Boundary



0 600 1,200 1,800 2,400  
 Scale In Feet

SOURCE: Merced County  
 Community And Economic  
 Development Department, 2018.

**Figure 6-1**  
**Alternative 2**

<b>TABLE 6-1</b> <b>Alternative 2: No Project/No Action</b>		
<b>Land Use Designations</b>	<b>Acreage<sup>1</sup></b>	<b>Dwelling Units/Potential Building Square Footage<sup>2</sup></b>
<b>Residential (Dwelling Units)<sup>2</sup></b>		
Agricultural Residential (AR)	31	31
Low Density (LD)	213	797
Medium Density (MD)	39	219
High Density (HD)	10	227
Commercial-Transition	<i>See below</i>	27
<i>Total Residential</i>	293	1,301 du
<b>Non-Residential (Square Feet)</b>		
General Commercial (GC)	11	98,355
Commercial Transition (CT)	6	9,148
Industrial (IND)	49	306,018
Institutional (INST)	8	30,058sf 3 acres
<i>Total Non Residential</i>	69	443,579 sf
<b>Schools</b>		
Elementary School (INST)	12	1 school
High School (INST)	37	1 school
<i>Total Schools</i>	49	2 schools
<b>Parks</b>		
Community Park (REC)	2	2 parks 480 sf
<i>Total Parks</i>	2	2 parks
<b>Other</b>		
Residential Reserve (RR)	40	40 acres 7 du
Other (e.g. roads, canals)	Included in above acreages	n/a
<i>Total Other</i>	40	7 du 40 acres
<b>Total</b>	<b>458 acres</b>	<b>1,308 dwelling units; 444,059 sf non-residential</b>
Notes: 1. Merced County, <i>Merced County General Plan Background Report</i> , Table 3-7, adjusted to reflect 2017 rezone of 10 acres from LDR to HDR. 2. Based on assumptions used in calculations for the proposed Community Plan.		

The policies and implementation measures, as well as the Community Design guidelines, of the proposed Community Plan would be not implemented under this alternative.

Like the Proposed Project, it is anticipated that Alternative 2 would require additional groundwater wells, upgrades to wastewater treatment facilities, and acquisition of additional acreage for irrigation with reclaimed water outside of the Plan Area, as well upgrades to the

sewer and water systems within the Plan area. Because the number of residents and the amount of industrial and commercial development would increase, demand for these services would go up, so the number of wells and reclamation acreage could be higher than under the Proposed Project.

#### Relationship of Alternative 2 to Project Objectives

The No Project/No Action alternative would meet some of the project objectives, because Le Grand would remain a small, neighborhood-based agricultural community, with land uses that support a mix of residential opportunities and employment-generating uses. However, it would not support a strong community core to the extent that the proposed Community Plan would, because the core would not be designated Mixed Use, and the design guidelines would not apply to new development. In addition, the improvements to existing roadway system, including completion of a network of sidewalks and creation of a bicycle network may not occur.

### **Environmental Analysis**

#### Impacts Identified as Being the Same or Similar to the Proposed Project

As with the Proposed Project, under Alternative 2 the Le Grand Wastewater Treatment Plant (WWTP) would have capacity to treat most of the additional wastewater, but additional farmland outside of the WWTP site would need to be acquired for irrigation with reclaimed water. Alternative 2 could require slightly more reclamation acreage particularly due to the increase in residential development levels. While this land would remain in cultivation, the application of reclaimed water could have an adverse effect on adjacent crops. This impact could be mitigated to a less-than-significant level for either the Proposed Project or Alternative 2.

As under the proposed Community Plan, Alternative 2 designates Low Density Residential north of the Veteran's Memorial building where there is riparian habitat that could support Valley elderberry longhorn beetle (VELB) and/or western pond turtle (Impacts 4.3-1 and 4.3-2, respectively). Therefore, the potential for harm to these species would be the same under Alternative 2 and the proposed Community Plan.

Buildings that are old enough to be considered historically significant would be concentrated within the core of the community, especially the areas designated Mixed-Use. Alternative 2 and the Proposed Project provide for similar levels of development in this area, so the potential to adversely affect historic buildings through demolition or reconstruction would be similar (Impacts 4.4-2 and 4.4-5). Therefore, this significant and unavoidable impact would be similar.

Under Alternative 2, the locations of General Commercial designations differ somewhat from the proposed Community Plan; however, the extent to which such uses abut residential designations is similar. Therefore, the potential for disturbance residents due to non-transportation noise, such as loading docks and HVAC systems, would be similar (Impacts 4.7-5 and 4.6-1).

#### Impacts Identified as Being Less Severe than the Proposed Project

None of the significant impacts associated with the Proposed Project would be less severe under Alternative 2.

#### Impacts Identified as Being More Severe than the Proposed Project

Impacts resulting from ground disturbance and conversion of undeveloped land to urban uses would be more severe under Alternative 2 than under the Proposed Project, because Alternative 2 has a larger footprint (28 additional acres) and designates less land as Residential Reserve (which is similar to Urban Reserve).



Alternative 2 would result in 208 more residences and a 7.7 percent increase in non-residential square footage compared to the proposed Community Plan. This would result in an increase in vehicle and energy use, so air quality emissions would be higher than under the proposed Community Plan (Impacts 4.2-1, 4.2-2 and 4.2-5). Construction-related air emissions would also be higher because approximately 51 more acres would be subject to grading, and more units would be constructed. As shown in Table 4.2-7 in Section 4.2, Air Quality, mitigated construction emissions of NO<sub>x</sub> (the only emissions to be exceeded) are estimated to be 7 tons annually, approximately 30 percent below the threshold. The additional acreage to be graded and increase in development that would occur over the life of the plan (about 20 years) would not be great enough to exceed that threshold. Therefore, like the proposed Community Plan, NO<sub>x</sub> emissions could be mitigated below the applicable threshold for both Alternative 2 and the Proposed Project. Unlike the proposed Community Plan, Alternative 2 would likely exceed the threshold for operational NO<sub>x</sub> emissions by a relatively small amount due to an 18 percent increase in vehicle trips and the increase in energy use. Therefore, mitigation would be required to reduce operational emission to a less-than-significant level.

Alternative 2 would disturb approximately 51 more acres than the Proposed Project, so impacts on several biological and cultural resources would be greater. Approximately half of the additional area is currently planted in orchard, which can provide habitat for certain bat species. Therefore, the potential to disturb roosting bats in orchards would increase (Impact 4.3-4). However, the potential to disturb bat species that roost in buildings would be similar because existing buildings are located within the community core. Approximately 10 acres of the additional area is used for field crops (south of Le Grand Road). Therefore, the impacts on species that could use grasslands and fields, such as Swainson's hawk, burrowing owls and other raptors (Impacts 4.3-3 and 4.3-7) would be increased. The additional acreage also has the potential to contain wetlands (Impact 4.3-5).

Alternative 2 would disturb more acreage than the Proposed Project, so the potential for damage to or destruction of archaeological and/or paleontological resources would be more severe than under the Proposed Project (Impacts 4.4-1, 4.4-3, 4.4-4, and 4.4-6). All of these impacts could be reduced to a less-than-significant level through mitigation identified for the Proposed Project.

Alternative 2 would increase the amount of development in the Plan Area, leading to an increase of approximately 18 percent in automobile trips. Vehicle miles are the primary source of air and GHG emissions. Therefore, Alternative 2 result in GHG emissions than the proposed Community Plan (Impacts 4.5-1 and 4.5-2). Mitigation is available to lessen these impacts for both the Proposed Project and Alternative 2, but it may not be feasible to reduce GHG emissions below the thresholds. This significant and unavoidable impact would be more severe under Alternative 2.

Traffic noise levels would be increased under Alternative 2 due to the increase in vehicle trips. Under the proposed Community Plan, noise levels on Fresno Road north of Le Grand Road would increase from 43.4 dB Ldn to 50 dB Ldn under existing conditions (see Table 4.7-6) and from 43.5 to 50 dB Ldn under cumulative conditions. While the noise levels on Fresno Road would meet residential thresholds, an increase of more than 5 dB is considered significant (Impacts 4.7-1 and 4.7-7). Alternative 2 would increase traffic levels on this roadway segment, exacerbating this significant and unavoidable impact. None of the other roadway segments studied were close to a 5 dB increase under the proposed Community Plan, and an approximately 18 percent increase in traffic levels would not be enough to cause the noise threshold to be exceeded elsewhere.

Alternative 2 would place more residential units in proximity to the railroad tracks than the

proposed Community Plan, and those residences could be exposed to train noise above 65 dB (Impact 4.7-2). Mitigation Measure 4.7-2 would reduce this impact to a less-than-significant level by requiring that new residential development demonstrate that it would meet County standards for rail noise.

Under Alternative 2, there would be more areas where construction would occur adjacent to sensitive receptors, such as residences and schools (Impact 4.7-3). These impacts could still occur, and would require mitigation to be reduced to a less-than-significant level, but they would be more severe under Alternative 2.

Alternative 2 provides for more residential development, so more bicyclists and pedestrians could be expected, along with the increase in vehicle trips. As a result, the potential for conflicts between pedestrian and bicycles with vehicles and the rail line would be increased (Impacts 4.8-4 through 4.8-6). Mitigation Measures 4.8-4 and 4.8-5, which require pedestrian and bicycle facility improvements, would reduce the potential risk for conflicts between vehicles and pedestrians and/or bicycles to a less-than-significant level.

### **Alternative 3: Reduced Footprint**

#### **Description**

Alternative 3 is designed to reduce the development footprint, primarily in order to preserve foraging habitat for raptors, such as Swainson's hawk. Under the proposed Community Plan, development would occur on approximately 130 acres of undeveloped and underdeveloped acreage. Most of the undeveloped land is farmland, some of which provides habitat for various wildlife species. Approximately 63 acres would be preserved as Urban Reserve, all of which is considered Prime Farmland. Under Alternative 3, these areas would remain Urban Reserve, and an additional 30 acres would be designated Urban Reserve. This additional acreage is designated Farmland of Local Importance, which is not considered Important Farmland. However, the 30 acres are considered potential habitat for foraging raptors because it is all weedy field (see Figure 4.3-1 in Chapter 4.3, Biological Resources).

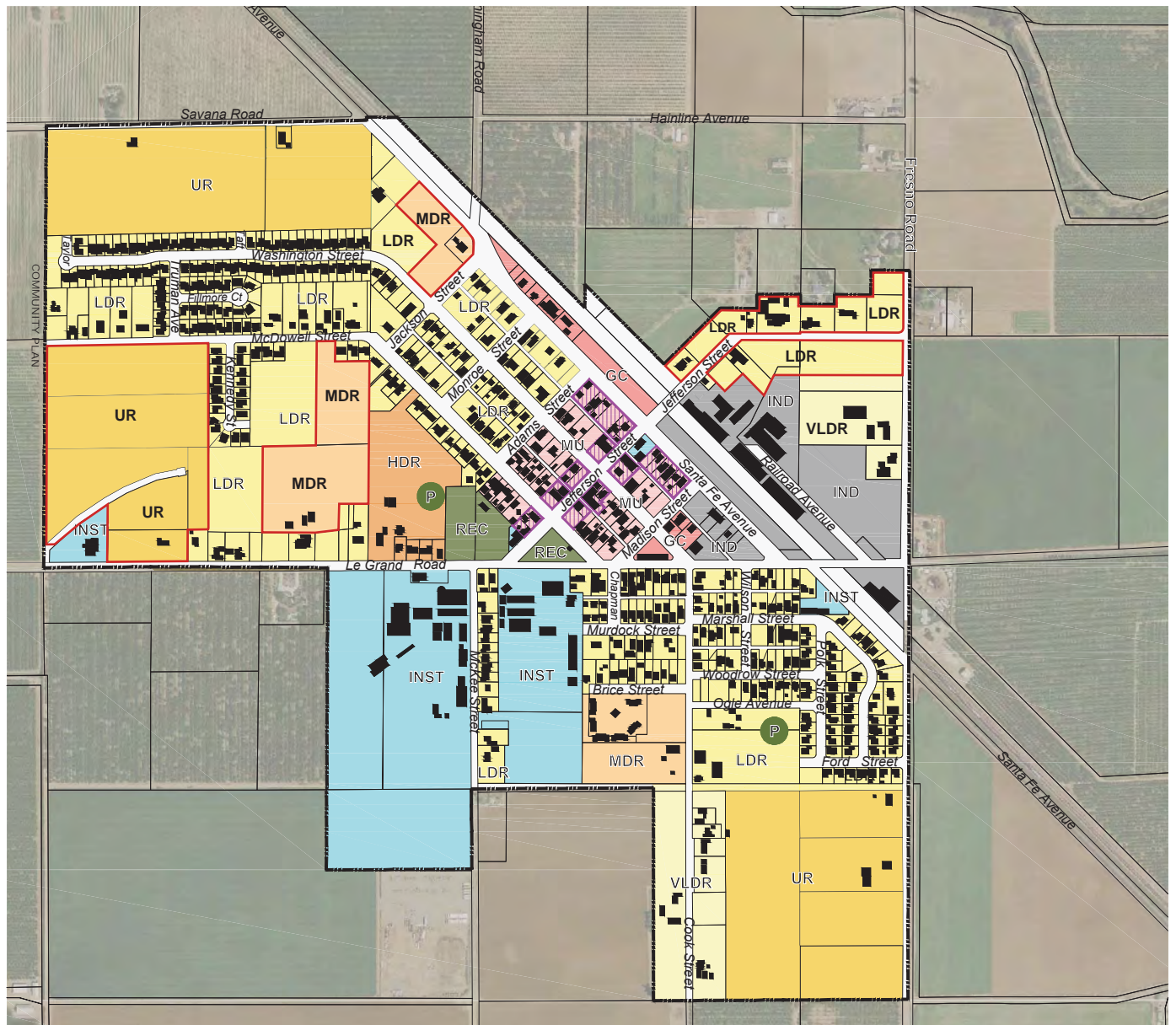
As shown in Figure 6-2, 30 acres in the western portion of the Plan Area would be designated Urban Reserve. This area is proposed to be designated Low Density Residential under the proposed Community Plan. In order to keep the total number of residential units similar to the proposed Community Plan, two areas would be designated Medium Density Residential under Alternative 3 that are proposed for Low Density Residential and General Commercial under the proposed Community Plan. As a result, the total number of residential units would be 1,044, approximately 5 percent fewer units than under the proposed Community Plan. The amount of General Commercial would be reduced by approximately half, from 80,034 square feet to 41,919 square feet due to the re-designation of one area to MDR. The remainder of the land uses would be the same as under the proposed Community Plan. Alternative 3 land uses are summarized in Table 6-2.

Alternative 3 would support a population of approximately 3,507 residents, assuming 3.36 persons per household.

Alternative 3 would retain the same land uses within the community core as the Proposed Project.

Alternative 3 would generate slightly fewer students than the Proposed Project, due to the reduction in the number of units. As with the proposed Community Plan, it is assumed that the additional students would be accommodated at expanded facilities within the existing school sites.





PROPOSED LAND USES

VLDR Very Low Density Residential  
 LDR Low Density Residential  
 MDR Medium Density Residential  
 HDR High Density Residential

MU Mixed Use  
 MUV Mixed Use Vertical  
 GC General Commercial  
 IND Industrial

REC Recreational  
 INST Institutional/ Public Facilities  
 UR Urban Reserve

FLOATING ZONES

P Potential Neighborhood Park



No Scale

SOURCE: RRM Design Group, 2018.

----- Proposed CP Boundary

— Changes To Proposed Land Use Designations

**Figure 6-2  
Alternative 3**

<b>TABLE 6-2</b> <b>Alternative 3: Reduced Footprint</b>		
<b>Land Use Designations</b>	<b>Acreage Total</b>	<b>Dwelling Units/Potential Building Square Footage</b>
<b>Residential (Dwelling Units)</b>		
Very Low Density (VLD)	22	22
Low Density (LD)	115	557
Medium Density (MD)	21	196
High Density (HD)	10	227
Mixed Use (MU)	12	37
Non-Residential Designations <sup>1</sup>		5
<i>Total Residential</i>	<i>180</i>	<i>1,044 du</i>
<b>Non-Residential (Square Feet)</b>		
General Commercial (GC)	4	41,919 sf
Industrial (IND)	22	255,656 sf
Mixed Use (MU)	See above	63,228 sf
Institutional <sup>6</sup> (INST)	3	30,058sf 3 acres
<i>Total Non Residential</i>	<i>29</i>	<i>390,861 sf</i>
<b>Schools</b>		
Elementary School (INST)	17	1 school
High School (INST)	37	1 school
<i>Total Schools</i>	<i>54</i>	<i>2 schools</i>
<b>Parks</b>		
Community Park (REC)	4 acres	2 parks 480 sf
<i>Total Parks</i>	<i>4 acres</i>	<i>2 parks</i>
<b>Other</b>		
Urban Reserve (UR)	93	93 acres 5 du
Other (e.g. roads, canals)	70	70 acres
<i>Total Other</i>	<i>163</i>	<i>5 du 163 acres</i>
<b>Total</b>	<b>430 acres</b>	<b>1044 dwelling units; 391,341 sf non-residential</b>
Notes:		
1. Some residential units are located within areas that are not zoned for residential.		

Utilities required to serve new development would be similar to the proposed Community Plan, although demand would be reduced slightly due to the reduction in residential units and commercial square footage. Alternative 3 would still require three wells or two wells and a storage tank, and 30 to 35 acres of reclamation area for treated effluent. Unlike the proposed Community Plan, Alternative 3 would require the extension of sewer lines to serve the residential area east of the railroad tracks because portions would be designated Low Density Residential, and would therefore not be able to use septic systems (Very Low Residential uses require at least one acre, which is large enough to support a septic system).

The goals, policies, objectives and implementation measures of the proposed Community Plan would be implemented with Alternative 3 as well, as applicable.

#### Relationship of Alternative 3 to Project Objectives

Alternative 3 would generally meet the project objectives by providing a mix of housing types and employment opportunities while maintaining a small agricultural town atmosphere. By retaining the Mixed Use designation, Alternative 3 would support a strong community core. In addition, Alternative 3 would include improvements to the existing roadway system, including completion of a network of sidewalks and creation of a bicycle network. There would be fewer employment opportunities, due to the reduction in General Commercial acreage.

### **Environmental Analysis**

#### Impacts Identified as Being the Same or Similar to the Proposed Project

Under Alternative 3, the amount of wastewater generated would be less than under the proposed Community Plan, but there would still be a need for a similar amount of additional reclamation area. Therefore, adjacent farmland could be adversely affected by reclaimed irrigation water, and Mitigation Measure 4.1-3 would be required.

Alternative 3 would develop the same amount of acreage that is planted in orchards, so there would be the same potential to disturb bat species that might roost in those orchards (Impact 4.3-4). Also, the potential to disturb bat species that roost in buildings would be similar because existing buildings are located within the community core.

Buildings that are old enough to be considered historically significant would be concentrated within the core of the community, especially the areas designated Mixed-Use. Alternative 3 and the Proposed Project provide for similar levels of development in the community core, where older buildings suitable for demolition or reuse are most likely to be located. Therefore, the potential impact on historic buildings would be similar (Impacts 4.4-2 and 4.4-5).

#### Impacts Identified as Being Less Severe than the Proposed Project

The reduced Plan Area footprint and reduction in residences and commercial square footage would result in fewer vehicle trips and energy use, so air quality and greenhouse gas emissions would be lower under Alternative 3. Construction-related air emissions would be lower because there would be a 25% reduction in the area to be graded (97 acres under Alternative 3 compared to 127 acres under the proposed Community Plan). Like the proposed Community Plan, Alternative 3 would not exceed the operational emissions thresholds (Impacts 4.2-1, 4.2-2 and 4.2-5).

Alternative 3 would disturb approximately 30 fewer acres than the Proposed Project, so impacts on several biological and cultural resources would be reduced. Under Alternative 3, the riparian area north of the Veteran's Memorial building would be designated Urban Reserve, so it would not be developed. Consequently, there would be a reduced potential to disturb or harm to Valley elderberry longhorn beetle (VELB) or western pond turtle (Impacts 4.3-1 and 4.3-2, respectively). The amount of annual grassland/weedy field and/or row crops that would be disturbed under Alternative 3 would be reduced by approximately half (30 acres compared to 64 acres under the proposed Community Plan), so impacts on species that could use these habitats, such as Swainson's hawk, burrowing owls and other raptors (Impact 4.3-3) would be substantially reduced. Alternative 3 would also develop fewer acres that have the potential to contain wetlands (Impact 4.3-5).

Because Alternative 3 would have less severe impacts on special-status species and sensitive habitat, the contribution toward cumulative harm to special-status species and loss or

degradation of sensitive habitats would also be less severe (Impacts 4.3-7 and 4.3-8). With the exception of the cumulative loss or degradation of special-status species habitat, all of the biological impacts could be reduced with mitigation to a less-than-significant level under either Alternative 3 or the Proposed Project.

Because Alternative 3 would disturb less acreage than the Proposed Project, the potential for damage to or destruction of archaeological and/or paleontological resources would be less severe than under the Proposed Project (Impacts 4.4-1, 4.4-3, 4.4-4, and 4.4-6). All of these impacts could be reduced to a less-than-significant level through mitigation identified for the Proposed Project.

Vehicle miles are the primary source of air and GHG emissions, and Alternative 3 would generate approximately 24 percent fewer trips than the proposed Community Plan. Therefore, Alternative 3 would generate fewer GHG emissions than the proposed Community Plan, but would still exceed the applicable standards (Impacts 4.5-1 and 4.5-2). Mitigation is available to lessen these impacts for both the Proposed Project and Alternative 3, but it may not be feasible to reduce GHG emissions below the thresholds, so the impact would remain significant and unavoidable, although the impacts of Alternative 3 would be less severe.

Like the Proposed Project, Alternative 3 would increase traffic noise in existing sensitive areas, such as residential areas. Under the proposed Community Plan, noise levels on Fresno Road north of Le Grand Road would increase from 43.4 dB Ldn to 50 dB Ldn under existing conditions (see Table 4.7-6) and from 43.5 to 50 dB Ldn under cumulative conditions. While the noise levels on Fresno Road would meet residential thresholds, an increase of more than 5 dB is considered significant (Impacts 4.7-1 and 4.7-7). Alternative 3 would generate less traffic than the proposed Community Plan, so the alternative would reduce traffic noise. Depending on the distribution of trips, a 24 percent reduction in traffic could still result in a greater than 5 dB increase on this roadway, so the impact would still be considered potentially significant and unavoidable. However, the severity of the impact would be reduced.

Under Alternative 3, there would be fewer areas where construction would occur adjacent to sensitive receptors, such as residences and schools (Impact 4.7-3). In addition, because there would be less commercial development, there would be fewer areas where residents could be disturbed by non-transportation noise, such as loading docks and HVAC systems (Impacts 4.7-5 and 4.6-1). These impacts could still occur, and would require mitigation to be reduced to a less-than-significant level, but they would be less severe under Alternative 3.

Because Alternative 3 would result in fewer dwelling units and less commercial development, traffic levels would be lower and there would be slightly fewer bicyclists and pedestrians. Therefore, the potential for conflicts with vehicles and the rail line would be reduced. (Impacts 4.8-4 through 4.8-6). Mitigation Measures 4.8-4 and 4.8-5, which require pedestrian and bicycle facility improvements, would still be required to reduce the potential risk for conflicts between vehicles and pedestrians and/or bicycles to a less-than-significant level.

#### Impacts Identified as Being More Severe than the Proposed Project

Alternative 3 would place more residential units in proximity to the railroad tracks than the proposed Community Plan, and those residences could be exposed to train noise above 65 dB (Impact 4.7-2). Mitigation Measure 4.7-2 would reduce this impact to a less-than-significant level by requiring that new residential development demonstrate that it would meet County standards for rail noise.

## **Alternative 4: Reduced Development**

### **Description**

Alternative 4 is designed to address the impacts of additional residential and non-residential development, particularly increased construction emissions, GHG emissions, traffic noise and potential conflicts between vehicles and pedestrians and bicyclists. Because it would also increase the amount of Urban Reserve, this alternative would have reduced impacts related to grading, such as loss of biological and cultural resources and construction emissions. Land uses for Alternative 4 are summarized in Table 6-3 and shown in Figure 6-3.

Under Alternative 4, the Plan Area footprint would be the same as the proposed Community Plan, but the densities would be reduced, so there would be fewer residential units and less commercial development. There would also be an increase in Urban Reserve, from 63 acres to 78 acres, which would reduce the amount of land available for development.

Under Alternative 4, there would be a total of 968 dwelling units, a reduction of approximately 12 percent compared to the Proposed Project. However, the reduction in new residential development would be approximately 22 percent (471 new units under Alternative 4; 603 new units under the Proposed Project). This reduction is achieved primarily by redesignating MDR to LDR and some LDR parcels to VLDR, and by redesignating 15 acres of LDR to Urban Reserve. As with Alternative 3, the 10-acre HDR parcel is retained because it implements County housing policy. In addition, a portion of General Commercial would be redesignated LDR. With a reduction in the number of dwelling units, there will be less need for commercial and retail services. In addition, a portion of the land designated Industrial under the proposed Project would be designated VLDR under Alternative 4, reducing the amount of employment-generating uses. However, the ratio of commercial and industrial jobs to housing units would be slightly higher than the proposed Community Plan (0.55 compared to 0.51). Assumptions for the Mixed Use designation would be the same as the Proposed Project. The overall result would be a lower density residential community, with Very Low Density Residential and Urban Reserve predominating along the edges of the Community, and higher density uses at its core.

The total population under Alternative 4 would be 3,252 persons. The total number of elementary students would be 740, which is lower than the Proposed Project, but would still require additional facilities at Le Grand Elementary School. Total enrollment at Le Grand High School students would also be lower, 1,105 compared to 1,149 students, so facilities beyond those identified in the District's Master Plan would not be needed.

Community park and recreation acreage would be the same as the Proposed Project.

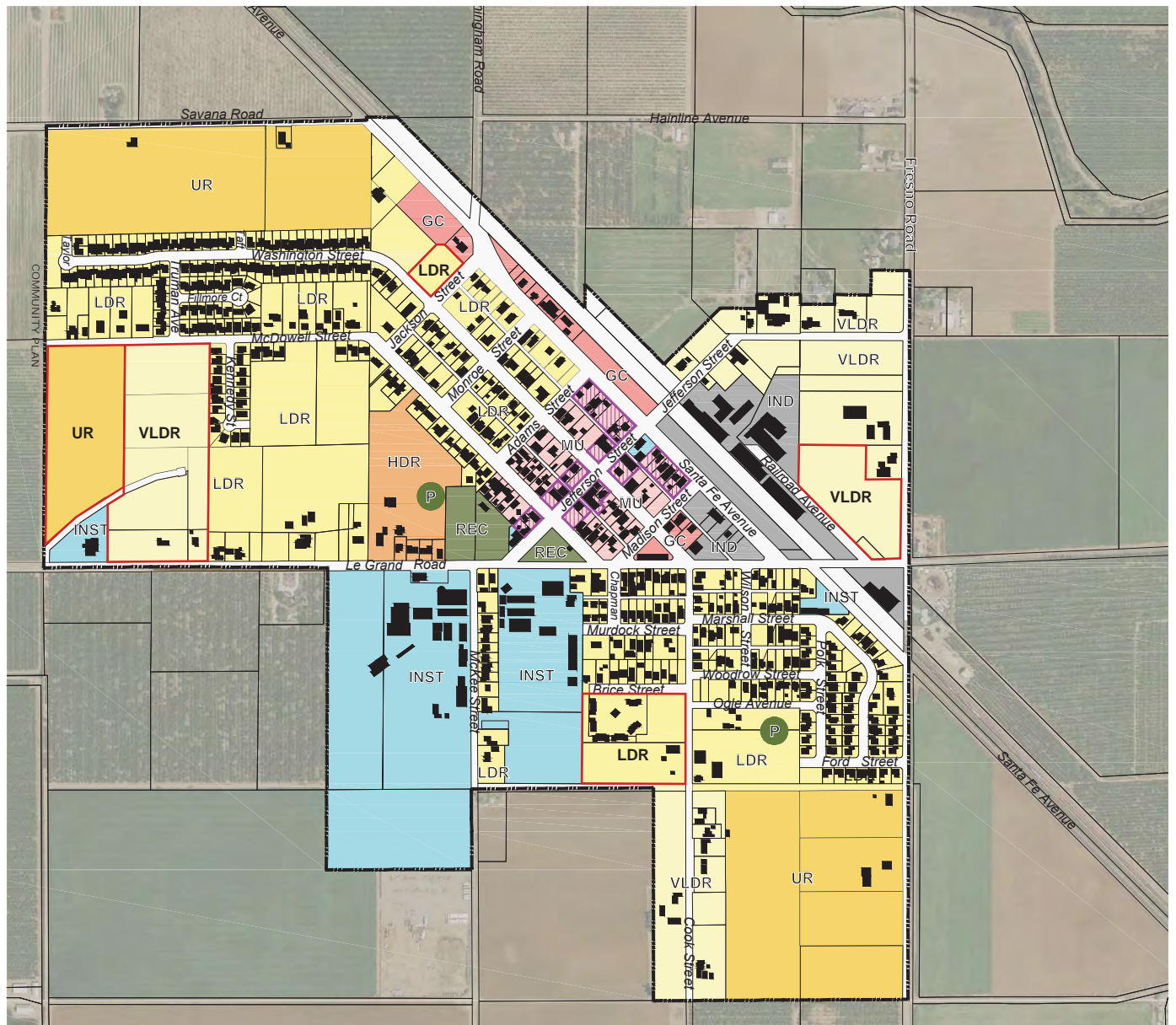
Utilities required to serve new development would be reduced under Alternative 4, due both to the reduced number of residential units and non-residential square footage, and the increase in VLDR (135 acres under Alternative 4, compared to 29 acres under the Proposed Project), which would be served primarily by individual domestic wells and septic systems.

The goals, policies, objectives and implementation measures of the proposed Community Plan would be implemented with Alternative 4 as well, as applicable.

### **Relationship of Alternative 4 to Project Objectives**

Alternative 4 would achieve most of the project objectives by providing a mix of housing and non-residential development, and accommodating additional population and other growth. However, because it would reduce the amount of residential development and employment-generating uses relative to the proposed Community Plan, it would not be as effective at achieving the objectives.





#### PROPOSED LAND USES

VLDR Very Low Density Residential  
 LDR Low Density Residential  
 MDR Medium Density Residential  
 HDR High Density Residential

MU Mixed Use  
 MUV Mixed Use Vertical  
 GC General Commercial  
 IND Industrial

REC Recreational  
 INST Institutional/ Public Facilities  
 UR Urban Reserve

#### FLOATING ZONES

P Potential Neighborhood Park



No Scale

SOURCE: RRM Design Group, 2018.

----- Proposed CP Boundary

— Changes To Proposed Land Use Designations

**Figure 6-3  
Alternative 4**

<b>TABLE 6-3</b> <b>Alternative 4: Reduced Development</b>		
<b>Land Use Designations</b>	<b>Acreage Total</b>	<b>Dwelling Units/Potential Building Square Footage</b>
<b>Residential (Dwelling Units)</b>		
Very Low Density (VLD)	53	54
Low Density (LD)	124	645
Medium Density (MD)	0	0
High Density (HD)	10	227
Mixed Use (MU)	12	37
Non-Residential Designations <sup>1</sup>		5
<i>Total Residential</i>	<i>199</i>	<i>968 du</i>
<b>Non-Residential (Square Feet)</b>		
General Commercial (GC)	6	58,254 sf
Industrial (IND)	16	190,860 sf
Mixed Use (MU)	See above	63,228 sf
Institutional <sup>6</sup> (INST)	3	30,058sf 3 acres
<i>Total Non Residential</i>	<i>25</i>	<i>342,400 sf</i>
<b>Schools</b>		
Elementary School (INST)	17	1 school
High School (INST)	37	1 school
<i>Total Schools</i>	<i>54</i>	<i>2 schools</i>
<b>Parks</b>		
Community Park (REC)	4	2 parks 480 sf
<i>Total Parks</i>	<i>4</i>	<i>2 parks</i>
<b>Other</b>		
Urban Reserve (UR)	78	78 acres 5 du
Other (e.g. roads, canals)	70	70 acres
<i>Total Other</i>	<i>148</i>	<i>5 du 148 acres</i>
<b>Total</b>	<b>430 acres</b>	<b>968 dwelling units; 342,880 sf non-residential</b>
Notes:		
1. Some residential units are located within areas that are not zoned for residential.		

## Environmental Analysis

### Impacts Identified as Being the Same or Similar to the Proposed Project

Alternative 4 would develop the same amount of acreage that is planted in orchards, so there would be less potential to disturb bat species that might roost in those orchards (Impact 4.3-4). Also, the potential to disturb bat species that roost in buildings would be similar because existing buildings are located within the community core.

Buildings that are old enough to be considered historically significant would be concentrated within the core of the community, especially the areas designated Mixed Use. Alternative 4 and the Proposed Project provide for similar levels of development in the community core, where older buildings suitable for demolition or reuse are most likely to be located. Therefore, the potential impact on historic buildings would be similar (Impacts 4.4-2 and 4.4-5).

#### Impacts Identified as Being Less Severe than the Proposed Project

Alternative 4 would generate less wastewater than the proposed Community Plan, but there would still be a need for additional reclamation area for disposal of treated wastewater. Therefore, adjacent farmland could be adversely affected by reclaimed irrigation water, and Mitigation Measure 4.1-3 would be required.

Construction-related air emissions would be lower under Alternative 4, because there would be a 15-acre reduction in the area to be graded (112 acres under Alternative 4 compared to 127 acres under the proposed Community Plan), and a reduced level of development due to the reduction in housing units and commercial and industrial space. However, NO<sub>x</sub> emissions could still exceed Air District thresholds, but with mitigation the impact would be reduced to a less-than-significant impact (see Impact 4.2-2). With a reduction in trips and energy use, Alternative 4 would result in lower operational emissions as well, and, like the proposed Community Plan, would not exceed the operational emissions thresholds. (Impacts 4.2-1, 4.2-2 and 4.2-5).

Alternative 4 would disturb approximately 15 fewer acres than the Proposed Project, so impacts on several biological and cultural resources would be reduced. However, riparian habitat, including a portion of the canal north of the Veteran's Memorial building, could still be disturbed by development under Alternative 4, so there would be a reduced potential to disturb or harm to Valley elderberry longhorn beetle (VELB) or western pond turtle (Impacts 4.3-1 and 4.3-2, respectively). The amount of annual grassland/weedy field and/or row crops that would be disturbed under Alternative 4 would be reduced by approximately 25% (45 acres compared to 64 acres under the proposed Community Plan), so impacts on species that could use these habitats, such as Swainson's hawk, burrowing owls and other raptors (Impact 4.3-3) would be substantially reduced. Alternative 4 would also develop fewer acres that have the potential to contain wetlands (Impact 4.3-5).

Because Alternative 4 would have less severe impacts on special-status species and sensitive habitat, the contribution toward cumulative harm to special-status species and loss or degradation of sensitive habitats would also be less severe (Impacts 4.3-7 and 4.3-8). With the exception of the cumulative loss or degradation of special-status species habitat, all of the biological impacts could be reduced with mitigation to a less-than-significant level under either Alternative 4 or the Proposed Project.

Because Alternative 4 would disturb less acreage than the Proposed Project, the potential for damage to or destruction of archaeological and/or paleontological resources would be less severe than under the Proposed Project (Impacts 4.4-1, 4.4-3, 4.4-4, and 4.4-6). All of these impacts could be reduced to a less-than-significant level through mitigation identified for the Proposed Project.

Alternative 4 would generate substantially (approximately 30%) fewer vehicles trips than the proposed Community Plan, and would use less energy due to the reduction in residential units, commercial space and industrial uses. Consequently, GHG emissions would be reduced, but would still be expected to exceed the applicable standards (Impacts 4.5-1 and 4.5-2).

As discussed under Alternative 2, under the proposed Community Plan, noise levels on Fresno Road north of Le Grand Road would increase by approximately 6.5 dB, and an increase of more



than 5 dB is considered significant (Impacts 4.7-1 and 4.7-7). Feasible mitigation is not available to substantially reduce traffic noise on this segment, so the impact would be significant and unavoidable under the proposed Community Plan. The number of trips generated under Alternative 4 would be almost one-third the number of trips generated by the proposed Community Plan. Assuming that the trip distribution would be similar, the traffic volumes on Fresno Road would be about 30% lower under Alternative 4, which could result a reduction in traffic noise of 1 dB or more. Therefore, the increase over “without project” traffic noise levels might not exceed the 5 dB threshold, in which case the impact would be less than significant under Alternative 4. In any case, the amount of traffic noise would be reduced.

Under Alternative 4, there would be fewer areas where construction would occur adjacent to sensitive receptors, such as residences and schools (Impact 4.7-3). In addition, because there would be less commercial development, there would be fewer areas where residents could be disturbed by non-transportation noise, such as loading docks and HVAC systems (Impacts 4.7-5 and 4.6-1). These impacts could still occur, and would require mitigation to be reduced to a less-than-significant level, but they would be less severe under Alternative 4.

Under Alternative 4, there would also be fewer new bicyclists and pedestrians due to the reduction in residential units. This, in combination with the reduction in vehicle trips, would reduce the potential for conflicts with vehicles and the rail line (Impacts 4.8-4 through 4.8-6). Mitigation Measures 4.8-4 and 4.8-5, which require pedestrian and bicycle facility improvements, would still be required to reduce the potential risk for conflicts a less-than-significant level.

#### Impacts Identified as Being More Severe than the Proposed Project

Alternative 4 would place slightly more residential units in proximity to the railroad tracks than the proposed Community Plan, and those residences could be exposed to train noise above 65 dB (Impact 4.7-2). Mitigation Measure 4.7-2 would reduce this impact to a less than significant level by requiring that new residential development demonstrate that it would meet County standards for rail noise.

### **ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. CEQA Section 15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives.

As shown in Table 6-4 and discussed above, three of the four alternatives would reduce impacts compared to the proposed Community Plan. Only Alternative 2 would increase the severity of most impacts. Alternative 1 would provide for no growth and would therefore have the fewest and least severe impacts. Therefore, Alternative 1 is the environmentally superior alternative. After Alternative 1, the environmentally superior alternative would be Alternative 3, because it would convert less undeveloped land to urban uses and result in lower levels of development, thus reducing impacts on Prime Farmland, biological and cultural resources, traffic, air quality, greenhouse gas emissions, and noise compared to either the proposed Community Plan or Alternatives 2 or 4.

It should be noted that environmental considerations are one portion of the factors that must be considered by the public and the decision makers in deliberations on the projects. Other factors of importance include urban design, economics, social factors, and fiscal considerations.

**TABLE 6-4**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>		<b>Proposed Project</b>	<b>Alt 1: No Project/ No Devel.</b>	<b>Alt 2: No Project/ No Action</b>	<b>Alt 3: Reduced Footprint</b>	<b>Alt 4: Reduced Density</b>
<b>4.1 Agricultural Resources</b>						
4.1-3	The proposed Community Plan could involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	LS/M	NI	LS/M	LS/M	LS/M-
<b>4.2 Air Quality</b>						
4.2-1	The proposed Community Plan could conflict with or obstruct implementation of the applicable air quality plans.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.2-2	The proposed Community Plan would generate air pollutants that could exceed air quality standards or contribute to existing air quality violations.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.2-3	The proposed Community Plan could result in exposure of sensitive receptors to substantial pollutant concentrations of criteria pollutants and TACs.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.2-5	The proposed Community Plan could contribute to cumulative increases in criteria air pollutants.	LS/M	NI	LS/M+	LS/M-	LS/M-
<b>4.3 Biological Resources</b>						
4.3-1	The proposed Community Plan could result in harm to special-status invertebrate species and/or loss or degradation of their habitat.	LS/M	NI	LS/M	LS/M-	LS/M
4.3-2	The proposed Community Plan could result in harm to special-status reptile species and/or loss or degradation of their habitat.	LS/M	NI	LS/M	LS/M-	LS/M
4.3-3	The proposed Community Plan could result in harm to special-status bird species and/or loss or degradation of their habitat.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.3-4	The proposed Community Plan could result in harm to special-status mammal species and/or loss or degradation of their habitat.	LS/M	NI	LS/M+	LS/M	LS/M
4.3-5	The proposed Community Plan could result in loss or degradation	LS/M	NI	LS/M+	LS/M-	LS/M-

LS = Impact less than significant, requiring no mitigation.

LS/M = Impact would be less than significant after mitigation.

NI = No Impact.

SU = Impact would be significant and/or potentially significant after mitigation (or no feasible mitigation is available).

+ = More severe impact than the proposed Community Plan.

- = Less severe impact than the proposed Community Plan.

**TABLE 6-4**  
**Summary of Impacts and Mitigation Measures**

<b>Impacts</b>		<b>Proposed Project</b>	<b>Alt 1: No Project/ No Devel.</b>	<b>Alt 2: No Project/ No Action</b>	<b>Alt 3: Reduced Footprint</b>	<b>Alt 4: Reduced Density</b>
sensitive habitat, including wetlands.						
4.3-7	The proposed Community Plan could contribute to the cumulative harm of special-status species and loss or degradation of their habitat.	SU/M	NI	SU/M	SU/M-	SU-
4.3-8	The proposed Community Plan could contribute to the cumulative loss or degradation of sensitive habitats, including wetlands.	LS/M	NI	LS/M	LS/M-	LS/M+
<b>4.4 Cultural Resources</b>						
4.4-1	The proposed Community Plan could result in the loss of archaeological resources.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.4-2	The proposed Community Plan could result in the loss of historically significant buildings, sites and/or facilities.	SU/M	NI	SU/M	SU/M	SU/M
4.4-3	The proposed Community Plan could result in the loss of paleontological resources.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.4-4	The proposed Community Plan would contribute to the cumulative loss of archaeological resources in Merced County and the Central Valley.	LS/M	NI	LS/M+	LS/M-	LS/M-
4.4-5	The proposed Community Plan would contribute to the cumulative loss of historic resources in Merced County and the Central Valley.	SU/M	NI	SU/M	SU/M	SU/M
4.4-6	The proposed Community Plan would contribute to the cumulative loss of paleontological resources in Merced County and the Central Valley.	LS/M	NI	LS/M+	LS/M-	LS/M-
<b>4.5 Greenhouse Gas Emissions and Climate Change</b>						
4.5-1	The Proposed Project would generate GHG emissions, either directly or indirectly, that would contribute to cumulative increases in greenhouse gas emissions and climate change.	SU/M	NI	SU/M+	SU/M-	SU/M-

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4.5-2	The Proposed Project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	SU/M	NI	SU/M+	SU/M-	SU/M-
<b>4.6 Land Use</b>						
4.6-1	The proposed Community Plan could result in incompatible land uses in proximity to one another within the Plan Area.	LS/M	NI	LS/M+	LS/M-	LS/M-
<b>4.7 Noise</b>						
4.7-1	The proposed Community Plan would increase traffic noise in the existing community.	SU	NI	SU+	SU-	LS
4.7-2	Future residences and other noise sensitive land uses would be exposed to transportation noise.	LS/M	NI	LS/M+	LS/M+	LS/M-
4.7-3	The proposed Community Plan would generate construction noise near noise-sensitive areas.	LS/M	NI	LS/M	LS/M-	LS/M
4.7-5	The proposed Community Plan would result in uses that could generate excessive non-vehicular noise.	LS/M	NI	LS/M	LS/M-	LS/M-
4.7-7	The proposed Community Plan would contribute to cumulative increase in traffic noise levels on local roadways.	SU	NI	SU+	SU-	LS
<b>4.8 Transportation and Circulation</b>						
4.8-4	The proposed Community Plan would increase demand for bicycle facilities.	LS/M	NI	LS/M	LS/M-	LS/M-
4.8-5	The proposed Community Plan would increase demand for pedestrian facilities.	LS/M	NI	LS/M	LS/M-	LS/M-
4.8-6	The proposed Community Plan could result in conflicts with the railroad tracks.	LS/M	NI	LS/M+	LS/M-	LS/M-

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## **7. CEQA CONSIDERATIONS**

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## 7.0 CEQA Considerations

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### 7.1 CUMULATIVE IMPACTS

#### **Background**

CEQA requires the analysis of impacts due to cumulative development that would occur independent of, but during the same timeframe as, the project under consideration, or in the foreseeable future. By requiring an evaluation of cumulative impacts, CEQA attempts to minimize the potential that large-scale environmental impacts would be ignored due to the project-by-project nature of project-level analyses contained in EIRs.

Cumulative analyses need not be undertaken in the same manner as those aimed at evaluating the project under consideration. According to Section 15130(b) of the CEQA Guidelines:

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as provided of the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are necessary to an adequate discussion of cumulative impacts:

(1) Either:

- (A) A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency, or
- (B) A summary of projections contained in an adopted general plan or related planning document or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency...

#### **Cumulative Context**

Cumulative analyses included in this EIR are based on an understanding of anticipated growth within the region that would affect the severity of project impacts identified in Chapter 4, based on adopted plans (e.g., General Plans). Different analyses use different cumulative development scenarios, because the location of future growth that affects cumulative impacts differs by the type of resource. As an example, the appropriate cumulative development base would be growth throughout the San Joaquin Valley Air Basin, because growth throughout the air basin contributes to air pollution. For each impact, the cumulative development base must be determined after consideration of the way in which cumulative impacts are created.

#### **Summary of Cumulative Impacts**

The following is a summary of the cumulative context assumed for each issue area and the cumulative impacts that were identified in Chapter 4. These impacts are discussed in detail in the relevant technical sections of Chapter 4.

#### **Agricultural Resources**

The cumulative context for the loss of Important Farmland is Merced County and the greater Central Valley. As discussed in Impact 4.1-4, farmland is being converted to urban uses

throughout the county, and this trend would continue. The proposed Community Plan would contribute to the cumulative loss of Important Farmland, but not considerably.

The proposed Community Plan would not affect any Williamson Act lands or agricultural preserves (Impact 4.1-2), so it would not contribute to cumulative impacts on these resources. The potential for conflicts between urban and agricultural uses (Impact 4.1-3) occurs where those uses abut each other and/or are in close proximity. No changes are proposed to agricultural lands adjacent to or near the Plan Area, so there would not be a cumulative impact associated with such potential conflicts.

### **Air Quality**

The cumulative context for the analysis of criteria air pollutants is the San Joaquin Valley Air Basin (SJVAB). As discussed in Section 4.2, Air Quality, future development in the SJVAB will increase air pollution in the Basin. This degradation in air quality would be a significant cumulative impact. The proposed Community Plan would contribute to increased emissions, but this contribution would not be considered considerable, because project emissions would be below SJVAPCD thresholds (see Impact 4.2-5).

Because there are no planned or anticipated changes to land uses and activities adjacent to the Plan Area, there would be no cumulative increases in toxic air contaminants, odors or carbon monoxide in proximity to the Plan Area, and no new sensitive receptors outside of, but near the Plan Area.

### **Biological Resources**

The cumulative context for biological resource impacts is Merced County and the greater San Joaquin Valley. The Plan Area contains several habitat types that could support a number of special-status species (Impact 4.3-7). Buildout of the Plan Area could adversely affect these species, if they are present. These same impacts could occur elsewhere in the county. For most of the special-status species that have the potential to occur within the Plan Area, the habitat is marginal and/or occurs in small pockets. Mitigation Measures 4.3-1 through 4.3-4 would ensure that the special-status species and their habitat would be protected, so development of this habitat would not be considered a considerable contribution to cumulative impacts on these species. Nonetheless, the proposed Community Plan could result in the permanent loss of habitat for special-status species, including foraging habitat for Swainson's hawk and other raptors. While mitigation would ensure that similar habitats are preserved in perpetuity, there would still be a permanent reduction in foraging habitat, which would be a considerable contribution to the loss and/or degradation of special-status species habitat in Merced County and the San Joaquin Valley. The conversion of this habitat to urban uses would therefore result in a significant and unavoidable cumulative impact.

Merced County contains extensive sensitive habitats, particularly wetlands. Le Grand is not in an area that has been designated vernal pool grassland or critical habitat for vernal pools. However, the Plan Area could contain wetlands in grasslands and there is a small amount of riparian habitat. Because wetlands within the Plan Area would be fragmented from larger wetland areas in the county, and mitigation would ensure that there would be no net loss of wetlands, the project would not contribute considerably to the cumulative loss of wetlands. The potential loss of riparian would also not be considerable, because the small area that could be affected provides marginal habitat and mitigation would minimize the loss by requiring compensation. For these reasons, the project's contribution to cumulative losses of sensitive habitats would be less than significant (Impact 4.3-8).

As grasslands and other habitat have been fragmented by agriculture and urban development,

migration corridors have become an important means for wildlife to move between areas that provide food and shelter. However, there are no contiguous open space areas within the Plan Area. Therefore, no barriers would be constructed that would impede wildlife travel within or through the Plan Area. Therefore, the project contribution to this cumulative impact would be less than significant (Impact 4.3-9).

### **Cultural Resources**

The cumulative setting for cultural resources includes Merced County for historic period resources, and the portions of San Joaquin Valley identified as the territory of the local Native American community for prehistoric archaeological resources. Historic resources tend to be more highly concentrated within cities and urban communities. The cumulative context for paleontological resources is Merced County and the San Joaquin Valley.

Merced County and the San Joaquin Valley have been inhabited by prehistoric peoples for thousands of years. Development throughout the county and the valley will continue to occur in areas that are likely to contain prehistoric and historic resources (Impact 4.4-4). The Plan Area is considered sensitive for archaeological resources, although none have been recorded there. Mitigation would ensure that steps are taken prior to construction to identify archaeological resources, if any are present, and ensure that if such resources are unexpectedly encountered during construction, they are identified before they can be damaged or disturbed by construction activities, and that they are treated appropriately after discovery. With these protections, the contribution of the proposed Community Plan to the cumulative loss of archaeological resources would be less than considerable.

The proposed Community Plan could result in the loss or alteration of historically significant historic properties. Historic resources are being lost to development throughout Merced County and the region. Such resources cannot be replaced, although they can be recorded. The proposed Community Plan would contribute to this regional cumulative impact (Impact 4.4-5). The extent to which this would occur cannot be determined at this time, because there is not yet a list of historic structures or specific development proposals. The proposed Community Plan contains a policy and implementation measures that, in combination with Mitigation Measure 4.4-5, would ensure that historic resources are identified and information about them is recorded, and that they be preserved where feasible. Nonetheless, given the anticipated extent of new development and the likelihood of some redevelopment within the downtown core, some historic resources could be lost and/or substantially altered under the proposed Community Plan. Because the extent of the loss would depend on the nature and number of resources that are affected, this is considered a potentially considerable contribution to the cumulative loss and alteration of historic resources.

Paleontological resources are known to occur within Merced County, and elsewhere in the San Joaquin Valley. Excavation and grading in areas with geologic formations that are able to contain paleontological resources could result in the damage or destruction of fossils and related resources, including fossils of large vertebrates (Impact 4.4-6). The Plan Area does contain geologic formations that have yielded paleontological resources elsewhere in the county. Construction of the proposed Community Plan could damage or destroy such resources, if they are present in the Plan Area, thereby contributing to the cumulative loss of paleontological resources. Mitigation Measure 4.4-3 would ensure that such resources are identified and protected if encountered during construction. With this measure, the project contribution to the cumulative impact on paleontological resources would not be considerable.

### **Greenhouse Gas Emissions and Climate Change**

An individual project in and of itself could not alter the climate globally, so climate change



impacts are considered only from a cumulative perspective. The proposed Community Plan's total estimated greenhouse gas (GHG) emissions, including amortized construction emissions, would exceed both the 2020 and 2030 thresholds (Impact 4.5-1). Mitigation would reduce GHG emissions; however, the type and extent of measures that could be implemented and the total amount of reductions toward cannot be quantified at this time. Furthermore, it may not be feasible for all projects to achieve the reduction targets. Further, The project cannot demonstrate compliance with State requirements to reduce emissions to 1990 levels by 2020 and to 40 percent below 1990 levels by 2030, even with the implementation of the identified mitigation (Impact 4.5-2). Therefore, the increase in GHG emissions would remain significant and unavoidable.

### **Land Use**

There are no cumulative impacts associated with land use compatibility and plan consistency. The analysis of land use compatibility addresses the effects of locating different uses adjacent to or near each other. That analysis considers existing and future uses, so there are no additional impacts to consider under the cumulative scenario. Plan consistency is a project-specific analysis that is unaffected by cumulative conditions.

### **Noise**

The only noise levels likely to be affected by cumulative development outside of the Plan Area would be related to traffic. The land surrounding the proposed Plan Area is expected to remain in agriculture, and there would be no residential, commercial or industrial development outside of and in proximity to the Plan Area. Therefore, the non-traffic noise environment would not change over time, and there would not be a cumulative impact different from the project-specific impacts discussed above.

The cumulative noise analysis focuses on traffic noise. Traffic volumes would increase over time, which would increase noise levels. Because Le Grand is not in close proximity to future urban growth, the greatest increases in traffic would be the result of the proposed Community Plan. The contribution of plan-related traffic to cumulative traffic noise would be considerable (see Impact 4.7-7). No mitigation is available to reduce this impact, so it would remain significant and unavoidable.

### **Transportation**

The context for the cumulative analysis of traffic impacts is the capacity of the roadway system in 2035 and the amount of traffic that would use that system. Some increases in traffic would occur whether or not the proposed Community Plan is adopted. In addition to the growth that could occur under the existing Community Plan, there would be some increase in traffic from other areas passing through the Le Grand community, primarily on Santa Fe Avenue. The growth in Le Grand under the current Community Plan combined with pass-through traffic forms the baseline against which impacts are measured.

The proposed Community Plan would increase traffic in the Plan Area, but all intersections would continue to operate at acceptable levels under cumulative conditions (Impacts 4.8-7 and 4.8-8). Therefore the cumulative impact on roads and intersections would be less than significant with the addition of proposed Community Plan traffic.

The proposed Community Plan would also contribute to cumulative increases in transit demand, but this impact would be less than significant, because the proposed Community Plan includes Implementation Measures to ensure that transit facilities are available within the Plan Area (Impact 4.8-9).

Pedestrian and bicycle impacts would be contained within the Plan Area, so there would be no cumulative impact related to the demand for these facilities.

### Utilities

The cumulative context for water supply is the Merced groundwater subbasin. The Le Grand Community Service District (LGCSD) would need to expand its boundaries in order to serve the entire Plan Area. The LGCSD is not expected to extend its boundaries beyond the Plan Area, so there would be no increase in the need for water and wastewater services beyond the proposed Community Plan. However, the LGCSD draws groundwater from an aquifer that also serves other agricultural and municipal users. The proposed Community Plan would contribute to this cumulatively significant impact on the aquifer (see Impact 4.9-3); but not considerably, because the amount of increased demand would not be great enough to affect groundwater levels and/or storage.

The cumulative context for wastewater impacts is the LGCSD service area. The proposed Community Plan would require additional facilities to convey and treat wastewater. The LGCSD serves only the community of Le Grand. Therefore, no development outside of the LGCSD service area would contribute to the generation of wastewater that needed to be conveyed and treated by the LGCSD. Consequently, there would not be a cumulative impact on conveyance and treatment facilities, beyond that needed by development within the proposed Plan Area (Impact 4.9-6).

The Le Grand drainage system is self-contained and serves only the Plan Area. The system drains to a basin located within the Plan Area. Stormwater from within the Plan Area will therefore stay within the Plan Area system. Because the drainage system serves only Le Grand, and Le Grand runoff remains contained within the Plan Area, there is no cumulative impact.

The cumulative context for solid waste is the Merced County Solid Waste Regional Agency (MCSWRA) service area. MCSWRA is responsible for ensuring that the cumulative solid waste disposal capacity needs of its member jurisdictions are met over time, and toward that end has approved expansion of the Highway 59 landfill, which accepts waste from the Le Grand area. The proposed Community Plan would increase the amount of solid waste that requires land filling, but not beyond the levels anticipated during planning for expansion of the Highway 50 landfill. Therefore, the project contribution to cumulative solid waste impacts would not be considerable (Impact 4.9-10).

## 7.2 GROWTH INDUCING IMPACTS

### Introduction

An EIR must discuss the ways in which a proposed Community Plan could foster economic or population growth or the construction of additional housing in the vicinity of the project and how that growth would in turn, affect the surrounding environment (see CEQA Guidelines Section 15126 [d]). Growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval.

Several factors must be considered when assessing the growth-inducing effects of a project. These include the following:

**Elimination of Obstacles to Growth:** The extent to which infrastructure capacity provided to the Plan Area or a change in regulatory structure would allow additional development in the Le Grand community; and

**Promotion of Economic Expansion:** The extent to which development of the proposed Community Plan could cause increased activity in the local or regional economy. Economic effects can include such effects as:

- **Increased Indirect Demand:** The extent to which the proposed Community Plan could generate secondary or indirect effects on other employment industries in the region.
- **Increased Pressure on Land Use Intensification:** The extent to which the proposed Community Plan could increase pressure on the Merced County and/or cities or other counties in the Central Valley to redesignate the land to higher land use intensities.

### **Elimination of Obstacles to Growth**

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

New infrastructure would be required to serve the proposed Community Plan, including new groundwater wells, additional reclamation area, and new lift stations and new pipelines, which would be extended to areas that do not have access to public water and sewer lines at present. The wastewater treatment plant has enough capacity to accommodate the increased sewer flows. Portions of the Plan Area would require annexation to the LGCSD in order to obtain service. The LGCSD serves the community of Le Grand. All of the new infrastructure would be within the existing LGCSD boundaries (after annexation of the portion of the Plan Area currently outside of the LGCSD Sphere). Given the 2030 General Plan policies that direct growth to Urban Communities, it is unlikely that substantial amounts of new development would occur outside of the Plan Area, and close enough to connect to the extended water or sewer lines. Further, water supply and sewer capacity are only two of many services and utilities that would be needed to serve growth. And, any new development must be consistent with the General Plan and Community Plan. The proposed Community Plan provides for adequate supply of housing and non-residential development. For these reasons, the proposed Community Plan would not remove an obstacle to growth outside of the development that would occur of under the proposed Community Plan.

### **Economic Effects**

The proposed Community Plan would increase economic activity both directly and indirectly. Retail stores would sell goods in the community. Retail, office and industrial land uses would buy goods and services in the community and hire employees from Le Grand and the surrounding region. Non-residential development would include retail stores, employ residents from Le Grand and the greater region and buy goods and services both locally, as well as regionally and from outside the region.

Using standard employment generation rates, the proposed Community Plan would result in approximately 566 jobs associated with non-residential land uses (see Table 7-1). The Community Plan would result in the buildout of 1,100 residential units, so there would be about 0.51 jobs per household. This does not include service jobs, such as school teachers, which would also be needed to serve new development. For example, an estimated 80 additional teachers would be needed to maintain an average classroom size of 25 students with the addition of project

population. The number of jobs associated with the proposed Community Plan would still be only a small portion of countywide employment, estimated at 95,200 jobs in 2010, growing to 137,200 jobs in 2030.<sup>1</sup> Therefore, while the non-residential land uses in Le Grand would provide services and an important source of jobs and economic activity within the Plan Area, it would not be substantial enough to induce growth unplanned for growth within Le Grand or elsewhere in the county.

<b>TABLE 7-1 Estimated Employment Generation</b>			
<b>Land Use</b>	<b>Square Feet (new)</b>	<b>Square feet/ employee</b>	<b>Employees</b>
GC	80,035	500	160
IND	255,655	500	256
MU (office)	47,421	400	119
MU (retail)	15,807	500	32
<b>Total</b>	<b>398,918</b>		<b>566</b>
Source: Merced County, <i>Merced County General Plan Draft Program Environmental Impact Report, Table 16-8</i> , November 2012, page 16-14.			

New residential development typically generates a secondary or indirect demand for other services, such as grocery stores, dry cleaners, banking, and communications. This demand can lead to unforeseen future development if located in areas that are currently lacking a full spectrum of economic activity.

Increased economic activity can increase demand for new construction, and create pressure to either expand into undeveloped areas or increase the density of development within urban areas. However, the proposed Community Plan provides for enough residential and non-residential development to meet demand for at least 20 years based on historic growth rates. Therefore, there would not be pressure to expand beyond the Plan Area, or to intensify development within the Plan Area beyond the levels anticipated in the proposed Community Plan.

In summary, the proposed Community Plan would contribute to economic activity in Merced County and surrounding region, but would not induce growth. Direct effects on growth, that is the increased population due to residents living in the proposed Community Plan, are the subject of this Draft EIR. The indirect growth due to increased demand for employees as the non-residential land uses in the Plan Area develop would not result in pressure to expand the Plan Area and/or develop additional housing elsewhere in the county.

### 7.3 SIGNIFICANT AND UNAVOIDABLE IMPACTS

According to CEQA Guidelines [Section 15126, subd. (b); Section 21000, subd. (b).], a Draft EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented. These impacts are unavoidable because it has been determined that either no mitigation, or only partial mitigation, is feasible. The final determination of

<sup>1</sup> Merced County, *2030 Merced County General Plan d Draft Program Environmental Impact Report*, November 2012, page 16-5.

significance of impacts and of the feasibility of mitigation measures would be made by the Board of Supervisors as part of certification action.

The potential environmental impacts that would result from proposed Community Plan are summarized in Table 2-1. In most cases, impacts that have been identified would be less than significant after incorporation of the mitigation measures described in Table 2-1. Those impacts that cannot be feasibly mitigated to a less-than-significant level would remain as significant unavoidable adverse impacts. The following impacts would be significant and unavoidable:

- Cumulative loss of special-status species habitat (Impact 4.3-7);
- Loss of historically significant buildings, sites and/or facilities (Impact 4.4-2);
- Cumulative loss of historic resources in Merced County and the Central Valley (Impact 4.4-5);
- Emission of greenhouse gasses, contributing to global climate change (Impact 4.5-1);
- Conflict with applicable plan, policy or regulation for the reduction of GHG emissions (Impact 4.5-2);
- Increased traffic noise in the existing community (Impact 4.7-1); and
- Cumulative increase in traffic noise (Impact 4.7-6).

#### **7.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS**

Under CEQA, an EIR must analyze the extent to which a project's primary and secondary effects would commit resources to uses that future generations will probably be unable to reverse [CEQA Guidelines Section 15126.2(c); 15127].

Implementation of the proposed Community Plan would result in the long-term commitment of resources to residential, commercial, industrial and other development. Specific long-term effects of the proposed Community Plan could include:

- Increased ambient noise;
- Irreversible commitment of municipal resources to the provision of service and infrastructure for future urban and suburban development;
- Irreversible consumption of goods and services associated with urban development;
- Increased traffic volumes on existing roadways;
- Irreversible consumption of natural resources; and
- Contribution to global climate change through the generation of greenhouse gases.

Those impacts that could be significant are addressed throughout this Draft EIR. See, for example, Section 4.5-1, Greenhouse Gas Emissions and Climate Change, 4.7, Noise and 4.9, Utilities.

## **8. REFERENCES**

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## 8. REFERENCES

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## **9. REPORT PREPARATION**

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