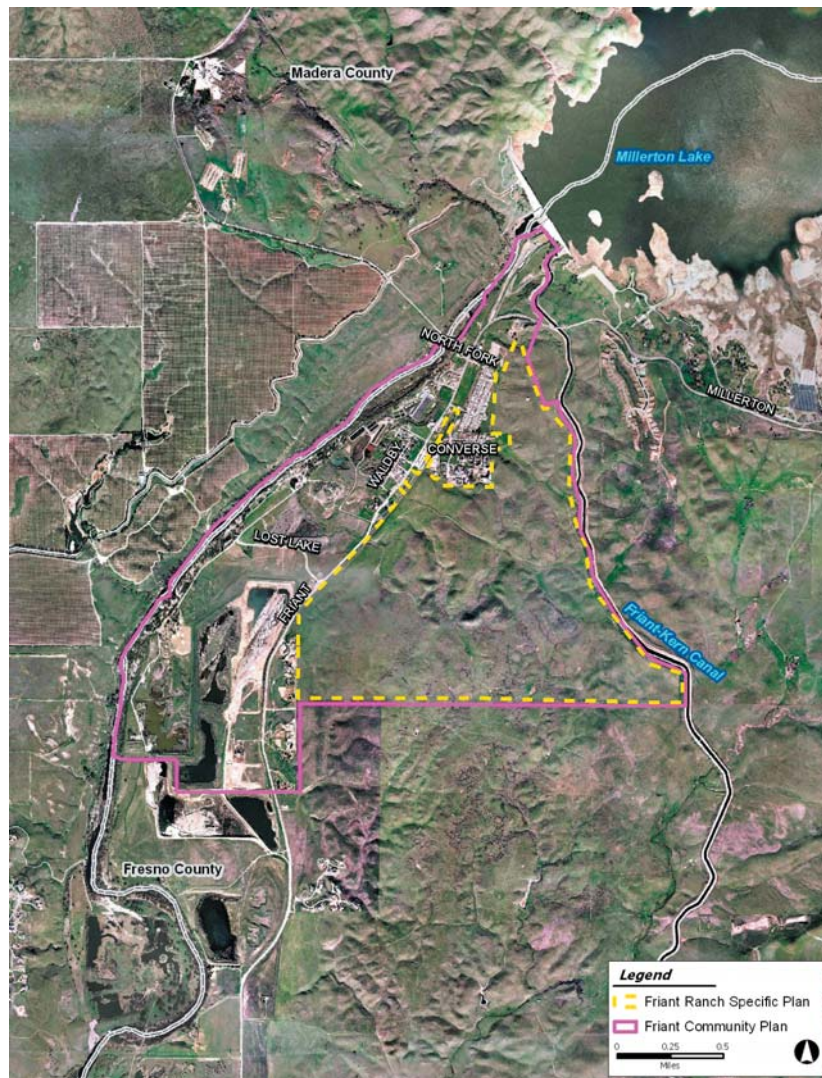


DRAFT ENVIRONMENTAL IMPACT REPORT

FRIANT COMMUNITY PLAN UPDATE & FRIANT RANCH SPECIFIC PLAN



October 2009

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SUMMARY

SUMMARY

Introduction

Under the California Environmental Quality Act (CEQA), when discretionary projects are undertaken by public agencies, an Environmental Impact Report (EIR) is required if the Lead Agency determines that the project may cause a significant environmental impact. This was concluded by the Notice of Preparation (NOP) prepared and published for this Project in October, 2007 (Appendix A). Comments received during the Notice of Preparation circulation period follow the NOP in Appendix A.

The purpose of an EIR is to provide full disclosure of the potentially significant environmental effects of the Project to the public and the decision-makers and explore the means to mitigate (i.e., reduce, avoid, or eliminate) those impacts through special mitigation measures or alternatives to the Project. CEQA intends that preparation of an EIR shall be a public process that provides meaningful opportunities for public input with regard to environmental effects.

Section 15123 of the *CEQA Guidelines* requires that an EIR contain a brief summary of the proposed action and its consequences. This Executive Summary is required to identify the following: 1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; 2) areas of controversy known to the Lead Agency including issues raised by agencies and the public; and 3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

This EIR will be used as a Program/Project EIR, and further environmental review may be required for the specific activities resulting from the Project's adoption.

Project Description and Location

The County of Fresno is the Lead Agency for the preparation of this Program/Project EIR for the Friant Community Plan Update and Friant Ranch Specific Plan ("Project"). As described more specifically in Chapter 2 (Project Description), Fresno County's processing of the Friant Community Plan Update and Friant Ranch Specific Plan will involve consideration of the following:

- Friant Community Plan Update
- Friant Ranch Specific Plan
- General Plan Amendment (for lands within the Friant Ranch Specific Plan Area and the Friant Depot parcel)
- Amendment to the Redevelopment Plan for the Friant Redevelopment Project
- New Zoning District for Friant Ranch Specific Plan Area and zone change for the Friant Depot parcel

- Development Agreements
- Conditional Use Permits
- Subsequent project-level approvals (i.e., tentative maps, parcel maps, grading/building permits)

Figures 2-1 and 2-2 of Chapter 2 show the regional location and a vicinity map for the Project. A full description of the Project is also discussed in Chapter 2, Project Description.

Potential Areas of Concern and Issues to be Resolved

A responsible agency scoping meeting and public scoping meeting were held on October 17, 2007 to accept comments on the scope of the Draft EIR. Based on the Notice of Preparation and comments received during the scoping process from public agencies, community organizations, and interested individuals, the following were identified as potential areas of concern:

- Potential cumulative impacts to utilities/service systems and public services
- Potential cumulative impacts to transportation systems and increased Levels of Service in the region
- Potential endangered species impacts and appropriate mitigation measures
- Potential inconsistencies with Fresno County General Plan policies with regards to directing growth to existing cities
- Potential hazards due to proximity to the Friant-Kern Canal and abandoned water wells
- Potential noise impacts from the Project
- Concern about the future zoning of the old elementary school site

Summary of Impacts and Mitigation Measures

Section 15123(b)(1) of the *CEQA Guidelines* provides that this summary shall identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Chapter One, Table 1-1 “Mitigation Monitoring Program.” With the exception of agricultural resources, air quality, traffic, noise and greenhouse gas emissions and global climate change, all identified impacts are either less than significant in relation to identified significance threshold levels or can be mitigated to a less than significant level through recommended mitigation measures.

Chapter Three should be consulted for the full text of impacts and mitigation measures.

This Draft EIR has analyzed cumulative impacts and found that there will be significant cumulative impacts on aesthetics, air quality, and traffic and transportation resources regardless of implementation of feasible mitigation measures.

Unavoidable Significant Environmental Effects

AESTHETICS

- Cumulatively considerable contribution to the overall aesthetic impact of past, present and reasonably foreseeable development in the surrounding area

AGRICULTURAL RESOURCES

- Conflict with Agricultural Zoning

AIR QUALITY

- Construction and Operational Emissions
- Greenhouse Gas Emissions

NOISE

- Off-site traffic noise impacts to existing homes

TRAFFIC AND TRANSPORTATION

- Significant and Unavoidable Impacts to Intersections and Roadway Segments

Alternatives to the Project

Chapter Four of this EIR evaluates the Project against the No Project Alternative, and against viable alternatives, which would achieve, or partially achieve, Project objectives. The conclusion reached in Chapter Four is that the No Project Alternative is environmentally superior compared to the other alternatives. However, the No Project Alternative would not meet the applicant's Project objectives, as identified in Section 4.2. Therefore the Northeast Development Configuration Alternative (#3) was determined to be the environmentally superior alternative because by reducing the footprint of the development project and reducing the unit count, while still incorporating (proportionate with the reduced units) the mitigation measures applicable to the proposed Project, Alternative #3 reduces all of the impacts of the proposed Project (except for cultural resource impacts which remain the same as with the Project) including, but not limited to traffic, biological, air quality, greenhouse gas, energy usage, aesthetic, agricultural, water supply, and water quality impacts. Specifically, Alternative #3 substantially reduces the impacts to waters of the United States, the California tiger salamander, vernal pools, and vernal pool fairy shrimp by reducing the affected area and creating a larger on-site open space with connectivity to adjacent open space areas to benefit species migration. The alternatives analyzed in Chapter Four are:

- No Project
- North Development Configuration (Alternative 1)
- East Development Configuration (Alternative 2)
- Northeast Development Configuration (Alternative 3)

CHAPTER ONE
INTRODUCTION

CHAPTER ONE – INTRODUCTION

This section of the Environmental Impact Report (EIR) briefly describes the proposed actions, delineates the procedure and methodology for environmental evaluation of the actions, and outlines the contents of the combined Program/Project EIR.

1.1 Summary of Proposed Actions

A detailed and complete description of the Project analyzed in this EIR is presented in Chapter Two. This section provides only a summary of the proposed actions under review.

The proposed actions involve the unincorporated community of Friant in north-central Fresno County, north of the cities of Fresno and Clovis. The community is bounded by the San Joaquin River and Madera County to the west, Friant Dam and Millerton Lake to the north, open space land to the south, and the Friant-Kern Canal to the east. Figure 2-1 and Figure 2-2 depict the regional location and vicinity, respectively.

The Friant Community Plan is Fresno County's adopted statement of policy for the growth and improvement for the unincorporated community of Friant, situated just below Millerton Dam along Friant Road. The Friant Community Plan establishes planning goals and policies to guide development of the unincorporated community of Friant. The original Friant Community Plan was adopted on July 23, 1964. The first amendment was adopted on September 25, 1975, followed by a second amendment on June 29, 1978, and a third amendment on October 20, 1983. The County is now processing an update to the Friant Community Plan. This EIR considers the impacts associated with the Friant Community Plan Update.

The Friant Redevelopment Plan was adopted in 1992 and identifies specific projects that are anticipated to encourage redevelopment of the area. As part of the Project, the County proposes an amendment to the Friant Redevelopment Plan to extend the term an additional 20 years and to eliminate the commercial development standards set forth in the 1992 Friant Redevelopment Plan.

Through the Friant Ranch Specific Plan, the applicants propose to develop a master planned community for the Active Adult population (55 years of age and older) adjacent to the existing community of Friant. The Friant Ranch Specific Plan would serve as an overall framework and regulatory document for the development of a mixed use community. The Specific Plan development will require a number of additional actions, which are analyzed in this EIR, including but not limited to a Fresno County General Plan Amendment, the enactment of a new zoning ordinance, a water transfer agreement providing water supplies for the Project, Regional Water Quality Control Board permits for irrigation with treated effluent of Specific Plan landscaping and off-site disposal on suitable nearby lands, (such as the Beck Property) or other similarly situated properties a US Army Corps of Engineers permit for dredge and fill of waters of the United States, Endangered Species Act and California Endangered Species Act compliance, construction of a new Wastewater Treatment Plant, expansion of the current Water Treatment Plant, annexation into Fresno County Waterworks District No. 18 for water and

wastewater service, and various agreements and permits related to the Water Treatment Plant and Wastewater Treatment Plant infrastructure and operation.

The Project also includes a land use designation and zone change for the Depot Parcel, which is outside of the Friant Ranch Specific Plan area but within the boundaries of the 1983 Friant Community Plan Area.

As more specifically defined in Chapter 2, the term “Project”, as used herein, refers to all of the above-referenced actions. For purposes of the analysis in this EIR, individual actions are referred to separately (e.g., Friant Ranch Specific Plan) as appropriate.

1.2 Procedures

Pursuant to Section 15168 of the Guidelines for Implementation of the California Environmental Quality Act, 14 California Code of Regulations, section 15000 et. seq. (CEQA Guidelines), a Program EIR is prepared for a series of related actions that can be characterized as one large project, such as a general plan or community plan. In contrast, a Project EIR, the most common type of EIR, examines the impacts that would result from a specific development project.

As Lead Agency, Fresno County has determined that a combined Program/Project EIR should be prepared for the proposed Specific Plan, Community Plan Update, General Plan amendment, Redevelopment Plan amendment, and related actions outlined in Chapter Two in accordance with the requirements of CEQA.

This EIR is a combined Program/Project EIR, which means that there are two tiers of environmental analysis provided herein. This EIR provides a project-level analysis of the Depot Parcel rezoning and Friant Ranch Specific Plan actions, including those above-referenced actions that are related to the proposed development within the Friant Ranch Specific Plan Area. For the Friant Community Plan Update and Friant Redevelopment Plan amendment, this EIR provides a program-level analysis due to the broad planning level actions involved. Unlike the Friant Ranch Specific Plan and Depot Parcel actions, the Friant Community Plan Update and Friant Redevelopment Plan amendment set forth a program of action rather than describe a specific development project.

The project-level analysis is a common type of EIR and addresses all the impacts associated with a specific development project. The project-level analysis specifically defines the development project and focuses on the changes in the environment that would result from the proposed development. The project-level analysis in this EIR analyzes all phases of the Friant Ranch Specific Plan development, including planning, construction, and operation. The project-level analysis also considers the physical changes involved with implementing the proposed change of land use designation and zoning for the Depot Parcel. Generally, when a project-level analysis is prepared under CEQA, no subsequent environmental review is required to carry out the proposed development (Public Resources Code section 21166 and CEQA Guidelines section 15162 and 15163.). Thus, for the Friant Ranch Specific Plan and Depot Parcel actions, this EIR is intended to provide project-specific analysis such that a subsequent or supplemental EIR would only be required if certain circumstances arise as outlined in Public Resources Code section 21166 and

CEQA Guidelines section 15162 and 15163. Residential projects in conformity with the approved Specific Plan would also be exempt from further CEQA review if the project meets the requirements of CEQA Guidelines section 15182 (a through e).

The program-level analysis conducted for the Friant Community Plan Update and Friant Redevelopment Plan amendment considers the broad program-wide policies and mitigation measures, without requiring analysis of project-specific impacts. The program-level analysis is not required to list or describe all subsequent activities that may be within its scope, allowing the lead agency flexibility to develop the program over time. The broad program-wide consideration also allows for a comprehensive evaluation of the cumulative impacts of a series of actions. The program-level analysis considers broad impacts of the overall program or series of projects, and later project-specific environmental review may or may not be required to consider specific impacts of individual actions within the broad planning area. That is, if the program-level analysis adequately considers the impacts of a future specific project within the program, no further environmental review is required. However, if the program-level analysis broadly considers the overall program, without consideration of the specific projects that result from the program, more specific environmental review will be required in the future. Thus, for the Friant Community Plan Update and Friant Redevelopment Plan amendment, this EIR intends to provide program-level analysis such that additional environmental review will be required for future project-specific actions to the extent required by CEQA Guidelines section 15168.

On October 3, 2007, a Notice of Preparation (NOP) was circulated for review and comment by responsible, trustee, local and other interested agencies. The NOP circulation period ended on November 1, 2007. The NOP and responses to the NOP are included in Appendix A of this EIR. A responsible agency scoping meeting was duly noticed and held on October 17, 2007, at the Development Services Conference Room A at 2220 Tulare Street, Fresno, California. A public scoping meeting was also duly noticed and held on October 17, 2007 at the Friant Elementary School. As provided in Section 15063(a) of the CEQA Guidelines, Fresno County determined that an EIR would be required; therefore an initial study was not prepared and circulated with the NOP.

Section 15121(a) of the CEQA Guidelines defines an EIR as an informational document that *“...will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.”*

As defined by Section 15378 of the CEQA Guidelines, a project is any action that *“...has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment...”* Section 15093 of the CEQA Guidelines requires decision-makers to balance the benefits of a proposed project against any unavoidable environmental risks of the project. If the benefits of the project outweigh the unavoidable adverse environmental effects, the decision-makers may adopt a statement of overriding considerations, finding that the environmental effects are acceptable in light of the project’s benefits to the public.

Under CEQA, the Lead Agency is usually the public agency with authority to approve or deny a project. In this case, the Fresno County Board of Supervisors will act as Lead Agency with authority to certify the EIR. Under §15381 of the CEQA Guidelines, a Responsible Agency is a public agency other than the Lead Agency that has discretionary approval authority over the project, and will utilize the EIR prepared for the Lead Agency. The Responsible Agencies for this Project are listed in Chapter 2 of this EIR.

The CEQA process requires that the Lead Agency seriously consider input from other interested agencies, citizen groups, and individuals. CEQA provides for a public process requiring full public disclosure of the expected environmental consequences of the proposed action. The public must be given a meaningful opportunity to comment. CEQA also requires monitoring to ensure that mitigation measures are implemented.

CEQA requires a minimum 45-day public review period for commenting on the Draft EIR. During the review period, any agency, group or individual may comment in writing on the Draft EIR, and the Lead Agency must respond in writing to each comment on environmental issues in the Final EIR. According to §15202 of the CEQA Guidelines, CEQA does not require formal hearings at any stage of the environmental review process; however, it is typical to consider the EIR and its findings during public hearings required for the associated project.

1.3 Methodology

As described in Section 1.2 above, Fresno County has determined that a combined Program/Project EIR should be prepared for the Project. As such, this EIR includes two tiers of environmental analysis. For the Depot Parcel and Friant Ranch Specific Plan actions, including those above-referenced actions that are related to the proposed development within the Friant Ranch Specific Plan Area, this EIR provides a project-level analysis. For the Friant Community Plan Update and Friant Redevelopment Plan amendment, this EIR provides a program-level analysis due to the broad planning level actions involved.

Through the scoping process outlined in Section 1.2 above, the Lead Agency has determined that this EIR should focus on the environmental aspects outlined below. All impacts will be analyzed in comparison to existing physical conditions.

Aesthetics. This section addresses visual and aesthetic impacts including impacts on scenic vistas, scenic highways, and light and glare, along with community design issues. Potential impacts are identified and appropriate mitigation measures are proposed.

Agricultural Resources. This section of the EIR addresses potential impacts to agricultural resources and uses, including Williamson Act contracts.

Air Quality. This section addresses potential short- and long-term air quality impacts and the overall magnitude of emissions resulting from implementation of the Project, as well as measures that could be implemented to reduce Project emissions.

Biological Resources. This section evaluates the available data and Project-specific biological field survey(s) of the Friant Ranch Specific Plan Area to determine whether the Project has any potential to disturb special-status species, adversely affect habitat or wetlands, or conflict with plans and policies protecting biological resources, and recommends measures that are necessary to mitigate potential impacts.

Cultural Resources. Existing and potential cultural resources (archaeological, paleontological, and historical) are described in this section, and impacts and mitigation measures are identified.

Hazards and Hazardous Materials. Hazardous materials, fire hazards, airport safety issues, and emergency response issues are addressed in this section, along with measures that are necessary to mitigate potential impacts.

Hydrology and Water Quality. This section addresses issues associated with hydrology and water quality, for both surface (potable water and reclaimed effluent) and ground water. For purposes of obtaining appropriate water quality permits from the RWQCB, an anti-degradation analysis has been prepared and is included as Appendix L to the EIR. Issues related to drainage, storm water runoff, climate change effects on snowpack and rainfall, and flooding are also evaluated and mitigation measures are identified.

Land Use and Planning. This section addresses potential Project impacts related to land use conflicts and Project compliance with Fresno County land use planning documents, regulations and zoning.

Noise. The noise section evaluates impacts on sensitive receptors from noise-generating activities, including new stationary noise sources and traffic noise associated with roadways.

Population and Housing. This section addresses the growth-inducing potential of the Project and impacts on the housing stock and recommends mitigation measures to the extent necessary.

Public Services and Recreation. Subjects addressed in this section include impacts on police and fire protection, schools, recreational resources, and parks, along with recommended mitigation measures.

Traffic and Circulation. The transportation and circulation section evaluates and summarizes existing and cumulative conditions in the relevant study area, including an analysis of roadway capacities and future cumulative traffic conditions. Circulation improvements are identified to reduce potential impacts, and public transit needs are discussed.

Utilities and Service Systems. This section addresses water supply (including the information provided within the SB 610 water supply assessment for the Friant Ranch Specific Plan development), sewage disposal, storm water drainage, and solid waste management, and recommends mitigation measures to address potential impacts.

Greenhouse Gas Emissions and Global Climate Change. This section analyzes the Project's potential impact on global climate change including potential impacts on the Project's water supply resulting from global climate change.

1.4 Organization of the EIR

Section 15122 through 15132 of the CEQA Guidelines identify the content requirements for Draft and Final EIRs. A Draft EIR must include a description of the environmental setting, environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts.

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary defines the general characteristics of the proposed Project and provides an overview of the Draft EIR. The Executive Summary also summarizes the alternatives to the Project and areas of known controversy.

CHAPTER ONE

Chapter One briefly summarizes the proposed actions under review, delineates the procedures and methodology for environmental evaluation of the Project, and outlines the contents of the EIR. The Chapter also provides a concise matrix of the Project's significant impacts and proposed mitigation measures (Mitigation Monitoring Program).

CHAPTER TWO

Chapter Two describes the Project in greater detail and summarizes the general characteristics of the Project location. The Project objectives are also presented. The Project's environmental setting is briefly described, and the regulatory context within which the Project is evaluated or must be approved is outlined.

CHAPTER THREE

Chapter Three details the environmental setting as it relates to each topical area described above (e.g., aesthetics, traffic, air quality), identifies and evaluates impacts, and proposes mitigation measures to reduce potentially significant impacts to less than significant levels where feasible. The format and content of this chapter are as follows:

Introduction

Each environmental topic is introduced by either a brief description of the topic or a brief statement of the rationale for addressing the topic.

Regulatory and Physical Setting

The existing regulatory and physical setting and conditions with respect to the environmental topic being discussed are briefly described.

Impact Evaluation Criteria

The standards or thresholds by which impacts are measured are identified, with the objective of determining if an impact is significant. Where no locally adopted or other specific standards exist, the thresholds set forth in Appendix G (Environmental Checklist) of the CEQA Guidelines are used, unless additional relevant impact considerations beyond the Appendix G items are deemed appropriate. Where the unique aspects of the Project or the existing physical conditions create the potential for impacts not listed in Appendix G, additional thresholds (beyond those set forth in Appendix G) are created and applied herein.

Impact Analysis

Impact #: Each identified environmental impact is numbered for reference in accordance with the chapter subsection (e.g., #3.4.1). Information leading to the significance determination is discussed.

Conclusion: This is a statement identifying whether the impact is potentially significant or less than significant. If found to be potentially significant, the conclusion states whether the impact can be avoided or reduced to a less than significant level through implementation of mitigation measures, or whether the impact is significant and/or unavoidable, based on the impact evaluation criteria.

Mitigation Measure #: Each proposed or recommended mitigation measure is described and listed by number.

Effectiveness of Mitigation: For potentially significant impacts, a statement is made regarding whether the impact can be mitigated to a less than significant level or, alternatively, whether the impact is only partially mitigated, unavoidable, and/or irreversible, based on the significance thresholds.

CHAPTER FOUR

Chapter Four describes and evaluates alternatives to the proposed Project. CEQA Guidelines §15126.6 requires that an EIR describe a range of reasonable alternatives to the Project, which could feasibly attain most of the basic objectives of the Project and avoid and/or substantially lessen the environmental effects of the Project. The “no project” alternative must be considered to compare the environmental consequences of the proposed Project to the consequences of taking no action. The potential environmental impacts of these alternatives are compared to the environmental impacts of the Project as proposed.

CHAPTER FIVE

Chapter Five includes a list of past, present and reasonable foreseeable projects and analyzes the potential cumulative impacts of those projects and the proposed project.

CHAPTER SIX

Chapter Six contains required discussions and analyses of various issues mandated by CEQA. The following topics are addressed in this chapter:

- Significant Environmental Effects That Cannot Be Avoided.
- Significant Irreversible Impacts
- Growth Inducing Impacts

LIST OF PERSONS CONTACTED

This section presents a list of persons that were consulted during preparation of the Draft EIR.

REFERENCES AND PERSONS CONTACTED

This section presents a list of references that were used during preparation of the Draft EIR.

REPORT CONTRIBUTORS

This section presents a list of all authors and other persons who contributed to preparation of the Draft EIR.

APPENDICES

Following the text of the Draft EIR, several documents and technical studies have been included to facilitate full environmental review of the proposed Project.

1.5 *Distinction between Review of Environmental Issues and Project Merits*

Often during review of an EIR, the public raises issues that relate to the proposed project itself or the project's community benefits or consequences (referred to herein as "project merits"), rather than the environmental analyses or impacts raised in the EIR. Lead Agency review of environmental issues and project merits are both important in the decision of what action to take on a project, and both are considered in the approval process for a project. However, a Lead Agency is only required to respond in its CEQA review to substantive environmental issues that are raised. Certifying an EIR (i.e., finding that it was completed in compliance with CEQA) and taking action on the proposed project rely on procedurally distinct processes and may result in separate decisions made by the Lead Agency.

An example of a project merits issue that is important, but is not a substantive environmental issue, is economic effects that do not result in any physical change to the environment. At any time that the Project comes before the Planning Commission or the Board of Supervisors, the merits of the Project will be discussed. The Planning Commission and the Board of Supervisors may hold public meetings or hearings to review Project merits that are separate from those intended for reviewing the EIR and environmental issues.

Generally, an EIR is "...a detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the

effects” (CEQA Guidelines §15362). An EIR is intended to identify significant effects on the environment defined in CEQA Guidelines §15382 as “...substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project...”. An EIR is intended to be used by the public, decision-makers, interested individuals, and other agencies and organizations that may have responsibility for a project or project components. CEQA Guidelines §15091 points out that “no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding.” Further, CEQA Guidelines §15092 states that “after considering the final EIR and in conjunction with making findings...the lead agency may decide whether or how to approve or carry out the project,” which is a separate action from EIR certification. When significant environmental effects cannot be reduced to a less than significant level, the Lead Agency must prepare a Statement of Overriding Considerations, in addition to findings, that documents how project benefits outweigh the unavoidable impacts.

1.6 Mitigation Monitoring Program

INTRODUCTION

State and local agencies are required by *Section 21081.6* of the *California Public Resources Code* to establish a monitoring and reporting program for all projects which are approved and which require CEQA processing.

Local agencies are given broad latitude in developing programs to meet the requirements of *Public Resources Code Section 21081.6*. The mitigation monitoring program outlined in this document is based upon guidance issued by the Governor’s Office of Planning and Research.

The mitigation monitoring and reporting program for the proposed Project corresponds to mitigation measures outlined in the DEIR. The Program summarizes the environmental issues identified in the EIR, the mitigation measures required to reduce each potentially significant impact to less than significant, the person or agency responsible for implementing the measures, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.

THE PROGRAM

The mitigation measures contained herein shall be included as conditions of approval for this permit, to the extent permitted by law. Fresno County shall ensure that all construction plans and project operations conform to the conditions of the mitigated project. Table 1-1 shall be attached to the permit as a condition of approval. As a condition of approval, the Applicant shall enter into an agreement with Fresno County to compensate the County’s time for mitigation monitoring and overseeing compliance of mitigation monitoring.

Compliance with local land use regulations is enforced by the Fresno County. Upon evidence of, or receipt of complaints of, noncompliance, the Code Compliance Officer and Building Inspector

of Fresno County conducts inspections for such noncompliance, the remedies for which are citations, fines, permit modifications, permit revocation, and even criminal charges.

Section 15123(b)(1) of the *CEQA Guidelines* provides that this summary shall identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Table 7-1 “Mitigation Monitoring Program.” With the exception of agricultural resources, air quality, traffic, and greenhouse gas emissions and global climate change, all identified impacts are either less than significant in relation to identified significance threshold levels or can be mitigated to a less than significant level through recommended mitigation measures.

Chapter Three should be consulted for the full text of impacts and mitigation measures.

This Draft EIR has analyzed cumulative impacts and found that there shall be significant cumulative impacts on aesthetics, air quality, and traffic and transportation resources regardless of implementation of feasible mitigation measures.

**Table 1-1
Mitigation Monitoring Program**

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
Impact #S.1 – Mitigation Monitoring Agreement	#S.1: The Applicant shall enter into an agreement with Fresno County to compensate the County’s time for mitigation monitoring and overseeing compliance of mitigation monitoring. At the County’s discretion, the County may hire an independent consultant to conduct on-going mitigation monitoring and compliance on behalf of the County.	Applicant	Fresno County	On going
Impact #3.1.3 – Introduction of New Sources of Light and Glare and Increased Lighting on the Night Sky as a Result of the Project	Mitigation Measure #3.1.3a: Prior to issuance of any discretionary permit necessary for development within the Project Area, a lighting plan shall be prepared and submitted to Fresno County for approval in conjunction with the permit applications related to such development. The County shall ensure that the lighting plan incorporates the requirements set forth in mitigation measures 3.1.3b through 3.1.3f below.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.1.3b: All lighting in the Project Area shall be shielded, directed downward and away from adjoining properties and rights-of-way. Light shields or equivalent shall be installed and maintained consistent with manufacturer’s specifications, and shall reduce the spillage of light onto adjacent properties to less than a one-foot-candle standard, as measured at the adjacent property line.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.1.3c: Development within the Project Area shall incorporate lighting fixtures designed to produce the minimum amount of light necessary for safety purposes. All parking lot pole lights and street lights shall be fully hooded and back shielded to prevent light spillage and glare.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.1.3d: The design of any development proposed within the Project Area shall	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	include the use of glare reducing materials, including non-reflective paints and building materials, to reduce the amount of glare created by the structures.			
	Mitigation Measure #3.1.3e: Landscaping within the Project Area shall include vegetation designed to shield adjacent properties from Project-generated light and glare.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.1.3f: Night lighting within the Project Area shall be limited to that necessary for security, safety, and identification. Night lighting shall also be screened from adjacent residential areas and not be directed in an upward manner or beyond the boundaries of the parcel on which the buildings are located.	Applicant	Fresno County	Prior to construction
Impact #3.1.4 – Degradation of the Existing Visual Character or Quality of the Project Area and its Surroundings Resulting from Utilities and Roadway Construction	Mitigation Measure #3.1.4a: Those portions of the Project Area containing natural vegetation or landscape material that are disturbed during utility line and or roadway construction shall be revegetated upon completion of work utilizing plant materials similar to those disturbed. Revegetated areas within the Friant Ranch Specific Plan Area shall be actively maintained by the developer until fully established, in accordance with the landscape design guidelines contained in the Friant Ranch Specific Plan.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.1.4b: All permanent utility structures within the Friant Ranch Specific Plan Area extending above ground shall be screened where feasible using a combination of berms, mounds, landscape material, decorative fencing/walls, or other screening feature approved in the Friant Ranch Specific Plan. In addition, any proposed roadway and utility pump station lighting within the Project Area shall be directed downward using cut-off fixtures to minimize lighting effects on adjacent areas and the night sky.	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
Impact #3.3.1 – Construction Impacts for the development of the Friant Ranch Specific Plan (5 phases) and Community Plan Update Carbon Monoxide (CO), Reactive Organic Gases (ROG), Nitrogen Oxide (NOx), Particulate Matter (PM₁₀), & Fine Particulate Matter (PM_{2.5})	<p>Mitigation Measures #3.3.1a: To reduce emissions and thus reduce air quality impacts, the following Option 2 (enhanced mitigation) measures shall be implemented for Phase 1:</p> <ol style="list-style-type: none"> 1. The use of aqueous diesel fuel for the construction vehicles. 2. Use of diesel oxidation catalysts capable of a 15% - 40% reduction in NOx emissions on all diesel equipment. 3. Use of low-volatile organic compound paints capable of reducing ROG emissions by 45% compared to existing architectural coating rules. 	Applicant	Fresno County/SJVAPCD	During all phases of construction
	<p>Mitigation Measures #3.3.1b: To reduce emissions and thus reduce air quality impacts, the following Option 2 (enhanced mitigation) measures shall be implemented for Phase 2:</p> <ol style="list-style-type: none"> 1. The use of aqueous diesel fuel for the construction vehicles. 2. Use of diesel oxidation catalysts capable of a 40% reduction in NOx emissions on all diesel equipment. 3. Use of low-volatile organic compound paints capable of reducing ROG emissions by 45% compared to existing architectural coating rules. 	Applicant	Fresno County/SJVAPCD	During all phases of construction
	<p>Mitigation Measures #3.3.1c: To reduce emissions and thus reduce air quality impacts, the following Option 1 measures shall be implemented for Phase 3.</p> <p><i>Option 1 mitigation measures:</i></p>	Applicant	Fresno County/SJVAPCD	During all phases of construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ol style="list-style-type: none"> 1. The use of aqueous diesel fuel for the construction vehicles. 2. Use of diesel oxidation catalysts capable of a 15% reduction in NOx emissions on all diesel equipment for grading and paving subphases. 3. Use of diesel oxidation catalysts capable of a 20% reduction in NOx emissions on all diesel equipment for the building construction subphase. 			
	<p>Mitigation Measure #3.3.1d: To reduce emissions and thus reduce air quality impacts, the following Option 1 measures shall be implemented for Phase 4.</p> <p><i>Option 1 mitigation measures:</i></p> <ol style="list-style-type: none"> 1. The use of aqueous diesel fuel for the construction vehicles. 2. Use of diesel oxidation catalysts capable of a 15% reduction in NOx emissions on all diesel equipment for grading and paving subphases. 4. Use of low-volatile organic compound paints capable of reducing ROG emissions by 20% compared to existing architectural coating rules. 	Applicant	Fresno County/SJVAPCD	During all phases of construction
<p>Impact #3.3.2 – Violation of Air Quality Standards by Area and Operational Emissions</p>	<p>Mitigation Measure #3.3.2: Implementation of the following mitigation measures shall substantially reduce air quality impacts related to human activity within the entire Project area, but not to a level that is less than significant:</p> <p>The following guidelines shall be used by the County during review of future project- specific submittals for non-residential development within the Specific Plan area and within the Community Plan boundary in order</p>	Applicant	Fresno County/SJVAPCD	Ongoing

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>to reduce generation of air pollutants with intent that specified measures be required where feasible and appropriate:</p> <ul style="list-style-type: none"> ▪ <i>Trees shall be carefully selected and located to protect building(s) from energy consuming environmental conditions, and to shade paved areas. Trees selected to shade paved areas should be varieties that shall shade 25% of the paved area within 20 years.</i> ▪ <i>Equip HVAC units with a PremAir or similar catalyst system, if reasonably available and economically feasible at the time building permits are issued. Catalyst systems are considered feasible if the additional cost is less than 10% of the base HVAC unit cost;</i> ▪ <i>Install two 110/208 volt power outlets for every two loading docks; and</i> <p>Implement the following, or equivalent measures, as determined by the County in consultation with the APCD:</p> <p>The following measures shall be used singularly or in combination to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of the 2008 State of California Title 24:</p> <ul style="list-style-type: none"> ▪ <i>Use of air conditioning systems that that are more efficient than the 2008 Title 24 requirements;</i> ▪ <i>Use of high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, and furnaces; and</i> 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> ▪ <i>Establishment of tree-planting guidelines that require residents to plant trees to shade buildings primarily on the west and south sides of the buildings. Use of deciduous trees (to allow solar gain during the winter) and direct shading of air conditioning systems shall be included in the guidelines.</i> ▪ <i>Establish paving guidelines that encourage businesses, if feasible, to pave all privately owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to Portland cement concrete. The use of a paving substance with reflective attributes similar to Portland cement concrete is considered feasible under this measure if the additional cost is less than 10% of the cost of applying a standard asphalt product.</i> <p>Bicycle usage shall be promoted by requiring the following:</p> <ul style="list-style-type: none"> ▪ <i>All non-residential projects shall provide bicycle lockers and/or racks; and</i> ▪ <i>All apartment complexes or condominiums without garages shall provide at least two Class I bicycle storage spaces per unit.</i> <p>Transportation related mitigation measures (Extended Conditions of approval):</p> <ul style="list-style-type: none"> ▪ <i>Commute options: to inform Specific Plan area occupants of the alternative travel amenities provided, including ridesharing and public transit availability/schedules;</i> 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> ▪ <i>Maps showing the Community Plan’s pedestrian, bicycle, and equestrian paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas; and</i> ▪ <i>Information regarding SJVAPCD programs to reduce county-wide emissions.</i> <p>The County and SJVAPCD may substitute different air pollution control measures for individual projects, that are equally effective or superior to those proposed herein, as new technology and/or other feasible measures become available in the course of build-out within the Friant Community Plan boundary.</p>			
Impact #3.4.1 - Impacts to candidate, sensitive, or special status species within the Friant Ranch Specific Plan Area				
Impact #3.4.1a – Impacts to succulent owls clover:	<p>Mitigation Measure #3.4.1a: To ensure that indirect impacts to succulent owls clover shall be less than significant; the following mitigation measures shall be implemented:</p> <ol style="list-style-type: none"> 1. The wetlands on the Friant Ranch Specific Plan Site that contain succulent owls clover shall be maintained as undisturbed open space, as required in mitigation measure 3.4.1c(4). 2. Prior to issuance of a grading permit that would result in activities affecting the succulent owls clover, a Land Management Plan shall be prepared for the open space that exists on the Specific Plan Site. That Land Management Plan shall include continued management by cattle grazing and shall: 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> ▪ be developed in cooperation with the California Department of Fish and Game and the United States Fish and Wildlife Service, ▪ describe management goals and objectives, ▪ include provisions for monitoring existing populations of protected biological resources (including succulent owls clover), ▪ include the use of adaptive management to ensure that results of the monitoring efforts are incorporated into management actions, and follow the management goals and objectives, and ▪ identify remedial actions and alternatives for protection (which may include off-site compensation) if management fails to protect on-site resources to the level established for each resource. 			
Impact #3.4.1b – Impacts to Hartweg’s golden sunburst	<p>Mitigation Measure #3.4.1b: The following measures shall be implemented to reduce the level of impacts to Hartweg’s golden sunburst to a level that is less than significant.</p> <ol style="list-style-type: none"> 1. In the spring preceding project construction, pre-construction surveys for this species shall be conducted to locate any populations not already documented. These surveys shall be conducted during the flowering period of this plant (March to May). 2. Prior to the issuance of a grading permit that would result in activities affecting the Hartweg’s golden sunburst populations, the on-site open space which contains the species shall be protected in perpetuity 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>through a conservation easement to be held by a non-profit land trust.</p> <p>3. The designated open space shall be managed to preserve in perpetuity the populations of Hartweg’s golden sunburst. Prior to issuance of a grading permit that would result in activities affecting the Hartweg’s golden sunburst, a Land Management Plan shall be prepared (see mitigation measure #3.4-1a2) that shall include the protection of the golden sunburst population from human foot traffic and off road vehicles by restricting access to open space through fencing and signage.</p> <p>4. Prior to issuance of a Building Permit, an informational brochure shall be prepared that educates Friant Ranch Community members about the sensitivity of this species to human trampling, discouraging trespass into conserved open space.</p> <p>5. Where avoidance is not possible, the project applicant shall have a qualified biologist develop a Restoration Plan to salvage populations of Hartweg’s golden sunburst located in proposed development areas that would be destroyed during construction activities. A draft of this plan shall be submitted to the California Department of Fish and Game and the U.S. Fish and Wildlife Service for review, comment, and approval. The plan shall be finalized and implemented by the project applicant prior to issuance of a grading permit for the areas inhabited by Hartweg’s golden sunburst. Elements of the Restoration Plan shall include the collection of mature seed prior to natural dispersal (late April or early May), the storage of the seed in a cool dry location until the fall, and the dispersal of the seed onto proposed open space areas of the Site where suitable Rocklin soils are known to be present. The</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>selected planting areas would be mapped using GIS, fenced to reduce grazing pressure, and monitored after planting for a minimum of four years during a 7 year monitoring period. An annual monitoring report shall be prepared and submitted to CDFG and the USFWS. The salvage and relocation of this species shall be considered successful when a self-sustaining population of Hartweg's golden sunburst has been established on approximately 0.06 acres of the designated open space (representing a 3:1 ratio).</p> <p>6. The Restoration Plan described in number 5 above shall include alternatives or contingencies for ensuring that appropriate compensation for the loss of Hartweg's golden sunburst is met (at a ratio of 3:1) should the initial relocation of the Hartweg's golden sunburst populations not meet established success criteria. These alternatives shall be approved by the CDFG and USFWS.</p>			
<p>Impact #3.4.1c – Impacts to vernal pool fairy shrimp</p>	<p>Mitigation Measure #3.4.1c: The following measures shall be implemented to ensure that impacts to vernal pool fairy shrimp are less than significant.</p> <p>1. The Project shall avoid vernal pool fairy shrimp to the maximum extent feasible. The Friant Ranch Specific Plan has been designed to avoid the majority of vernal pools on the site. Of the 14.38 acres of vernal pool habitat identified on the project site, 12.09 acres of vernal pools shall be protected within approximately 233 acres of designated undisturbed open space that shall be placed under a conservation easement. The area of vernal pool fairy shrimp habitat to be protected within designated on-site open space shall be at a ratio of 5 acres of protected vernal pool habitat for each acre</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>of such habitat directly or permanently disturbed by grading and construction associated with the development of the project.</p> <p>2. Prior to the issuance of a grading permit the project applicant shall compensate for the loss of vernal pool habitat through the creation/restoration of additional vernal pool habitat at a ratio of one acre of creation/restoration for each acre of such habitat directly and permanently disturbed by grading and construction associated with the project development. Creation/restoration of vernal pool habitat shall be accomplished by one or a combination of the following three mitigation alternatives:</p> <p>a. <u>Off-Site Creation/Restoration.</u> The project applicant shall conserve through acquisition or conservation easement off-site lands suitable for vernal pool creation/restoration in Fresno, Madera, or Merced County. Such lands shall consist of the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species shall be absent (i.e., these lands shall have been previously disturbed by farming, or some other intensive use); vernal pools once occurred on these lands naturally; the underlying hardpan layer is still intact; and the natural topography has not been eliminated through land leveling. Topographic depressions shall be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. The depressions shall hold water for approximately three months of every year. When full, the depth of the filled pools shall vary from 6 to 18 inches. The depressions shall be revegetated</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>with vernal pool species native to the area; soil collected from existing pools in the region shall be distributed on the bottoms of the constructed pools in order to enhance the prospects for establishing vernal pool fairy shrimp populations. Efforts to establish fairy shrimp populations in the constructed pools shall only occur after receiving formal authorization to do so from the USFWS, as required by law. The components of this mitigation and monitoring plan shall be consistent with standard USACE guidelines.</p> <p>b. <u>Purchase of Vernal Pool Creation/Restoration Credits from a Conservation Bank.</u> The project applicant shall pay the market rate for Vernal Pool Creation/Restoration Credits at the stipulated 1:1 ratio from a Conservation Bank whose service area includes the Friant Ranch Specific Plan Area.</p> <p>c. <u>Payment into the Vernal Pool Fund.</u> Should a conservation bank having vernal pool creation credits for sale not exist south of the Fresno River, the project applicant shall pay the going rate per acre into the Vernal Pool Fund managed by the Center for Natural Lands Management. These funds may only be used for the purchase of vernal pool creation credits in a local conservation bank.</p> <p>3. The designated open space proposed for the project site shall provide buffers of 100 to 450 feet between developed areas of the project site and vernal pools, to reduce encroachment into pools by foot and off-road vehicle traffic.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>4. Prior to issuance of a grading permit for the project site, a Drainage Plan shall be prepared for the undisturbed open space of the site. Elements of this plan shall include:</p> <ul style="list-style-type: none"> a. Design plans to ensure that winter stormwater runoff into open space areas of the project site shall mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved vernal pools shall be roughly equivalent to pre-project conditions, b. All runoff originating in developed areas of the site shall pass through retention basins, bio-filtration swales, or both, which shall act together as stormwater filters such that water quality shall not be significantly reduced from pre-project conditions, c. Irrigation runoff from landscaped areas shall be routed away from vernal pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions, d. A grazing management plan shall be developed and implemented to control the proliferation of non-native annuals in grassland and vernal pool habitats of the on-site open space areas, and to control the build-up of flammable thatch, e. Access to the open space areas shall be controlled in order to minimize impact to vernal pools and other habitats, and to ensure that cattle are confined to the open space areas when grazing is permitted. This plan shall be submitted to the USFWS for review and approval. 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.4.1d – Impacts to the California tiger salamander</p>	<p>Mitigation Measure #3.4.1d: The following measures shall be implemented to ensure that impacts to the California tiger salamander are at levels that are <i>less than significant</i>.</p> <ol style="list-style-type: none"> <li>1. The Project shall be designed to avoid elimination of breeding and aestivation habitat to the maximum extent possible. The project applicant has designed the project to avoid a substantial amount of on-site habitats suitable for CTS. Of the 14.38 acres of on-site vernal pool habitat potentially used as breeding habitat by the CTS, 12.09 acres of vernal pools shall be protected in designated undisturbed open space (Table 3.4-2). The area of California tiger salamander breeding habitat to be protected within designated open space shall be at a ratio of 5 acres of protected vernal pool habitat for each acre of such habitat directly and permanently disturbed by grading and construction associated with project development. Of the 927.82 acres of potential aestivation habitat now present in the Specific Plan Area, approximately 233 acres of undisturbed aestivation habitat shall be preserved within the proposed open space. An additional 30 acres of the site that are contiguous with undisturbed open space and that are to be temporarily disturbed by site grading shall be restored to native vegetation and managed as part of the proposed open space area. Open space areas and vernal pool complexes of the completed project, totaling 275.4 acres, shall be linked to one another to facilitate the movements of CTS from one preserved habitat area to another, and linked to significant breeding and aestivation habitats on lands to the south of the Site. <li>2. Management of the undisturbed open space, as required in mitigation for vernal pool fairy shrimp 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>set forth in mitigation measure 3.4.1c, shall ensure that vernal pools protected in open space areas of the Site shall continue to provide breeding habitat for CTS and that grasslands shall continue to provide habitat for burrowing rodents, which create aestivation habitat for CTS.</p> <p>3. Prior to issuance of a grading permit for all or any portion of the project site, the project applicant shall preserve grassland habitats suitable for CTS aestivation under conservation easement at a minimum ratio of two acres of habitat preservation for every acre of such habitat directly or permanently disturbed by project grading and construction. Such preservation shall include on-site (i.e., open space areas) and off-site habitat in Fresno and/or Madera Counties south of the Fresno River. Should the project be constructed in phases, preservation can be phased concurrent with development phases as long as the 2:1 ratio is met for the acreage subject to the grading permit.</p> <p>At full buildout the project shall eliminate approximately 694.5 acres of suitable on-site aestivation habitat. Under this mitigation measure, the applicant shall preserve two times that amount of known and created CTS aestivation habitat on-site and off-site in suitable habitat located on other parcels within Fresno, Madera and Merced Counties.. Parcels that could meet the requirements of this mitigation measure and are available for mitigation purposes have been identified in Tables 3.4-2 and 3.4-3. These representative parcels provide up to 31.21 acres of breeding habitat in the form of vernal pools and 1,282.19 acres of aestivation habitat in the form of grasslands and other habitats supporting populations of burrowing animals such as California ground squirrels and</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>pocket gophers. To meet the 2:1 preservation requirement set forth in the above mitigation measure the project applicant may identify additional or alternative parcels similar to those identified in Tables 3.4-2 and 3.4-3.</p>			
<p>Impact #3.4.1e – Impacts to the Western Spadefoot</p>	<p>Mitigation Measure #3.4.1e: To reduce impacts to western spadefoots to a level that is <i>less than significant</i>, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. The western spadefoot utilizes the same habitats as the California tiger salamander for breeding and aestivation (i.e., the western spadefoot breeds in vernal pools and aestivates in rodent burrows of surrounding grasslands). Therefore, implementation of mitigation measures for the California tiger salamander (Mitigation Measures 3.4.1d) would reduce the impact to the western spadefoot to a <i>less than significant level</i>. 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>
<p>Impact #3.4.1g – Impacts to Burrowing Owls</p>	<p>Mitigation Measure #3.4.1g: The following measures shall be implemented to ensure that impacts to the burrowing owl are <i>less than significant</i>:</p> <ol style="list-style-type: none"> 1. A pre-construction survey shall be conducted on the Specific Plan Site and on the Depot Parcel for ground nesting raptors, including burrowing owls, within 14 to 30 days prior to initiation of site grading activities. If the grading activities are implemented in phases, then so shall the surveys be conducted in phases. If more than 30 days lapse between the time of the preconstruction survey (s) and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted (e.g., graded and developed). The survey 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>shall be completed in accordance with the survey requirements detailed in the CDFG's October 17, 1995 <i>Staff Report on Burrowing Owl Mitigation</i>.</p> <p>2. If burrowing owls are identified onsite or within the area of influence of the project site (within 1,000 feet of the project site), during surveys required in mitigation measure 3.4.1g (1) above, an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site shall be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be $2 \times 6.5 = 13$ acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be $3 \times 6.5 = 19.5$ acres). Two natural or artificial nest burrows shall be provided on the mitigation site for each burrow in the project area that shall be rendered biologically unstable.</p> <p>3. If burrowing owls are present on the site and require relocation, an upland mitigation site for burrowing owls shall be designated as provided for in item 2 above. This site may be located within the on-site open space area or it may be located off site. The mitigation site must consist of grassland habitat, contain small mammals (or other prey), and ground</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>squirrel burrows. Habitat protected for the CTS (see mitigation measure #3.4.1e) may be sufficiently suitable. The mitigation site must be approved by the California Department of Fish and Game. The area shall be preserved in perpetuity as wildlife habitat through a conservation easement that designates the California Department of Fish and Game, or any other qualified conservation organization as the Grantee of the easement. The mitigation area need not be identified prior to finding burrowing owls on the Site, however advance planning would reduce the potential for construction delays.</p> <p>4. If a Conservation Easement is established for burrowing owl mitigation onsite, the project applicant shall provide the Grantee of the easement with an endowment to cover the management of the Conservation Easement within six months of breaking ground on the project site. The endowment amount necessary for the conservation easement shall be established after negotiations between the applicant, easement holder/land trust, and the regulatory agencies. The management fund shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.</p> <p>5. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 500 foot buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, as approved by the California Department of Fish and Game, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity shall be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring shall be submitted to CDFG and the County within two months of the relocation. That report can be incorporated into the monthly monitoring reports as required in item 6 below.</p> <p>6. Monitoring of the project site shall occur on a weekly basis to identify any burrowing owls that may move into the construction area. Monitoring shall be conducted by a qualified biologist provided by the project applicant. Monthly reports of monitoring activities shall be submitted by the biologist to the project applicant, the County of Fresno, and the California Department of Fish and Game. A final report of all monitoring application shall be prepared by the biologist and submitted to the project applicant, the County of Fresno, and the California Department of Fish and Game within 90 days of project completion.</p>			
Impact #3.4.1h – Impacts to the American Badger	Mitigation Measure #3.4.1h: The following measures shall be implemented to ensure that impacts to American badgers are <i>less than significant</i> :	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ol style="list-style-type: none"> <li>1. Pre-construction surveys shall be conducted in development zones no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the American badger. If construction activities (including ground disturbing activities) are phased, then so shall the pre-construction surveys be phased. <li>2. If dens are found within the construction area and require removal, they shall be monitored for badger presence using a tracking medium or a video probe. Tracking medium must be monitored for 3 consecutive days to provide evidence of vacancy. All dens and burrows within the construction area and which contain badger sign must be hand excavated by a trained wildlife biologist. Dens must be replaced at a ratio of 2 artificial den for each natural dens removed. Replacement dens may be constructed within grassland habitat on-site, within the open space, conservation area. Replacement dens shall consist of 6 inch diameter plastic corrugated sewer pipe cut to a 6 foot length. One end of the pipe shall be buried no deeper than 2 feet and no less than 1 foot below grade. The other end of the pipe shall remain above ground. Dirt shall be mounded above the pipe to a depth of at least 1 foot above grade, with the opening exposed. If a badger is found during construction on the site, a qualified biologist with the appropriate permits shall trap the badger and physically relocate it to the onsite undisturbed open space. <li>3. If dens are located within 100 feet of construction areas, but not within construction areas, they shall not be removed. Instead, exclusion fencing shall be constructed around the den (s). The exclusion fencing shall consist of plastic construction fencing 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>held in place by t-posts every 25 feet, or by a rope and flagging fence. The purpose of the fencing is to exclude construction activities occurring near the den (s).</p> <p>4. Project-related vehicles shall observe a 20-mph speed limit while on the project site, except on County roads and State and Federal highways. This is particularly important at night (between sunset and sunrise) when American badgers are most active. Construction activities at night (sunset to sunrise) should be prohibited, unless:</p> <p>a. The construction area is appropriately fenced to exclude American badgers. Appropriate fencing would consist of a 4-foot chain link fence or similar material (e.g., 2 inch mesh stock fence) buried at least 6 inches below grade.</p> <p>b. The area within any such fence should be inspected by a qualified biologist for badger dens, all dens must be removed, and the site determined to be uninhabited by American badgers prior to initiation of construction.</p> <p>5. Off-road construction traffic outside of designated construction areas shall be prohibited.</p> <p>6. To prevent inadvertent entrapment of American badgers or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>filled, they shall be thoroughly inspected for trapped animals by a qualified biologist or trained monitor.</p> <p>7. American badgers are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored in an unfenced storage yard (see item 4a and b above for appropriate fencing and clearance conditions) for one or more overnight periods should be thoroughly inspected for American badgers before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. Inspections may be conducted by a qualified biologist or trained monitor. If necessary, and under the direct supervision of a biologist, a pipe inhabited by a badger may be moved once to remove it from the path of construction activity, until the animal has escaped.</p> <p>8. During construction, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from the construction site.</p> <p>9. No firearms shall be allowed on the project site during construction activities.</p> <p>10. A representative should be appointed by the project proponent who shall be the contact source for any employee or contractor who might inadvertently kill or injure an American badger, or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the CDFG.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>11. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. If an entrapped animal is incapable of escaping or is otherwise trapped for an excess of 12 hours, the California Department of Fish and Game should be contacted for advice.</p> <p>12. Any contractor, employee(s), or other personnel who inadvertently kills or injures an American badger should immediately report the incident to their representative. This representative should contact the CDFG immediately in the case of a dead, injured or entrapped American badger. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They shall contact the local warden or biologist.</p>			
<p>Impact #3.4.1i –Impacts to nesting raptors</p>	<p>Mitigation Measure #3.4.1i: To protect breeding raptors, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. The typical breeding period for raptors is March 1 to September 1. If construction commences between March 1 and September 1, surveys shall be conducted 30 days prior to the start of construction for the project. The raptor nesting surveys shall include examination of all trees and shrubs on the project site and within a 1,000 foot area of influence surrounding the Site. If construction begins between September 2 to February 28, nest surveys shall not be required since this is outside the typical breeding period for raptors. 2. If nesting raptors are identified during the surveys on the project site, a 300-foot radius buffer around the nest tree or shrub must be fenced with orange construction fencing or rope and flagging. If a nest site is on an adjacent property, the portion of the buffer that occurs on the Site shall be fenced with 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>orange construction fencing. The 300-foot buffer may be reduced in size if a qualified biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. The buffer areas shall not be reduced in size to less than a radius of 200 feet. When construction buffers are reduced in size, the biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the qualified biologist shall re-implement the full 300-foot buffer.</p> <p>3. No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by early July, but September 1 is considered the end of the nesting period unless otherwise determined by a qualified biologist. Once raptors have completed nesting and young have fledged, disturbance buffers shall no longer be needed and can be removed, and monitoring can be terminated.</p>			
<p>Impact #3.4.1j – Impacts to common and special status nesting birds</p>	<p>Mitigation Measure #3.4.1j: To protect common and special status nesting birds, the following measures shall be implemented:</p> <p>1. A nesting bird survey shall be conducted prior to commencing with construction work (including site grading and vegetation removal) if that work would commence between March 15th and August 31st. The nesting bird survey shall be conducted no greater than 30 days prior to commencement of work, nor</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>sooner than 14 days prior to commencement of work. If the construction activities are conducted in phases, then so shall the survey be conducted in phases.</p> <p>2. If special status birds are identified nesting on the construction area or within a 250 foot area of influence, a 150-foot non-disturbance radius around the nest must be fenced using orange plastic construction fencing or rope and stake fencing as previously described (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within the 150-foot buffer until it is determined by a qualified biologist that the nest is no longer occupied and young have fledged (that is, left the nest and attained sufficient flight skills to avoid project construction activities). This typically occurs by July 1st, but the date may vary, and would need to be confirmed by a qualified biologist. Similarly, the qualified biologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities.</p> <p>3. If non-special status birds are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified biologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds. The mitigation</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>measure shall be implemented by the project applicant and the construction contractor.</p> <p>4. Results of the surveys and monitoring shall be provided in monthly monitoring reports submitted to the project applicant, County of Fresno, and the California Department of Fish and Game.</p>			
<p>Impact #3.4.2 – Impact of Friant Ranch Specific Plan development (including wastewater treatment plant and disposal) to riparian habitat or other sensitive natural communities</p>	<p>Mitigation Measure #3.4-2: The following measure shall be implemented to reduce impacts to the northern hardpan vernal pool sensitive natural community to a level that is <i>less than significant</i>:</p> <p>1. Implementation of mitigation for federally protected wetlands and jurisdictional Waters (Mitigation Measure #3.4.3) shall ensure the long-term conservation of northern hardpan vernal pools in the region. That measure provides for the acquisition, preservation, and management of large patches of vernal pool and grassland habitats in the project region.</p>	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction
<p>Impact #3.4.3 – Impact of Friant Ranch Specific Plan development (including wastewater treatment plant and disposal) to federally protected wetlands and other waters</p>	<p>Mitigation Measure #3.4.3a: The following measures shall be implemented to reduce impacts to wetlands and other waters to a level that is <i>less than significant</i>:</p> <p>1. Mitigation measures for vernal pool fairy shrimp and California tiger salamanders (mitigation measures 3.4.1c and 3.4.1d) are designed to ensure the long-term conservation of wetlands and other waters in the region. Implementation of these measures shall result in the preservation under conservation easement of wetlands and other waters. For example, mitigation parcels currently under evaluation to meet mitigation measures for vernal pool fairy shrimp and CTS would result in preservation of 22.67 acres of wetlands on-site and</p>	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>up to 60.30 acres off-site (Tables 3.4-5 and 3.4-6), for a combined total of 82.97 acres.</p> <p>As can be seen in these tables (Tables 3.4-5 and 3.4-6), the preservation under conservation easement of wetlands and other waters pursuant to mitigation measures for vernal pool and Conservancy fairy shrimp and CTS could achieve preservation ratios of:</p> <ul style="list-style-type: none"> ▪ Wetland Channels: 1 acre of disturbed habitat to every 11.1 acres of preserved habitat; ▪ Vernal Swales: 1 acre of disturbed habitat to every 3.7 acres of preserved habitat; ▪ Vernal Pools: 1 acre of disturbed habitat to every 13.6 acres of preserved habitat; <p>2. Prior to the issuance of a grading permit, the project applicant shall create/restore wetlands to compensate for any wetlands and other water bodies subject to the jurisdiction of the USACE that are directly and permanently disturbed by grading and construction associated with the project. The creation/restoration of such wetlands and other waters shall be at a ratio of one acre of created/restored wetlands and other jurisdictional waters for each acre of jurisdictional wetlands and other waters directly and permanently disturbed by grading and construction associated with the project development. Mitigation measure for vernal pool fairy shrimp (mitigation measure 3.4.1c) provides specifically for the creation/restoration of vernal pool habitat. This mitigation measure provides for the creation/restoration of wetlands and other waters such as wetland and non-wetland channels and vernal swales. Creation/restoration of wetland habitat and other water bodies shall be accomplished</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>by one or a combination of the following two mitigation alternatives:</p> <p>a. <u>Off-Site Creation/Restoration.</u> The Project applicant shall conserve through acquisition or conservation easement, off-site lands suitable for the creation/restoration of wetlands and other water bodies in Fresno, Madera, or Merced County. Such lands shall have the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species shall be absent (i.e., these lands shall have been previously disturbed by farming, or some other intensive human use); native wetlands and/or other water bodies once occurred on these lands naturally; the soils and hydrology of these lands are suitable for the creation of naturally occurring wetlands and other water bodies; and the natural topography has not been eliminated through land leveling. Topographic depressions, swales and naturalistic drainage channels shall be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. These engineered features must be inundated and/or experience soil saturation for a duration sufficient to naturally support hydrophytic vegetation native to wetlands of the region. All engineered wetlands and other water bodies shall be revegetated with native hydrophytic species. The wetland creation/restoration plan prepared by the biologist shall provide for long-term management of the mitigation site, mitigation objectives by which the success of the mitigation can be measured, and a monitoring</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>plan for determining the success of the mitigation. The components of this mitigation and monitoring plan shall be consistent with standard USACE guidelines.</p> <p>b. Purchase of Wetland Creation Credits from a Conservation Bank. The Project applicant shall pay the market rate for Wetland Creation Credits at a 1:1 ratio from a Conservation Bank whose service area includes the Friant Ranch Specific Plan Site.</p>			
<p>Impact #3.4.3b – Impacts to water quality in seasonal creeks, reservoirs, and other downstream waters</p>	<p>Mitigation Measure #3.4.3b: To ensure protection of water quality in seasonal creeks, reservoirs, and other downstream waters, the following measures shall be implemented:</p> <p>1. Prior to the onset of construction, an erosion control plan shall be prepared by a qualified engineer consistent with the requirements of a Fresno County grading permit and a General Construction Permit (an NPDES permit issued by the Regional Water Quality Control Board for projects in which one or more acres of land are graded). Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The project site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing on-site erosion and the associated deposition of sediment off the project site. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of an erosion control plan typically include:</p> <p>a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric,</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.</p> <p>b. Protection of natural drainage channels from sedimentation. Hay bale check dams should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter the creek.</p> <p>c. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular project site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from “hardscapes” into grassy swales, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.</p> <p>2. Where possible, project construction should be confined to the dry season, when the chance for significant rainfall and stormwater runoff is very low. Construction during the spring, summer, and fall shall not eliminate the need to implement erosion control measures described in mitigation measures above, but shall ensure that the threat of soil erosion has been minimized to the maximum extent possible.</p> <p>3. All post-construction runoff shall be routed through a system of grease traps, stormwater</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	retention/detention basins, and bio-filtration swales to ensure that water quality of on-site and off-site wetlands, creeks and rivers are maintained at roughly pre-project levels.			
Impact #3.4.5 – Consistency of the Friant Ranch Specific Plan with local policies or ordinances protecting biological resources	Mitigation Measure #3.4.5: To ensure that the Friant Ranch Specific Plan is consistent with Local Policies or Ordinances that Protect Biological Resources, the following shall be implemented: Mitigation Measures #3.4.1c and #3.4.1d shall be implemented to preserve pools as breeding habitat and open space for aestivation habitat for tiger salamanders and western spadefoots, through a combination of on-site and off-site conservation easements. These measures shall also serve to maintain buffer zones around wetland features, preserve vernal pool vegetation, maintain habitat functions and values and control siltation and pollutant entry into these habitats. Implementation of Mitigation Measure 3.4.3a would create/restore wetland habitats to preserve the “no net loss” policy of the ACOE, and mitigate for the loss of wildlife habitat. Implementation of Mitigation Measure 3.4.3b establishes best management practices for preventing impacts to waters via pollutants, siltation, etc. Along with mitigation measures prescribed in Chapter 3.8 of this EIR, “Hydrology and Water Quality”, the mitigation measures just described shall ensure consistency with local ordinances and policies, including the County General Plan Policies. Moreover a considerable amount of additional wildlife habitats and wetlands would be preserved off-site incidental to the mitigation measures required for project impacts to California tiger salamanders.	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction
Impact #3.4-7 - Potential biological impacts resulting from the	Mitigation Measure #3.4.7: Because the treatment facility is located immediately adjacent to the Friant Ranch Specific Plan Area, and potential impacts associated with its expansion are treated at a project	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
transport and treatment of water	level, all potential impacts and mitigation measures which would apply to construction associated with increasing treatment capacity would be covered by impact and mitigation measures #'s 3.4.1 to 3.4.6 of this DEIR. Similarly, potential impacts to biological resources resulting from construction of on-site conveyance systems, which would be needed to transport the treated water to end users, are covered by impacts and mitigation #'s 3.4.1 through 3.4.6 (for areas within the Friant Ranch Specific plan Site) and #'s 3.4.9 through 3.4.14 (for areas within the Friant Community Plan Area). No additional mitigation measures are warranted.			
Impact #3.4.9 – Impacts of the Friant Community Plan to Candidate, Sensitive, or Special status Species				
Impact #3.4.9a - Swales and depressions in the Friant Community Plan Area potentially contain spiny-sepaled button celery. Projects within the Area have the potential to eliminate this species through grading and construction activities.	<p>Mitigation Measure # 3.4.9a: To ensure that there is no take of spiny-sepaled button celery, the following measures shall be implemented.</p> <ol style="list-style-type: none"> 1. Prior to the issuance of a grading permit within the Existing Friant Community Plan Area, a biological survey shall be conducted on the project site during the appropriate phenological period for spiny-sepaled button celery. This period generally occurs between April 1 and May 31, but this species persists and is identifiable through July of most years. 2. If spiny-sepaled button celery is not present, no further action is warranted. If spiny-sepaled button-celery is found to occur on a project site, then the following actions shall be taken. 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> a. Any population of spiny-sepaled button celery shall be completely avoided by grading and construction activities and there shall be no modifications to existing land management practices, or b. If any population of spiny-sepaled button celery cannot be avoided, then the project proponent must: <ul style="list-style-type: none"> ▪ Compensate for the loss of spiny-sepaled button celery at a ratio of 3 acres for each 1 acre of take, either through implementation of a conservation agreement or through purchase of conservation credits in an approved mitigation bank. 			
Impact #3.4.9b – Impacts to vernal pool fairy shrimp	<p>Mitigation Measure #3.4.9b: The following measures shall be implemented to ensure that impacts to vernal pool fairy shrimp are <i>less than significant</i>.</p> <ol style="list-style-type: none"> 1. Prior to issuance of a grading permit, the project proponent must ensure that a qualified biologist conduct a survey for wet areas which potentially support vernal pool fairy shrimp. That survey must be conducted during the wet season (October through April), and immediately after a substantial rainfall event (of 0.5 inches of rainfall or more). If habitat is found on the project site that is suitable for supporting vernal pool fairy shrimp, then the project applicant must ensure that a qualified biologist implement a standard vernal pool fairy shrimp protocol survey. If vernal pool fairy shrimp or other sensitive vernal pool invertebrates are not found, then no other actions are warranted. If vernal pool fairy shrimp are found, then the following measures shall be implemented: 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> a. The Project shall avoid vernal pool fairy shrimp to the maximum extent feasible. b. Prior to the issuance of a grading permit the project applicant shall compensate for the loss of occupied ephemeral pool habitat through the conservation of vernal pool habitat at a ratio of two acres of conservation for each acre of such habitat directly and permanently disturbed by grading. Conservation of occupied ephemeral pool habitat shall be accomplished by placing a conservation easement on existing pools, either on-site or off-site, or by purchasing credits in an approved conservation bank that has the Existing Friant Community Plan Area within its service boundaries. c. A Section 10(a) 1b permit for take must be acquired from the United States Fish and Wildlife Service, or a Section 7 consultation must be conducted, whichever is appropriate. d. Prior to issuance of a grading permit for a project site, a Drainage Plan shall be prepared for the site. Elements of this plan shall include: <ul style="list-style-type: none"> ▪ Design plans to ensure that winter stormwater runoff into open space areas of the project site shall mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved ephemeral pools shall be roughly equivalent to pre-project conditions. ▪ All runoff originating in developed areas of the site shall pass through retention basins, 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>bio-filtration swales, or both, which shall act together as stormwater filters such that water quality shall not be significantly reduced from pre-project conditions, and</p> <ul style="list-style-type: none"> ▪ Irrigation runoff from landscaped areas shall be routed away from ephemeral pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions. 			
<p>Impact #3.4.9c - Impacts to the Valley elderberry longhorn beetle</p>	<p>Mitigation Measure #3.4.9c: The following measures shall be implemented to ensure that impacts to the Valley elderberry longhorn beetle are at levels that are <i>less than significant</i>.</p> <ol style="list-style-type: none"> 1. Prior to issuance of a grading permit, the project proponent must ensure that a qualified biologist conduct a survey for elderberry bushes. If elderberry bushes with stem diameters of 1 inch or greater are found on or within 100 feet of the project site, then standard stem counts and searches for sign (e.g., exit holes) of the Valley elderberry beetles must be conducted. 2. If elderberry bushes do not occur on or within 100 feet of the project site, then no further actions are warranted. 3. If elderberry bushes are found on or within 100 feet of the project site, then the following measures shall be implemented: <ol style="list-style-type: none"> a. For those bushes in which the beetle does not occur, construction within the 100 foot buffer area shall be allowed, provided that: 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> <li>▪ A letter of concurrence shall be obtained from the United States Fish and Wildlife Service authorizing construction within the buffer area. <li>▪ A biologist is present on-site during construction within the 100 foot buffer area to monitor construction activities and ensure that there are no impacts to the elderberry bushes. <li>▪ Restoration of habitat within the 100 foot buffer area occurs once construction is complete, except in those instances where permanent facilities are constructed. The applicant must provide a written description to the USFWS of how the buffer areas are to be restored, protected, and maintained after construction is completed. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment). <li>▪ All areas to be avoided during construction activities shall be fenced and flagged. In areas where encroachment on the 100-foot buffer has been approved by the Service, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant. <li>▪ Erect signs every 50 feet along the edge of the avoidance area with the following 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.</p> <ul style="list-style-type: none"> ▪ A qualified biologist shall conduct a training program for all construction contractors that shall be working on the project to inform workers of the need to avoid damaging elderberry plants and the possible penalties for not complying with these requirements. The training program must include information on the status of the beetle and the need to protect its elderberry host plant. ▪ No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant. ▪ Other protection measures and replacement of elderberry bushes, when applicable, are implemented as outlines in <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS 1999, Appendix H), <p>b. For each bush in which the Valley elderberry longhorn beetle is found, the 100 foot buffer area shall be observed during the activity</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>period of the Valley elderberry longhorn beetle (from April to July). Construction activities may occur within the 100 foot buffer area during other periods provided the mitigation measures outlined above are implemented and restoration within the buffer area is completed by beetle emergence (April).</p> <p>c. If elderberry bushes that contain elderberry longhorn beetles cannot be avoided and must be removed, then:</p> <ul style="list-style-type: none"> ▪ Compensation for the loss of elderberry beetles must be accomplished through replanting of elderberries and other native plant species at ratios provided in <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS 1999, Appendix H), and ▪ A Section 10(a) 1B permit for take must be acquired from the United States Fish and Wildlife Service or a Section 7 consultation must be conducted. <p>If the elderberry longhorn beetle is de-listed by the United States Fish and Wildlife Service prior to implementation of the Project, then these measures need not apply.</p>			
<p>Impact #3.4.9d – Impacts to the California tiger salamander</p>	<p>Mitigation Measure #3.4.9d: The following measures shall be implemented to ensure that impacts to the California tiger salamander are at levels that are <i>less than significant</i>:</p> <ol style="list-style-type: none"> 1. Prior to issuance of a grading permit, the Applicant shall provide sufficient documentation that determines whether the site contains wetlands that 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>could potentially support breeding California tiger salamanders. If so, the project proponent must ensure that a qualified biologist conduct a survey for wetlands which potentially support breeding California tiger salamanders. That survey must be conducted during the wet season (October through April), and immediately after a substantial rainfall event (of 0.5 inches of rainfall or more).</p> <p>2. If wetlands are found on a project site that are suitable for supporting breeding California tiger salamanders, then the project applicant must either presume presence in all wetlands onsite and mitigate as prescribed in section 3(a) through (d) below as if breeding California tiger salamanders were found or ensure that a qualified biologist implement a standard California tiger salamander protocol survey (see Appendix I, California Tiger Salamander Protocol Survey).</p> <p>3. If pools containing breeding California tiger salamanders are found, then the following measures shall be implemented:</p> <ul style="list-style-type: none"> a. The Project shall avoid California tiger salamanders to the maximum extent feasible. b. Prior to the issuance of a grading permit the project applicant shall compensate for the loss of occupied ephemeral pool habitat through the conservation of suitable ephemeral pool habitat at a ratio of two acres of conservation for each acre of such habitat directly and permanently disturbed by grading. Conservation of suitable ephemeral pool habitat shall be accomplished by placing a conservation easement on existing pools, either on-site or off-site, or by purchasing credits in an approved conservation 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>bank that has the Friant Community Plan Area within its service boundaries.</p> <p>c. A Section 10(a) 1b permit for take must be acquired from the United States Fish and Wildlife Service, or a Section 7 consultation must be conducted. A 2080 or 2081 Management Agreement with the California Department of Fish and Game may also be needed if the California tiger salamander is listed as a State threatened or endangered species prior to development.</p> <p>d. Prior to issuance of a grading permit for the project site, a Drainage Plan shall be prepared for the site. Elements of this plan shall include:</p> <ul style="list-style-type: none"> ▪ Design plans to ensure that winter stormwater runoff into open space areas of the project site shall mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved vernal pools shall be roughly equivalent to pre-project conditions, ▪ All runoff originating in developed areas of the site shall pass through retention basins, bio-filtration swales, or both, which shall act together as stormwater filters such that water quality shall not be significantly reduced from pre-project conditions, and ▪ Irrigation runoff from landscaped areas shall be routed away from vernal pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions, 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>4. If grassland habitat is present on a project site that is capable of supporting aestivating California tiger salamanders (as determined by a qualified biologist), then compensation for the loss of aestivation habitat shall occur prior to issuance of a grading permit. Compensation shall be provided at a ratio of 0.5 acres for each 1 acre removed. Compensation shall be provided by establishing a permanent conservation easement on on-site or off-site grassland habitat that supports aestivating California tiger salamanders or by purchasing credits in an established California tiger salamander Conservation Bank that includes the Friant Community plan within its service area.</p>			
<p>Impact #3.4.9e – Impacts to the Western spadefoot</p>	<p>Mitigation Measure #3.4.9e: To reduce impacts to western spadefoots to a level that is <i>less than significant</i>, the following measures shall be implemented:</p> <p>1. The western spadefoot utilizes the same habitats as the California tiger salamander for breeding and aestivation (ie, the western spadefoot breeds in vernal pools and aestivates in rodent burrows of surrounding grasslands). Therefore, implementation of mitigation measures for the California tiger salamander (Mitigation Measures 3.4.9d) would reduce the impact to the western spadefoot to a <i>less than significant</i> level.</p>			
<p>Impact #3.4.9f - Impacts to the western pond turtle</p>	<p>Mitigation Measure #3.4.9f: The following measures shall be implemented to ensure that impacts to the western pond turtle are at levels that are <i>less than significant</i>:</p> <p>1. Projects within the Existing Friant Community Plan Area shall maintain a 100 foot construction setback</p>	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>area from the Ordinary High Water Mark of the San Joaquin River (including any backwaters) and from the Ordinary High Water Mark of Lost Lake to protect potential basking sites and upland aestivation sites for the western pond turtle.</p> <p>2. Projects exceeding one acre in size within the Existing Friant Community Plan Area shall be required to implement a stormwater pollution prevention plan and implement other protective measures as required in mitigation measure 3.4.11b for the protection of downstream water quality.</p>			
<p>Impact #3.4.9g- Impacts to Swainson’s hawks</p>	<p>Mitigation Measure #3.4.9g: The following measures shall be implemented to ensure that impacts to breeding and foraging Swainson’s hawks are <i>less than significant</i>:</p> <p>1. Prior to the issuance of any grading permits exceeding 5 acres in the southern half of the Existing Friant Community Plan Area (exclusive of the Friant Specific Plan Area and the Depot Parcel), a qualified biologist shall survey the site for Swainson’s hawks. The survey area shall encompass all trees within 0.5 mile of the individual project site. Several projects proposed for construction within a single nesting period may use the results from a single survey, provided the surveyed is conducted within 0.5 mile or more from all individual project boundaries. The survey shall consist of:</p> <p>a. All trees within the survey area suitable for nesting by hawks shall be inspected by a qualified biologist</p> <p>b. Survey periods and survey lengths shall be:</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> ▪ Period I. January-March 20. All trees shall be inspected at least once during this period to locate potential nests. The survey(s) may be conducted throughout daylight hours. ▪ Period II. March 20 to April 5. Survey sunrise to 10:00 a.m. and 4:00 p.m. to sunset. Three complete surveys are recommended within this period to locate hawks preparing to nest. ▪ Period III. April 5 to April 20. Survey sunrise to 12:00 p.m. and 4:30 p.m. to Sunset. Three surveys within this period recommended within this period to locate hawks preparing to nest. ▪ Period IV. April 21 to June 10. Monitor known nest sites only. ▪ Period V. June 10 to July 30 (post-fledging). Survey sunrise to 12:00 p.m. and 14:00 p.m. to sunset. <p>2. If Swainson’s hawks are not found to nest within the survey area, then no further action is warranted.</p> <p>3. If Swainson’s hawks are found to nest within the survey area then the following measures shall be implemented:</p> <ul style="list-style-type: none"> a. Foraging habitat shall be replaced at a ratio of 1 acre of grassland habitat known to provide foraging habitat for Swainson’s hawk for each 1 acre of grassland habitat subject to grading and construction within the Community Plan Area. 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>b. If construction is to occur within the breeding period for Swainson’s hawk (15 February to 15 September), then a 2,500 foot radius no construction area is to be installed around each active Swainson’s hawk nesting site. If a construction area falls within this nesting site, construction must be delayed until the young have fledged (left the nest). The 2,500 foot radius no construction zone may be reduced in size. A qualified biologist must conduct construction monitoring on a daily basis, inspect the nest on a daily basis, and ensure that construction activities do not disrupt breeding behaviors. In no case shall the no construction zone be reduced to less than 500 feet.</p> <p>c. Take of active or inactive Swainson’s hawk nests shall be prohibited within the Existing Community Plan Area.</p>			
<p>Impact #3.4.9h –Impacts to burrowing owls</p>	<p>Mitigation Measure #3.4.9h – The following measures shall be implemented to ensure that impacts to the burrowing owl are <i>less than significant</i>:</p> <p>1. A pre-construction survey shall be conducted for ground nesting raptors, including burrowing owls, within 14 to 30 days prior to initiation of site grading activities. If the grading activities are implemented in phases, then so shall the surveys be conducted in phases. If more than 30 days lapse between the time of the preconstruction survey (s) and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted (e.g., graded and developed). The survey shall be completed in accordance with the survey</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>requirements detailed in the CDFG's October 17, 1995 <i>Staff Report on Burrowing Owl Mitigation</i>.</p> <p>2. If burrowing owls are identified onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site shall be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be $2 \times 6.5 = 13$ acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be $3 \times 6.5 = 19.5$ acres). Two natural or artificial nest burrows shall be provided on the mitigation site for each burrow in the project area that shall be rendered biologically unstable.</p> <p>3. If burrowing owls are present on the site and require relocation, an upland mitigation site for burrowing owls shall be designated as provided for in item 2 above. This site may be located within the on-site open space area or it may be located off site. The mitigation site must consist of grassland habitat, contain small mammals (or other prey), and ground squirrel burrows. The mitigation site must be approved by the California Department of Fish and Game. The area shall be preserved in perpetuity as</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>wildlife habitat through a conservation easement that designates the California Department of Fish and Game, or any other qualified conservation organization as the Grantee of the easement. The mitigation area need not be identified prior to finding burrowing owls on the site, however advance planning would reduce the potential for construction delays.</p> <p>4. If a Conservation Easement is established for burrowing owl mitigation, an endowment to cover the management of the area must be provided. The management fund shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.</p> <p>5. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 500 foot buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, as approved by the California Department of Fish and Game, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity shall be monitored by a qualified biologist daily for one week and once per week for an additional two</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring shall be submitted to CDFG and the County within two months of the relocation. That report can be incorporated into the monthly monitoring reports as required in item 6 below.</p> <p>6. Monitoring of the project site shall occur on a weekly basis to identify any burrowing owls that may move into the construction area. Monitoring shall be conducted by a qualified biologist provided by the project applicant. Monthly reports of monitoring activities shall be submitted by the biologist to the project applicant, the County of Fresno, and the California Department of Fish and Game. A final report of all monitoring application shall be prepared by the biologist and submitted to the project applicant, the County of Fresno, and the California Department of Fish and Game within 90 days of project completion.</p>			
<p>Impact #3.4.9i –Impacts to other nesting raptors</p>	<p>Mitigation Measure #3.4.9i: To protect breeding raptors, the following measures shall be implemented:</p> <p>The typical breeding period for raptors is March 1 to September 1. If construction commences between March 1 and September 1, surveys shall be conducted 30 days prior to the start of construction for the project. The raptor nesting surveys shall include examination of all trees and shrubs on the project site and within a 1,000 foot area of influence surrounding the Site. If construction begins between September 2 to February 28, nest surveys shall not be required since this is outside the typical breeding period for raptors.</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ol style="list-style-type: none"> <li>1. If nesting raptors are identified during the surveys on the project site, a 300-foot radius buffer around the nest tree or shrub must be fenced with orange construction fencing or rope and flagging. If a nest site is on an adjacent property, the portion of the buffer that occurs on the Site shall be fenced with orange construction fencing. The 300-foot buffer may be reduced in size if a qualified biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. The buffer areas shall not be reduced in size to less than a radius of 200 feet. When construction buffers are reduced in size, the biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the qualified biologist shall re-implement the full 300-foot buffer. <li>2. No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by early July, but September 1 is considered the end of the nesting period unless otherwise determined by a qualified biologist. Once raptors have completed nesting and young have fledged, disturbance buffers shall no longer be needed and can be removed, and monitoring can be terminated. 			
Impact #3.4.9j – Impacts to common and special status nesting birds	Mitigation Measure #3.4.9j: To protect common and special status nesting birds, the following measures shall be implemented:	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ol style="list-style-type: none"> <li>1. A nesting bird survey shall be conducted prior to commencing construction work (including site grading and vegetation removal) if that work would commence between March 15th and August 31st. The nesting bird survey shall be conducted no greater than 30 days prior to commencement of work, nor sooner than 14 days prior to commencement of work. If the construction activities are conducted in phases, then so shall the survey be conducted in phases. <li>2. If special status birds are identified nesting on the construction area or within a 250 foot area of influence, a 150-foot non-disturbance radius around the nest must be fenced using orange plastic construction fencing or rope and stake fencing as previously described (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within the 150-foot buffer until it is determined by a qualified biologist that the nest is no longer occupied and young have fledged (that is, left the nest and attained sufficient flight skills to avoid project construction activities). This typically occurs by July 1st, but the date may vary, and would need to be confirmed by a qualified biologist. Similarly, the qualified biologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities. <li>3. If non-special status birds are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified biologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>sufficient for young to avoid project construction zones. Unless otherwise prescribed for special status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds. The mitigation measure shall be implemented by the project applicant and the construction contractor.</p> <p>4. Results of the surveys and monitoring shall be provided in monthly monitoring reports submitted to the project applicant, County of Fresno, and the California Department of Fish and Game.</p>			
<p>Impact #3.4.9k. – Impacts to the American Badger</p>	<p>Mitigation Measure #3.4.9k: The following measures shall be implemented to ensure that impacts to American badgers are <i>less than significant</i>:</p> <ol style="list-style-type: none"> 1. Pre-construction surveys shall be conducted in development zones no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the American badger. If construction activities (including ground disturbing activities) are phased, then so shall the pre-construction surveys be phased. 2. If dens are found within the construction area and require removal, they shall be monitored for badger presence using a tracking medium or a video probe. Tracking medium must be monitored for 3 consecutive days to provide evidence of vacancy. All dens and burrows within the construction area and which contain badger sign must be hand excavated by a trained wildlife biologist. Dens must be replaced at a ratio of 2 artificial den for each natural dens removed. Replacement dens may be constructed within grassland habitat on-site, within the open space, conservation area. 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>Replacement dens shall consist of 6 inch diameter plastic corrugated sewer pipe cut to a 6 foot length. One end of the pipe shall be buried no deeper than 2 feet and no less than 1 foot below grade. The other end of the pipe shall remain above ground. Dirt shall be mounded above the pipe to a depth of at least 1 foot above grade, with the opening exposed.</p> <p>3. If dens are located within 100 feet of construction areas, but not within construction areas, they shall not be removed. Instead, exclusion fencing shall be constructed around the den (s). The exclusion fencing shall consist of plastic construction fencing held in place by t-posts every 25 feet, or by a rope and flagging fence. The purpose of the fencing is to exclude construction activities occurring near the den (s).</p> <p>4. Project-related vehicles shall observe a 20-mph speed limit while on the project site, except on County roads and State and Federal highways. This is particularly important at night (between sunset and sunrise) when American badgers are most active. Construction activities at night (sunrise to sunset) should be prohibited, unless:</p> <p>a. The construction area is appropriately fenced to exclude American badgers. Appropriate fencing would consist of a 4-foot chain link fence or similar material (e.g., 2 inch mesh stock fence) buried at least 6 inches below grade.</p> <p>b. The area within any such fence should be inspected by a qualified biologist for badger dens, all dens must be removed, and the site determined to be uninhabited by American badgers prior to initiation of construction.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>5. Off-road construction traffic outside of designated construction areas shall be prohibited.</p> <p>6. To prevent inadvertent entrapment of American badgers or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by a qualified biologist or trained monitor.</p> <p>7. American badgers are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored in an unfenced storage yard (see item 4a and b above for appropriate fencing and clearance conditions) for one or more overnight periods shall be thoroughly inspected for American badgers before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. Inspections may be conducted by a qualified biologist or trained monitor. If necessary, and under the direct supervision of a biologist, a pipe inhabited by a badger may be moved once to remove it from the path of construction activity, until the animal has escaped.</p> <p>8. During construction, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from the construction site.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>9. No firearms shall be allowed on the project site during construction activities.</p> <p>10. A representative shall be appointed by the project proponent who shall be the contact source for any employee or contractor who might inadvertently kill or injure an American badger, or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the CDFG.</p> <p>11. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. If an entrapped animal is incapable of escaping or is otherwise trapped for an excess of 12 hours, the California Department of Fish and Game should be contacted for advice.</p> <p>12. Any contractor, employee(s), or other personnel who inadvertently kills or injures an American badger should immediately report the incident to their representative. This representative should contact the CDFG immediately in the case of a dead, injured or entrapped American badger. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They shall contact the local warden or biologist.</p>			
<p>Impact #3.4.9I – Impacts to the pallid bat and western mastiff bat</p>	<p>Mitigation Measure # 3.4.9I: Implementation of the following measures shall reduce impacts to the pallid bat and the western mastiff bat to levels that are <i>less than significant</i>:</p> <p>1. Prior to the removal of trees or the demolition of buildings, a qualified biologist shall conduct a pre-construction survey between 14 and 30 days prior to activities, to inspect buildings and trees for the</p>	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>presence of bats. If pallid bats or western mastiff bats are identified to be roosting in the trees or structures, those trees or structures shall not be removed until:</p> <ul style="list-style-type: none"> a. Permanent, elevated bat houses have been installed outside of, but near the construction area. Placement and height shall be determined by a qualified biologist, but the height of bat house shall be at least 15 feet. Bat houses shall be multi-chambered and be purchased or constructed to the specifications provided in Appendix J (bat house design). The number of bat houses required shall be dependant upon the size and number of colonies present, but at least 1 bat house shall be installed for each pair of bats (if occurring individually) or each colony of bats found. b. Bats have been passively relocated from the tree or structure by progressively boarding up any entrances at night while bats are foraging away from the tree or structure. Relocation of bats may not be performed during the breeding season (March 1 to September 15). 			
<p>Impact #3.4.10 – Impacts to riparian habitat or other sensitive natural communities within the Existing Friant Community Plan Area</p>	<p>Mitigation Measure #3.4.10: The following measure shall be implemented to reduce impacts to riparian habitats and other sensitive natural communities to a level that is <i>less than significant</i>:</p> <ul style="list-style-type: none"> 1. The distribution of riparian habitats and other sensitive natural communities within the Existing Friant Community Plan Area shall be mapped prior to issuance of any grading permit. All mapping shall be accomplished using high resolution aerial photographs (1 meter accuracy or better) and be verified by ground inspections using sub-meter 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>GPS. The final map of the distribution of these habitat types shall be rendered using GIS at sub-meter accuracy. All riparian areas and other sensitive natural communities shall be avoided by construction activities, including grading, unless the following measures are implemented prior to site grading:</p> <p>a. The following measures shall be conducted prior to removal of riparian habitat or other sensitive natural community:</p> <ul style="list-style-type: none"> <li>▪ A Stream Alteration Agreement (SAA) must be obtained prior to removal of riparian habitat, unless it is determined by the California Department of Fish and Game that SAA is not necessary. <li>▪ For each 1 acre of riparian habitat or other sensitive natural community removed, a total of 3 acres of in-kind habitat shall be acquired by fee title, placed into a permanent conservation easement, and a management endowment provided. Any riparian habitat acquired must be located along the San Joaquin River in Fresno or Madera Counties. <li>▪ Temporary disturbance to riparian habitat may be mitigated by restoration. A restoration plan must be prepared in cooperation with the California Department of Fish and Game and a SAA must be obtained if required by the California Department of Fish and Game. 			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.4.11 – Impacts to federally protected wetlands and other waters within the Existing Friant Community Plan Area</p>	<p>Mitigation Measure #3.4.11a: The following measures shall be implemented to reduce impacts to wetlands and other waters to a level that is <i>less than significant</i>:</p> <ol style="list-style-type: none"> 1. Prior to issuing a grading permit for a project within the Existing Friant Community Plan Area, a survey for potential wetlands shall be conducted. If potential wetlands are present, a wetland delineation to ACOE standards shall be conducted for the project site. Either a single wetland delineation can be prepared for the entire Existing Community Plan Area, or individual delineations can be prepared for each project. Regardless, the USACE must verify the delineation(s) and, if necessary, appropriate Clean Water Act 401 and 404 permits be obtained. 2. Prior to the issuance of a grading permit in areas containing jurisdictional wetlands the project applicant shall acquire, or purchase and donate a conservation easement on, suitable off-site lands in Fresno and/or Madera County for the creation/restoration of wetlands and other waters to compensate for any wetlands and other water bodies subject to the jurisdiction of the USACE that are directly and permanently disturbed by grading and construction associated with the project. The creation/restoration of such wetlands and other waters shall be at a ratio of one acre of created/restored wetlands and other jurisdictional waters for each acre of jurisdictional wetlands and other waters directly and permanently disturbed by grading and construction associated with the project development. Creation/restoration of wetland habitat and other water bodies shall be accomplished by one or a combination of the following two mitigation alternatives: 	<p>Applicant</p>	<p>California Dept. of Fish & Game and U.S. Fish & Wildlife</p>	<p>Prior to construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>a. <u>Off-Site Creation/Restoration.</u> The Project applicant shall conserve through acquisition or conservation easement, off-site lands suitable for the creation/restoration of wetlands and other water bodies in Fresno, Madera, or Merced County. Such lands shall have the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species shall be absent (i.e., these lands shall have been previously disturbed by farming, or some other intensive human use); native wetlands and/or other water bodies once occurred on these lands naturally; the soils and hydrology of these lands are suitable for the creation of naturally occurring wetlands and other water bodies; and the natural topography has not been eliminated through land leveling. Topographic depressions, swales and naturalistic drainage channels shall be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. These engineered features must be inundated and/or experience soil saturation for a duration sufficient to naturally support hydrophytic vegetation native to wetlands of the region. All engineered wetlands and other water bodies shall be revegetated with native hydrophytic species. The wetland creation/restoration plan prepared by the biologist shall provide for long-term management of the mitigation site, mitigation objectives by which the success of the mitigation can be measured, and a monitoring plan for determining the success of the mitigation. The components of this mitigation and monitoring plan shall be consistent with standard USACE guidelines.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> b. Purchase of Wetland Creation Credits from a Conservation Bank. The Project applicant shall pay the market rate for Wetland Creation Credits at a 1:1 ratio from a Conservation Bank whose service area includes the Friant Community Plan Area. 			
<p>Impact #3.4.11b - Impacts to water quality in seasonal creeks, reservoirs, and other downstream waters</p>	<p>Mitigation Measure #3.4.11b: To ensure protection of water quality in the San Joaquin River and other downstream waters, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. Prior to the onset of construction which would disturb one acre or more, an erosion control plan shall be prepared by a qualified engineer consistent with the requirements of a Fresno County grading permit and a General Construction Permit (an NPDES permit issued by the Regional Water Quality Control Board for projects in which one or more acres of land are graded). Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. Each project site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing on-site erosion and the associated deposition of sediment off the project site. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of an erosion control plan typically include: <ul style="list-style-type: none"> a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three. 	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>b. Protection of natural drainage channels from sedimentation. Hay bale check dams should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter the creek.</p> <p>c. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular project site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from “hardscapes” into grassy swales, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.</p> <p>2. Where possible, project construction should be confined to the dry season, when the chance for significant rainfall and stormwater runoff is very low. Construction during the spring, summer, and fall shall not eliminate the need to implement erosion control measures described in mitigation measures above, but shall ensure that the threat of soil erosion has been minimized to the maximum extent possible.</p> <p>3. All post-construction runoff shall be routed through a system of grease traps, stormwater retention/detention basins, and bio-filtration swales to ensure that water quality of on-site and off-site wetlands, creeks and rivers are maintained at roughly pre-project levels.</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
Impact #3.4.12 – Impacts to Fish or Wildlife Movement Corridors within the Existing Friant Community Plan Area	Mitigation Measure #3.4.12: Implementation of mitigation measures 3.4.10, 3.4.11a and 3.4.11b shall ensure that the riparian zone around the San Joaquin River and water quality in the San Joaquin River are maintained at level that are appropriate for fish and wildlife migratory movements. No other mitigation measures are warranted.	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction
Impact #3.4.13 – Consistency with local policies or ordinances protecting biological resources within the Friant Community Plan Area	Mitigation Measure #3.4.13a: Mitigation Measures to Ensure Consistency with Local Policies or Ordinances Protecting Biological Resources: Implementation of mitigation measures 3.4.9a through 3.4.9l shall compensate for potential loss of foraging and/or breeding habitat for special status plant and wildlife species. Mitigation Measures #3.4.10, #3.4.11a and #3.4.11b provide for protection and compensation of riparian and wetland habitats potentially affected by projects within the Existing Friant Community Plan Area, and mitigation for potential impacts to water quality downstream of projects. These measures shall also serve to maintain habitat functions and values in riparian and wetland areas and control siltation and pollutant entry into these habitats. Along with mitigation measures prescribed in Chapter 3.8 of this EIR, “Hydrology and Water Quality”, the mitigation measures just described shall ensure consistency with local ordinances and policies, including the County General Plan Policies.	Applicant	California Dept. of Fish & Game and U.S. Fish & Wildlife	Prior to construction
	Mitigation Measure #3.4.13a: Implementation of the various mitigation measures described in the preceding paragraph required for projects within the Existing Friant Community Plan Area shall ensure compliance with County General Plan Policies.	Applicant	Fresno County	Prior to construction
	Mitigation Measure #3.4.13b: To ensure compliance with State and local ordinances protecting oak trees and	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	oak woodland habitat, the following measure shall be implemented:			
Impact #3.5.1 – Substantial Adverse Changes in the Significance of Historical and/ or Archaeological Resources and Destruction of Unique Paleontological Resources	<p>Mitigation Measure #3.5.1a: Given that excavation is ultimately destructive and avoidance is generally the preferred alternative and consistent with Fresno County General Plan policy, the preferred mitigation is that the significant cultural resource site (CA-FRE-2653) be placed within a development exclusion zone, thus avoiding impacts to the significant cultural resource site (CA-FRE-2653). Subsurface testing suggests that the cultural deposit is contained within a limited area, which roughly coincides with the identified midden deposit and the area of bedrock milling features. Prior to issuance of a grading permit affecting the area surrounding the significant cultural resource site (CA-FRE-2653), the developer shall do one of the following:</p> <p>3.5.1a(1): Retain a qualified archaeologist to identify and mark the boundaries of the cultural deposit so that it is avoided during construction. The significant cultural resource site (CA-FRE-2653) shall be included within a designed open space within the Friant Ranch Specific Plan Area, which may include interpretive information regarding the archaeological site; or</p> <p>3.5.1a(2): If avoidance of the significant cultural resource site (CA-FRE-2653) through design, during construction activities, and long-term protection are not feasible, then treatment of significant effects on the site(s) shall be accomplished through a program of controlled data recovery. A qualified archaeologist shall meet at the site and review the development plans vis-à-vis the significant cultural resource site (CA-FRE-2653) area and put together a data recovery plan (Phase III) to recover the information that would be lost as a result of Project development. The archaeologist shall excavate</p>	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>the significant cultural resource site (CA-FRE-2653) and recover the materials that would otherwise be destroyed. The bedrock milling features shall be thoroughly documented; therefore any adverse impacts as a result of disturbance to these features would be mitigated. Such work is designed to compensate for the impacts of the Project by collecting a representative sample of the cultural remains and other data that would otherwise be destroyed.</p>			
	<p>Mitigation Measure #3.5.1b: A qualified archaeologist and a member of the Table Mountain Rancheria shall be retained by the developer to monitor construction activities around the significant cultural resource site (CA-FRE-2653) to ensure that there is no impact to any significant cultural resource. Prior to construction, the developer shall consult with a designated representative of the Table Mountain Rancheria on the appropriate course of action to be taken should unanticipated cultural materials, and specifically human remains, be discovered during construction.</p>	Applicant	Fresno County	Prior to construction
	<p>Mitigation Measure #3.5.1c: Cultural resource sites protected pursuant to mitigation measure 3.5.1a(1) shall be protected after development from vandalism, illicit excavation or artifact collection. The County shall discuss measures for long-term protection with the Table Mountain Rancheria, and an appropriate plan for permanent protection of the resource shall be instituted by the developer prior to issuance of building permits for the Friant Ranch Specific Plan. The final plan could include any or all of the following: permanent fencing; funding for permanent maintenance of the fencing; annual or semi-annual monitoring by archaeologists and/or by the Table Mountain Rancheria with reports filed with the County and other agencies; acquisition of the site by a group such as the Archaeological Conservancy.</p>	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>Mitigation Measure #3.5.1d: During construction within the Friant Ranch Specific Plan Area, protected cultural resource sites (including CA-FRE-2651, -2652, -2653) shall be protected from vandalism, illicit excavation or artifact collection, or inadvertent direct impact. This may be accomplished in part through the installation of orange protective fencing prior to initiation of any construction activities within 200 feet of the site area.</p>	Applicant	Fresno County	Prior to construction
	<p>Mitigation Measure #3.5.1e: If unknown cultural resources are discovered during Project construction, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the developer, and approved by the County, to assess the significance of the find, make recommendations on its disposition, and prepare appropriate field documentation, including verification of the completion of required mitigation. If archaeological or paleontological resources are discovered during earth moving activities, all construction activities within 50 feet of the find shall cease until the archaeologist evaluates the significance of the resource. In the absence of a determination, all archaeological and paleontological resources shall be considered significant. If the resource is determined to be significant, the archaeologist, as appropriate, shall prepare a research design for recovery of the resource in consultation with SHPO that satisfies the requirements of Public Resources Code Section 21083.2. The archaeologist shall complete a report of the excavations and findings. Upon approval of the report, the developer shall submit the report to the regional office of the California Historical Resources Information System and Fresno County.</p>	Applicant	Fresno County	Prior to construction
	<p>Mitigation Measure #3.5.1f: Construction personnel shall be informed of the potential for encountering significant archaeological or paleontological resources</p>	Applicant	Fresno County	Prior to construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>within the Project Area, and shall be instructed in the identification of artifacts, bone and other potential resources. For any construction within the Project area, all construction personnel shall be informed of the need to stop work on the construction site until a qualified archaeologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of cultural resources is prohibited.</p>			
	<p>Mitigation Measure #3.5.1g: If unknown cultural resources are discovered during future development in the existing Friant Community Plan Area, including the Depot parcel, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the developer, and approved by the County, to assess the significance of the find, make recommendations on its disposition, and prepare appropriate field documentation, including verification of the completion of required mitigation. If archaeological or paleontological resources are discovered during earth moving activities, all construction activities within 50 feet of the find shall cease until the archaeologist evaluates the significance of the resource. In the absence of a determination, all archaeological and paleontological resources shall be considered significant. If the resource is determined to be significant, the archaeologist, as appropriate, shall prepare a research design for recovery of the resource in consultation with SHPO that satisfies the requirements of Public Resources Code Section 21083.2. The archaeologist shall complete a report of the excavations and findings. Upon approval of the report, the developer shall submit the report to the regional office of the California Historical Resources Information System and Fresno County.</p>	Applicant	Fresno County	Prior to and during construction

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>Mitigation Measure #3.5.1h: Future construction personnel shall be informed of the potential for encountering significant archaeological or paleontological resources within the existing Friant Community Plan Area, and shall be instructed in the identification of artifacts, bone and other potential resources. For any future construction within the existing Friant Community Plan Area, all construction personnel shall be informed of the need to stop work on the construction site until a qualified archaeologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of cultural resources is prohibited.</p>	Applicant	Fresno County	Prior to construction
<p>Impact #3.5.2 – Disturbance of Human Remains</p>	<p>Mitigation Measure #3.5.2: If human remains are encountered during Project construction, all work shall cease within 50 feet of the find and the Fresno County Coroner’s Office shall be contacted and procedures implemented pursuant to California Public Resources Code Section 5097 et seq. and California Health and Safety Code Sections 7050.5, 7051, and 7054 with respect to treatment and removal, Native American involvement, burial treatment, and re-burial, if necessary.</p>	Applicant	Fresno County	Prior to and during construction
<p>Impact #3.7.6 – Emergency Preparedness</p>	<p>Mitigation Measure #3.7.6a: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a Community Facilities District shall be formed to provide funding for additional fire protection services in the Project Area sufficient to satisfy the standards set forth in the Fresno County Health and Safety Element.</p>	Applicant	Fresno County	Prior to issuance of a building permit
	<p>Mitigation Measure #3.7.6b: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD shall be established to</p>	Applicant	Fresno County	Prior to issuance of a building permit

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>provide the funding necessary to maintain adequate law enforcement staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-G.2 and PF-G.4. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.</p>			
<p>Impact #3.8.3 – Alteration of the Existing Drainage Pattern and Stormwater Drainage Capacity</p>	<p>Mitigation Measure #3.8.3a: Storm drain design for the Friant Ranch Specific Plan portion of the Project shall be in accordance with approved LID management practices, as recommended in the Friant Ranch IMP and its appendices. The suggested management practices include but are not limited to the following:</p> <ol style="list-style-type: none"> 1. LID IMPs: <ol style="list-style-type: none"> a) Bioretention (Rain Gardens) – A practice using landscaped areas on individual lots to hold and infiltrate stormwater. b) Dry Well – Small excavated trenches backfilled with stone, designed to hold and slowly release rooftop runoff. c) Filter/Buffer Strip – Bands of close-growing vegetation, usually grass, planted between pollutant source areas and a downstream receiving water body. d) Swales – Two types of swales may be used. Grass swales provide both quantity (volume) and quality control by facilitating stormwater infiltration. Wet swales use residence time and natural growth to reduce peak discharge and 	<p>Applicant</p>	<p>Fresno County</p>	<p>Prior to issuance of building permit</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>provide water quality treatment before discharge to a downstream location.</p> <p>e) Infiltration Trench – An excavated trench that has been backfilled with stone to form a subsurface basin. Stormwater runoff is diverted into the trench and is stored until it can be infiltrated into the soil.</p> <p>f) Pervious Concrete – A special structural concrete without fine aggregates. This creates 15 to 30 percent voids, allowing water to pass through to a gravel layer and the native soil underneath while maintaining the structural strength of standard concrete pavement. Pervious concrete also provides demonstrable water quality treatment to the waters passing through its structure.</p> <p>2. Inlet and Outlet Structures:</p> <p>Inlet and Outlet Structures shall be a type and configuration rated to accept the SDMP design flow at the inlet and outlet locations shown on the SDMP.</p> <p>3. Pipelines:</p> <p>Storm drain pipeline design shall conform to the Storm Drain Master Plan (SDMP). Pipeline soffits shall be designed a minimum of one (1) foot below the hydraulic grade line (HGL) or to the soffit control elevation shown in the hydraulic calculations. The design of the storm drain pipeline below the HGL insures full pipe flow and reduces the chance of water seal breaks in the pipe and other hydraulic inefficiencies during pipeline use. Design of pipeline below the soffit control elevation insures</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>proper pipeline performance in sections of the pipe where flow is in the open channel condition due to steep grade construction.</p> <p>4. Culverts and Open Channels:</p> <p>Culverts and open channels shall be designed to the standards of the Federal Highway Administration Hydraulic Design of Highway Culverts (HDS-5, September 2001 or current) and the Fresno County Design Standards. The culverts and channels shall be designed to convey the critical storm event for the Friant Ranch project.</p> <p>5. Detention & Retention Basins:</p> <p>Detention and Retention basin design calculations and minimum basin geometries are provided in Appendix A of the IMP (see Appendix N). The basin geometry for each watershed differs depending on many factors, including the contributing drainage area and the design flow volume. Retention basins are designed to maintain the predevelopment runoff volume by storing the peak storm runoff above a base flow; retention basins in this case have also been sized to provide the storage volume necessary to give the detention time required for water quality control.</p> <p>Detention basin storage is designed to maintain the predevelopment peak runoff rate while capturing all runoff above that amount.</p> <p>Conceptual basin locations are shown in the SDMP. These locations have been selected to work with the existing ground topography and the overall master-planned drainage concept. Exact basin locations shall be determined by the developer, after precise</p>			

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>site layouts are determined. The basins shall be permitted to shift, so long as the function provided for in the SDMP is maintained, or appropriate modifications are made to the SDMP as discussed above.</p> <p>Prior to issuance of a grading permit for the Friant Ranch Specific Plan, the Fresno County Engineering Department shall review the project detention and retention basin designs for conformance with the basin calculations and conformance with the basin design guidelines provided in the Friant Ranch IMP.</p>			
<p>Impact #3.10.1 – Exposure to Excessive Noise Levels or Vibration</p>	<p>Mitigation Measure #3.10.1a:</p> <ol style="list-style-type: none"> 1. Prior to issuance of any grading permit for new public and private development proposals within the Friant Community Plan Area, the County shall review the proposal to determine conformance with the policies of the Fresno County General Plan and the Friant Community Plan. 2. Where the development of any future project within the Friant Community Plan Area (other than the Friant Ranch Specific Plan Area and Depot Parcel) may result in noise sensitive land uses being exposed to existing or projected future noise levels exceeding the levels specified by the policies of the General Plan and Community Plan, the County shall require that an acoustical analysis be submitted as part of the entitlement application that designates that adequate noise mitigation is included in the project design to comply with County standards. 3. Prior to issuance of a grading permit for proposed development within the Friant Community Plan 	<p>Applicant</p>	<p>Fresno County</p>	<p>Prior to and during construction</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	Area (other than the Friant Ranch Specific Plan Area and Depot Parcel), site-specific acoustical analyses shall be conducted to determine setbacks and any other feasible mitigation measures (e.g. berms, site design, location of structures, noise walls/barriers) required to reduce traffic noise to levels that meet County design standards and comply with the Fresno County Noise Ordinance.			
Impact #3.10.2 – Construction Noise	Mitigation Measure #3.10.2a: Construction projects and any other noise generators shall be regulated by the standards identified in Chapter 8.40 of the Fresno County Ordinance Code.	Applicant	Fresno County	On going
	Mitigation Measure #3.10.2b: Effective mufflers shall be fitted to gas- and diesel-powered equipment to reduce noise levels as much as practicable.	Applicant	Fresno County	On going
	Mitigation Measure #3.10.2c: All construction activities shall be limited to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m., Saturday and Sunday.	Applicant	Fresno County	On going
Impact #3.12.1 – Increased Demand for Fire Protection Services and Personnel	Mitigation Measure #3.12.1: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD shall be established to provide the funding necessary to maintain adequate staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-H.2, PF-H.5 and PF-H.8. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.	Applicant	Fresno County	Prior to issuance of building permit
Impact #3.12.2 – Increased Demand for	Mitigation Measure #3.12.2: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD shall be established to	Applicant	Fresno County	Prior to issuance of building permit

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
Law Enforcement Services	provide the funding necessary to maintain adequate staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-G.2 and PF-G.4. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.			
Impact #3.13-1 (TR-20): The Project shall cause the level of service to fall below the minimum acceptable level of service at the intersection of Friant Road and the Site Access north of Lost Lake Road. This is a <i>significant impact</i> .	Mitigation Measure #3.13-1 (TR-20): The Project shall construct traffic signals at the intersection of Friant Road and the Site Access intersection north of Lost Lake Road prior to construction of the 201 st residential unit and prior to the construction of any commercial/office aspects of the Project if an engineering study indicates that the signals are warranted at that time. The applicant shall utilize the services of a traffic engineer to determine if traffic signals are warranted based on CMUTCD traffic signal warrants. If traffic signals are not warranted, then traffic signals shall not be installed and an engineering study shall be performed at the discretion of the Director prior to each subsequent interval of 200 dwelling units and prior to each phase of commercial construction. The Project shall install traffic signals at the intersection when they are warranted at the discretion of the Director.	Applicant	Fresno County	The applicant shall post the funds required for the signal by construction of the 201 st unit, but shall not be required to construct the signal until signal warrants are met.
Impact #3.13-2 (TR-6): The Project shall cause the level of service to fall below the minimum acceptable level of service at the intersection of Friant Road and Lost Lake Road. This is a <i>significant impact</i> .	Mitigation Measure #3.13-2 (TR-6): The Project shall construct traffic signals at the intersection of Friant Road and Lost Lake Road prior to construction of the 201 st residential unit and prior to the construction of any commercial/office aspects of the Project.	Applicant	Fresno County	The applicant shall post the funds required for the signal by construction of the 201 st unit, but shall not be required to construct the signal until signal warrants are met.

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-3: The Project shall contribute to the following deficiencies to Caltrans intersections:</p>	<p>Mitigation Measure #3.13-3: Prior to issuance of a building permit, the applicant shall contribute to its pro rata share of the cost of future off-traffic improvements to Caltrans intersections through payment of a per trip fee to Caltrans. If Caltrans has not established a per trip fee prior to issuance of a building permit, the applicant shall contribute a fair share fee to the County for the identified improvements based on the then-current estimated traffic volume attributable to the Project. The traffic improvements and current Caltrans fees or estimated percentage of the 2030 cumulative traffic volume are as follows:</p>			
<p>Impact #3.13-3a (TR-1): The Project shall exacerbate anticipated delays and a cumulative LOS that shall fall below the minimum acceptable LOS in the 2030 condition without the Project at the intersection of SR 41 and Road 145 under the 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-3a (TR-1): The intersection of SR 41 and Road 145 should be converted to an interchange by the year 2030. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 3.2%.</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-3b (TR-2): The Project shall exacerbate existing delays and an existing LOS already below the minimum acceptable LOS at the intersection of SR 41</p>	<p>Mitigation Measure #3.13-3b (TR-2): The intersection of SR 41 and Avenue 12 should be converted to an interchange by the year 2030. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
and Avenue 12, and is expected to exacerbate a cumulative LOS that shall fall below the acceptable LOS in the anticipated 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This shall result in an individually and cumulatively <i>significant impact</i> .	unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 0.5%.			
Impact #3.13-3c (TR-3): The Project shall exacerbate an existing LOS already below the minimum acceptable LOS at the intersection of SR 41 and Avenue 15, and is expected to exacerbate a cumulative LOS that shall fall below the acceptable LOS in the anticipated 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This shall result in an individually and cumulatively <i>significant impact</i> .	Mitigation Measure #3.13-3c (TR-3): The intersection of SR 41 and Avenue 15 should be converted to an interchange by the year 2030. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 0.8 %. Caltrans has not established a set fee for this intersection at this time.	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-3d (TR-11): The Project shall	Mitigation Measure #3.13-3d (TR-11): The intersection of Friant Road and the State Route 41	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>exacerbate a cumulative LOS anticipated to fall below the minimum acceptable LOS in the 2030 cumulative condition without the Project at the intersection of Friant Road and the SR 41 northbound off ramp. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a significant impact.</p>	<p>northbound offramp is expected to operate at LOS C with the addition of a fifth westbound through lane. It is contemplated that a future Measure C Regional Transportation Mitigation Fee program may include mitigation for this intersection. Caltrans typically collects per-trip fees for this interchange as follows:</p> <ul style="list-style-type: none"> ▪ <i>Widen Friant Road under SR 41 with four additional lanes, \$900 per trip;</i> ▪ <i>SR 41 northbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$757 per trip; and</i> ▪ <i>SR 41 northbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,300 per trip.</i> 			
<p>Impact #3.13-3e (TR-12): The Project shall exacerbate delays under existing conditions, and shall exacerbate anticipated delays and unacceptable LOS in the cumulative 2030 No Project condition at the intersection of Friant Road and SR 41 southbound off ramp. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. The Project shall have an individually and cumulatively significant impact on this intersection. This is a significant impact</p>	<p>Mitigation Measure #3.13-3e (TR-12): The intersection of Friant Road and the State Route 41 southbound offramp is expected to operate at LOS C with the addition of a second southbound left-turn lane and a second southbound right-turn lane. It is contemplated that a future Measure C Regional Transportation Mitigation Fee program may include mitigation for this intersection. Caltrans typically collects per-trip fees for this interchange as follows:</p> <ul style="list-style-type: none"> ▪ <i>Widen Friant Road under SR 41 with four additional lanes, \$900 per trip;</i> ▪ <i>SR 41 southbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip;</i> ▪ <i>SR 41 southbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip; and</i> ▪ <i>SR 41 southbound off ramp to Friant Road: additional ramp lane and auxiliary lane, \$834 per trip.</i> 	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-4: The Project shall contribute to the following deficiencies to Madera County intersections and roadways:</p>	<p>Mitigation Measure #3.13-4: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements necessary to accommodate the 2030 cumulative condition through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-4a (TR-4): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS in the anticipated 2030 No Project condition at the intersection of Road 145 and Road 206. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13.4a (TR-4): The intersection of Road 145 and Road 206 shall require signalization with two northbound left-turn lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 7.2 %.</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13.4b (TR-34): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS in the anticipated 2030 No Project condition on the Madera County segment of Road 206 west of Friant Road. The Project's contribution to the anticipated cumulative</p>	<p>Mitigation Measure #3.13.4b (TR-34): The Madera County segment of Road 206 west of Friant Road should be widened to four lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 17.1%.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
condition is cumulatively considerable. This is a <i>significant impact</i> .				
Impact #3.13-5: The Project shall contribute to the following deficiencies to Fresno County* intersections and roadways:	Mitigation Measure #3.13-5: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-5a (TR-5): The Project shall contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Friant Road and North Fork Road (Road 206) under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively <i>significant impact</i> .	<p>Mitigation Measure #3.13-5a (TR-5): The intersection of Friant Road and North Fork Road (Road 206) should be signalized to achieve an acceptable level of service (LOS C). The ultimate lane configurations required are as follows:</p> <p>Northbound: two left-turn lanes and two through lanes with a shared right turn</p> <p>Southbound: one left-turn lane, two through lanes, and one right-turn lane</p> <p>Eastbound: two left-turn lanes, one through lane, and two right-turn lanes</p> <p>Westbound: one left-turn lane and one shared through/right-turn lane</p> <p>The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 17.2%. This signalization shall also provide an opportunity to satisfy the Friant Community Plan Policy 1.6 which states, <i>“Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.”</i></p>			
<p>Impact #3.13-5b (TR-6): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Friant Road and Lost Lake Road under the 2030 no Project condition. The Project’s contribution to the anticipated cumulative condition is cumulatively considerable. However, mitigation measure 3.13-1a requires the applicant to construct the requisite improvement. Construction of the intersection shall achieve a LOS B with the cumulative condition plus Project and thus reduce the Project’s contribution to less than cumulatively considerable. <i>This is a less than significant impact.</i></p>	<p>Mitigation Measure #3.13-5b (TR-6): No additional mitigation required. See Mitigation Measure 3.13-1.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-5c (TR-7): The Project shall contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Friant Road and Shallow Avenue under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5c (TR-7): Signalization of the intersection of Friant Road and Shallow Avenue to achieve an acceptable level of service (LOS B). The ultimate lane configurations required are as follows:</p> <p>Northbound: one left-turn lane (protected), two through lanes, and one right-turn lane</p> <p>Southbound: two left-turn lanes (protected), two through lanes with a shared right turn</p> <p>Eastbound: one shared lane (permissive)</p> <p>Westbound: one shared left-turn/through lane (permissive) and one right-turn lane</p> <p>The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 29.6%.</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met
<p>Impact #3.13-5d (TR-13): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Millerton Road and Winchell Cove Road under the 2030 no Project condition. The Project's contribution to the</p>	<p>Mitigation Measure #3.13-5d (TR-13): Signalization of Millerton Road and Winchell Cove Road and widening of Millerton Road to four lanes is needed to achieve appropriate levels of service to accommodate the 2030 cumulative condition plus the Project. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 3.3%. The Measure C Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Harbour Road. However, the Tier 2 projects are not yet funded.</p>			
<p>Impact #3.13-5e (TR-14): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Millerton Road and Brighton Crest Drive under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5e (TR-14): The intersection of Millerton Road and Brighton Crest Drive should be signalized and Millerton Road should be widened to four lanes to accommodate the 2030 cumulative condition plus Project. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 3.7%. The Measure C Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road. However, the Tier 2 projects are not yet funded.</p>	<p>Applicant</p>	<p>Fresno County</p>	<p>As determined by Fresno County when signal warrants are met</p>
<p>Impact #3.13-5f (TR-15): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Millerton Road and Sky Harbour Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5f (TR-15): The intersection of Millerton Road and Sky Harbour Road should be signalized and Millerton Road should be widened to four lanes to provide an acceptable level of service (LOS A) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 2.9%. The Measure C Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road. However, the Tier 2 projects are not yet funded.</p>	<p>Applicant</p>	<p>Fresno County</p>	<p>As determined by Fresno County when signal warrants are met</p>

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-5g (TR-16): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Millerton Road and Table Mountain Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5g (TR-16): The intersection of Millerton Road and Table Mountain Road should be signalized and Millerton Road should be widened to four lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 2.1%.</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met
<p>Impact #3.13-5h (TR-17): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Millerton Road and Auberry Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5h (TR-17): The intersection of Millerton Road and Auberry Road should be signalized. The intersection shall likely require either two northbound left turn lanes on Millerton Road or an extended single left-turn lane to accommodate queues up to approximately 600 feet in length in the ultimate condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 1.8%.</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met
<p>Impact #3.13-5i (TR-18): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of</p>	<p>Mitigation Measure #3.13-5i (TR-18): The intersection of Copper Avenue and Auberry Road should be signalized to provide an acceptable level of service (LOS B) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22 is</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Copper Avenue and Auberry Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a significant impact. (County of Fresno jurisdiction, City of Fresno Sphere of Influence)</p>	<p>0.7%. The ultimate lane configurations required are as follows:</p> <p>Southbound: one left-turn lane and one right-turn lane</p> <p>Eastbound: two left-turn lanes and two through lanes</p> <p>Westbound: two through lanes with a shared right turn.</p>			
<p>Impact #3.13-5j (TR-21): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS at the intersection of Shallow and Copper Avenues under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a significant impact. (County of Fresno jurisdiction, City of Fresno Sphere of Influence)</p>	<p>Mitigation Measure #3.13-5j (TR-21): The intersection of Shallow and Copper Avenues should be signalized to provide an acceptable level of service (LOS D) under the 2030 condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 10.6%. The additional lanes on Shallow Avenue are included in the Measure C Tier 1 Urban project to widen Shallow Avenue to six lanes between Copper Avenue and Barstow Avenue.</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met
<p>Impact #3.13-5k (TR-27): The Project shall contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that shall fall below the minimum</p>	<p>Mitigation Measure #3.13-5k (TR-27): None feasible. Friant Road between North Fork Road (Road 206) and Lost Lake Road requires six lanes to achieve an acceptable LOS (LOS C or better). Widening this segment of Friant Road to six lanes is not feasible due to the physical constraints of the adjacent land uses and the Fresno County General Plan policy that prohibits six lane rural roadways. Although the Measure C Tier 1</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>acceptable LOS under the 2030 no Project condition at the following County of Fresno segments of Friant Road:</p> <ul style="list-style-type: none"> ▪ Between North Fork Road (Road 206) and Parker Avenue; ▪ Between Parker and Granite Avenues; ▪ Between Granite and Root Avenues; and ▪ Between Root Avenue and Lost Lake Road. <p>The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively <i>significant impact</i>.</p>	<p>Rural project widening Friant Road to four lanes between Copper Avenue and Millerton shall partially mitigate this impact, the impact shall remain <i>significant and unavoidable</i>.</p>			
<p>Impact #3.13-51 (TR-30): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS under the 2030 no Project condition on Shallow Avenue between Friant Road and Silaxo Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively</p>	<p>Mitigation Measure #3.13-51 (TR-30): Shallow Avenue should be widened to four lanes between Friant Road and Silaxo Avenue to provide an acceptable level of service (LOS B) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 18.9%.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
considerable. This is a <i>significant impact</i> .				
Impact #3.13-5m (TR-31): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS under the 2030 no Project condition on Shallow Avenue between Silaxo Avenue and Copper Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i> .	Mitigation Measure #3.13-5m (TR-31): Shallow Avenue should be widened to four lanes between Silaxo Avenue and Copper Avenue to provide an acceptable level of service (LOS B or better) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 18.9%.	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-5n (TR-33): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS under the 2030 no Project condition on Millerton Road at the following locations: <ul style="list-style-type: none"> ▪ Between North Fork Road (Road 206) and Winchell Cove Road; ▪ Between Winchell Cove Road and Brighton Crest Drive; ▪ Between Brighton Crest Drive and Sky Harbour Road; 	Mitigation Measure #3.13-5n (TR-33): Millerton Road should be widened to four lanes to provide LOS C or better. The Measure C Tier 2 Rural project to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road would mitigate a portion of the impact. However, the Tier 2 projects are not yet funded. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) for the segment from Sky Harbour to Table Mountain is 2.4%. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) for the segment from Table Mountain to Auberry is 2.0%.	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<ul style="list-style-type: none"> ▪ Between Sky Harbour Road and Table Mountain Road; ▪ Between Table Mountain Road and Auberry Road. <p>The Project's contribution to the anticipated cumulative condition is cumulatively considerable. These are <i>significant impacts</i>.</p>				
<p>Impact #3.13-5o (TR-34): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS in the anticipated 2030 No Project condition on the Fresno County segment of Road 206 west of Friant Road. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5o (TR-34): Road 206 west of Friant Road for the Fresno County segment should be widened to four lanes to provide an acceptable level of service (LOS C or better) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 17.1%.</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-5p (TR-35): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the</p>	<p>Mitigation Measure #3.13-5p (TR-35): None feasible. Peak-hour traffic signal warrants for Parker Avenue are not expected to be satisfied at the intersection. The County may consider constructing a median to prevent left turns from Parker Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants on Parker Avenue are not satisfied and it is desirable to maintain access at the intersection, there</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>intersection of Friant Road and Parker Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>are no feasible mitigations and the impact shall remain <i>adverse but not significant</i>.</p>			
<p>Impact #3.13-5q (TR-36): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the intersection of Friant Road and Granite Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-5q (TR-36): None feasible. Peak-hour traffic signal warrants are not expected to be satisfied at the intersection on Granite Avenue. The County may consider constructing a median to prevent left turns from Granite Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants are not satisfied on Granite Avenue and it is desirable to maintain access at the intersection, there are no feasible mitigations and the impact shall remain <i>adverse but not significant</i></p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-5r (TR-37): The Project shall exacerbate a cumulative LOS that shall fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the intersection of Friant Road and Root Avenue. This is a <i>significant impact</i>.</p> <p>*Fresno County roadways and intersections that also</p>	<p>Mitigation Measure #3.13-5r (TR-37): None feasible. Peak-hour traffic signal warrants on Root Avenue are not expected to be satisfied at the intersection. The County may consider constructing a median to prevent left turns from Root Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants on Root Avenue are not satisfied and it is desirable to maintain access at the intersection, there are no feasible mitigations and the impact shall remain <i>adverse but not significant</i></p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
fall within the jurisdictions of City of Fresno and City of Clovis are addressed in Impact # 3.13-6 and 3.13-7.				
Impact #3.13-6: The Project shall contribute to the following deficiencies to City of Fresno* roadways and intersections:	Mitigation Measure #3.13-6: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-6a (TR-8): The Project shall contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that shall fall below the minimum acceptable LOS under the 2030 no Project condition at the intersection of Friant Road and Shepherd Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively <i>significant impact</i> .	Mitigation Measure #3.13-6a (TR-8): The intersection of Friant Road and Shepherd Avenue should be provided with a second northbound right-turn lane in addition to the funded third westbound left-turn lane and third southbound through lane to achieve an acceptable level of service (LOS C). The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 6.3%.	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-6b (TR-9): The Project shall	Mitigation Measure #3.13-6b (TR-9): None feasible. The intersection of Friant Road and Audubon Drive is	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>exacerbate existing delays and an existing LOS already below the minimum acceptable LOS at the intersection of Friant Road and Audobon Drive, and is expected to exacerbate anticipated delays and a cumulative LOS that shall fall below the acceptable LOS even without the Project under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This shall result in an individually and cumulatively <i>significant impact</i>.</p>	<p>constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is <i>significant and unavoidable</i>.</p>			
<p>Impact #3.13-6c (TR-10): The Project shall exacerbate delays and a cumulative LOS that shall fall below the minimum acceptable LOS under the 2030 no Project condition at the intersection of Friant Road and Fresno Street. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-6c (TR-10): None feasible. The intersection of Friant Road and Fresno Street is constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is <i>significant and unavoidable</i>.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-6d (TR-19): The Project shall exacerbate an existing LOS already below the minimum acceptable LOS at the intersection of Audobon Drive and Nees Avenue, and is expected to exacerbate delays and a cumulative LOS that shall fall below the acceptable LOS even without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-6d (TR-19): The intersection of Nees Avenue and Audubon Drive should be signalized with two eastbound left-turn lanes to provide an acceptable level of service (LOS D) under the existing and the 2030 cumulative condition. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for improvements at this intersection, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct this major improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 2.0%. The intersection is funded by the City of Fresno Traffic Signal Mitigation Impact Fee.</p>	Applicant	Fresno County	As determined by Fresno County when signal warrants are met
<p>Impact #3.13-6e (TR-28): The Project shall contribute to an unacceptable LOS on the City of Fresno segment of Friant Road between Champlain Avenue and Ft. Washington Road under the 2030 cumulative condition (2030 with Project). The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-6e (TR-28): Friant Road between Champlain Avenue and Ft. Washington Road shall require six lanes to provide an acceptable level of service (LOS D or better) under the 2030 cumulative condition. The City of Fresno has planned for this improvement in its capital improvement program and its current citywide traffic fee program. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 14.7%.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Impact #3.13-6f (TR-29): The Project shall contribute to an existing and cumulative LOS already below the minimum acceptable LOS on the following City of Fresno segments of Friant Road:</p> <ul style="list-style-type: none"> ▪ Between Shepherd Avenue and Audubon Drive. ▪ Between Audubon Drive and Fresno Street; and ▪ Between Fresno Street and SR 41. <p>These are <i>significant impacts</i>.</p>	<p>Mitigation Measure #3.13-6f (TR-29): None feasible. The City of Fresno General Plan identifies the need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue to accommodate the anticipated cumulative conditions due to regional growth and accepts LOS F with six lanes since additional widening is not feasible due to physical constraints associated with the adjacent land uses. This condition, as already contemplated and accepted in the City of Fresno General Plan, is <i>significant and unavoidable</i>.</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-7: The Project shall contribute to the following deficiencies to intersections and roadways within the shared jurisdiction of City of Clovis and City of Fresno:</p>	<p>Mitigation Measure #3.13-7: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-7a (TR-22): The Project shall exacerbate existing and anticipated future delays and shall contribute to a cumulative level of service</p>	<p>Mitigation Measure #3.13-7a (TR-22): None feasible. The intersection of Shallow Avenue and Nees Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. This impact is <i>significant and unavoidable</i>.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>below the minimum acceptable level of service at the intersection of Shallow Avenue and Nees Avenue in the 2030 plus project condition. The Project's contribution to the anticipated 2030 cumulative condition is cumulatively considerable. This is a <i>significant impact</i>. (County of Fresno, City of Fresno, City of Clovis jurisdiction)</p>				
<p>Impact #3.13-7b (TR-23): The Project shall exacerbate anticipated delays and contribute to a cumulative level of service that shall fall below the minimum acceptable level of service at the intersection of Shallow Avenue and Herndon Avenue in the 2030 plus project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i>.</p>	<p>Mitigation Measure #3.13-7b (TR-23): None feasible. The intersection of Shallow Avenue and Herndon Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Herndon Avenue and accepts LOS F with six lanes since additional widening is not feasible. This impact is <i>significant and unavoidable</i>.</p>	Applicant	Fresno County	As determined by Fresno County
<p>Impact #3.13-7c (TR-24): The Project shall exacerbate anticipated delays and a cumulative level of service that shall</p>	<p>Mitigation Measure #3.13-7c (TR-24): None feasible. The intersection of Shallow Avenue and Sierra Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
fall below the minimum acceptable level of service at the intersection of Shallow Avenue and Sierra Avenue in the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a <i>significant impact</i> .	are feasible. Therefore, this impact is <i>significant and unavoidable</i> .			
Impact #3.13-7d (TR-25): The Project shall exacerbate existing delays, and shall exacerbate anticipated delays and a cumulative level of service below the minimum acceptable level of service at the intersection of Shallow Avenue and Bullard Avenue under the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This shall result in an individually and cumulatively <i>significant impact</i> .	Mitigation Measure #3.13-7d (TR-25): None feasible. The intersection of Shallow Avenue and Bullard Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. Therefore, this impact is <i>significant and unavoidable</i> .	Applicant	Fresno County	As determined by Fresno County
Impact #3.13-7e (TR-26): The Project shall exacerbate existing delays at the intersection of	Mitigation Measure #3.13-7e (TR-26): The intersection of Shallow Avenue and Barstow Avenue should be widened to the following lane configurations	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<p>Shallow Avenue and Barstow Avenue. The Project shall also exacerbate anticipated delays and a cumulative level of service that shall fall below the minimum acceptable level of service at the intersection of Shallow Avenue and Barstow Avenue in the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This shall result in an individually and cumulatively <i>significant impact</i>.</p>	<p>to provide an acceptable level of service (LOS D) in the 2030 cumulative condition.</p> <ul style="list-style-type: none"> ▪ Northbound: two left-turn lanes, three through lanes, one right-turn lane ▪ Southbound: two left-turn lanes, three through lanes, one right-turn lane ▪ Eastbound: one left-turn lane, two through lanes, and two right-turn lanes ▪ Westbound: one left-turn lane and two through lanes with a shared right turn. <p>The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 1.0%.</p>			
<p>Impact #3.13-7f (TR-32): The Project shall exacerbate a cumulative LOS that falls below the minimum acceptable level of service under the 2030 condition without the Project on Shallow Avenue at the following locations:</p> <ul style="list-style-type: none"> ▪ Between Alluvial and Herndon Avenues; ▪ Between Herndon and Sierra Avenues; ▪ Between Sierra and Bullard Avenues; and 	<p>Mitigation Measure #3.13-7f (TR-32): None feasible. The City of Fresno General Plan identifies the ultimate need for six lanes on Shallow Avenue between Alluvial and Barstow Avenues and accepts LOS E. The City of Clovis requires LOS D. A width of six lanes is typically considered the maximum width for roadways in Fresno even when additional lanes are warranted (for example, Herndon Avenue and Friant Avenue are limited to six lanes even where the ultimate mitigation requires more lanes). The proposed Project does not create the need for additional lanes. The Project's share of this cumulative impact is considered to be <i>significant and unavoidable</i>.</p>	Applicant	Fresno County	As determined by Fresno County

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
<ul style="list-style-type: none"> ▪ Between Bullard and Barstow Avenues. <p>The Project's contribution to the anticipated cumulative condition is cumulatively considerable. These are <i>significant impacts</i>.</p>				
Impact #3.14.1 –Water Supply	Mitigation Measure #3.14.1: Prior to recordation of any final subdivision map within the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, a water transfer agreement to serve the proposed development shall be approved by the USBR, WWD 18 and/or the LTRID as appropriate. Approval and execution of the water transfer agreement for the full project water amount shall be required prior to approval of any land use entitlements.	Applicant	Fresno County	Prior to recordation of a final subdivision map
Impact #3.14.3 – Inadequate Wastewater Treatment Capacity and Facilities	Mitigation Measure #3.14.3a: All new development in the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, shall comply with Fresno County General Plan policy PF-D.2, which requires that any new community sewer and wastewater treatment facilities serving residential subdivisions be owned and maintained by a County Service Area or other public entity approved by the County, such as Waterworks District No. 18.	Applicant	Fresno County	Prior to development
	Mitigation Measure #3.14.3b: Adequately sized on-site collection facilities, including lift stations, shall be installed for each subdivision in the Project area concurrent with road construction for individual subdivisions. A “backbone” conveyance system	Applicant	Fresno County	Prior to issuance of building permits

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	sufficient to serve each subdivision shall be installed prior to issuance of building permits for that subdivision.			
	Mitigation Measure #3.14.3c: Wastewater collection, treatment and disposal of the Friant Ranch Specific Plan Area shall adhere to Section VI of the Friant Ranch Infrastructure Master Plan. The applicant and/or WWD 18 must demonstrate adherence to Section VI of the Friant Ranch Infrastructure Master Plan prior to issuance of an occupancy permit for development within the Friant Ranch Specific Plan Area.	Applicant	Fresno County	Prior to issuance of occupancy permit
	Mitigation Measure #3.14.3d: Commitments from the wastewater treatment provider to receive anticipated flows from the Friant Ranch Specific Plan Area and Millerton Lake Village Mobile Home Park at the WWTP shall be secured by Fresno County prior to County approval of improvement plans for wastewater collection and transmission infrastructure.	Applicant	Fresno County	Prior to approval of improvement plans
	Mitigation Measure #3.14.3e: Prior to issuance of building permits for each increment of new development within the Project Area, the County shall confirm that all necessary permits (e.g., NPDES) are in place for the WWTP to discharge additional treated effluent in the amounts associated with new development. This shall include a determination that development timing shall not impede other development for which entitlements have been issued.	Applicant	Fresno County	Prior to issuance of building permits
	Mitigation Measure #3.14.3f: Prior to approval of improvement plants and wastewater collection and infrastructure, the applicant must demonstrate to the County that on- and off-site sewer pipelines shall have watertight joints and be in accordance with design standards adopted by Fresno County in order to minimize the potential for accidental discharge.	Applicant	Fresno County	Prior to approval of improvement plans

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	Mitigation Measure #3.14.3g: The design plans for the WWTP shall incorporate appropriate and cost-effective odor and noise reduction measures, to the satisfaction of the Fresno County Public Works and Planning Department prior to issuance of the conditional use permit for the WWTP.	Applicant	Fresno County	Prior to issuance of CUP for the WWTP
Impact #3.14.6 – Compliance with Federal, State, and Local Solid Waste Regulations	Mitigation Measure #3.14.6a: Contractors shall be required to provide on-site separation of construction debris to assure a minimum 50% diversion of this material from the landfill.	Applicant	Fresno County	On going
	Mitigation Measure #3.14.6b: A source-separated green waste program shall be implemented within the project area, subject to review and approval by the Fresno County Department of Public Works and Planning, Resources and Parks Division.	Applicant	Fresno County	On going
Impact #3.14.7 – Development of the Community Plan area shall increase the demand for electricity and natural gas and shall result in the need to construct new infrastructure to serve the Community Plan area	Mitigation Measure #3.14.7a: The Specific Plan applicants and subsequent developers within the Community Plan area shall work closely with PG&E to ensure that development of electrical and natural gas infrastructure with the capacity to service the entire Community Plan area is located and provided concurrently with roadway construction and in accordance with PUC regulations. The applicant(s) shall grant all necessary easements for installation of electrical and natural gas facilities, including utility easements along existing and future on-site arterial roads for the development of area-wide utility corridors. Coordination with PG&E shall occur, and any required agreements shall be established prior to recordation of the first final subdivision map.	Applicant	Fresno County	On going
	Mitigation Measure #3.14.7b: Implement Mitigation Measure 3.3.2 as set forth in Section 3.3 of this Draft EIR.	Applicant	Fresno County	See mitigation for specific time span

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
Impact #3.14.1 – Development of the Project could potentially result in a cumulatively considerable incremental contribution to the significant cumulative impact of global climate change	Mitigation Measure #3.15.1a: The applicant shall select and locate trees carefully to protect buildings from energy consuming environmental conditions, and to shade paved areas. Trees selected to shade paved areas should be species that shall shade 25% of the paved area within 20 years.	Applicant	Fresno County	Prior to development
	Mitigation Measure #3.15.1b: The applicant shall distribute a tree planting informational packet to help project area residents understand their options for planting trees that can absorb carbon dioxide.	Applicant	Fresno County	Prior to resident occupancy
	Mitigation Measure #3.15.1c: Prioritized parking within commercial and retail areas shall be given to electric vehicles, hybrid vehicles, and alternative fuel vehicles.	Applicant	Fresno County	Prior to resident occupancy
	Mitigation Measure #3.15.1d: Promote passive solar building design and landscaping conducive to passive solar energy use.	Applicant	Fresno County	Prior to resident occupancy
	Mitigation Measure #3.15.1e: Develop walking trails throughout the Friant Ranch Specific Plan Area in accordance with the plan	Applicant	Fresno County	Prior to resident occupancy
	Mitigation Measure #3.15.1f: Implement the following measures as determined appropriate by the County in consultation with the SJVAPCD: <ul style="list-style-type: none"> ▪ Fund Transportation Control Measures (TCM's) program: transit, bicycle, pedestrian, traffic flow improvements, transportation system management, rideshare, telecommuting, video-conferencing, etc. This plan shall provide for eventual public transit and implementation of trip reduction strategies that 	Applicant	Fresno County/SJVAPCD	Prior to development

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>coordinate with surrounding areas. A Transportation Management Association (TMA) shall be established that shall be funded by the developer and all businesses located within the Specific Plan area. The TCM plan shall be updated annually by TMA staff to demonstrate compliance with all air quality requirements, and to incorporate the latest state-of-the-art techniques and strategies to reduce emissions.</p> <ul style="list-style-type: none"> ▪ Establish paving guidelines that encourage businesses, if feasible, to pave all privately-owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to Portland cement concrete. The use of a paving substance with reflective attributes similar to Portland Cement concrete is considered feasible under this measure if the additional cost is less than 10% of the cost of applying a standard asphalt product; and 			
	<p>Mitigation Measure #3.15.1g: The following measures shall be used singularly or in combination to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of the 2008 State of California Title 24:</p> <ul style="list-style-type: none"> ▪ Prior to issuance of an occupancy permit, the applicant shall demonstrate the use of air conditioning systems that that are more efficient than Title 24 requirements; ▪ In marketing materials associated with any project within the Friant Community Plan Area, the applicant shall encourage the use of high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, and furnaces; 	Applicant	Fresno County	Prior to issuance of occupancy permit

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> ▪ Encourage photovoltaic rooftop energy systems in community buildings and larger commercial buildings. ▪ Prior to issuance of an occupancy permit, the applicant shall establish tree-planting guidelines that require residents to plant trees to shade buildings primarily on the west and south sides of the buildings. Use of deciduous trees (to allow solar gain during the winter) and direct shading of air conditioning systems shall be included in the guidelines. ▪ As required by the Friant Specific Plan, prohibit any wood-burning fireplaces, woodstoves, or similar wood-burning devices. This prohibition shall be included in any CC&Rs that are established. 			
	<p>Mitigation Measure #3.15.1h: The following measures shall be used to demonstrate sustainable building practices and lessen the impact on Greenhouse Gases.:</p> <ul style="list-style-type: none"> ▪ Provide parks and open space throughout the residential developments as required by the Friant Ranch Specific Plan; ▪ Prior to issuance of an occupancy permit, all non-residential projects within the Community Plan Area shall demonstrate that bicycle racks shall be provided. ▪ Prior to issuance of an occupancy permit, all apartment complexes or condominiums without garages within the Community Plan Area shall demonstrate that at least two Class I bicycle storage spaces per unit shall be provided; 	Applicant	Fresno County/SJVAPCD	Prior to issuance of occupancy permit

Impact Number	Mitigation Measures	Implementation	Monitoring	Time Span
	<ul style="list-style-type: none"> <li>▪ As required by the Friant Community Plan Update and Friant Ranch Specific Plan, residential neighborhoods shall be interconnected, with easy access to commercial and recreational land uses. <li>▪ Prior to issuance of an occupancy permit within the Friant Ranch Specific Plan area, the applicant shall create informational materials informing occupants of: <ul style="list-style-type: none"> <li>○ The alternative travel amenities provided, including ridesharing and public transit availability schedules. <li>○ The Community Plan’s pedestrian, bicycle, and equestrian paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas; <li>○ The SJVAPCD programs to reduce county-wide emissions. <li>▪ Any new park areas within the Community Plan Area shall include: <ul style="list-style-type: none"> <li>○ Bicycle racks at all appropriate locations; and <li>○ A community notice board and information kiosk with information about community events, ride sharing, and commute alternatives. <li>▪ Provide a community notice board and information kiosk with information about community events, ride-sharing, and commute alternatives. 			

CHAPTER TWO
PROJECT DESCRIPTION

CHAPTER TWO – PROJECT DESCRIPTION

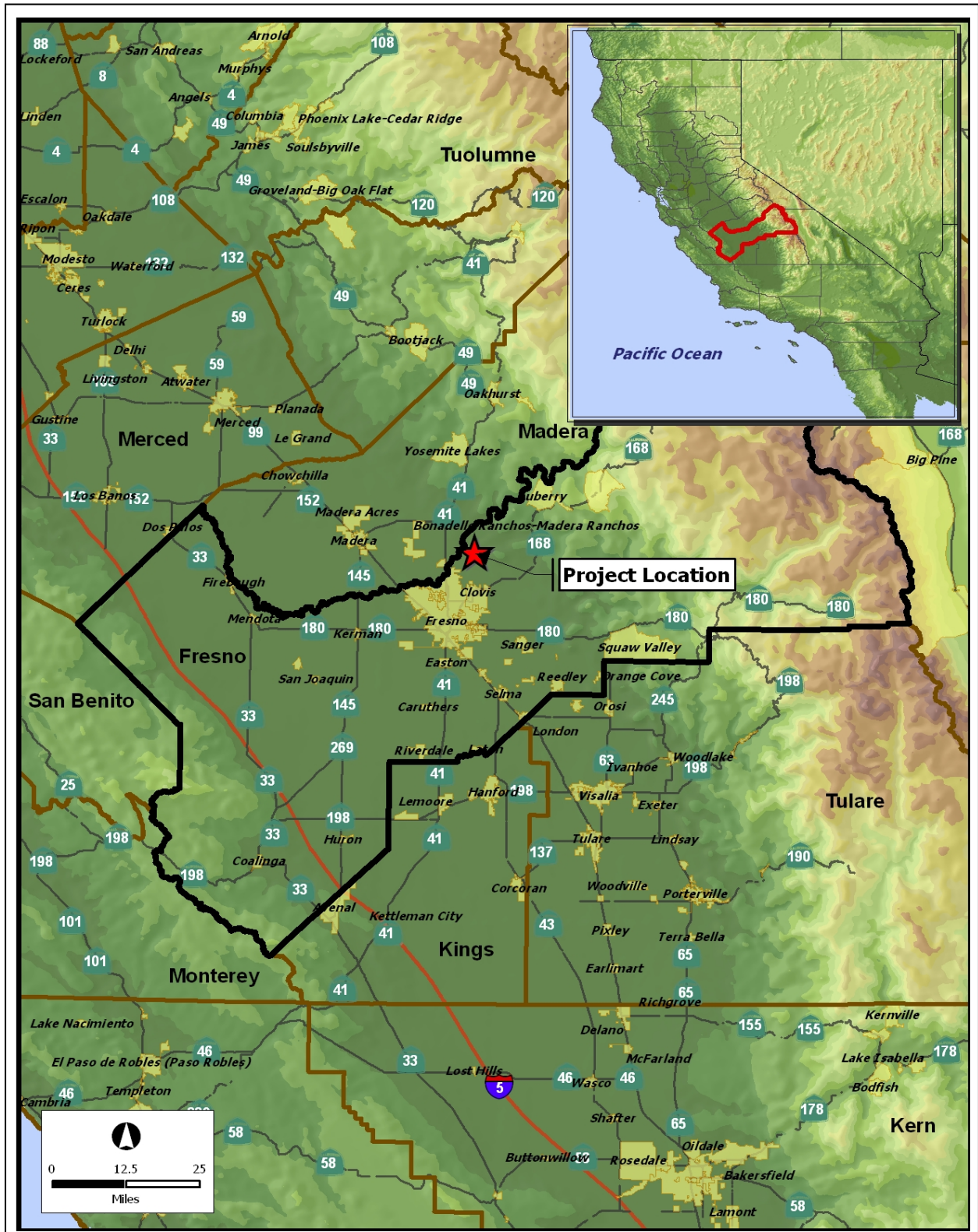
2.1 *Project Summary*

The County of Fresno is the Lead Agency for the preparation of this Program/Project EIR for the Friant Community Plan Update, Friant Redevelopment Plan Amendment, Friant Ranch Specific Plan, and related actions described in section 2.4 below (collectively referred to herein as the “Project”).

2.2 *Project Location*

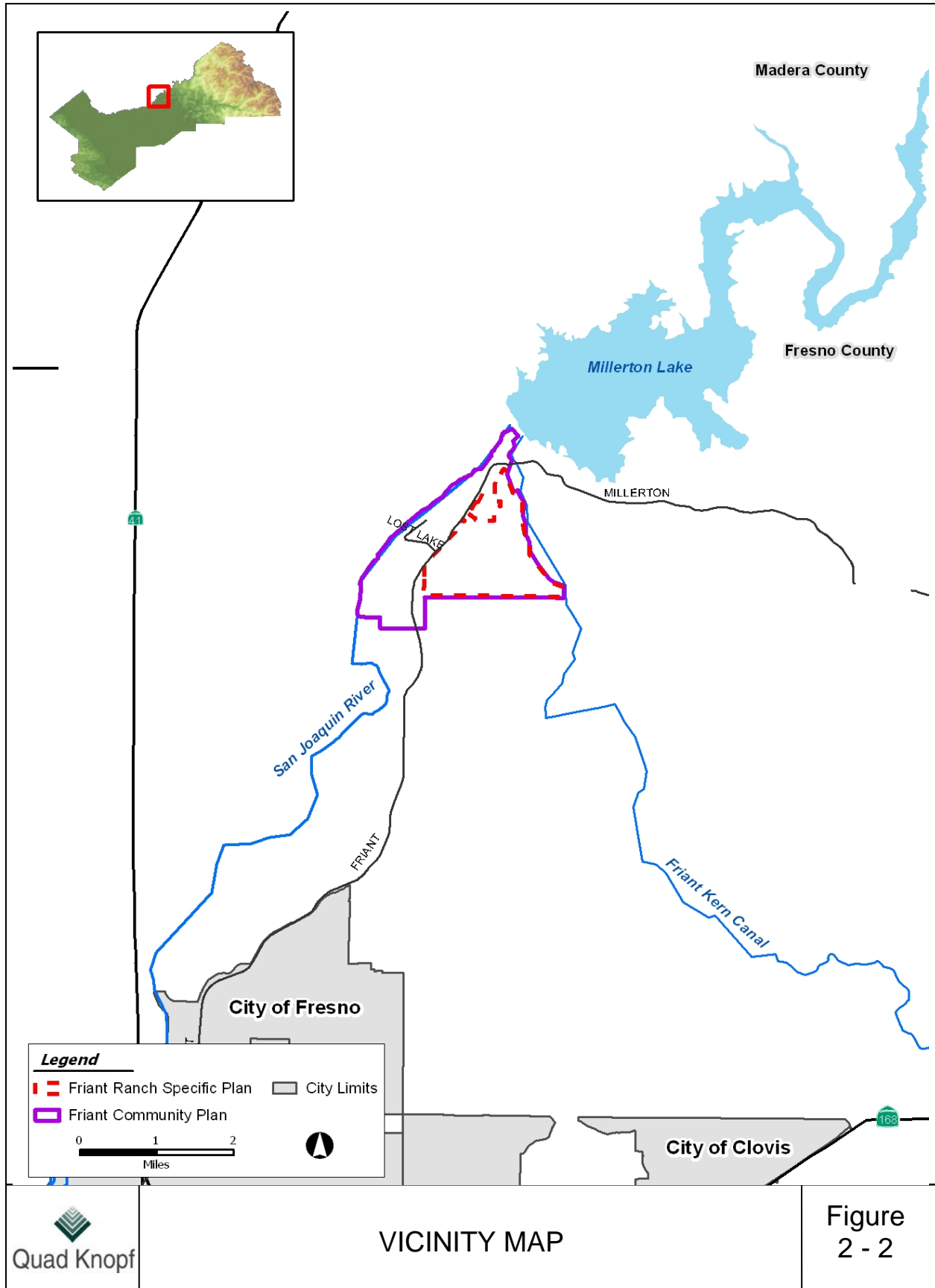
Figure 2-1 shows the regional location of the Project Area. The white numbers on the map represent state highways. Figure 2-2 shows a vicinity map for the Project. The Project Area lies on the eastern side of the San Joaquin Valley. The San Joaquin Valley is bordered on the east by the Sierra Nevada Mountains, on the west by the South Coast Ranges, and on the far south by the Tehachapi Range. The Project Area is located in and on lands adjacent to the unincorporated community of Friant in north-central Fresno County, north of the cities of Fresno and Clovis. The Project Area is just east of the San Joaquin River, which forms the western boundary between Fresno and Madera Counties in this portion of Fresno County.

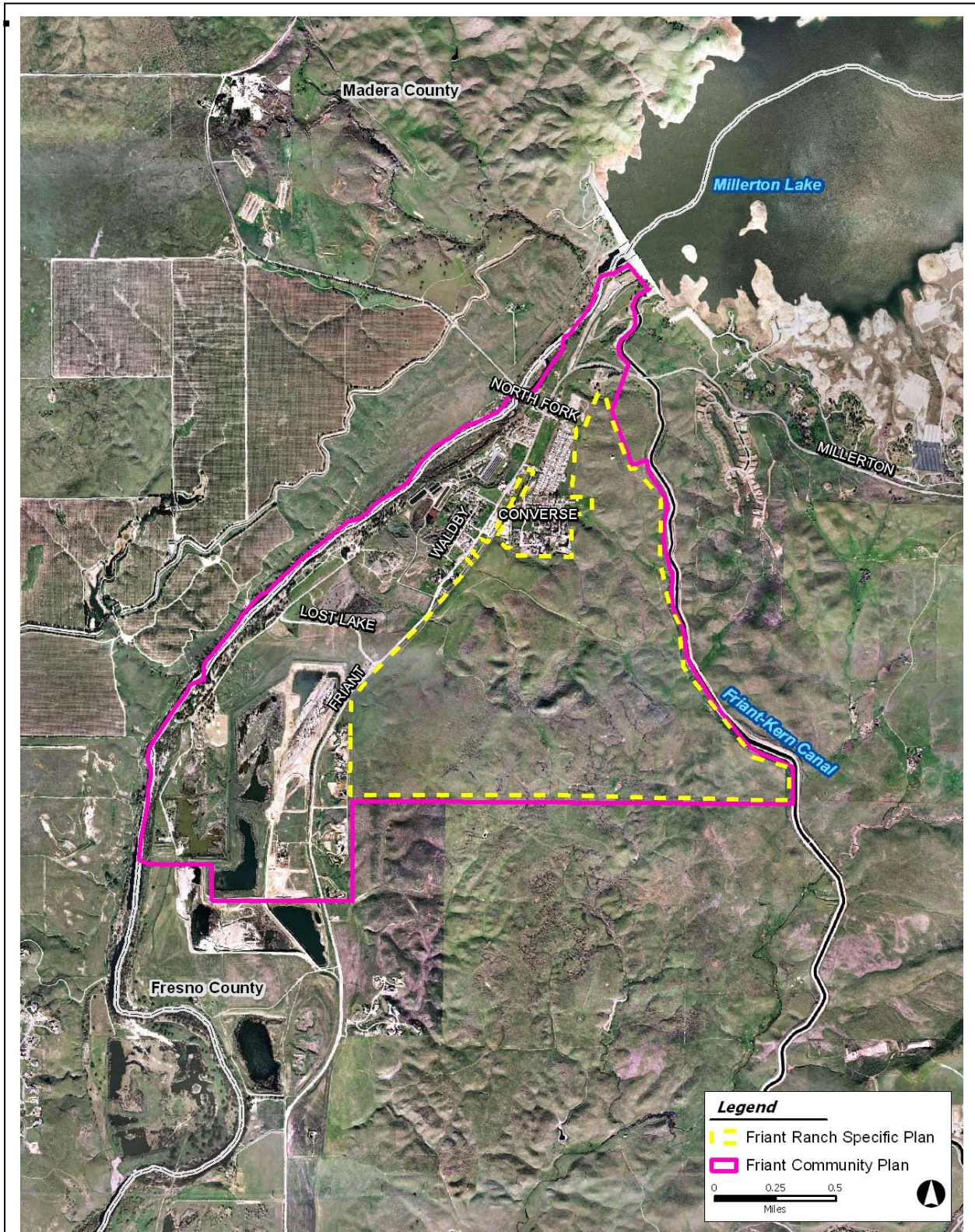
- The Project involves the following property: Figure 2-3 shows an aerial photo for the expanded boundaries of the proposed Friant Community Plan Update (“Proposed Community Plan Area”). Figure 2-4 identifies the lands currently included within the boundaries of the 1983 Friant Community Plan. For purposes of this EIR, the lands within the 1983 Friant Community Plan are referred to herein as the “Existing Friant Community Plan Area.” The Friant Community Plan Update proposes to expand the Existing Friant Community Plan Area boundaries to encompass a total area of approximately 1,804 acres.
- Figure 2-3 shows an aerial photo for the expanded boundaries of the Friant Ranch Specific Plan boundaries (“Specific Plan Area”). Figures 2-2 and 2-3, identify the approximately 942.2 acres proposed for development through the Friant Ranch Specific Plan. The Specific Plan Area is located approximately nine miles north of the Fresno City limits and 21 miles east of the City of Madera. Portions of the Specific Plan Area are already within the existing Community Plan Area identified in Figure 2-4. The Friant Community Plan Update will expand the Friant Community Plan boundary to include the remaining Specific Plan Area.



REGIONAL LOCATION

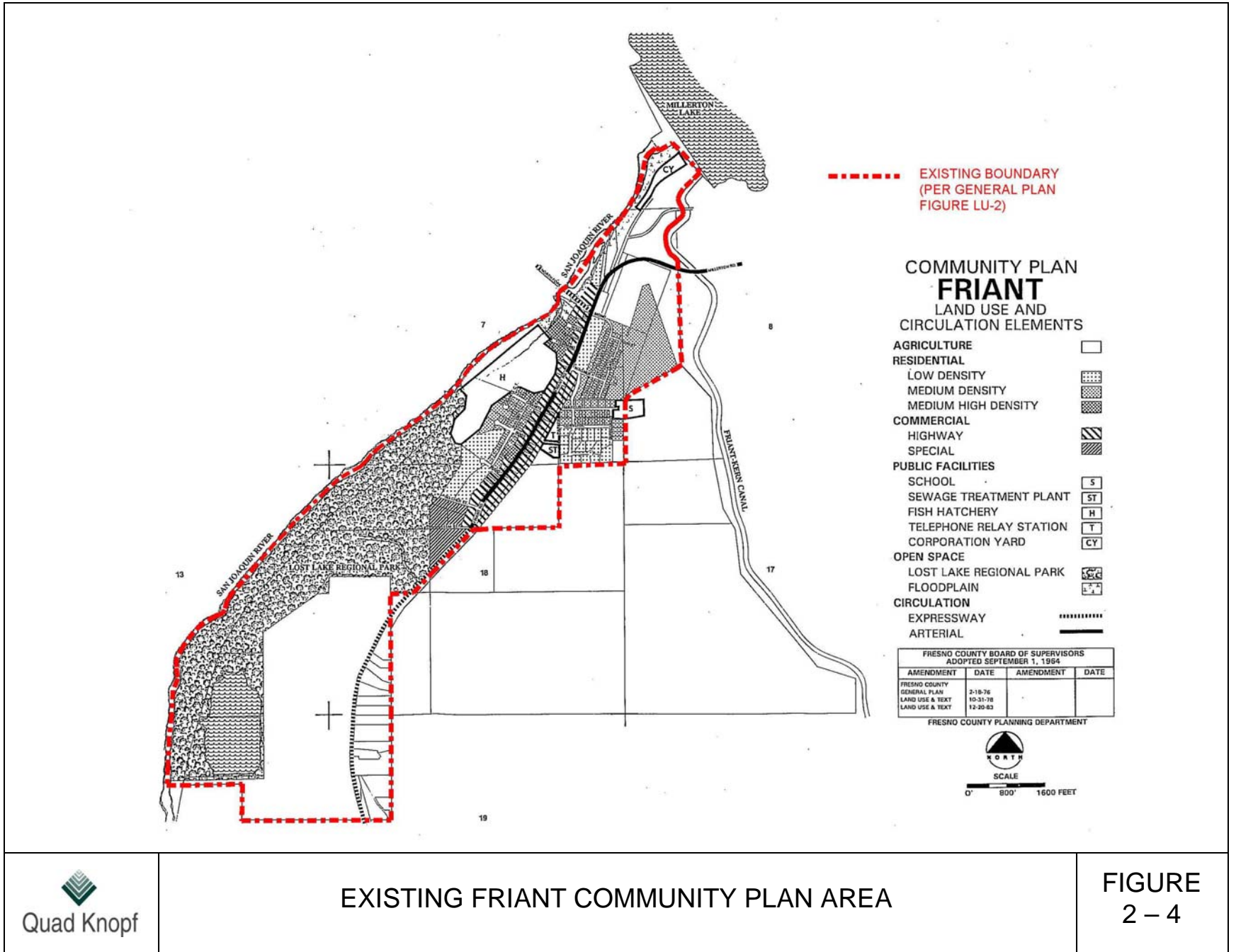
Figure 2 - 1





AERIAL VIEW OF PROJECT AREA

Figure
2 - 3



EXISTING FRIANT COMMUNITY PLAN AREA

FIGURE
 2 - 4

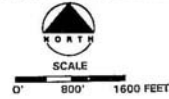
- - - - - EXISTING BOUNDARY
 (PER GENERAL PLAN
 FIGURE LU-2)

COMMUNITY PLAN
FRIANT
 LAND USE AND
 CIRCULATION ELEMENTS

- AGRICULTURE □
- RESIDENTIAL
 - LOW DENSITY ▨
 - MEDIUM DENSITY ▩
 - MEDIUM HIGH DENSITY ▧
- COMMERCIAL
 - HIGHWAY ▨
 - SPECIAL ▩
- PUBLIC FACILITIES
 - SCHOOL S
 - SEWAGE TREATMENT PLANT ST
 - FISH HATCHERY H
 - TELEPHONE RELAY STATION T
 - CORPORATION YARD CY
- OPEN SPACE
 - LOST LAKE REGIONAL PARK L.R.P.
 - FLOODPLAIN F.P.
- CIRCULATION
 - EXPRESSWAY —————
 - ARTERIAL —————

FRESNO COUNTY BOARD OF SUPERVISORS ADOPTED SEPTEMBER 1, 1964			
AMENDMENT	DATE	AMENDMENT	DATE
FRESNO COUNTY GENERAL PLAN	2-18-76		
LAND USE & TEXT	10-31-78		
LAND USE & TEXT	12-20-83		

FRESNO COUNTY PLANNING DEPARTMENT



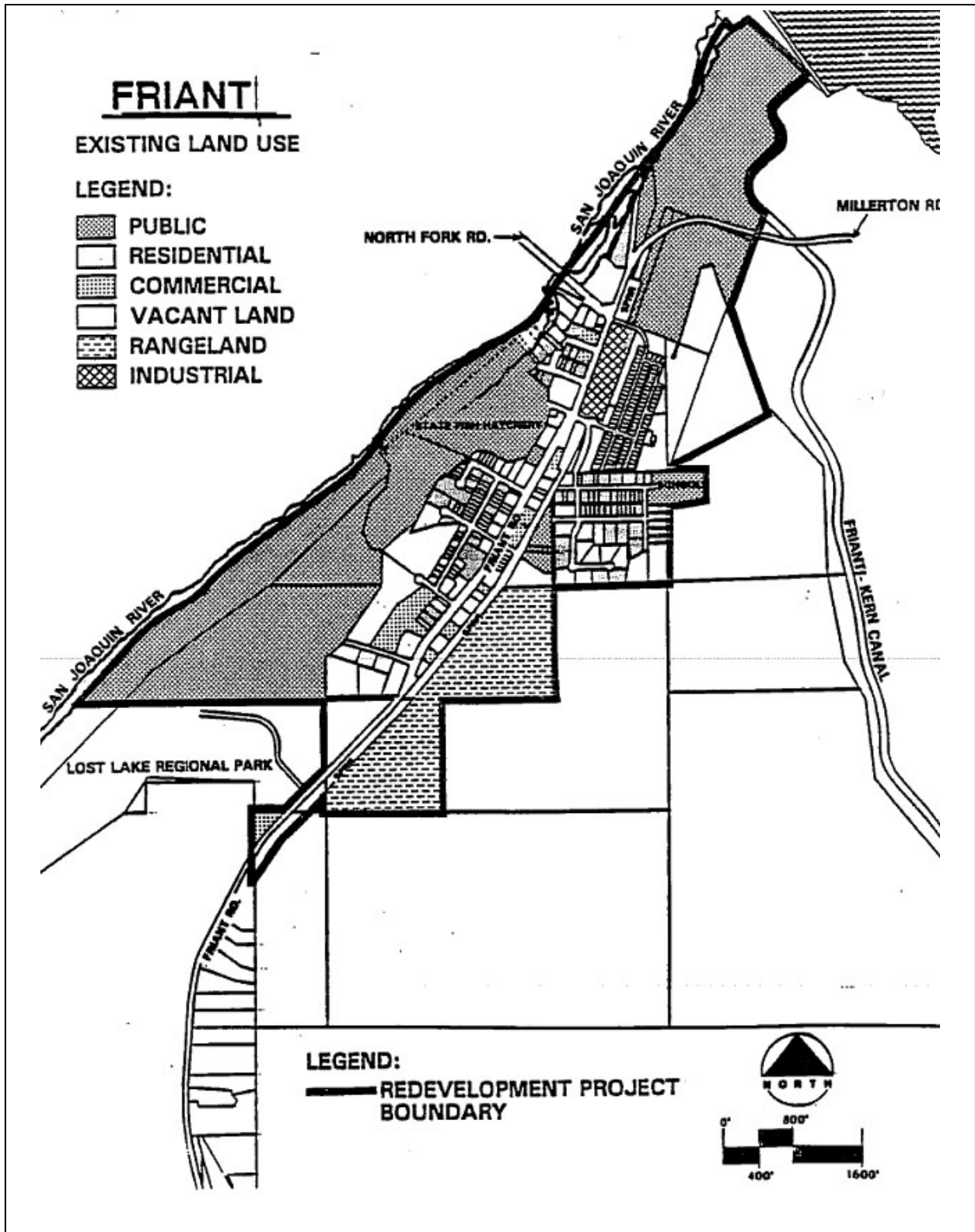
- The Depot Parcel, which is within the Existing Community Plan Area and is owned by an affiliate of the Project applicant, is located on the east side of Friant Road, just below the intersection with Road 206 and above Bugg Street. Figure 2-4 shows the Depot Parcel.¹
- The existing Redevelopment Project Plan area (“Redevelopment Plan Area”), as shown in Figure 2-5, is located within the western portion of the Community Plan area and is bordered by the San Joaquin River to the west, Lost Lake Regional Park to the south, and the Friant Dam and Millerton Lake to the north. The eastern border extends slightly beyond Burroughs Avenue and Bluewater Bay and encompasses a portion of the Specific Plan Area. The Project does not propose to change the boundaries of the Friant Redevelopment Plan Area. The proposed expanded Water Treatment Facility will affect previously disturbed lands under and immediately surrounding the existing Water Works District 18 Water Treatment Facility within the Existing Friant Community Plan Area.
- The proposed water transfer between Water Works District 18 (Figure 2-10) and Lower Tule River Irrigation District (Figure 2-11) will benefit lands within the Proposed Community Plan Area and indirectly affect lands within the Lower Tule River Irrigation District in Tulare County that currently use the water subject to the proposed transfer.

2.3 Surrounding Land Uses

The Project Area is in central Fresno County, north of the cities of Fresno and Clovis. The Existing Community Plan Area is bounded by the San Joaquin River and Madera County to the west, Friant Dam and Millerton Lake to the north, open space land to the south, and the Friant-Kern Canal to the east.

The Specific Plan Area is bounded by residential single-family homes to the north, Friant Road to the west, and vacant open space to the south and east beyond the Friant-Kern Canal, which runs along the eastern edge of the Specific Plan Area. The Specific Plan Area is in the vicinity of several neighborhoods within the Existing Community Plan Area. Nearby developments include but are not limited to Millerton New Town which is still being entitled (although some areas have been graded, significant portions of the proposed development are not yet under construction), Brighton Crest (with approximately 80 of the 420 approved lots built at this time) and Table Mountain Casino which is already built. (Please see Chapter Five – Cumulative Impacts for more information about regional developments.)

¹ The recorded size of the parcel (APN 300-010-03S) is 12.75 acres. The recorded size of the entire APN 300-010-03S is 12.75 acres. The north section of APN 300-010-03S is already developed (1.963 acres) as commercial, portions of APN 300-010-03S are comprised of access roadways (0.635 acres), and the southern part is included in the Specific Plan Area and is currently designated in the 1983 Community Plan as Highway Commercial and already zoned s General Commercial District (C-6) (2.30 acres). widening has been approved and construction was in progress as of the issuance of the NOP and circulation of this EIR). The “Depot Parcel”, which comprises the middle section of APN 300-010-03S (7.85 acres), is designated Low Density Residential and is zoned as Single Family Residential—Agricultural District (R-A). The middle section will be reduced to approximately 6.75 acres with the widening of Friant Road (based on Fresno County’s adopted road widening plan).



FRIANT REDEVELOPMENT PLAN AREA

Figure 2 - 5

The Depot Parcel is surrounded to the north by commercial uses, to the east by residential areas, to the south by vacant buildings and some commercial uses, and to the west by Friant Road and additional vacant buildings and commercial uses.

The Redevelopment Plan Area is bordered by open space to the west, open space and residential to the south, a public facility to the north, and open space and residential to the east.

2.4 Project Description

Friant Community Plan Update

The Friant Community Plan is Fresno County's adopted statement of policy for the growth and improvement for the unincorporated community of Friant, situated just below Friant Dam along Friant Road. The Friant Community Plan establishes planning goals and policies to guide development of the unincorporated community of Friant. The original Friant Community Plan was adopted on July 23, 1964. The first amendment was adopted on September 25, 1975, followed by a second amendment on June 29, 1978, and a third amendment on October 20, 1983. The County is now processing an update to the Friant Community Plan. This EIR considers the impacts associated with the Friant Community Plan Update, including any impacts resulting from the expansion of the boundaries and the change of land use designation for the Depot Parcel (as described in Section 2.2 and depicted in Figure 2-4). Though the Friant Community Plan Update does not propose any changes to land use designations for lands other than those within the Friant Ranch Specific Plan Area and the Depot Parcel, this EIR also analyzes the potential impacts associated with the future buildout of vacant lands within the Existing Friant Community Plan Area according to the proposed land use designations (as set forth in the 1983 Friant Community Plan and proposed for re-adoption in this Friant Community Plan Update). The change in Friant Community Plan boundaries and the land use designation changes for the Depot Parcel and Friant Ranch Specific Plan Area parcels will also require a Fresno County General Plan amendment.

The Friant Redevelopment Plan, adopted in 1992, covers 597 acres within the Existing Friant Community Plan Area and includes specific projects that are anticipated to encourage redevelopment of the area. The Friant Redevelopment Implementation Plan for the years 2005-2009 contains as a primary program, "the design and construction of a sewage treatment and collection system for the commercial strip along Friant Road and for new and existing residential development within the Community of Friant." As part of the Project, the County proposes an amendment to the Friant Redevelopment Plan to extend the term an additional 20 years and to eliminate the commercial development standards set forth in the 1992 Friant Redevelopment Plan. The Friant Redevelopment Plan amendment is related to the other Project actions in that the lands involved overlap. Moreover, the development proposed within the Friant Ranch Specific Plan will provide commercial development within the Friant Redevelopment Plan Area, which will create additional revenues to fund the redevelopment program.

Friant Ranch Specific Plan

The Friant Ranch Specific Plan would serve as an overall framework and regulatory document for the development of a mixed use community with 2,683 single-family age-restricted units, 83 multiple-family age-restricted units, 180 non-age-restricted multi-family units, and 250,000 square feet of commercial within a Village Core that also provides for up to 50 residential units.

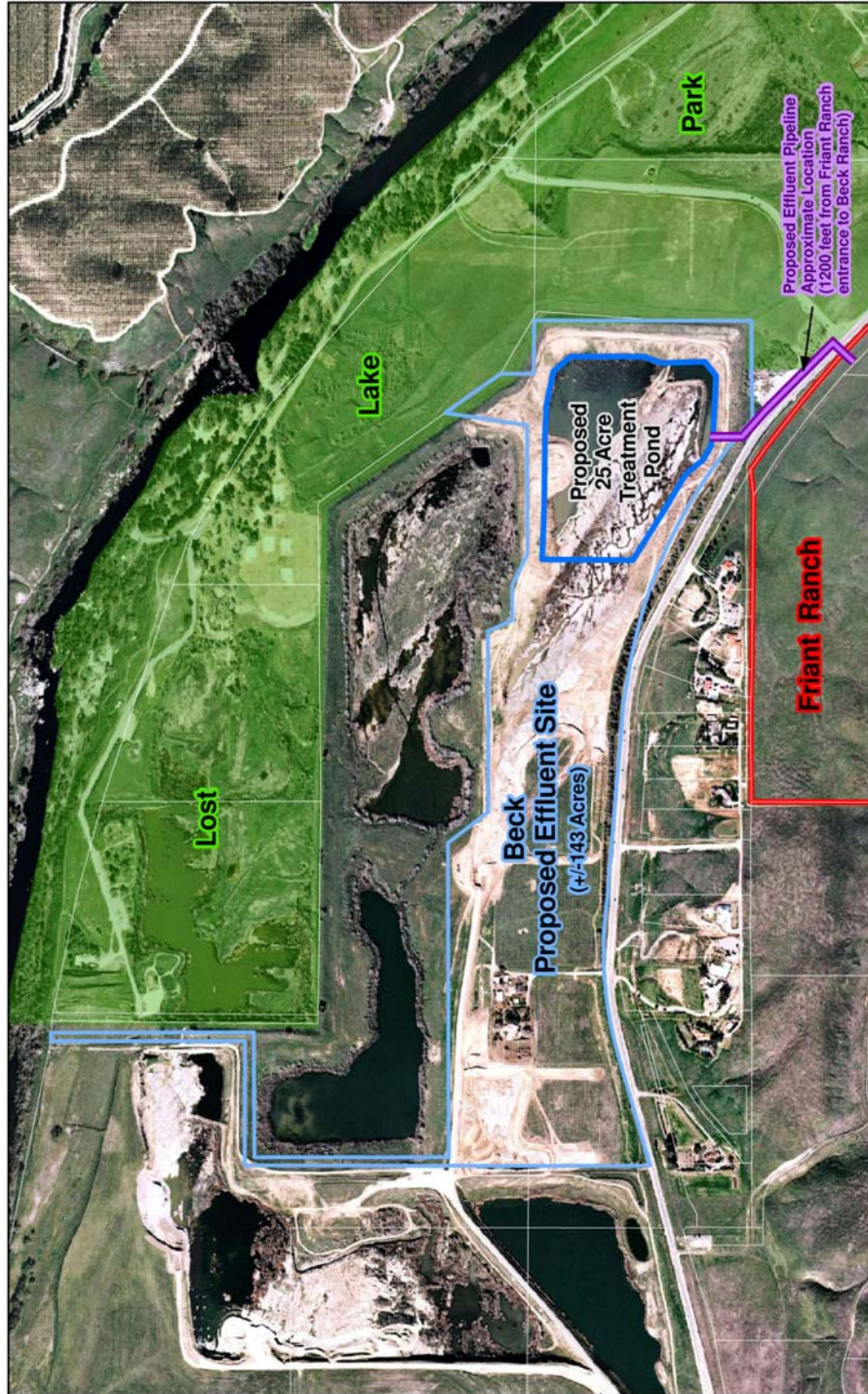
The Friant Ranch Specific Plan incorporates two active adult recreation centers, approximately 15 miles of trails and parkways, approximately 20 acres of parks and public open space areas, approximately 92 acres of landscaped slopes, and approximately 275 acres of conservation open space areas (including 245 acres of undisturbed open space and 30 acres of revegetated open space slopes). The Specific Plan development will require a number of additional actions, which are analyzed in this EIR, including but not limited to a water transfer agreement for 2,000 acre-feet of water annually between Lower Tule River Irrigation District and Fresno County Waterworks District No. 18 (WWD #18), Regional Water Quality Control Board permits for irrigation with treated effluent of Specific Plan landscaping and off-site disposal of treated effluent on suitable nearby lands such as the Beck Property (identified in Figure 2-6) and/or Lost Lake Park (and, if sufficient winter land disposal areas are not available, seasonal discharge to the San Joaquin River), United States Army Corps of Engineers and Regional Water Quality Control Board permits for dredge and fill of wetlands, Endangered Species Act and California Endangered Species Act compliance through United States Fish and Wildlife Service, United States National Marine Fisheries Service, and California Department of Fish and Game, replacement of the current wastewater treatment plant servicing the Millerton Lake Village Mobile Home Park, construction of a new water treatment plant, annexation of Friant Ranch Specific Plan Area into Fresno County Waterworks District No. 18, and various agreements and permits related to the water treatment plant and wastewater treatment plant infrastructure and operation. The Project also includes the adoption of a new zoning ordinance for the Friant Ranch Specific Plan Area.

As noted above in the Friant Community Plan discussion, the Project also includes a land use designation change for the middle 6.75 acres of APN 300-010-03S (this middle portion of APN 300-010-03S is referred to herein as the “Depot Parcel”), which is within the Existing Friant Community Plan Area, from Low Density Residential to Highway Commercial.² The Project also includes a corresponding zone change for the Depot Parcel from Single Family Residential—Agricultural District (R-A) to General Commercial District (C-6).

The Specific Plan Area is planned as an active adult community and will qualify for the exemption³ as a community for age 55 and older persons based on the Fair Housing Amendments Act of 1988, and the Housing for Older Persons Act of 1995: Final Rule (Department of Housing and Urban Development: 24 CFR Part 100) and California Government Code section 65008(a)(1)(B).

² The recorded size of the entire APN 300-010-03S is 12.75 acres. The north section (1.963 acres) is already in commercial use. Portions of the Depot Parcel (0.635 acres) are dedicated to access roadways. The Depot Parcel, which comprises the middle section (7.85 acres), is designated Low Density Residential and is zoned as Single Family Residential—Agricultural District (R-A). The middle section will be reduced to approximately 6.75 acres with the widening of Friant Road (based on Fresno County’s adopted road widening plan). The southern section (2.30 acres), which is located within the Friant Ranch Specific Plan Area, is designated for Highway Commercial and zoned as General Commercial District (C-6). For purposes of this EIR, the middle 6.75 acres of APN 300-010-03S is referred to as the “Depot Parcel”.

³ The applicant has provided information and a legal opinion to show that age-restricted units within the Friant Ranch Specific Plan Area are exempt from the general ban on discrimination in housing based upon familial status.



**FIGURE
2 - 6**

TREATED EFFLUENT DISPOSAL SITES



The age restrictions for the Project are enforceable as covenants and deed restrictions that run with the land. The Covenants, Conditions, and Restrictions (CC&Rs), by-laws, and policy each will reflect that the age restriction is intended to run with the land. The age restriction relates to the land because it governs the residency of the community and membership in the Home Owners Association (HOA). Since the age restriction is common to the community, any lot owner and/or the HOA would be able to enforce the age restriction.

Since 2,766 (approximately 92%) of the maximum 2,996 dwelling units will be age-restricted units (55 years and over), it is anticipated that some of the potential environmental impacts associated with the Project may be different than with a typical multi-generational residential subdivision. This is because active adult (55+) communities have, on average, a lower per unit number of residents than non-restricted communities. The 2001 American Housing Survey by the US Census Bureau and the Department of Housing and Urban Development states that the combined demographic for the 55-64 and 65-74 age categories averages 1.9 persons per dwelling unit. Additionally, active adults (55+) have unique lifestyles that differentiate their habits from residents of multi-generational communities. This EIR considers the potential effect of the age restrictions that would be in effect within all but one non-age restricted multi-family section of the Specific Plan Area (180 units) in its evaluation of Project impacts.

In accordance with federal law, the covenants, codes and restrictions to be recorded against the property deeds for the Friant Ranch Specific Plan Area will require each dwelling unit to be occupied by at least one person not less than 55 years of age so that at all times a person 55 years of age or older will reside in at least 80% of the occupied dwellings. Similarly, the Friant Ranch Homeowners Association (HOA) By-Laws will limit new membership in the association to those dwelling units with at least one resident at 55 years of age or older. Finally, the association age-restriction policy will declare the association's requirement to maintain the percentage of age qualified occupancy as close to 100% as possible without mandating a greater percentage than the minimum 80% required by federal law. The age restrictions are enforceable as covenants that run with the land. The age restriction relates to the land because it governs the residency of the community and membership in the HOA.

Consistent with these policies and state and federal law, for the foreseeable future 100% of the age-restricted units will be occupied by at least one person of the age 55 years and older. However, if the age-qualified individual ceases to reside in the home, it is conceivable that over time some of the units will not be occupied by someone over 55 years of age (e.g., the 50 year old widow remains in a unit after her 55+ husband passes away). Although the legal restrictions assure that the community as a whole will maintain resident(s) over the age of 55 no less than 80% of the age-restricted units, the actual percentage of homes (ie, from 80% -100%) that would, over time, not be occupied by someone over the age of 55 is speculative. However, at any given time during the life of the Project, no fewer than 2,212 of the 2,776 age-restricted units will be occupied by at least one person of age 55 years or older. This amounts to nearly 74% of the maximum residential units contemplated under the Friant Ranch Specific Plan. Since the age restriction is common to the community, any lot owner and/or the HOA would be able to enforce the age restriction. This analysis considers the age-restricted nature of the proposed community in assessing potential impacts.

The Friant community is home to the County's only redevelopment area. The Redevelopment Plan was adopted in 1992 and includes specific projects anticipated to encourage redevelopment of the area. The Friant Redevelopment Implementation Plan for the years 2005-2009 contains as a primary program, "the design and construction of a sewage treatment and collection system for the commercial strip along Friant Road and for new and existing residential development within the Community of Friant." These improvements have not been implemented due to lack of funding sources. The Project applicant proposes to construct a new tertiary treatment plant that will have capacity to treat wastewater from the existing community of Friant as well as the proposed Friant Specific Plan development, but construction of the collection system necessary to provide sewer service to the community is not part of this Project. Additional improvements (such as wastewater collection infrastructure for the existing community) will require financing from redevelopment funds or other funding sources. In order to maximize the benefits from the proposed redevelopment improvements, the County is proposing a redevelopment plan amendment to extend the term of the already designated redevelopment area from 2012 to 2032.

2.4.1 COUNTY OF FRESNO GENERAL PLAN DESIGNATIONS AND ZONING

The Project will amend the General Plan and zoning designations for the: (1) 942.2 acres of the Specific Plan Area; and (2) approximately 6.75 acres of the Depot Parcel.

- The majority of the Specific Plan Area is designated Agriculture in the Fresno County General Plan, with the exception of approximately 47 acres within the Specific Plan Area that are currently designated as Medium Density Residential (the northernmost tip of the Specific Plan Area) and Highway Commercial (along Friant Road frontage). The current zoning designation for the majority of the Specific Plan Area is Exclusive Agriculture (AE-20 and AE-40), however, approximately 20 acres are zoned Trailer Park-conditional (TP-C), approximately 15 acres are zoned Trailer Park (TP), approximately 4 acres are zoned commercial (C-6), and approximately 2.5 acres are zoned residential (R-A and R-1).
- The Project proposes to change the land use designation and zoning for the approximately 6.75-acre Depot Parcel. The Depot Parcel is currently designated Low Density Residential in the Fresno County General Plan and 1983 Friant Community Plan. As depicted in Figure 2-7, the Project proposes to change this designation to Highway Commercial. The Project proposes to change the zoning of the Depot Parcel from Single-Family Residential Agricultural District (R-A) to General Commercial District (C-6).

2.4.2 PROPOSED STATE AND LOCAL ENTITLEMENTS AND APPROVALS

1. County of Fresno

a. Fresno County General Plan Amendment

A General Plan amendment is required for the proposed Community Plan Update. The proposed General Plan amendment will have the following effects:

- Increase the size of the Community Plan area to approximately 1,804 acres.

- Change the land use designations for the Specific Plan Area to Medium Density Residential, Medium High Density Residential, Community Commercial, Open Space, and Public Facilities. The current land use designations for the Specific Plan Area include Agriculture, Medium Density Residential, and Highway Commercial.
- Change the land use designation for the Depot Parcel from Low Density Residential to Highway Commercial.
- Establish development standards to accommodate proposed development within the Specific Plan Area.

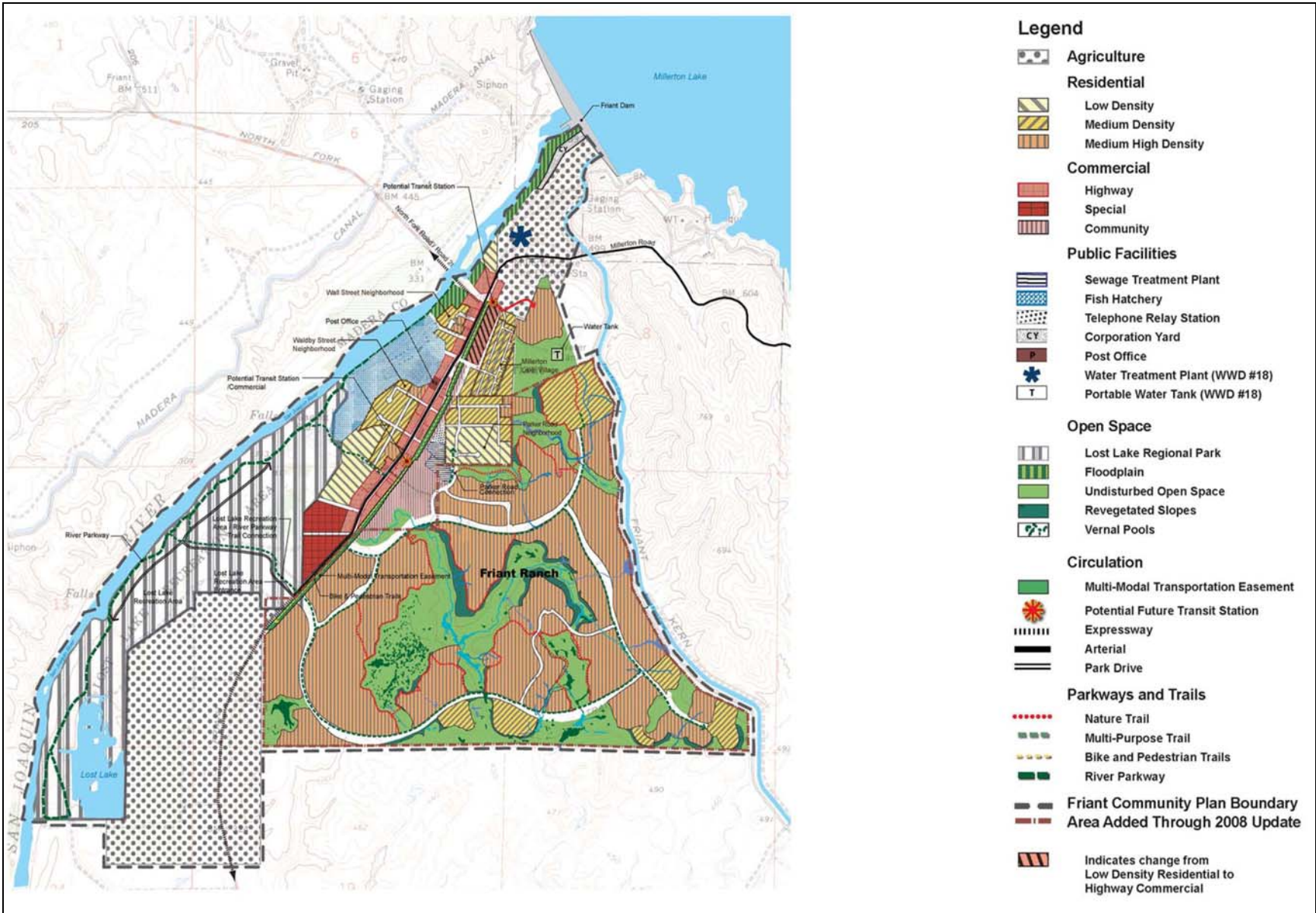
b. Friant Community Plan Update

The Project includes updating the Friant Community Plan (Community Plan). The Friant Community Plan was first adopted on September 1, 1964 and subsequently amended in 1976, 1978 and 1983. Figure 2-7 shows the proposed Community Plan map.

The Community Plan is Fresno County’s adopted statement of policy for the growth and improvement for the community of Friant. The Community Plan area is bounded by the San Joaquin River and Madera County to the west, Friant Dam and Millerton Lake to the north, open space land to the south, and the Friant-Kern Canal to the east. Friant and Millerton Roads provide access to surrounding communities in Fresno County, while North Fork Road/Road 206 provides access to Madera County. The proposed Community Plan area will encompass approximately 1,804 acres. The Community Plan establishes planning goals and policies to guide development of this growing small town, consistent with the Fresno County General Plan goals to create a recreational hub within the Friant area.

The Community Plan Update designates appropriate areas for agricultural, residential (Low Density, Medium Density and Medium High Density), commercial (Highway, Special and Community), recreational, public facilities and open space uses. The Community Plan Update also recommends road and other infrastructure (water, sewer and storm drainage) improvements. In addition, the Community Plan Update identifies the goals and policies designed to guide land use planning, expand the community’s tourism resources, expand community services and provide a guiding framework for future development, while conserving environmental resources and natural habitat.

The Community Plan Update includes goals, policies, implementation programs, transportation, infrastructure and trails, public facilities and services, and environmental resource management. The Community Plan Update maintains the existing designations for all lands outside of the new Friant Ranch Specific Plan Area, except for the Friant Depot Parcel (Figure 2-7 identifies the Depot Parcel change from Low Density Residential to Highway Commercial). The Community Plan Update includes a Community Map, an Implementation Program, and the following five elements:



PROPOSED FRIANT COMMUNITY PLAN AREA

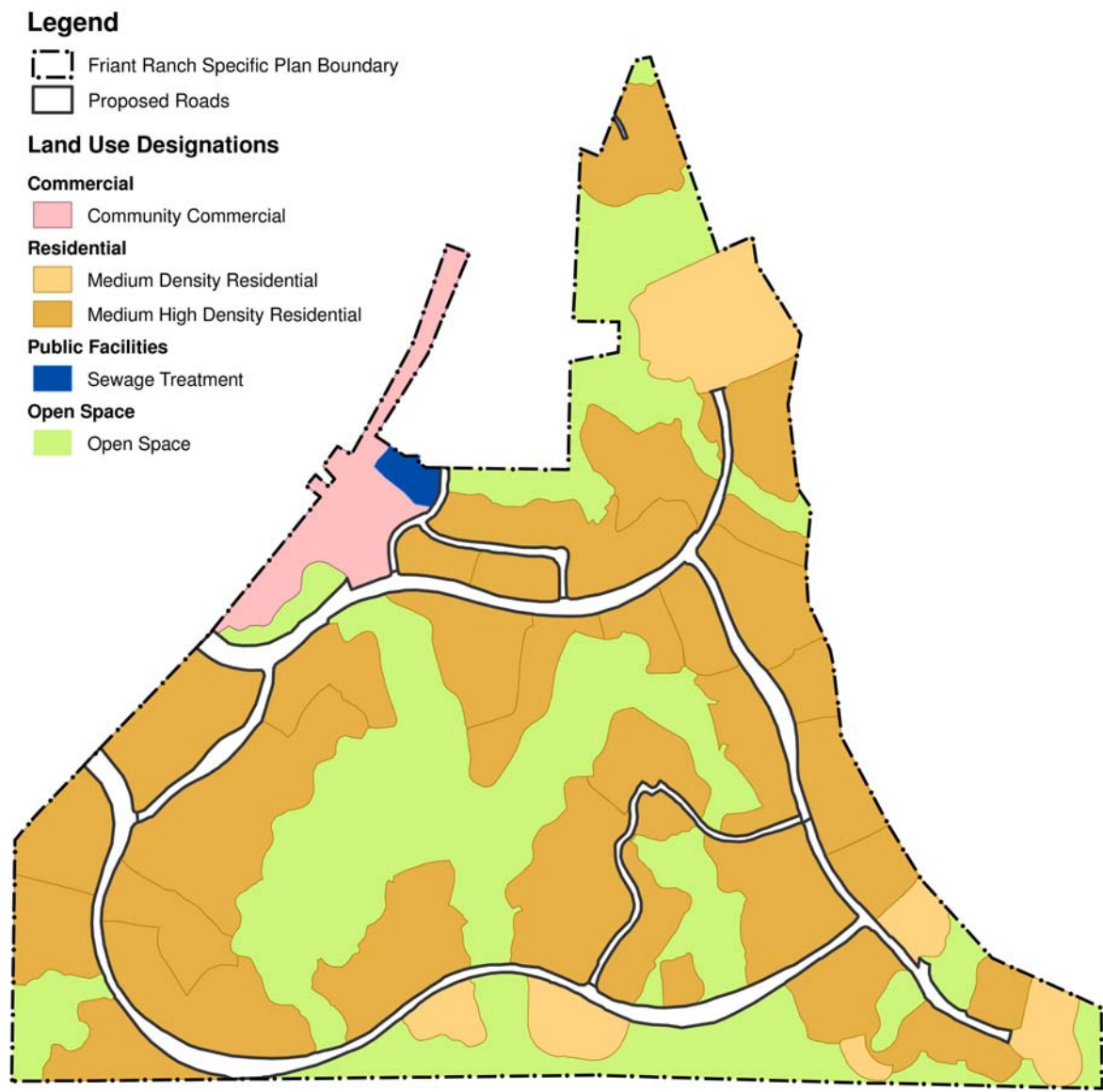
FIGURE
2 - 7

- Land Use Element – designates the type, intensity and general distribution of land uses for housing, commercial, industrial, open space and other categories of public and private uses. Notably, the only land use changes proposed within the Community Plan Update are: (1) the changed land use designations for the Specific Plan Area, which is proposed for complete inclusion within the Community Plan area by way of the Update; and (2) the change of designation for the Depot Parcel from residential to commercial uses.
- Economic Development Element – addresses revitalization, redevelopment, attracting tourism, creating a small-town image, economic development, and employment growth for Friant.
- Transportation Element – identifies the general location and extent of existing major thoroughfares, transportation routes, and other local public transportation facilities. This chapter also addresses roadways, regional transportation, alternative transportation methods, road abandonments, parking facilities, trails, and scenic roadways.
- Public Facilities and Services Element – addresses public facilities and services in Friant, including sewer, water, storm drainage, utilities, police and fire, and solid waste. This element also addresses public health and safety including flood hazards, seismic and geological hazards, hazardous materials and noise.
- Environmental Resources Management Element – addresses natural resources found in Friant, including scenic resources, agricultural resources, watershed management, water conservation, and protection measures for wildlife species, habitat, and the night sky.

These elements update and expand on the 1983 Friant Community Plan, which contained land use, circulation, and public facilities elements. Many of the policies within the Friant Community Plan Update merely readopt those set forth in the 1983 Friant Community Plan, however, policies in the Friant Community Plan Update are more comprehensive with an emphasis on quality design, neighborhoods, and environmental preservation, and the creation of places that benefit all Community of Friant residents.

c. Friant Ranch Specific Plan

The Specific Plan proposes the development of an age-restricted active adult community located on approximately 942.2 acres comprising the Specific Plan Area. The Specific Plan contains a mix of attached and detached single-family homes and multi-family residences. Approximately 31.8 acres are planned for a mixed-use Village Center. In addition to the Village Center, the Land Use Plan identifies neighborhood residential clusters, open space and recreational amenities. The proposed Specific Plan Land Use Plan is shown in Figure 2-8.



PROPOSED SPECIFIC PLAN LAND USE PLAN

FIGURE
2 - 8

Land use designations are established to identify uses and development. The designations identify the types and nature of development allowed on all properties within the Specific Plan Area. The following land uses in Table 2-1 are proposed for the Specific Plan (acreages and dwelling unit numbers are estimated figures):

**Table 2-1
Friant Ranch Specific Plan Land Uses**

Land Use Designation³	Specific Land Use Description	Estimated Acres	Estimated Maximum Total Dwelling Units
Medium Density Residential	Active Adult Single-Family Density One (SFD-1)	63.7	293
Medium High Density Residential	Active Adult Single-Family Density Two (SFD-2)	271.0	1,295
Medium High Density Residential	Active Adult Single-Family Density Three (SFD-3)	178.0	1,095
Medium High Density Residential	Active Adult Multi-Family Density (MFD)	6.0	83
	Active Adult Total	518.7	2,766
Medium High Density Residential	Non-Age-Qualified Multi-Family Density (MFD)	14.6	180
Community Commercial	Village Center (Mixed Use)	31.8	50 ¹
Medium High Density Residential	Active Adult Recreation Centers	20.8	--
Open Space	Undisturbed Open Space	245.4	--
Open Space	Revegetated Open Space Slopes	30.0	--
Public Facilities	Wastewater Treatment System ²	4.0	--
N/A	Roads	76.9	--
	Total	942.2	2,996

1) Fifty dwelling units are permitted within the Village Center, as either freestanding multi-family housing or vertical mixed-use development with commercial/office on the first floor and residential units on the upper floors. A portion of these units may be constructed as live/work units.

2) Several additional acres of land devoted to the Wastewater Treatment System are located outside of the Project boundaries in CSA 44.

3) Residential and commercial acreages include lands to be used for accessory parks, parkways, and landscaped slopes as required by Specific Plan Policies 2.1, 2.2, and 2.6.

Medium Density and Medium High Density Residential. Three single-family land use designations and one multi-family residential category are proposed for Friant Ranch. The residential development will be arranged in clusters around small pocket parks to create identifiable neighborhoods. Approximately 2,996 dwelling units are planned within Friant Ranch. As neighborhood amenities, the Specific Plan allocates approximately 20.8 acres in two active adult recreation centers. The larger recreation center will be an accessory structure on approximately 17.8 acres, while the smaller facility will be an accessory structure on approximately 3.0 acres.

Community Commercial. Friant Ranch will include a Village Center on 31.8 acres expected to contain a mix of retail, office, medical, social gathering and light rail opportunities, possibly in conjunction with mixed-use development. The actual site plan for the Village Center may vary from that indicated in Figure 2-8 depending on the final mix of uses identified for inclusion. The Village Center is designed to serve the regional shopping needs for residents of and employees in Friant Ranch, the community of Friant

and other nearby areas. The commercial/office development in the Village Center would provide retail and office uses that are compatible with a residential environment. The Village Center would include 50 multi-family dwelling units and 250,000 square feet of retail and office uses. The Village Center is proposed for designation as a Community Commercial zone to allow for flexible mixed-use development. The timing of the Village Center will be driven by the rate of residential development within Friant Ranch and surrounding areas.

Open Space. The Specific Plan proposes the preservation of approximately 245.4 acres of undisturbed open space (Specific Plan Policy 2.5), and 30 acres of revegetated open space slopes for habitat conservation. The Specific Plan anticipates that the undisturbed open space will be dedicated via easement to a conservation trust with the appropriate endowment for management and preservation. The Specific Plan provides for setbacks around the environmentally sensitive areas located within the habitat conservation areas.

Medium High Density and Medium Density Residential/Community Commercial: Parks and Parkways. In addition to the natural, undisturbed open space, the Specific Plan provides an extensive amount of open space in the form of parks, trails, greenbelts and landscaped slopes, as set forth in the following Specific Plan policies:

Policy 2.1: Require that residential development within the Medium Density Residential and Medium High Density Residential areas include neighborhood parks and parkways, at a rate of 5 to 8 acres per 1,000 dwelling units.

Policy 2.2: Require that development within the Village Core (Community Commercial) include 5 acres of parks, parkways, and town greens.

Policy 2.6: Require that residential development within the Medium Density Residential and Medium High Density Residential areas include landscaped slopes at a rate of approximately 5 acres per 1,000 dwelling units.

The parks, trails, and greenbelts will be maintained and operated by a Homeowners Association. The Specific Plan will include a series of smaller neighborhood-serving parks and pocket parks scattered around the Project. These parks will be passive facilities that will range in size from approximately 0.25 acre to more than an acre in size.

Public Facilities: Wastewater Treatment Plant. The proposed Land Use Plan also provides a location for a new Friant Wastewater Treatment Plant. The Project wastewater will be collected and treated at the new wastewater treatment facility to be constructed adjacent to the existing facility. The new wastewater treatment facility will utilize tertiary treatment technology and will be designed to have capacity to service current and planned future Existing Community Plan Area uses in addition to the development proposed through the Specific Plan. However, no collection system exists or is proposed by the Project to serve areas other than the existing Millerton Village Mobile Home Park and the Specific Plan development. It is anticipated that treated effluent from the wastewater treatment system will be used for irrigation of landscaping.

The Specific Plan divides the proposed development into five phases, as shown in Table 2-2 and Figure 2-9. The phasing is conceptual only; the actual phasing may vary from that identified in this section. The Specific Plan phases provides that new development will commence from the area abutting the existing community of Friant and the planned Village Center.

**Table 2-2
Phasing**

Phase	Acres	Dwelling Units	Comm. Center Sq. Ft.	Rec. Center (acres)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Phase 1	111.3	564 ¹		17.8	200	200	164							
Phase 2	155.6	781				100	200	300	181					
Phase 3	102.1	524	50,000	3.0				100	224	200				
Phase 4	110.2	625	100,000							175	375	75		
Phase 5	110.7	502	100,000									300	150	52
Total	589.9²	2,996	250,000	20.8	200	300	364	400	405	375	375	375	150	52
Annual Cumulative Units					200	500	864	1264	1669	2044	2419	2794	2944	2996

¹ Includes 50 dwelling units allocated to the Village Center.

² Active adult recreation center acreage included in total acres.

Phases may occur in any sequence and concurrently with one another provided, however, that the necessary infrastructure and utilities needed to support each phase are in place prior to issuance of any certificate of occupancy for that phase. The Friant Ranch Specific Plan development is estimated at a 10-year buildout.

Phase 1. Phase 1 initiates the development of approximately 564 residential units located near the northern boundary of the Specific Plan Area, the residential and commercial buildings within the 31.8-acre Village Center, and the larger active adult recreation center. The advantage of initiating the project implementation from this area is that it ensures planned growth that starts adjacent to existing communities and also ensures completion or near completion of necessities and residential amenities prior to residential occupancy. Also, developing the infrastructure adjacent to the commercial component will allow for implementation of various commercial services as quickly as demand allows.

Phase 2. Shortly after Phase 1 commences, construction will begin on the residential areas located near the western boundary of the Specific Plan area. Development will consist of up to 781 residential homes anchored by pocket parks and surrounded by undisturbed open space.

Phase 3. Phase 3 starts the construction of residential areas located in the center and southern portion of the Specific Plan Area. Development will consist of up to 524 single-family residential homes, a pocket park, and the smaller active adult recreation center.



FRIANT RANCH PHASING

FIGURE
2 - 9

Phase 4. Phase 4 includes the construction of up to 625 residential homes and park land located in the eastern portion of the Specific Plan Area.

Phase 5. The final phase (Phase 5) will occur in the southeastern portion of the Specific Plan Area with up to 502 residential homes and park land.

d. Friant Redevelopment Plan Amendment

The County proposes, through and in coordination with the Fresno County Redevelopment Agency, to amend the Redevelopment Plan to extend the timeframe for implementation of improvement projects identified within the Friant Redevelopment Plan, which are planned for the benefit of the existing community of Friant. The Redevelopment Plan Amendment also proposes to delete the commercial standards set forth in the 1992 Redevelopment Plan.

e. Zoning Changes

The County will process and consider the following zoning change applications pertaining to the Project:

- Application No. 3751. Application to create new zone districts for the Specific Plan Area. The creation and application of new zone districts will change the zoning designations for the Friant Ranch Specific Plan Area to new designations that relate back to the Fresno County zoning designations for Community Shopping Center District (C-2), Single-Family Residential (R-1), Low Density Multi-Family Residential District (R-2), Recreational District (R-E), and Open Space Conservation District (O). The current zoning designation for the majority of the Specific Plan Area is Exclusive Agriculture (AE-20 and AE-40), however, approximately 20 acres are zoned Trailer Park-conditional (TP-C), approximately 15 acres are zoned Trailer Park (TP), approximately 4 acres are zoned commercial (C-6), and approximately 2.5 acres are zoned residential (R-A and R-1).
- Application No. 36915. Application to change zoning on the Depot Parcel, identified in Figure 2-4, from Single-Family Residential Agricultural District (R-A) to Commercial (C-1). The Depot Parcel is approximately 7.85 acres, which will be reduced to approximately 6.75 acres with the widening of Friant Road.

f. Development Agreement

The County will process a development agreement for the Project in accordance with the Fresno County Development Agreement guidelines and the California Government Code Sections 65864-65869.5.

g. Conditional Use Permits

The County will consider issuance of conditional use permits for: (1) the wastewater treatment plant serving the Specific Plan Area and related use of treated wastewater for irrigation of Lost Lake Park and/or other land disposal sites; and (2) the active adult recreation centers.

h. Subsequent Actions

The development of the Specific Plan Area will likely include the processing of tentative maps, parcel maps, site plans, grading permits, building permits, and an agreement to accommodate discharge of treated effluent on County lands within Lost Lake Park.

2. Water Works District No. 18

The applicant proposes to pursue annexation of the Specific Plan Area into the service area of the existing County Water Works District No. 18 (WWD #18) or any successor agency thereof. The preferred option for water and wastewater services, and potentially lighting services, is to include the Specific Plan Area within the WWD #18 service area and designate the Specific Plan Area as a separate zone of benefit within WWD #18 to appropriately allocate service costs. As part of the development Project, the applicant proposes to provide and finance an expansion to the existing WWD #18 water treatment plant and a new tertiary level wastewater treatment plants sufficient to provide capacity for WWD #18 to serve the population at full build out within the Specific Plan Area and the current and planned future uses within the Existing Community Plan Area. The anticipated actions of WWD #18 are:

a. Approve Change in Water Supply, Lighting, and Wastewater Service Area/Annexation

Figure 2-10 identifies the proposed area of inclusion into WWD #18's boundaries for water supply, lighting, and wastewater service.

b. Approve and Execute a Water Transfer Agreement with the Lower Tule River Irrigation District

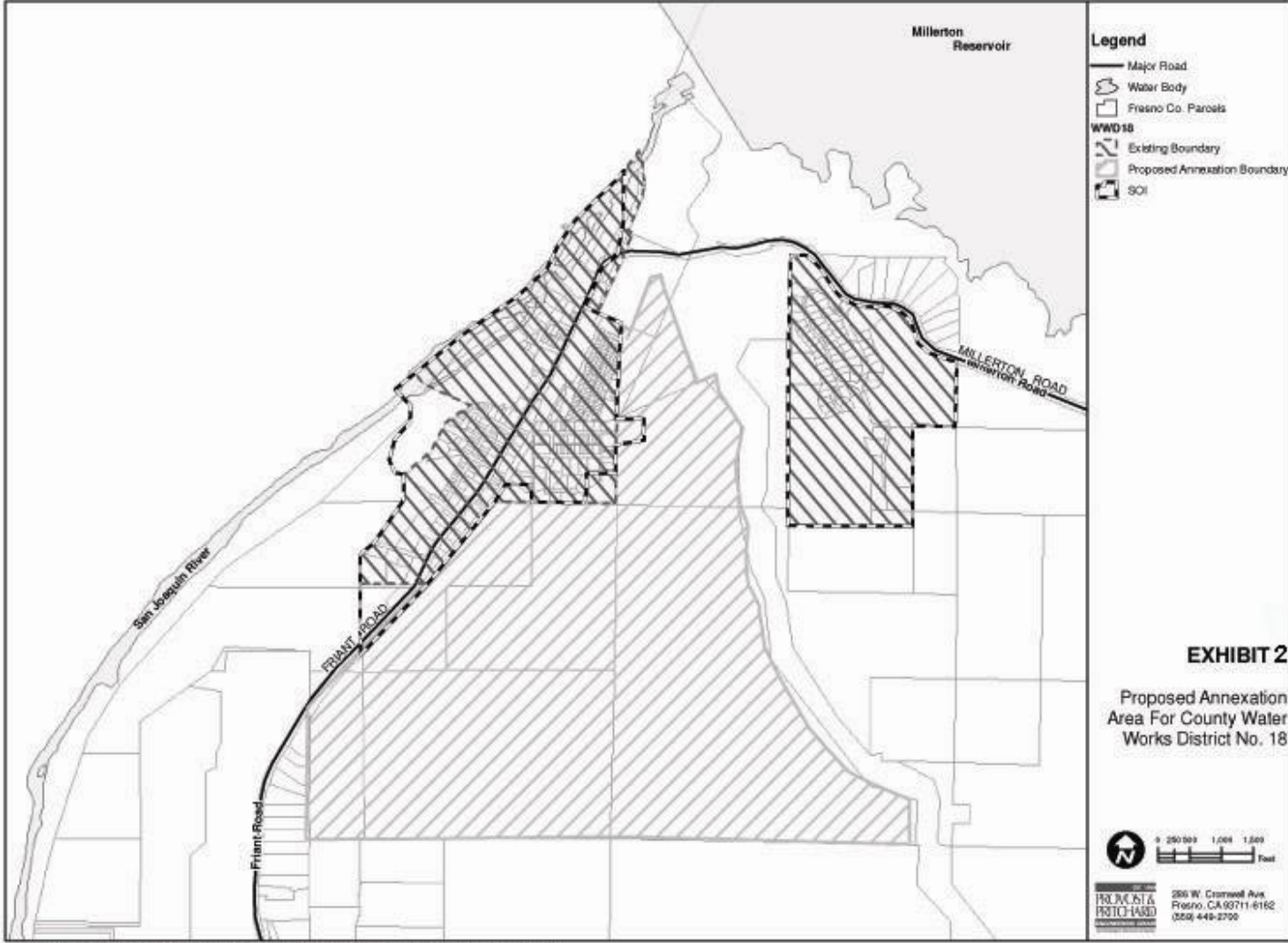
c. Designate a Separate Zone of Benefit for the Friant Ranch Specific Plan Area

d. Approve and Execute a Utility Service Agreement for the Friant Ranch Specific Plan Area

e. Issue a Will-Serve Letter for the Friant Ranch Specific Plan Area

3. Lower Tule River Irrigation District

The Lower Tule River Irrigation District (LTRID) has provided a notice of intent to enter into a long-term water transfer with WWD #18 for 2,000 acre feet of water annually to serve the Specific Plan uses (see Figure 2-11 for District boundaries). To effectuate this long-term transfer of Central Valley Project (CVP) Friant Division water to WWD #18, the following action would be taken by LTRID (or, if deemed necessary in the planning process, an alternative water purveyor able and willing to transfer Central Valley Project Friant Division water supplies):

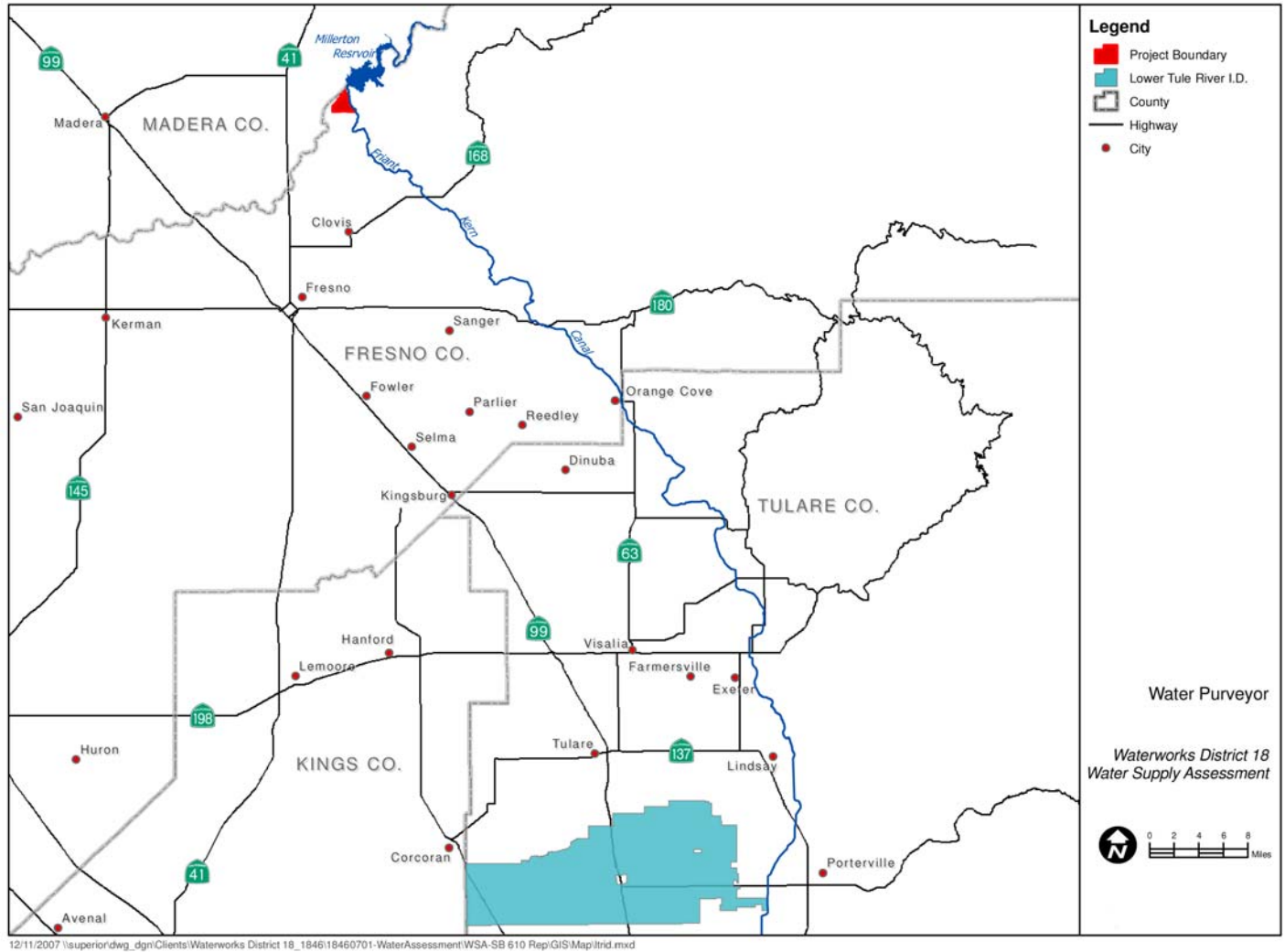


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WWD #18

FIGURE
2 - 10



LOWER TULE RIVER IRRIGATION DISTRICT

FIGURE
2 – 11

a. Approve Water Transfer Agreement with WWD #18

The proposed transfer is for up to 2,000 acre-feet annually of LTRID's U.S. Bureau of Reclamation (USBR) contract water supply. The proposed transfer term is to run for the balance of the existing term of LTRID's long-term contract. One renewal of the LTRID's contract is required in accordance with federal law and additional renewals of said contract are anticipated. This transfer, likewise, is anticipated to be renewed on terms mutually agreeable to the parties for subsequent periods consistent with multiple renewals of LTRID's contract. The transferred water will be delivered from the Millerton Lake Reservoir at existing diversion points at Friant Dam into an existing pipeline owned by USBR, for delivery to treatment facilities owned by WWD #18 for treatment and subsequent delivery through new and existing distribution system of WWD #18. No other CVP facilities will be utilized in the delivery of the transferred water. The volume of annual transferred water supply is less than one percent of LTRID's annual contract entitlement.

To make up to 2,000 acre-feet of its CVP contract water supply available to WWD #18 each year, LTRID will utilize its new water distribution facilities (Tule River Intertie) that allow LTRID to divert to groundwater recharge either by direct or "in-lieu" recharge methods, additional water held under LTRID's rights to Tule River water. The additional water so recharged will become available to the LTRID's water users and pumped to meet consumptive crop demands under their rights to groundwater as overlying landowners, offsetting the District's need to provide an equivalent amount of LTRID's annual CVP surface water supplies (thus freeing up water that can be transferred to WWD #18). The Tule River Intertie construction underwent independent environmental analysis pursuant to CEQA, copies of which can be obtained from LTRID.

The physical facilities associated with the Tule River Intertie are composed of three connected pieces: the Tule River Diversion Rehabilitation, the Wood Central Ditch Modification, and the construction of the Intertie Canal. The Tule River Intertie facilities provide for improved delivery of Tule River water and the construction of a new canal that increases the District's ability to deliver Tule River water to lands served by the Tipton Canal (LTRID Canal #2), Poplar Ditch and the Casa Blanca Canal (LTRID Canal #1).

4. Central Valley Regional Water Quality Control Board and State Water Resources Control Board

The following actions of the Central Valley Regional Water Quality Control Board (RWQCB) and/or the State Water Resources Control Board will be required for the proposed development at the Project site:

- a. Adopt Waste Discharge Requirements for Land Disposal of Treated Effluent
- b. Adopt Water Reclamation Requirements for Land Disposal of Treated Effluent

- c. Adopt National Pollutant Discharge Elimination Permit for any Discharge of Treated Effluent to San Joaquin River
- d. Issue Clean Water Act Section 401 Certification
- e. Action on Notice of Intent to Dredge and Fill Isolated Wetlands
- f. Accept Notice of Intent for Coverage Under General Stormwater Permit for Construction Activities

5. Fresno Local Agency Formation Commission

The Fresno Local Agency Formation Commission (LAFCo) will review and process the appropriate reorganization necessary to annex the lands identified on Figure 2-10 into the appropriate wastewater and water supply service areas of WWD #18. This action may involve some reorganization between WWD #18 and County Service Area 44 (CSA 44). Figure 2-10 identifies the proposed area of inclusion into WWD #18's boundaries.

LAFCo will conduct a Municipal Service Review and likely require the following actions to approve the proposed development:

- a. Take Appropriate Action to Effectuate Inclusion of the Friant Ranch Specific Plan Area into WWD #18 Wastewater Treatment, Lighting, and Water Supply Service Area, Including Expansion of the Sphere of Influence and Annexation
- b. To the Extent Deemed Appropriate by the County and LAFCo, Take Appropriate Action to Effectuate Inclusion of Other Lands within the Friant Community Plan Area into WWD #18 Wastewater Treatment, Lighting, and Water Supply Service Area
- c. To the Extent Deemed Appropriate by CSA 44 and LAFCo, Take Appropriate Action to Expand Lighting Service Area of CSA 44 to Include the Friant Ranch Specific Plan Area
- d. Take Appropriate Actions to Add Wastewater Services to the Active Powers of WWD #18

6. California Department of Public Health

The following actions of the California Department of Public Health will be required for the proposed wastewater disposal and water treatment for the Project:

- a. Approve Engineering Report for the Water Treatment Plant
- b. Issue Report of Wastewater Reclamation

7. County Service Area 44

The following actions of CSA 44 may be required to facilitate the proposed wastewater, water supply, and lighting services for the Project:

- a. Appropriate Action To Effectuate Transfer of Friant Community Wastewater Service, and to the Extent Necessary, Wastewater Infrastructure to WWD #18
- b. Appropriate Action to Provide Lighting Service to the Friant Ranch Specific Plan Area

8. California Department of Fish and Game

The following actions of the California Department of Fish and Game (CDFG) will be required for the proposed development at the Project site:

- a. Fish and Game Code Section 1602 Streambed Alteration Permit
- b. California Endangered Species Act Incidental Take Permit(s) (or Federal Incidental Take Coverage Sufficiency Finding Under Fish and Game Code Section 2080.1)
- c. Incidental take coverage pursuant to Fish and Game Code 2080 or 2080.1 may be required for take of *Pseudobahia bahiifolia*. In addition, the California Tiger Salamander was recently classified as a candidate species; an incidental take permit will be required unless the petition is rejected.
- d. Agreement for the Use of Existing Infrastructure Facilities at Friant Dam

9. San Joaquin Valley Air Pollution Control District

The following actions of the San Joaquin Valley Air Pollution Control District may be required for the proposed development at the Project site:

- a. Process Air Permit Application for Wastewater Treatment Plant
- b. Process Air Impact Assessment
- c. Issuance of Dust Control Permit
- d. Appropriate Action to Ensure Rule 9510 Compliance for Friant Ranch Specific Plan Development

2.4.3 RELATED FEDERAL ACTIONS

The development proposed within the Specific Plan will also require federal actions, subject to environmental review under the National Environmental Policy Act, historic and cultural resource analysis under the National Historic Preservation Act, and consultation with the United States Fish and Wildlife Service (USFWS) and, potentially, the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NMFS) under the Fish and Wildlife Coordination Act and Section 7 of the Endangered Species Act. USFWS and, potentially, NMFS will consider issuance of incidental take coverage for any take of listed species through the Section 7 process.

These federal actions are integrally connected with actions of state and local agencies (i.e., actions of WWD #18, LTRID, RWQCB, and CDFG) that are subject to CEQA. Pursuant to CEQA, the County will consult with the federal action agencies to ensure appropriate coordination of the state and federal review processes. The federal actions include:

1. *United States Department of the Interior, Bureau of Reclamation*

The Friant Division of the Central Valley Project (CVP) was constructed and is operated by the U.S. Department of the Interior Bureau of Reclamation (BOR). The Central Valley Project Friant Division transports surplus water from the San Joaquin River through Friant Dam, the Friant-Kern Canal, and the Madera Canal. The BOR has authority over water transfers between CVP contractors within the Friant Division. Service of the proposed water supply from WWD #18 to the Friant Ranch Specific Plan Area requires the following approvals from the BOR:

- a. Approval for Water Transfer Between LTRID and WWD #18
- b. WWD #18 Service Area Change Approval
- c. Permission for construction of infrastructure improvements to abandoned pipeline(s)
- d. Authorization of WWD #18 Use of Existing Infrastructure Agreement for the Use of Existing Infrastructure Facilities at Friant Dam

2. *United States Army Corps of Engineers*

The United States Army Corps of Engineers (Corps) is comprised of military and civilian engineers, scientists, and other specialists who provide engineering services to the United States. One of the major responsibilities of the Corps is administering the wetlands permitting program under Section 404 of the Federal Water Pollution Control Act of 1972 (Clean Water Act). The Friant area includes various hydrologic features including wetland channels, non-wetland channels, seasonal wetland swales, and vernal pools. Some of these features likely fall under the jurisdiction of the Corps, in which excavating, grading, or filling requires permits per the Clean Water Act. The Corp provided a final jurisdictional determination and wetland delineation for the Specific Plan site (October 2008). The proposed development of the Project site described in the Specific Plan requires the following approvals from the Corps:

- a. Approval of Clean Water Act Section 404 Permit

3. *United States Environmental Protection Agency*

The United States Environmental Protection Agency (EPA) has authority under the federal Clean Water Act to review and comment on the Section 404 permit application for Friant Ranch and generally enforces Section 404 of the Clean Water Act. The Project infrastructure applies the drainage principles set forth in EPA's Low Impact Drainage Design and Biofiltration guidelines.

2.5 Project Objectives

A statement of the Project's objectives is required by CEQA Guidelines Section 15124(b). The Project's objectives are as follows:

Friant Community Plan Update

- To update the 1983 Friant Community Plan, as required by law, to implement the goals and policies articulated in the 2000 Fresno County General Plan Update.
- To guide development within the Friant Community Plan area through a set of guiding principles embodying the community's values, as developed through community meetings and consultation with various County departments.
- To expand the boundaries of the Friant Community Plan Area to include developable acreage immediately adjacent to the existing Friant Community.

Friant Redevelopment Plan

- To extend the duration of the Friant Redevelopment Plan by twenty (20) years in order to maximize potential redevelopment funds generated by new commercial and residential uses for needed infrastructure improvements within the Friant Community Plan Area.
- To eliminate the commercial development standards set forth in the 1992 Friant Redevelopment Plan.

Friant Ranch Specific Plan

- To create an environmentally-sensitive master planned community adjacent to the existing community of Friant where public facilities and infrastructure are available or can be provided.
- To provide on-site open space preservation in the form of undisturbed open space, parks and recreation areas, and landscaped slopes.
- To provide diverse housing types that accommodate varying lifestyles and income levels including: active adult single family residential units, active adult multi-family residential units, non-age restricted multi-family dwelling units, and mixed-use residential units.
- To develop an economically feasible Active Adult (55+) Lifestyle community on approximately 950 acres adjacent to an existing unincorporated community aimed at providing diverse housing types that accommodate varying lifestyles and income levels that will blend with the existing natural resources.
- To provide a comprehensive onsite trail system accessible to the public that showcases the open space preserve and provides linkage to the community of Friant and Lost Lake Park.

- To contribute to the community of Friant’s infrastructure by constructing a new tertiary wastewater treatment plant with the treatment capacity to serve the Friant Ranch Specific Plan development, Millerton Village Mobile Home Park, and full build-out of the Proposed Friant Community Plan Area, allowing for the future connection of a collector system, as constructed by others, for areas outside of the Friant Ranch Specific Plan Area and Millerton Village Mobile Home Park.
- To obtain a reliable water supply sufficient to serve the Friant Ranch Specific Plan development.
- To develop a Village Center with a mix of retail, office, residential, medical, and social gathering opportunities that responds to the needs and services of the Friant area.
- To develop a wide range of recreational amenities including a Community lodge and fitness center as well as a series of smaller neighborhood-serving parks and pocket parks throughout the Specific Plan development.
- To develop a roadway network that accommodates both traditional and alternative modes of transportation, such as Neighborhood Electric Vehicles (NEV’s).

2.6 Intended Uses of the EIR

This Program/Project EIR serves two primary purposes. First, it evaluates potential impacts of implementing the Community Plan Update and Specific Plan and proposes mitigation measures that reduce impacts to a less than significant level where possible.

Second, this EIR is intended to streamline the environmental review of new development projects in conformance with Sections 15152 and 15168 of the CEQA Guidelines. Subsequent, related projects will be evaluated for their consistency with this EIR. Where projects are consistent, further environmental review may be eliminated or streamlined. Projects found inconsistent may require additional environmental review. Some subsequent, related projects may have impacts not considered in this EIR or impacts not addressed at a level of detail to allow adequate analysis. The most common types of subsequent, related projects for which this EIR will be used include development applications such as use permits, subdivision (tentative) maps, parcel maps, variances, rezoning, and/or public infrastructure or service improvements or programs.

Public agencies other than the County, including Responsible and Trustee Agencies (as defined under CEQA) may use this EIR during their review of the Community Plan Update and Specific Plan and projects which implement them. Although the County has primary approval authority for the Project, Responsible Agencies may also have some discretionary approval authority over portions of the Project and/or over projects proposed by public agencies or private interests that implement the Community Plan Update and Specific Plan. The discretionary approval authority may include permit approvals, consultation requirements or other required actions. The following is a list of potential agencies that may use this EIR for such purposes.

- Fresno County
- Fresno County Water Works District No. 18
- Lower Tule River Irrigation District
- County Service Area 44
- Fresno Local Agency Formation Commission
- San Joaquin Valley Air Pollution Control District
- California Department of Transportation
- California Department of Fish and Game
- California Department of Public Health
- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- United States Department of the Interior, Bureau of Reclamation
- United States Environmental Protection Agency
- Central Valley Regional Water Quality Control Board
- State Water Resources Control Board

If Fresno County approves the proposed Project, subsequent actions, permits, and approvals will be necessary for project implementation. Upon certification, this EIR may be used for evaluation of actions including, but not necessarily limited to, those identified within Chapter 4 of this EIR.

CHAPTER THREE

SETTING, IMPACTS AND MITIGATION MEASURES

CHAPTER THREE – SETTING, IMPACTS AND MITIGATION MEASURES

3.1 Aesthetics

INTRODUCTION

This section addresses Project impacts on the visual and aesthetic character of the Friant community and vicinity. Issues include potential impacts to scenic views and vistas, potential disturbance of scenic resources (i.e., trees, rock outcroppings, etc.), alteration of open landscapes and impacts associated with an increase in light or glare.

3.1.1 REGULATORY SETTING

The Fresno County General Plan designates the following roadway segment within the Project Area as a designated scenic highway, “Friant Road from City of Fresno to Lost Lake Road” (General Plan 5-36; Policy OS-I.1.). This roadway segment is adjacent to the Friant Ranch Specific Plan Area in the southwest corner for approximately one-quarter of a mile of the Friant Ranch Specific Plan development’s frontage.

Fresno County General Plan

The following existing Fresno County General Plan policies and standards provide guidelines for protecting aesthetic resources in the County:

Policy OS-F.1 The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.

Policy OS-F.2 The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.

Policy OS-F.7 The County shall require developers to take into account a site’s natural topography with respect to the design and siting of all physical improvements in order to minimize grading.

Policy OS-K.1 The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.4 The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

Policy OS-L.3 The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

- a. Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest;*
- b. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way;*
- c. Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;*
- d. Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way. Modification of the setback requirement may be appropriate when any one of the following conditions exist:
 - 1. Topographic or vegetative characteristics preclude such a setback;*
 - 2. Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;*
 - 3. Property dimensions preclude such a setback; or*
 - 4. Development proposal involves expansion of an existing facility or an existing concentration of uses.**
- e. Subdivision proposals shall be designed to minimize the number of right-of-way access drives;*
- f. Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and*
- g. Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with the landscape plantings or artificial screens which harmonize with the natural landscape.*

Policy OS-L.4 The County shall require proposed new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.

Policy Consistency

The Friant Ranch Specific Plan site comprises natural vegetation and hillsides. The Project proposes development designed in a way that facilitates conservation of the natural foothill character of the Friant Ranch Specific Plan site with preservation of central canyons and vista and view corridors with an open space commitment of over one third of the Friant Ranch Specific Plan acreage.

Consistent with Policy OS-K.4, the Friant Ranch Specific Plan provides for an appropriate setback from the 900-foot length of frontage abutting the Friant Road scenic highway corridor (which runs from City of Fresno to Lost Lake Road). As identified in Specific Plan Figure 2-6, the Friant Ranch Specific Plan grading plan provides for more than 200-foot buffer for the majority of the scenic road frontage. Modification to the 200-foot buffer is appropriate for a small portion of that road frontage (225 feet) because the topographic and vegetative characteristics provide screening of buildings and parking areas from the right-of-way and the property dimensions, as they relate to the newly widened Friant Road allow for 175-foot, rather than 200-foot, setback. (General Plan Policy OS-K.4.)

The Friant Community Plan Update proposes the following policies to preserve and protect scenic resources consistent with the General Plan:

Friant Community Plan Update

Policy 5.1 Preserve areas with scenic qualities and natural beauty in open space or as farmland, where feasible.

Policy 5.2 Encourage development within Friant Ranch to preserve existing scenic resources in open space, including natural drainage ways and vernal pools.

Policy 5.3 Work with federal, state, regional, and other appropriate public agencies, non-profit organizations, and landowners to conserve, protect, and enhance natural resources in the Community Plan area.

Policy 5.4 Protect “dark skies” by ensuring light and glare is minimized by using low-level lighting.

The Specific Plan proposes the following policies that assure consistency with the General Plan policies:

- Policy 2.5 Require a minimum of 245 acres to be preserved as undisturbed permanent open space within the Specific Plan area.*
- Policy 5.48 Use thematic landscaping to complement the natural and rural setting of the Friant area.*
- Policy 5.52 Use native and non-invasive plant materials to transition into undisturbed open space areas. Landscaping shall blend in with the existing wetlands and natural drainages.*
- Policy 5.54 Incorporate street lights and project entry signage into the streetscape landscaping and design to blend with the natural features of the site.*
- Policy 5.70 Landscape parking areas with shade tree to visually soften the paved areas.*
- Policy 5.82 Incorporate the use of native planting and/or compatible species of water-wise/low water plants into the landscaping.*
- Policy 5.100 Maximize, interconnect and restore natural open space and include opportunities for local access to open space with limited human impact.*
- Policy 5.101 Consider the existing topography of the site when designing and grading for the project.*
- Policy 5.102 Pursue opportunities to preserve significant natural landforms and drainage features such as valleys and natural depressions within or next to the site, where possible, and as indicated on Friant Ranch Land Use Plan.*
- Policy 5.103 Plan development outside of natural drainage areas, where feasible, to avoid environmental features, such as vernal pools and steep slopes, as indicated on the Friant Ranch Concept Plan.*
- Policy 5.104 Plan around natural drainage areas, where feasible, particularly avoiding environmental features such as wetlands, vernal pools and steep slopes, as indicated on the Friant Ranch Project Concept Plan.*
- Policy 5.106 Landscape trails with a variety of plants that enhance visual appeal and are compatible with the nearby native plant species.*
- Policy 5.110 Locate nature trails along the edges of the developed areas and the periphery of natural open space areas to avoid unnecessary intrusion into sensitive habitat areas and vernal pools. Where appropriate, design trains to meander along natural topography.*

- Policy 5.111 Provide multi-purpose trails with pedestrian-scaled lighting that is appropriately shielded to minimize light pollution and excessive glare. Lighting nature trails is prohibited.*
- Policy 5.116 Avoid, to the maximum extent feasible, solid fences and walls, except where noise attenuation is required. Decorative walls may incorporate glass or acrylic to showcase scenic views and vistas.*
- Policy 5.117 Paint or stain any solid walls or fences used to blend in with natural surroundings; provided, however, that unpainted/unstained synthetic fencing shall be allowed if durable and low maintenance and provided that it has the appearance of wood or other natural material.*
- Policy 5.119 Coordinate the design and location of all retaining and freestanding walls so that they become an integral part of the natural and rural landscape.*
- Policy 7.1 Minimize the impact area and/or utilize sensitive grading techniques when grading on sites located adjacent to natural open space in order to minimize impacts on sensitive natural areas.*
- Policy 7.2 Utilize techniques including, but not limited to, terracing, varying slope heights, contour grading, rounding tops and bottoms of slopes and screening with landscaping to soften the visual impact of long or high slope banks.*
- Policy 7.3 Contour slopes in lieu of using retaining walls where space permits.*

State Scenic Highway System

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. There are no State Highways eligible for Official Scenic Highway designation in the Project Area. (General Plan 5-37; Policy OS-L.9.)

3.1.2 PHYSICAL SETTING

The Project Area is located in the rolling hills of north-central Fresno County in the central part of the San Joaquin Valley. The existing site is characterized by rolling grass-covered hillsides with a gradual north-south slope and meandering waterways that lead to pockets of seasonal vernal pools. Figure 2-3 shows an aerial view of the Project Area.

The Project Area is located approximately nine miles north of the cities of Fresno and Clovis. Friant is situated at the base of Friant Dam and Millerton Lake. In 2000, the Friant Community had a population of 519 persons. Friant Road traverses the community and serves as its commercial strip for the town. The community is bordered by the Lost Lake State Recreation Area and the San Joaquin River on the west; Millerton Lake State Recreation Area to the north; and land devoted to agricultural and grazing to the east and southeast, including the Friant Ranch

Specific Plan Area. Table Mountain Casino is located further to the east of the Project Area, along Millerton Road.

Scenic views from the Project include the Sierra Nevada foothills and mountains to the east. The Sierra Nevadas rise to 12,000 feet and higher and consist of many different climate zones, landscapes, and ecosystems. Both the foothills of the Sierra Nevada, made up of grasslands, oak woodlands, and deciduous forests, and the higher elevations of the Sierra, made up of the famous Sequoia groves, evergreen forests, alpine meadows and areas above the treeline, are visible in the distance from the Project Area on clear days and constitute a significant scenic resource. Figures 3.1-1 through 3.1-3 show views from the Friant Ranch Specific Plan Area.

The growth as a result of the Project will increase urban development, which may increase light and glare impacts. Common sources of light and glare are advertising, signs, streetlights, and light or reflective surfaces of buildings.

3.1.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact associated with aesthetics/visual resources if it would do any of the following:

- a) *Have a substantial adverse effect on a scenic vista.*
- b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state or county designated scenic highway or county designated scenic road.*
- c) *Substantially degrade the existing visual character or quality of the site and its surroundings which are open to public view.*
- d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*

3.1.4 IMPACT ANALYSIS

Impact #3.1.1 – Scenic Vistas [Evaluation Criteria (a)]

Implementation of the Project will alter the visual character of the Project Area in that it will result in increased urbanization. This increase in urbanization could be perceived as a negative aesthetic impact in comparison with the Friant Ranch Specific Plan's current pastoral vistas.

Both the Friant Community Plan Update and Friant Ranch Specific Plan contain goals and policies to ensure that new development conforms to community design guidelines and standards that will both enhance the visual quality of the Project and help minimize effects to scenic



Looking north towards the dam from Friant Ranch



Looking northwest along the Friant-Kern Canal from the project site's eastern boundary



Looking west from Friant Ranch



**VIEWS FROM THE FRIANT RANCH SPECIFIC
PLAN AREA AND VICINITY #1**

**Figure
3.1 - 1**



Looking north along Friant Road
from the Community Plan southern boundary



Looking east from the center of the south boundary of the Community Plan area



Looking north from the center of the south boundary of the Community Plan area



**VIEWS FROM THE FRIANT RANCH SPECIFIC
PLAN AREA AND VICINITY #2**

**Figure
3.1 - 2**



Looking west at Lost Lake Park from Friant Road.



Looking north toward Friant Dam.



Looking south toward Friant Ranch from the project's northern boundary.



VIEWS FROM THE FRIANT RANCH SPECIFIC PLAN AREA AND VICINITY #3

Figure 3.1 - 3

resources from urban growth. (Proposed Community Plan Policies 5.1, 5.2; Proposed Specific Plan Policies 2.5, 5.70, 5.101, 5.102, 5.106, 5.116, 5.117, 7.2, and 7.3.) The Friant Ranch Specific Plan also includes architectural, landscaping, community and neighborhood design guidelines addressing entry elements, walls, fencing and lighting. Moreover, the age restricted portions of the Friant Ranch Specific Plan development will primarily be single level in configuration, which will minimize the impact to scenic vistas looking out across the development (Proposed Specific Plan Policy 5.37).

The Friant Ranch Specific Plan includes guidelines for architecture, streetscapes, landscaping and grading and proposes development that will complement a ranch-like setting and the regional heritage of the Fresno area. Architectural styles initially selected include Rustic Mountain Lodge, American Farmhouse, Craftsman, and Prairie. Architectural guidelines include design elements and materials that reflect the regional heritage of Fresno County; materials, colors and forms that work together to express a unified rustic theme; articulated building facades; varied roof pitches; and front porches to minimize the visual impact of the garage. (Proposed Specific Plan Policies 5.1, 5.2, 5.3, 5.5, 5.6, 5.8, and 5.11.)

Streetscape guidelines include having the front of a primary structure oriented to the street; entries that face the street, greenbelt or park; garages located behind the building frontage or porch; varied garage treatments; architectural elements and details on the side elevation; and sidewalks, street trees and landscaping. (Proposed Specific Plan Policies 5.8, 5.93 -5.99.)

Landscaping guidelines include planting ornamental and water-wise landscaping, including trees, shrubs and ground covers; using thematic landscaping to complement the natural and rural setting; using native and non-invasive plant materials; developing landscaping plans to preserve natural features; and incorporating, where warranted, landscaped bio-swales. (Proposed Specific Plan Policies 5.57-5.81, 5.93-5.99.)

The master grading plan follows the natural topography and landforms of the land and strives to minimize grading. The master grading plan protects the low valleys and natural drainages where many of the sensitive habitats are located. Grading is limited in areas with slopes in excess of 30 percent. In areas where hillside grading is necessary, hillsides will be designed with contoured slopes and/or revegetated with native and water-wise landscaping. Techniques to be utilized include, but are not limited to, terracing, varying slope heights, contour grading, rounding tops and bottoms of slopes and screening with landscaping to soften the visual impact of long or high slope banks. (Proposed Specific Plan Policies 7-1-7.6.)

The Friant Ranch Specific Plan is consistent with Fresno County General Plan policies OS-F.1, OS-F.-2, OS-F.7, and OS-K.1 in that it will preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas, preserve scenic views, panoramas, and vistas whenever possible, use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements, and will take into account the site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading. (Proposed Specific Plan Policies 7-1-7.6.)

Conclusion: Development of the Project in compliance with the goals, policies and community design guidelines of the Friant Community Plan Update and Friant Ranch Specific Plan will preserve areas with scenic qualities and natural beauty, integrate new homes into the natural open space and rolling hillsides, and include landscaping that complements the open space areas and rural setting. As designed, the Project will not have a substantially adverse effect on a scenic vista. The potential impact to visual resources is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.1.2 – Scenic Resources within a State Designated Scenic Highway or County Designated Scenic Road

[Evaluation Criteria (b)]

A portion of the Project (900 feet of Friant Ranch Specific Plan frontage) abuts the segment of Friant road that is designated scenic highway. The Project does not propose any new uses that would substantially obstruct scenic views of the surrounding foothills or mountains along this scenic highway corridor.

There are no visible trees, rock outcroppings or historic buildings within the Project Area that are visible from the designated scenic highway (Friant Road from the City of Fresno to Lost Lake Park) and would be substantially damaged as a result of the Project. The more intense commercial uses are located along Friant Road, outside of the Scenic Highway corridor. The majority of outlying portions of the Friant Ranch Specific Plan Area, which fall within the Scenic Highway corridor, are made up of low intensity uses including low and medium density residential and parks/parkways, and open space areas which would not obstruct views (see Figures 2-3, 2-4 and 2-7).

Conclusion: Development of the Project in compliance with the goals, policies and community design guidelines of the Friant Community Plan Update and Friant Ranch Specific Plan will preserve areas with scenic qualities and natural beauty, integrate new homes into the natural open space and rolling hillsides, and include landscaping that compliments the open space areas and rural setting not substantially damage scenic resources. The potential impact to visual resources is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.1.3 – Introduction of New Sources of Light and Glare and Increased Lighting on the Night Sky as a Result of the Project

[Evaluation Criteria (d)]

The growth as a result of the Project will increase urban development, which may increase light and glare impacts. Common sources of light and glare are advertising signs, streetlights, and light or reflective surfaces of buildings.

Lighting for parking areas, pathways and buildings has the potential to create light pollution in the vicinity of the Project Area, especially in the Friant Ranch Specific Plan residential areas and

Village Core. Light pollution is a potential impact from the operation of any light source at night. Proper light shields, lighting design, and landscaping will be used in the Friant Ranch Specific Plan Area to reduce light pollution generated from lighting by blocking the conveyance of light upwards. The result is that the lights are not visible from above, and do not add ambient light to the nighttime sky. Trails in natural open areas (nature trails) of the Friant Ranch Specific Plan will not have night lighting in order to promote nocturnal movement of animals. (Proposed Specific Plan Policy 5.111.)

Interior lighting at night has the potential to create a source of light spillage onto adjacent development and roadways. Proper light shields, lighting design, landscaping and certain building materials can be used to reduce light spillage from Project structures. The result is a reduction in the amount of light spillage that occurs from the interior of buildings.

Light reflecting off surfaces during daylight hours has the potential to create a source of glare in the vicinity of the Project. Glare reducing materials are needed to reduce the impact of glare from reflective surfaces such as windows and other building materials. The result of these design measures is that glare is less visible from adjacent development and roadways.

The Friant Ranch Specific Plan includes installation and operation of outdoor security lighting throughout parking areas, and on the exterior of buildings. Light production will also occur from within buildings which will be visible from adjacent areas through windows and glass doors. Depending on the building materials used for commercial buildings, this could have the potential to create glare.

Signs will not be internally lighted, except within the Village Center, where internally lighted signs are permitted, but not required. When externally lighted, the Friant Ranch Specific Plan requires the signs to be lighted by hidden or screened light sources. (Reference pertinent policy.)

Policy 5.111 of the Friant Ranch Specific Plan requires that the developer provide multi-purpose trails with pedestrian-scaled lighting that is appropriately shielded to minimize light pollution and excessive glare. Lighting nature trails is prohibited.

The Friant Community Plan requires that project applicants protect “dark skies” by ensuring light and glare is minimized by using low-level lighting. (Proposed Specific Plan Policy 5.4.)

Pump stations and similar facilities proposed within the Project Area are also a potential source of light and glare.

Conclusion: This Project will create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. This impact is considered *potentially significant* and the following mitigation measures are required to address Project impacts.

Mitigation Measure #3.1.3a: Prior to issuance of any discretionary permit necessary for development within the Project Area, a lighting plan shall be prepared and submitted to Fresno County for approval in conjunction with the permit applications related to such development.

The County shall ensure that the lighting plan incorporates the requirements set forth in mitigation measures 3.1.3b through 3.1.3f below.

Mitigation Measure #3.1.3b: All lighting in the Project Area shall be shielded, directed downward and away from adjoining properties and rights-of-way. Light shields or equivalent shall be installed and maintained consistent with manufacturer's specifications, and shall reduce the spillage of light onto adjacent properties to less than a one-foot-candle standard, as measured at the adjacent property line.

Mitigation Measure #3.1.3c: Development within the Project Area shall incorporate lighting fixtures designed to produce the minimum amount of light necessary for safety purposes. All parking lot pole lights and street lights shall be fully hooded and back shielded to prevent light spillage and glare.

Mitigation Measure #3.1.3d: The design of any development proposed within the Project Area shall include the use of glare reducing materials, including non-reflective paints and building materials, to reduce the amount of glare created by the structures.

Mitigation Measure #3.1.3e: Landscaping within the Project Area shall include vegetation designed to shield adjacent properties from Project-generated light and glare.

Mitigation Measure #3.1.3f: Night lighting within the Project Area shall be limited to that necessary for security, safety, and identification. Night lighting shall also be screened from adjacent residential areas and not be directed in an upward manner or beyond the boundaries of the parcel on which the buildings are located.

Effectiveness of Mitigation: Implementation of the mitigation measures above will reduce the day and nighttime view impacts and light and glare impacts of the Project to a *less than significant* level.

Impact #3.1.4 – Degradation of the Existing Visual Character or Quality of the Project Area and its Surroundings Resulting from Utilities and Roadway Construction
[Evaluation Criteria (c)]

On- and off-site roadway widening and construction of several on- and off-site utility lines and facilities (water, sewer, storm drainage, electric, gas, telephone, etc.) will be required for Specific Plan Project implementation. Because utilities will be placed primarily underground, visual impacts will be related to the period of construction and revegetation, with the potential exception of utility line access sites, pump stations and similar facilities where some portion of the facility improvements may remain above ground. Roadway widening will occur adjacent to existing roadways and will not introduce a new visual element; however, new roadways within the Friant Ranch Specific Plan Area will introduce a new visual element. Revegetation of construction sites will be particularly important where on- and off-site infrastructure construction would affect the Friant Road corridor.

The Specific Plan provides for a new wastewater treatment plant to provide adequate capacity for existing Community Plan Area needs and to accommodate new development within the Friant Community Plan Area. The new wastewater treatment plant will replace the existing wastewater treatment plant that services the Mobile Home Park. WWD #18 receives water from the Friant Division of the Central Valley Project (CVP), and has an existing water treatment plant at the base of Friant Dam. The Specific Plan proposes to expand the water treatment plant to serve the Friant Ranch Specific Plan Area. The new wastewater treatment plant and water treatment plant expansion could potentially have negative visual impacts in the area. However, the new water treatment plant will be in the immediate vicinity of the existing plant and, as such, will not significantly increase the visual impact in the area. Further, Policy 3.4 of the Draft Friant Community Plan provides for “create appropriate buffers and screening between the wastewater treatment plant and the Parker Road Neighborhood”. According to the Friant Ranch Specific Plan, the new wastewater treatment plant facility will utilize the latest technology to be designed to be compatible with existing neighborhood uses.

Conclusion: Visual impacts during construction are temporary in nature consisting of and can include views of construction equipment, construction materials and earth stockpiling, and are considered less than significant. Visual impacts related to removal of vegetation and permanent above-ground structures/lighting are *potentially significant*.

Potentially significant visual impacts related to removal of vegetation during utility line construction can be partially mitigated through implementation of the various mitigation measures described in Section 3.4 (Biological Resources) of this Draft EIR. Visual impacts related to vegetation removal and above-ground structures can be more fully mitigated by implementing the mitigation measures below.

Mitigation Measure #3.1.4a: Those portions of the Project Area containing natural vegetation or landscape material that are disturbed during utility line and or roadway construction shall be revegetated upon completion of work utilizing plant materials similar to those disturbed. Revegetated areas within the Friant Ranch Specific Plan Area shall be actively maintained until fully established, in accordance with the landscape design guidelines contained in the Friant Ranch Specific Plan.

Mitigation Measure #3.1.4b: All permanent utility structures within the Friant Ranch Specific Plan Area extending above ground shall be screened where feasible using a combination of berms, mounds, landscape material, decorative fencing/walls, or other screening feature approved in the Friant Ranch Specific Plan. In addition, any proposed roadway and utility pump station lighting within the Project Area shall be directed downward using cut-off fixtures to minimize lighting effects on adjacent areas and the night sky.

Effectiveness of Mitigation: Implementation of the mitigation measures above will reduce the aesthetic impacts from on- and off-site utilities and roadway construction to a *less than significant* level.

3.2 Agricultural Resources

INTRODUCTION

Protection and preservation of agricultural resources is vital to the overall economic strength of the County as a whole. Although there is some agricultural land in the Project Area, it provides very little economic base for the Friant community. This section addresses the Project's potential impacts on agricultural resources and associated issues.

3.2.1 REGULATORY SETTING

Federal and State

There are four major classifications of farmland adopted by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). These classifications, as defined below, outline the fertility of soils:

- “Prime Farmland” (formerly Class I and Class II soils) is best suited for producing food and fiber. This category has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops, when managed according to modern farming methods;
- “Farmland of Statewide Importance” is land other than prime farmland with a good combination of physical and chemical characteristics for producing food, feed, forage, and fiber;
- “Unique Farmland” is land other than prime farmland and farmland of statewide importance that has a special combination of soil quality, growing season, and moisture supply needed to produce sustained high yields of a specific crop; and
- “Farmland of Local Importance” is defined as important to the local agricultural economy as determined by the county.

The State prepares current maps of the important farmland in agricultural counties of California and monitors permanent farmland conversion. The California Department of Conservation, Division of Land Resource Protection's Farmland Mapping and Monitoring Program also use this system for the classification of farmland. In addition to the farmland classifications above, the California Department of Conservation describes three other categories, as follows:

- “Grazing Land” is land on which the existing vegetation is suited to the grazing of livestock;
- “Urban and Built-Up Land” is land that does not fall within an agricultural category and is occupied by structures with a density of at least one structure to one and one-half acres; and
- “Other Land” is all other land that does not meet the criteria of any other category.

The Fresno County General Plan characterizes the soils in the Friant area as excessively drained to somewhat poorly drained soils of recent alluvial fans and floodplains. Figure 3.2-1 illustrates the types and locations of the soils in the Project Area.

As shown in Figure 3.2-2, the farmland classifications in the Project Area include: Prime Farmland, Farmland of Local Importance, and Grazing land.

Williamson Act

The California Land Conservation Act (Williamson Act) was established in 1965 to protect agricultural lands from conversion to non-agricultural use. Owners of land placed under Williamson Act contract receive lower property tax rates, but must keep the land in agricultural production or related use during 10-year contracts that are automatically renewed each subsequent year (after the initial 10-year period) unless a notice of non-renewal is filed. Figure 3.2-3 shows parcels under Williamson Act contract in the Project vicinity. As shown by Figure 3.2-3 no parcels within the Project Area are under Williamson Act contract.

Farmland Security Zone

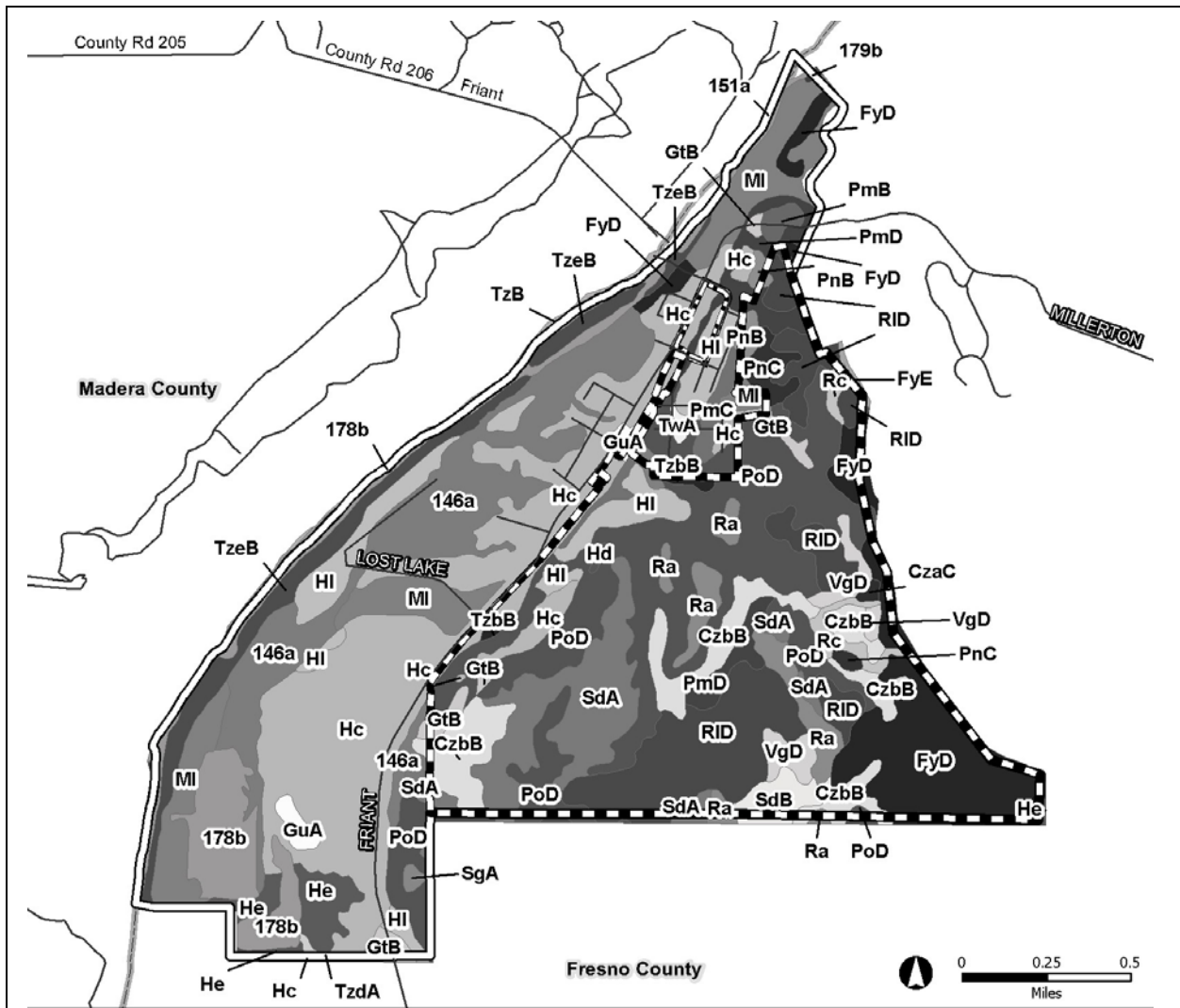
A Farmland Security Zone (FSZ) contract is a contract between a private landowner and a county that enforceably restricts land to agricultural or open space uses. The minimum initial term is 20 years. Like a Williamson Act contract, FSZ contracts renew annually unless either party files a “notice of nonrenewal.” There are no lands under FSZ contract within the Project Area or vicinity. The nearest FSZ contracted lands (non-prime agricultural lands) are approximately four miles to the east.

Fresno County Zoning

The existing zoning designations for the Friant Community Plan Area include (reference Figure 3.2-4): TP (Trailer Park); R-E (Recreational District); R-A (Single-Family Residential Agricultural District); R-2 and R-2-A (Low Density Multifamily Residential); R-1 and R-1-B (Single-Family Residential, 12,000); C-R (Commercial Recreation); C-6 (General Commercial); AL-20 (Limited Agriculture); and A-c (Agricultural Commercial Center).

The current zoning designation for the majority of the Friant Ranch Specific Plan Area is Exclusive Agriculture (AE-20 and AE-40), however, approximately 20 acres are zoned Trailer Park-conditional (TP-C), approximately 15 acres are zoned Trailer Park (TP), approximately 4 acres are zoned commercial (C-6), and approximately 2.5 acres are zoned residential (R-A and R-1)

The Depot Parcel from is zoned Single-Family Residential Agricultural District (R-A).



Legend

- Friant Ranch Specific Plan
- Friant Community Plan
- The Depot Property

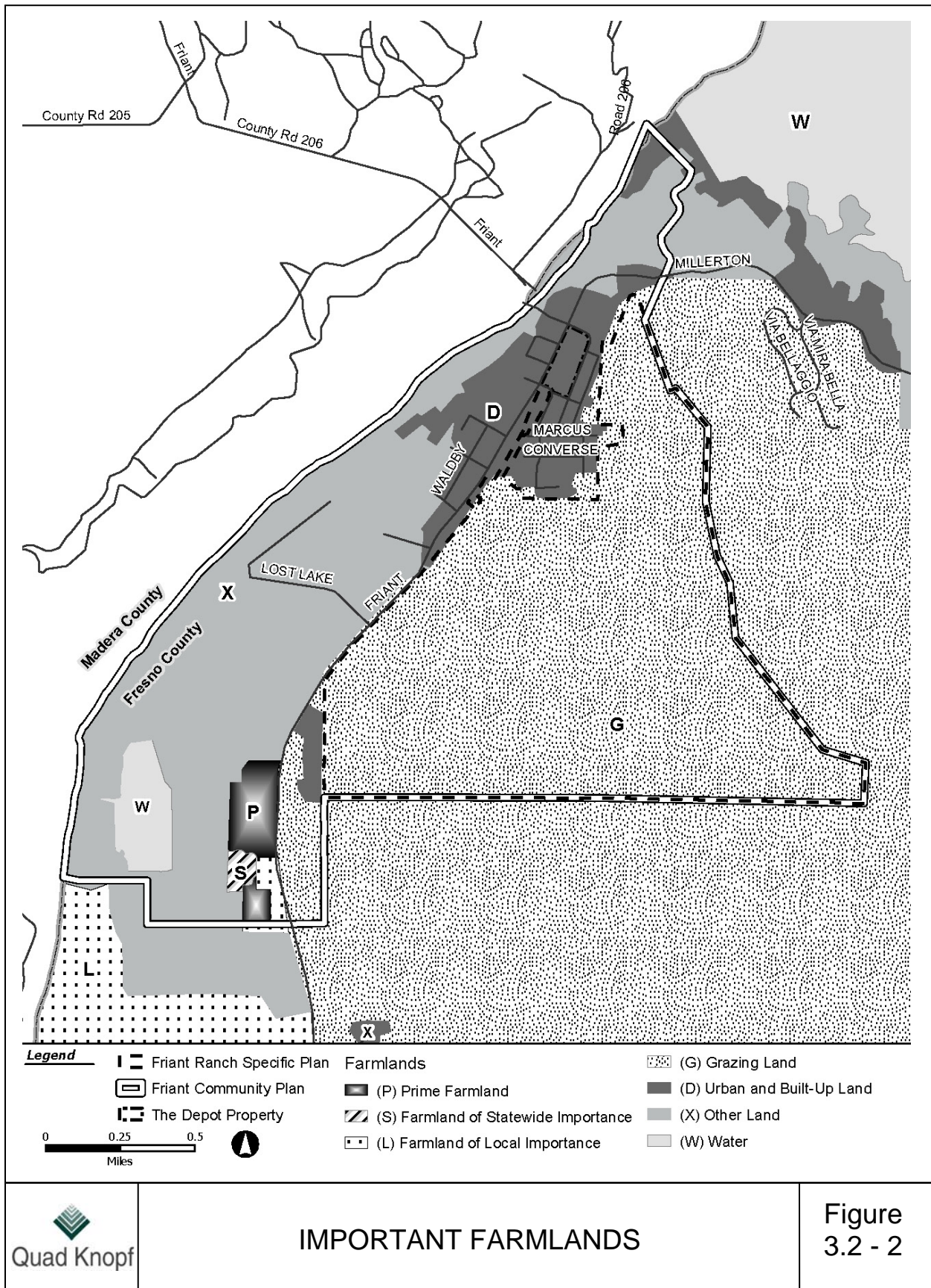
Soils

- AHWAHNEE AND VISTA VERY ROCKY COARSE SANDY LOAMS, 30 TO 75 % SLOPES (ArF)
- COMETA LOAM, 2 TO 9 % SLOPES (CzbB)
- COMETA SANDY LOAM, 9 TO 15 % SLOPES (CzaC)
- DAMS (179b)
- FRIANT FINE SANDY LOAM, 30 TO 45 % SLOPES (FyE)
- FRIANT FINE SANDY LOAM, 9 TO 30 % SLOPES (FyD)
- GREENFIELD SANDY LOAM, 0 TO 3 % SLOPES (GuA)
- GREENFIELD SANDY LOAM, 3 TO 9 % SLOPES (GtB)
- HANFORD GRAVELLY SANDY LOAM (Hl)
- HANFORD SANDY LOAM (Hc)
- HANFORD SANDY LOAM, BENCHES (Hd)
- HANFORD SANDY LOAM, GRAVELLY SUBSTRATUM (He)
- MERCED CLAY, MODERATELY SALINE (MI)
- PITS (146a)
- POLLASKY FINE SANDY LOAM, 2 TO 9 % SLOPES (PnB)
- POLLASKY FINE SANDY LOAM, 9 TO 15 % SLOPES (PnC)
- POLLASKY SANDY LOAM, 15 TO 30 % SLOPES (PmD)
- POLLASKY SANDY LOAM, 2 TO 9 % SLOPES (PmB)
- POLLASKY SANDY LOAM, 9 TO 15 % SLOPES (PmC)
- POLLASKY-MONTEPELLIER COMPLEX, 15 TO 30 % SLOPES (PoD)
- RAMONA LOAM (Rc)
- RAMONA SANDY LOAM (Ra)
- RIVERWASH (151a)
- ROCKLIN SANDY LOAM, PUMICEOUS VARIANT, 3 TO 30 % SLOPES (RID)
- SAN JOAQUIN LOAM, SHALLOW, 0 TO 3 % SLOPES (SgA)
- SAN JOAQUIN SANDY LOAM, SHALLOW, 0 TO 3 % SLOPES (SdA)
- SAN JOAQUIN SANDY LOAM, SHALLOW, 3 TO 9 % SLOPES (SdB)
- TUJUNGA AND HANFORD SOILS, CHANNELED, 0 TO 8 % SLOPES (TzB)
- TUJUNGA COBBLY LOAMY SAND, 0 TO 3 % SLOPES (TzdA)
- TUJUNGA LOAMY SAND, 0 TO 3 % SLOPES (Twa)
- TUJUNGA LOAMY SAND, 3 TO 9 % SLOPES (TzbB)
- TUJUNGA SOILS, CHANNELED, 0 TO 9 % SLOPES (TzeB)
- VISTA COARSE SANDY LOAM, SHALLOW, 9 TO 30 % SLOPES (VgD)
- WATER (178b)



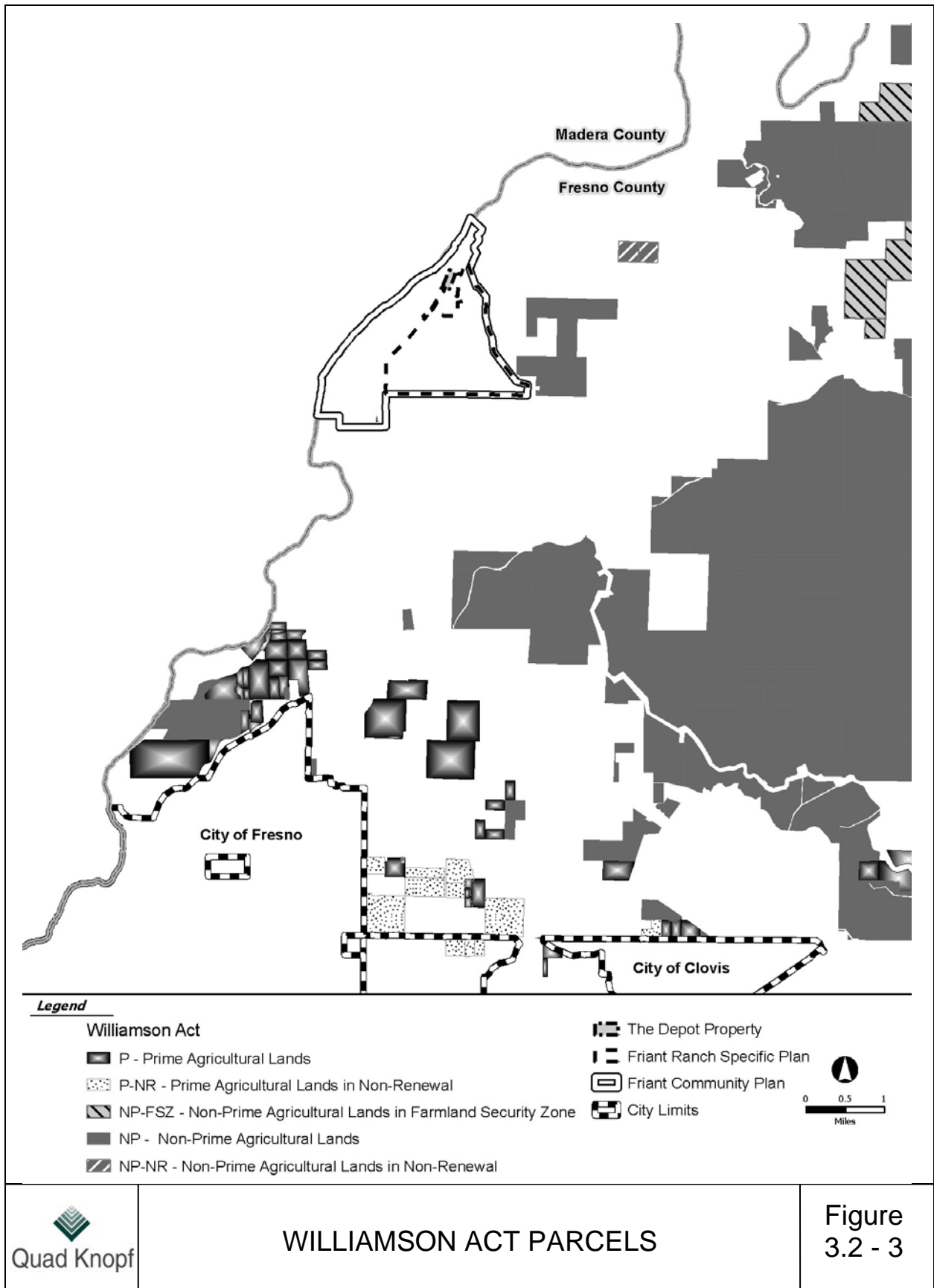
SOILS MAP

Figure 3.2 - 1



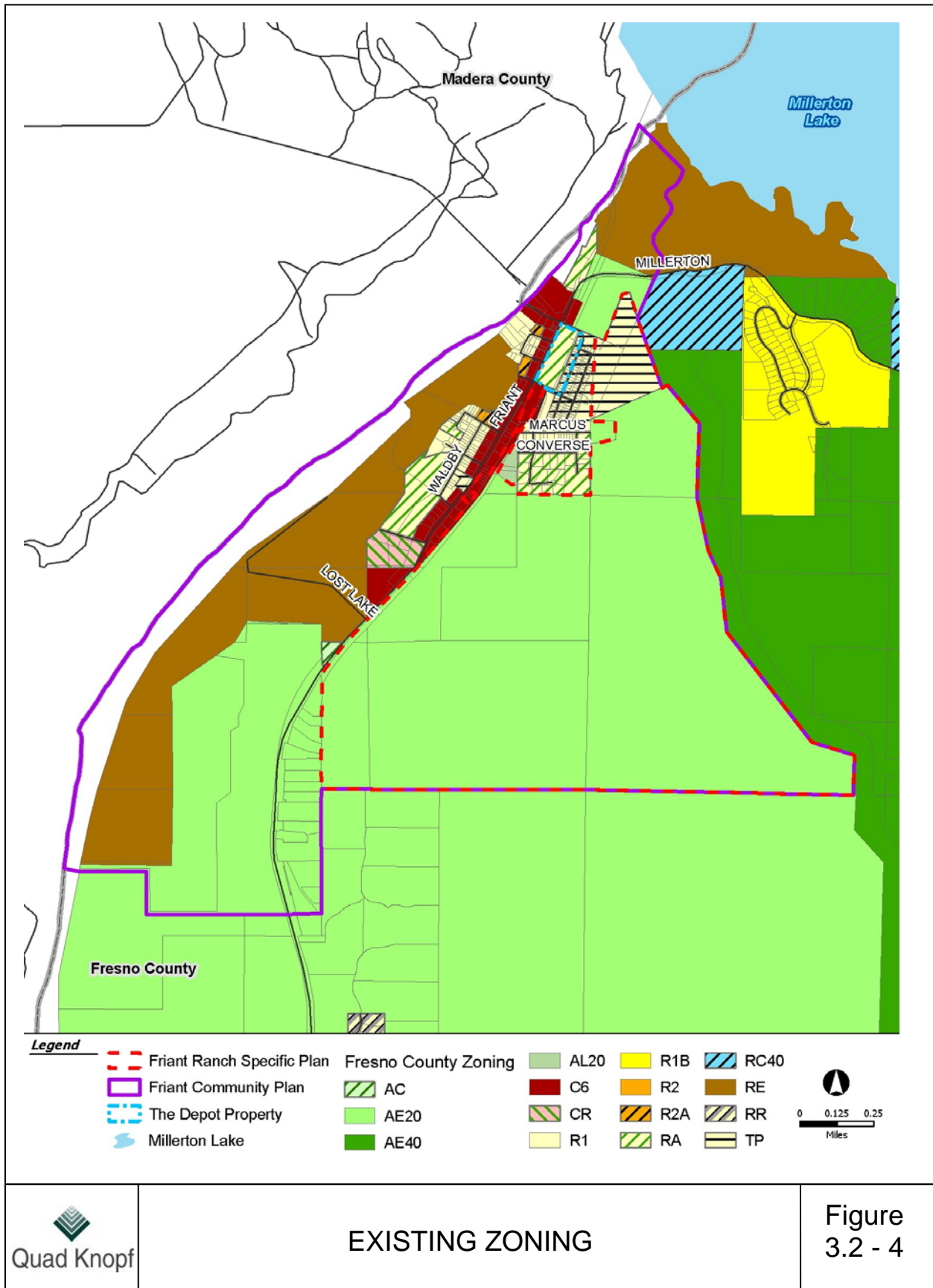
IMPORTANT FARMLANDS

Figure 3.2 - 2



WILLIAMSON ACT PARCELS

Figure 3.2 - 3



EXISTING ZONING

Figure 3.2 - 4

Fresno County General Plan

The existing Fresno County General Plan land use designations within the Friant Community Plan Area include Agriculture, Low Density Residential, Medium Density Residential, Medium High Density Residential, Highway Commercial, Special Commercial, Public Facilities, and Open Space.

The majority of the Friant Ranch Specific Plan Area is designated Agriculture in the Fresno County General Plan, with the exception of approximately 47.03 acres within the Specific Plan Area that are designated as Medium Density Residential (northernmost tip) and Highway Commercial (along Friant Road frontage).

The Depot Parcel is currently designated as residential Low Density Residential use in the Fresno County General Plan.

The following existing Fresno County General Plan policies provide guidelines for protecting agricultural resources in the County:

Policy LU-A.1 The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.

Policy LU-A.12 In adopting land uses policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.

Policy LU-A.13 The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

Policy LU-A.14 The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Policy LU-A.15 The County shall generally condition discretionary permits for residential development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

Policy LU-C.4 The policies of the Friant Community Plan shall remain applicable in the Friant Community Plan area.

Policy Consistency

The Friant Community Plan Update and Friant Ranch Specific Plan are consistent with Policies LU-A.1 and LU-A.12 in that growth is being directed in an area that does not include valuable agricultural land and where public facilities and infrastructure are available or can be expanded. This Community Plan is consistent with the County's General Plan objective to limit urban encroachment into Prime Agricultural Lands and to concentrate new development in existing communities such as Friant. The Draft Friant Community Plan includes the following policies to preserve prime agricultural land within the Friant Community Plan Area:

Policy 11.1 To the extent practicable, direct urban growth away from prime agricultural land.

Policy 11.2 Encourage growth on non-prime agricultural land in close proximity to existing development or with potential connectivity to existing public facilities and infrastructure.

Policy 11.3 Encourage agricultural activities related to the production of food and fiber within the Friant Community Plan Area and support uses incidental and secondary to the on-site agricultural operation.

Policy 11.4 Maintain appropriate buffers between prime agricultural lands and new growth within the Friant Community Plan Area.

3.2.2 PHYSICAL SETTING

Fresno County produces many different crops and is considered one of the most diverse and productive farming areas in the world. Though there is some agricultural land in the Friant Community Plan area, it provides very little economic base for the Friant community. According to the California Department of Conservation, there are three types of farmland categories in the Project Area boundary (see Figure 3.2-2): Grazing Lands throughout the Friant Ranch Specific Plan Area, Prime Farmland and Farmland of Local Importance within the Friant Community Plan Area to the southwest of Friant Ranch, and a small piece of land designated as Farmland of Statewide Importance within the Friant Community Plan Area to the southwest of Friant Ranch, which is not utilized for agriculture. In fact, this Prime Farmland within the Friant Community Plan Area to the southwest of Friant Ranch, including the small piece of land designated as Farmland of Statewide Importance, is subject to sand and gravel excavation which will effectively negate the Prime and Statewide Important Farmland designations. Farmland of Local Importance is located just south of the Friant Community Plan Area along Friant Road.

Much of the land surrounding the Project Area is used for agriculture, primarily grazing. The two agricultural zoned areas located within the Community Plan Area (not including the Friant Ranch Specific Plan Area) are situated at either end of Friant Road: one at the southwestern portion of the Friant Community Plan Area adjacent to Lost Lake and the Lost Lake Recreation Area and the other at the northern end of the Friant Community Plan Area, just south of Friant Dam. As noted above, neither agricultural zoned area is currently being used for agricultural

production. The Friant Ranch Specific Plan Area is currently used for cattle grazing while the Depot Parcel is a vacant lot adjacent to Friant Road to the west and developed properties to the north, south and east.

3.2.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact associated with agricultural resources if it would do any of the following:

- a) *Converts Prime Farmland, Unique Farmland, Farmland of Local Importance, 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 uses.*
- b) *Conflicts with existing zoning for agricultural use, or a Williamson Act contract.*
- c) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland (Prime Farmland, Unique Farmland, or Farmland of Statewide Importance), to non-agricultural use.*

3.2.4 IMPACT ANALYSIS

Impact #3.2.1 – Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to Non-agricultural Uses **[Evaluation Criteria (a)]**

The Project does not propose to convert to non-agricultural uses any of the Prime Farmland and Farmland of Statewide Importance within the Project Area. (Figure 3.2-2.) No lands within the Project Area are designated as Unique Farmland.

The Project will result in the conversion of an existing agricultural use (grazing land) and a vacant lot surrounded by development (The Depot Parcel) to residential, commercial, recreation, open space and public uses. This conversion to non-agricultural uses (as designated by the California Department of Conservation, Division of Land Resource Protection's Farmland Mapping and Monitoring Program) would result in the loss of approximately 670 acres currently used as grazing land within the Friant Ranch Specific Plan Area, as the 275 acres of open space areas (undisturbed areas and revegetated slopes) within the Friant Ranch Specific Plan Area will not be converted to another use and will continue to be used for grazing.

Conclusion: The conversion of non-prime and non-important agricultural land does not result in a significant impact to agricultural resources. None of the land designated Prime Farmland or Farmland of Statewide Importance within the Project Area will be converted to non-agricultural use as a result of the proposed project and there are no lands designated as Unique Farmland within the Project Area, there is *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.2.2 – Conflict with Agricultural Zoning or Williamson Act Contracts [Evaluation Criteria (b)]

Figure 3.2-4 shows existing zoning designations for parcels within and surrounding the Project Area. The amount of land currently zoned for agriculture within the Project Area, is approximately 1,328 acres. The Project retains approximately 428 acres of land zoned for agriculture within the combined Friant Community Plan and Friant Ranch Specific Plan Project Area. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 900 acres. The Project proposes to change the Agricultural zoning for approximately 900 acres of agriculturally zoned property (AE-20 and AL-20) within the Friant Ranch Specific Plan Area and for 6.75 acres of Single Family Residential – Agricultural District (R-A) zoning for the Depot Parcel. The proposed residential and commercial uses within the Friant Ranch Specific Plan Area and Depot Property conflict with the existing agricultural zoning for approximately 606 acres within the Friant Ranch Specific Plan and Depot Property Area. The proposed 275 acres of undisturbed and revegetated open space within the Friant Ranch Specific Plan Area required by mitigation measures 3.4.1b and 3.4.1c will be managed in perpetuity through a grazing management plan, which will ensure that cattle grazing continue on the property. The Friant Ranch Specific Plan proposes a green belt system that is largely focused on the edge of development to minimize impacts to these important natural areas. The natural open space edge condition proposed by the Friant Ranch Specific Plan includes the use of appropriate buffers such as slopes and landscaping between the open space preserve and the development areas. As such, the proposed open space will not conflict with the existing agricultural zoning designations for the approximately 275 acres proposed for preservation as undisturbed and revegetated open space with grazing management.

There is no land within the Project Area that is currently under Williamson Act or Farmland Security Zone contract.

The proposed development in the Project Area will be subject to the County’s Right-to-Farm Ordinance; however, this may not eliminate complaints or conflicts with surrounding lands under Williamson Act contract and/or zoned for agriculture. There are parcels comprising non-prime farmland adjacent and to the east of the Friant Ranch Specific Plan Area (reference Figure 3.2-3) that are under Williamson Act contract and zoned for agriculture. These parcels are used for grazing and are physically divided from the Friant Ranch Specific Plan Area by the Friant-Kern Canal. Policy 11:4 of the Draft Friant Community Plan requires any new development within the Project Area to maintain appropriate buffers between prime agricultural lands and new growth within the Friant Community Plan Area. These buffers will ensure that development within the Project Area does not conflict with agricultural zoning designations and Williamson Act contracts on nearby lands.

Conclusion: The proposed redesignation of approximately 900 acres of grazing land within the Friant Ranch Specific Plan Area and 6.75 acres of land within the Depot Parcel currently zoned for agriculture is a *significant and unavoidable* impact. The proposed residential and commercial uses on approximately 600 acres of those lands will conflict with the existing agricultural zoning.

Mitigation Measures: No mitigation measures are available.

Impact #3.2.3 – Other Changes Resulting in the Conversion of Prime Farmland, Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance to Non-agricultural Use

[Evaluation Criteria (c)]

The Project Area and vicinity include some Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance as depicted in Figure 3.2-2. The Project could result in additional development within the vicinity, which may contribute to growth pressures on nearby Prime Farmland, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance to non-agricultural use due to Friant's location and surroundings. However, the few parcels designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance within the Project Area and vicinity are located near the southern end of the Project Area and are primarily surrounded by proposed open space uses within Lost Lake Park and the Friant Ranch Specific Plan Area. Further, these parcels are now subject to sand and gravel excavation which will remove all prime agricultural soils and are separated from the Friant Ranch Specific Plan Area by Friant Road, which was a two-lane road and was recently reconstructed as a four-lane expressway.

The proposed water transfer between Lower Tule River Irrigation District and Water Works District No. 18 to accommodate the Project involves the transfer of water from agricultural users to domestic uses. As explained in the Water Supply Assessment, attached hereto as Appendix B, Lower Tule River Irrigation District does not propose to fallow any agricultural lands or otherwise convert agricultural lands to non-agricultural uses. Rather, the district has identified supplemental supplies to meet the existing agricultural demands within the district. As such, the proposed transfer will not result in the conversion of Unique Farmland, Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance within the Lower Tule River Irrigation District area.

Conclusion: The impact of potential future conversion of farmland within the Project Area and vicinity is *less than significant* because there are only a few parcels designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance within the Project Area and vicinity and the Project maintains sufficient buffers between these parcels (the majority of which are now subject to sand and gravel excavation) and the proposed development areas. The impact of potential future conversion of farmland within the Lower Tule River Irrigation District and surrounding area is *less than significant* because the proposed transfer provides for supplemental agricultural supplies and does not involve the fallowing or conversion of agricultural lands.

Mitigation Measures: No mitigation measures are required.

3.3 Air Quality

INTRODUCTION

This section describes the impacts of the proposed Project on local and regional air quality, based on the assessment guidelines of the San Joaquin Valley Air Pollution Control District (SJVAPCD). This section describes existing air quality, construction-related impacts, direct and indirect emissions associated with the proposed Project, the local and regional impacts of those emissions, and mitigation measures warranted to reduce or eliminate any identified significant impacts.

3.3.1 REGULATORY SETTING

Regulatory

Air quality is regulated by several agencies including the Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent. In general, air quality evaluations are based upon air quality standards developed by the federal government and several State agencies. Emissions limitations are then imposed upon individual sources of air pollutants by local agencies, such as the SJVAPCD. Mobile sources of air pollutants are largely controlled through federal and State agencies, while most stationary sources are regulated by the SJVAPCD.

Federal Plans, Policies, Regulations, and Laws

The EPA is responsible for implementing the Federal Clean Air Act (FCAA), which passed in 1970 and was last amended in 1990 to form the basis for the national air pollution control effort. The FCAA required the EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS), as shown in Table 3.3-1, and reassess, at least every five years, whether adopted standards are adequate to protect public health based on current scientific evidence.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all state SIPs to determine conformance to the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan in the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

**Table 3.3-1
Federal and State Ambient Air Quality Standards –2008**

Pollutant	Averaging Time	California Standards^a Concentration^c	Federal Standards^b Primary^{c,d}
Ozone	1 Hour	0.09 ppm (180 µg/m ³)	--
	8 Hour	0.07 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³) ^e
Respirable Particulate Matter (PM₁₀)	24 Hour	50 µg/m ³	150 µg/m ³
	Annual Arithmetic Mean	20 µg/m ³	--
Fine Particulate Matter (PM_{2.5})	24 Hour	No separate standard	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 µg/m ³)	9 ppm (10 mg/m ³)
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
Nitrogen Dioxide (NO₂)^f	Annual Arithmetic Mean	0.030 ppm (56 µg/m ³)	0.053 ppm (100 µg/m ³)
	1 Hour	0.18 ppm (338 µg/m ³)	--
Sulfur Dioxide (SO₂)	Annual Arithmetic Mean	--	0.030 ppm (80 µg/m ³)
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	--
Lead	30 Day Average	1.5 µg/m ³	--
	Calendar Quarter	--	1.5 µg/m ³
Visibility Reducing Particles	8 Hour	^g	--
Sulfates	24 Hour	25 µg/m ³	--
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	--
Vinyl Chloride	24 Hour	0.010 ppm (26 µg/m ³)	--

^a California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter – PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^b National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

^e New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997.

^f The Nitrogen Dioxide ambient air quality standard was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm.

^g Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

State Plans, Policies, Regulations and Laws

California Air Resources Board (CARB)

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the 1988 adopted California Clean Air Act (CCAA). The CCAA requires that all air districts in the state endeavor to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

The CARB is primarily responsible for developing and implementing air pollution control plans to achieve the NAAQS. The CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. However, local air districts are still relied on to provide additional strategies for sources under their jurisdiction. The CARB combines local district data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing the CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

Local Plans, Policies, Regulations, and Ordinances

Air pollution transcends political boundaries; therefore, many air quality problems are best managed on a regional basis. This was the case for the San Joaquin Valley where until 1991, each County operated a local air pollution control district (APCD). The State Legislature then determined that management of the entire air basin by a single agency would be more effective. Air basins are geographic areas sharing a common “air-shed.” Most major metropolitan areas in California now fall under unified air pollution control districts (UAPCDs), or air quality management districts (AQMDs).

San Joaquin Valley Air Pollution Control District

The SJVAPCD attains and maintains air quality conditions in Fresno County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the SJVAPCD includes the preparation of plans for the 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. The 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 FCAA and the CCAA.

In January of 2002, the SJVAPCD released a revision to the previously adopted guidelines document (SJVAPCD 1998). This revised Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2002) is an advisory document that provides lead agencies,

consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The GAMAQI contains the following applicable components:

- Criteria and thresholds for determining whether a project may have a significant adverse air quality impact;
- Specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- Methods available to mitigate air quality impacts; and
- Information for use in air quality assessments and EIR's that will be updated more frequently such as air quality data, regulatory setting, climate, topography, etc.

ISR- Indirect Source Review

As population continues to grow and more vehicles are put on the roads, the air quality will continue to become an issue due to the increase in exhaust emissions. The San Joaquin Valley has always put in efforts to improve air quality in the basin. One such effort was the adoption of Rule 9510 and Rule 3180, which were put forth by the SJVAPCD to mitigate construction, area, and operational emissions that are created from development.

The ISR Rule (Rule 9510) and the Administrative ISR Fee Rule (Rule 3180) are the result of state requirements outlined in the California Health and Safety Code, Section 40604 and the SIP. The District's SIP commitments are contained in the District's 2003 PM₁₀ Plan and Extreme Ozone Attainment Demonstration Plan (Plans), which identify the need to reduce PM₁₀ and NO_x in order to reach the ambient air-pollution standards on schedule. The Plans identify growth and reductions in multiple source categories. The Plans quantify the reduction from current District rules and proposed rules, as well as state and federal regulations, and then model future emissions to determine if the District may reach attainment for applicable pollutants (<http://www.valleyair.org/ISR/ISROverview.htm>).

This new rule applies to new developments that are over a certain threshold size. Any of the following projects require an application to be submitted unless the projects have mitigated emissions of less than two tons per year each of NO_x and PM₁₀. Projects that are at least:

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

Air Quality Plans

The SJVAPCD submitted the 1991 Air Quality Attainment Plan in compliance with the requirements set forth in the CCAA. In addition, the CCAA requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of this assessment, the attainment plan must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. The CCAA requirement for a first triennial progress report and revisions of the 1991 Air Quality Attainment Plan was first fulfilled with the preparation and adoption of the 1995-1997 Triennial Progress Report and Plan Revision. Triennial reports were also prepared for 1995-1997, 1997-1999, and 1999-2001 in compliance with the CCAA.

In an effort to reach attainment for ozone, the SJVAPCD submitted the 1994 Ozone Attainment Demonstration Plan. This plan stresses ozone attainment and focuses on strategies reducing NO_x and ROG air emissions by promoting active public involvement, enforcement of compliance with rules and regulations, public education in both the public and private sectors, development and promotion of transportation and land use programs designed to reduce vehicle miles traveled (VMT) in the region, and implementation of stationary and mobile source control measures.

In addition to the above mentioned items, the SJVAPCD has submitted numerous plans with respect to ozone, PM₁₀, and CO in compliance with the FCAA and CCAA, as listed below:

- 1992 Federal Attainment Plan for Carbon Monoxide;
- Revised 1993 Rate of Progress Plan, November 1994;
- Revised Post-1996 Rate of Progress Plan, September 1995;
- 1997 PM₁₀ Attainment Demonstration Plan, May 1997;
- 2000 Ozone Rate of Progress Report, April 2000;
- 2000 PM₁₀ Attainment Plan Progress Report, August 2000;
- 2001 Update to Ozone Attainment Plan;
- Amended 2002-2005 Rate of Progress Plan, December 2002;
- 2003 PM₁₀ Plan, June 2003, Amended December 2003, Amended May 2005;
- 2004 One-Hour Extreme Ozone Attainment Demonstration Plan, Adopted October 2004, Amended October 2005;
- 2005 Indirect Source Review, Adopted December 2005;
- 2006 PM₁₀ Plan, February 2006; and
- 2007 PM₁₀ Maintenance Plan, Adopted September 2007.

Fresno County General Plan

The following existing Fresno County General Plan policies have been adopted to protect air quality:

Policy OS-G.12 The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses

and any other use which have the potential for creating a hazardous or nuisance effect.

Policy OS-G.13 The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD's particulate matter of less than ten (10) microns (PM₁₀) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

Policy OS-G.14 The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Policy OS-G.15 The County shall continue to work to reduce PM₁₀ and PM_{2.5} emissions from County-maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.

Policy OS-G.16 The County shall require the use of natural gas or the installation of low emission, EPA-certified fireplace inserts in all open hearth fireplaces in new homes. The County shall promote the use of natural gas over wood products in space heating devices and fireplaces in all existing and new homes.

A discussion of the Project's consistency with the policies above is located in the impact analysis section where applicable.

3.3.2 PHYSICAL SETTING

The area is currently in a rural setting with a small residential suburban community, several community shops, and a recreational park. This Project Area is in a state of transition. Within the immediate region, population growth is occurring with the influx of new development projects. Although the area is noted for its rural identity and extensive rangeland, new towns and large residential developments are changing the context of the land, spurring population growth that will ultimately influence Friant's economy and resources.

The project is located in the San Joaquin Valley Air Basin (SJVAB) (Figure 3.3-1), which occupies the southern half of the Central Valley and is approximately 250 miles in length and, on average, 35 miles in width. The Coast Range, which has an average elevation of 3,000 feet, serves as the western border of the SJVAB. The San Emigdio Mountains, part of the Coast Range, and the Tehachapi Mountains, part of the Sierra Nevada, are both located to the south of the SJVAB. The Sierra Nevada extends in a northwesterly direction and forms the eastern boundary of the SJVAB. The SJVAB is basically flat with a downward gradient to the northwest.



Source: California Environmental Protection Agency
Air Resources Board

 <p>Quad Knopf</p>	<p>CALIFORNIA AIR BASINS</p>	<p>Figure 3.3-1</p>
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The climate of the SJVAB is strongly influenced by the presence of these mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific to release precipitation on the western slopes, producing a partial rain shadow over the valley. A rain shadow is defined as the region on the leeward side of a mountain where precipitation is noticeably less because moisture in the air is removed in the form of clouds and precipitation on the windward side. In addition, the mountain ranges block the free circulation of air to the east, resulting in the entrapment of stable air in the valley for extended periods during the cooler months.

Winter in the SJVAB is characterized as mild and fairly humid, and the summer is hot, dry, and cloudless. During the summer, a Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore and storms.

Summer temperatures that often exceed 100 degrees Fahrenheit coupled with clear sky conditions are favorable to O₃ formation. The majority of the precipitation in the valley occurs during the winter. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. However, between winter storms, high pressure and light winds lead to the creation of low level temperature inversions and stable atmospheric conditions that results in high CO concentrations and PM. Summer wind conditions promote the transport of ozone and its precursors to the SJVAB from the Bay Area through the Carquinez Strait (a gap in the Coast Range), and low mountain passes such as Altamont Pass and Pacheco Pass.

With respect to the Project Area, the annual normal precipitation is approximately 8 inches. January temperatures range from a normal minimum of 34 degrees F to a normal maximum of 54 degrees F. July temperatures range from a normal minimum of 62 degrees F to a normal maximum of 96 degrees F (NOAA 1992). The predominant wind direction and speed is from the north-northwest at 8 mph (CARB 1994).

Existing Ambient Air Quality

The CARB and the U.S. EPA currently focus on the following air pollutants as indicators of ambient air quality: O₃, CO, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as “criteria air pollutants.”

EPA has established primary and secondary NAAQS for the following criteria air pollutants: O₃, CO, NO₂, SO₂, PM₁₀, fine particulate matter (PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect the public welfare. In addition to the NAAQS, CARB has established CAAQS for the following criteria air pollutants: sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. In most cases the CAAQS are more stringent than the NAAQS. The NAAQS and CAAQS as discussed above are listed in Table 3.3-1.

Criteria air pollutant concentrations are measured at several monitoring stations in the SJVAB, 7 of those monitoring stations being in Fresno County. The Fresno- First Street site, Fresno-Skypark site, and the Parlier site were chosen to represent the ambient air quality of the proposed Project Site. The two Fresno air monitoring locations are closest in relation to the project area, while the Parlier site is located southeast of the Project. The Parlier site was chosen for data collection on this particular project due to prevailing winds from the northwest. This proposed project could result in emissions exposure southeast of the site including Parlier. The Fresno First Street monitoring station is located near central Fresno near the northeast corner of N. First Street and E. Shields Ave. The Fresno Sierra Skypark #2 testing location is located in northwest Fresno at the southwest corner of W. Chennault Ave. and N. Blythe Ave. Fresno First Street location, however has more data results than the Sierra Skypark #2 location. Table 3.3-2 summarizes the air quality data from these locations for the most recent years available. Ambient air quality conditions with respect to each separate criteria pollutant are described below.

**Table 3.3-2
Ambient Air Quality
Ozone and Particulate Matter**

Year	Days Exceeding Standards								
	Fresno – 1 st Street					Fresno Sierra Skypark #2		Parlier	
	State Ozone	Federal Ozone	State PM ₁₀ ¹	Federal PM ₁₀ ¹	Federal PM _{2.5}	State Ozone	Federal Ozone	State Ozone	Federal Ozone
1989	--	--	--	--	--	39	2	--	--
1990	36	8	--	--	--	0	0	50	5
1991	76	27	185	0	--	34	5	74	14
1992	56	12	--	0	--	50	3	61	12
1993	59	11	134	0	--	26	6	65	10
1994	56	7	--	--	--	35	3	26	3
1995	65	14	--	0	--	40	3	42	19
1996	59	15	64	0	--	45	5	82	18
1997	30	1	71	0	--	19	1	68	9
1998	46	15	77	0	--	53	13	64	13
1999	53	4	110	0	--	36	1	81	15
2000	48	5	72	0	--	69	8	81	17
2001	51	5	98	6	12	84	10	93	12
2002	45	11	90	0	15	66	15	96	21
2003	56	5	80	0	0	35	1	103	14
2004	23	0	30	0	2	16	0	23	0
2005	31	3	58	0	10	22	2	36	1
2006	45	4	80	0	1	31	1	52	1
2007	14	0	54	0	11	6	0	18	0

Source: Air Resources Board Aerometric Data Analysis and Management System (ADAM)

--: Insufficient Data

Both CARB and EPA use monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of the designations is to identify those 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 the Nonattainment designation, called Nonattainment-Transitional. The Nonattainment-Transitional designation is given to Nonattainment areas that are progressing and nearing Attainment.

Ozone

Ozone (O₃) is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight, and the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of Reactive Organic Gases (ROG) and NO_x in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that results from the combustion of fuels.

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level or "bad" ozone is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog because sunlight and heat serve as catalysts for the reaction between ozone precursors, peak ozone concentrations typically occur during the summer in the Northern Hemisphere (U.S. Environmental Protection Agency 2003). The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric or "good" ozone layer extends upward from about 10 to 30 miles and protects the earth from the sun's harmful ultraviolet rays (UV-B).

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 ppm for 1 to 2 hours has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in the permeability of respiratory epithelia; such increased permeability leads to an increase in responsiveness of the respiratory system to challenges, and the interference or inhibition of the immune system's ability to defend against infection (Godish 1991).

With respect to the NAAQS, Fresno County is currently designated as a Severe Non-Attainment area for the National 8-hour ozone standard (California Air Resources Board 2003b, 2003c). In addition, Fresno County is currently designated as a Severe Non-Attainment area for the state 8-hour ozone standard (California Air Resources Board 2003b, 2003c).

As shown in Table 3.3-2, the national 1-hour ozone standard had been exceeded a majority of the years in the past 20 years in all three collection locations. A sign of improvement has been

displayed in the past 3 years with a reduction in the days exceeding the standards. A similar trend is noticed in the same table for the days exceeding the state ozone standards.

Maximum peak ozone values in the SJVAB have trended downwards over the last twenty years, as shown in Table 3.3-2. The number of days on which the national 1-hour standard has been exceeded has been variable over the years, but indicates an overall improvement; however, the ozone problem in the SJVAB still ranks among the most severe in California.

Particulate Matter

Particulate matter pollution consists of very small particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gaseous pollutant undergo chemical reactions in the atmosphere. Respirable particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}) represent fractions of particulate matter. PM₁₀ refers to particulate matter 10 microns or less in diameter and PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter. Major sources of PM_{2.5} include diesel fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. PM₁₀ sources include all PM_{2.5} sources as well as emissions from dust generated by construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions.

The adverse health effects associated with PM₁₀ depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances absorbed onto fine particulate matter, which is referred to as the piggybacking effect, or with fine dust particles of silica or asbestos. Generally, adverse health effects associated with PM₁₀ may result from both short-term and long-term exposure to elevated PM₁₀ concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (U.S. Environmental Protection Agency 2003). PM_{2.5} poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health.

Fresno County is currently designated as a Non-Attainment area for the state and national PM₁₀ standards (California Air Resources Board 2003a, 2003c). As shown in Table 3.3-2, the national 24-hour PM₁₀ standard was exceeded only during one year from 1989-2007 at the Fresno-First Street station. The state standard was exceeded a number of times each year from 1989-2007, however there is an improvement trend in a declining number of days exceeding the standards, as we move towards the future.

Direct emissions of PM₁₀ have decreased from 1988 to 2005, as shown in Table 3.3-2. CARB's Almanac of Emissions and Air Quality (California Air Resources Board 2003a) projects that PM₁₀ emissions will remain nearly constant between 2005 and 2020. PM₁₀ emissions in the SJVAB are dominated by emissions from area-wide sources, primarily from vehicle travel on unpaved and paved roads, waste burning, and residential fuel combustion.

Carbon Monoxide

Unlike ozone, carbon monoxide (CO) is released directly into the atmosphere by stationary and mobile sources and typically found at high concentrations near the source of emission. CO is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels, primarily from mobile (transportation) sources of pollution. In fact, 77 percent of the nationwide CO emissions are from mobile sources. The other 23 percent consists of CO emissions from wood-burning stoves, incinerators, and industrial sources.

Fresno County is currently designated as an Unclassified or Unclassified/Attainment area for the state and national CO standards (California Air Resources Board 2003b, 2003c).

With respect to CO air quality trends according to the 2003 California Almanac of Emissions and Air Quality (California Air Resources Board 2003a), the maximum peak 8-hour trend for the SJVAB shows a fairly consistent downward trend from 1982 to 2001, with year-to-year variability especially in the 1980's because of meteorological conditions. The national CO standards have not been exceeded since 1991 and the state standards have not been exceeded the past six years. The decline in ambient CO is attributable to the introduction of cleaner fuels and newer, cleaner motor vehicles.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells; however, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (U.S. Environmental Protection Agency 2003).

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂ (U.S. Environmental Protection Agency 2003). The combined emissions of NO and NO₂ are referred to as NO_x, which are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (O₃), the NO₂ concentration in a particular geographical area may not be representative of the local NO_x emission sources.

Inhalation is the most common route of exposure to NO₂. Because NO₂ has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, including coughing, difficulty with breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4 to 12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO₂ intoxication after acute exposure has been linked on occasion with prolonged respiratory impairment with such symptoms as chronic bronchitis and

decreased lung functions. Fresno County is currently designated as an attainment or unclassified/attainment area for the state and national NO₂ standards (California Air Resources Board 2003b, 2003C).

Sulfur Dioxide

SO₂ is produced by such stationary sources as coal and oil combustion, steel mills, refineries, pulp and paper mills. The major adverse health effects associated with SO₂ exposure pertain to the upper respiratory tract. SO₂ is a respiratory irritant with constriction of the bronchioles occurring with inhalation of SO₂ at 5 ppm or more. On contact with the moist mucous membranes, SO₂ produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects. Exposure to high SO₂ concentrations may result in edema of the lungs or glottis and respiratory paralysis.

Fresno County is currently designated as an attainment or unclassified/attainment area for the state and national SO₂ standards (California Air Resources Board 2003b, 2003c).

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed in detail below, metal processing is currently the primary source of lead emissions. The highest levels of lead in the air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (U.S. Environmental Protection Agency 2003).

As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector have declined dramatically (95% between 1980 and 1999), and levels of lead in the air decreased by 94 percent between 1980 and 1999. Transportation sources, primarily airplanes, now contribute only 13 percent of lead emissions. A recent National Health and Nutrition Examination Survey reported a 78 percent decrease in the levels of lead in people's blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (as well as the removal of lead from soldered cans) (U.S. Environmental Protection Agency 2003).

The decrease in lead emissions and ambient lead concentrations over the past 25 years is one of California's most dramatic success stories. As stated above, the rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent CARB regulations have virtually eliminated all lead from gasoline now sold in California. All areas of the state are currently designated as Attainment for the state lead standard (the EPA does not designate areas for the national lead

standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. As a result, the CARB identified lead as a toxic air contaminant (California Air Resources Board 2003c).

3.3.3 IMPACT EVALUATION CRITERIA

The SJVAPCD has established thresholds of significance for determining environmental significance. These thresholds separate a project’s short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project, which are recognized to be short in duration. The long-term emissions are primarily related to the activities that will occur indefinitely as a result of project operations.

Impacts will be evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction, operational emissions of criteria pollutants (particulate matter (PM₁₀) and reactive organic gas precursors to ozone), and cumulative air quality impacts. Because the area is Non-Attainment for ozone and PM₁₀, a major criterion for review is whether the Project will result in a net increase of pollutants impacting ozone precursor pollutants and of particulate matter (PM₁₀).

URBEMIS 2007 Version 9.2.4 (URBEMIS)

URBEMIS is a software program designed to estimate air emissions from land development projects. This program data was generated for the Community Plan, the five phases of the Specific Plan development, and also the full Specific Plan build-out, which is assumed to be 2020. Full documentation of the URBEMIS model results is available in Appendix C. The URBEMIS full buildout results are displayed in Section 3.3.4, Impact Analysis.

Standards of Significance

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project would have significant adverse air quality impacts if it would do any of the following:

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

The following thresholds of significant are based on the quantitative and qualitative criteria recommended by SJVAPCD. For purposes of this EIR, the Project would have significant adverse air quality impacts if it would do any of the following:

- Projects that emit ozone precursor (ROG and NOx) air pollutants in excess of 10 tons/year;
- Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants; and
- Any odor impacts to local residents and/or complaints from neighbors.

3.3.4 IMPACT ANALYSIS

The impact analysis is divided up into several sections because portions of the project have proposed development and other portions do not have development proposed at this time. The analysis is broken up into two different project areas and then further broken down into construction and area/operational phases. The two project areas are the Friant Ranch Specific Plan area and the Community Plan Update area outside of the Friant Ranch SP area.

This section identifies and discusses the environmental impacts resulting from the proposed project and suggests mitigation measures to reduce the level of impacts. The proposed plan will affect air quality during both construction and operational phases. Construction activities will result in criteria pollutant emissions through earthmoving activities, application of architectural coatings, and vehicle and equipment exhaust emissions. The proposed project operations would result in criteria pollutant emissions primarily from vehicular sources; however landscape maintenance equipment, residential heating sources, and other miscellaneous activities would also generate pollutant emissions.

This section will analyze the impacts from a local and regional standpoint. The section will be quantifying the Community Plan and Specific Plan conditions and relating the projects effects to the significance criteria to determine impact significance. Emissions that consist of mobile and stationary sources during construction and eventual operation were estimated using URBEMIS 2007, Version 9.2.4, (Rimpo and Associates, 2007). The Friant Ranch Specific Plan will be broken up into five separate phases, which will be evaluated accordingly. The construction will be evaluated and analyzed for the five different Specific Plan phases, since the project is not being completely built out all at once. The area and operational analysis will include an overall evaluation of the Specific Plan development in full operation. The Community Plan area outside of the Friant Ranch Specific Plan Area, with exception of the Depot Parcel project, is not being evaluated because no development is presently proposed for those parcels and there exists uncertainty about the timing of construction of future projects. Notably, the existing Community Plan designations for those parcels are not changing. Future development within the Community Plan will be subject to additional air quality analysis at the time individual projects are proposed.

Impact #3.3.1 – Construction Impacts for the development of the Friant Ranch Specific Plan (5 phases) and Community Plan Update Carbon Monoxide (CO), Reactive Organic Gases (ROG), Nitrogen Oxide (NOx), Particulate Matter (PM₁₀), & Fine Particulate Matter (PM_{2.5})

[Evaluation Criteria (a), (b), (c), (d)]

Although the impacts from construction related air pollutant emissions are temporary in duration, such emissions can become a significant air quality impact. Construction activities such as grading, excavation, building construction, and paving can generate substantial amounts of air pollution. Emissions from construction equipment engines also contribute to elevated concentrations of PM₁₀ and CO, as well as ROGs and NOx.

Several pieces of diesel-powered heavy equipment will operate during the construction of the Friant Ranch Specific Plan. Site preparation activity emissions have been estimated based on the maximum fleet recommended by the SJVAPCD. Exhaust and fugitive dust emissions will be generated by construction activities in the Specific Plan area, such as excavation and grading, construction vehicle traffic, wind blowing over exposed earth, construction workers traveling to and from the construction sites, heavy-duty construction equipment operation, and application of architectural coatings.

Dust from construction activities can cause impacts both locally and regionally. The dry climate of the area during the summer months, combined with regional fine, silty soils, create a high potential for dust generation. Increased dustfall and locally elevated PM₁₀ levels near the construction activity are expected. Depending on the weather, soil conditions, the amount of activity taking place at any one time, and the nature of dust control efforts, these impacts could significantly affect existing land uses near the Specific Plan area. The construction portions of this project will be analyzed in phases, since the construction for the entire Specific Plan area will not be built out all at one time. A quantitative approach as well as qualitative approach will be applied for analysis of the construction emissions.

Construction emissions estimates for the proposed Specific Plan were calculated using the URBEMIS computer program, version 9.2.4 (Rimpo and Associates, 2007) and incorporated into this EIR as Appendix C. Based on the output of the URBEMIS program, the project will produce the emissions shown in Tables 3.3-3 through 3.3-7. The trips/day results have been assigned per a traffic study conducted by Peters Engineering and is provided in Appendix D. The traffic study will provide a more accurate reading for traffic trips than the defaults programmed into URBEMIS.

The mitigation measures and tables below describe two different mitigation options for several of the construction phases. Option 1 provides mitigation measures available to lower the construction emissions to below the SJVAPCD threshold standards. Option 2 (enhanced mitigation) displays increased mitigation reduction possible with higher amounts of construction equipment modifications. This includes greater percentage reduction features than Option 1. When Option 1 mitigates the phased emission activities below the legal threshold, the Option 2 is not required unless agreed upon by local agency and developer. In phases 1 and 2 the Option 2

mitigation measures are required because the unmitigated emissions are too high to mitigate below the threshold.

Phase 1: The following construction fleet calculations were collected through URBEMIS 9.2.4.

Phase 1 consists of:

- 230 Dwelling units of low rise apartments, which are calculated at 6.59 trips/day;
- 83 Dwelling units of attached senior adult housing at 3.48 trips/day; and
- 251 Dwelling units of detached senior adult housing at 3.71 trips/day.

The construction fleet for Phase 1 consists of the following equipment:

Mass Grading

- 1 Excavator (168 hp) operating at a 0.57 load factor for 8 hours/day;
- 1 Grader (174 hp) operation at a 0.61 load factor for 8 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.55 load factor for 8 hours/day;
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day; and
- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 8 hours/day;
- 2 Paving Equipment (104 hp) operation at a 0.53 load factor for 6 hours/day; and
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours/day.

**Table 3.3-3
Construction Equipment Exhaust Emissions (Tons/Year): Phase 1**

	ROG	NO _x	CO	SO ₂	PM ₁₀
Unmitigated Conditions					
<i>Year 2010</i>	0.86	5.23	8.9	0.01	15.34
<i>Year 2011</i>	0.85	4.6	10.76	0.01	0.33
<i>Year 2012</i>	6.25	4.57	10.30	0.01	0.33
Total	7.96	14.4	29.96	0.03	16
Mitigated Conditions (Option 2)					
<i>Year 2010</i>	0.86	3.5	8.9	0.01	15.21
<i>Year 2011</i>	0.85	3.47	10.76	0.01	0.22
<i>Year 2012</i>	3.82	3.39	10.30	0.01	0.23
Total	5.53	10.36	29.96	0.03	15.66

Source: URBEMIS v.9.2.4

ROG = Reactive Organic Gases; NO_x = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide
PM₁₀ = Particulate Matter, 10 Microns

Conclusion: Air pollutant emissions by construction activities associated with the first phase of development will degrade local air quality. The calculated emissions exceed SJVAPCD thresholds and the impact is *potentially significant* for Phase 1.

Mitigation Measures #3.3.1a: To reduce emissions and thus reduce air quality impacts, the following Option 2 (enhanced mitigation) measures shall be implemented for Phase 1:

1. The use of aqueous diesel fuel for the construction vehicles.
2. Use of diesel oxidation catalysts capable of a 15% - 40% reduction in NOx emissions on all diesel equipment.
3. Use of low-volatile organic compound paints capable of reducing ROG emissions by 45% compared to existing architectural coating rules.

Effectiveness of Mitigation: The mitigation measures above, which is a demonstration of Option 2 measures (enhanced mitigation measures) will help to reduce exhaust emissions but not below the SJVAPCD thresholds for Phase 1 of the Project. This phase of construction will be *significant and unavoidable*.

Phase 2: The following construction fleet calculations were collected through URBEMIS 9.2.4.

Phase 2 consists of:

- 781 Dwelling units of detached senior adult housing at 3.71 trips/day.

The construction fleet for Phase 2 consists of the following equipment:

Mass Grading

- 1 Excavator (168 hp) operating at a 0.57 load factor for 8 hours/day;
- 1 Grader (174 hp) operation at a 0.61 load factor for 8 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 8 hours/day;
- 3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours/day;
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day; and
- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 8 hours/day;
- 2 Paving Equipment (104 hp) operation at a 0.53 load factor for 8 hours/day; and
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours/day.

Building Construction

- 1 Crane (399 hp) operating at a 0.43 load factor for 7 hours/day;

- 3 Forklifts (145 hp) operation at a 0.3 load factor for 8 hours/day;
- 1 Generator Set (49 hp) operating at a 0.74 load factor for 8 hours/day;
- 3 Tractor/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours/day; and
- 1 Welder (45 hp) operating at a 0.45 load factor for 8 hours/day.

Conclusion: Air pollutant emissions by construction activities associated with the second phase of development will degrade local air quality. The calculated emissions exceed SJVAPCD thresholds and the impact is *potentially significant* for Phase 2.

Mitigation Measures #3.3.1b: To reduce emissions and thus reduce air quality impacts, the following Option 2 (enhanced mitigation) measures shall be implemented for Phase 2:

1. The use of aqueous diesel fuel for the construction vehicles.
2. Use of diesel oxidation catalysts capable of a 40% reduction in NOx emissions on all diesel equipment.
3. Use of low-volatile organic compound paints capable of reducing ROG emissions by 45% compared to existing architectural coating rules.

**Table 3.3-4
Construction Equipment Exhaust Emissions (Tons/Year): Phase 2**

	ROG	NOx	CO	SO ₂	PM ₁₀
Unmitigated Conditions					
<i>Year 2011</i>	1.23	8.24	12.92	0.01	45.38
<i>Year 2012</i>	1.02	5.07	16.97	0.02	0.38
<i>Year 2013</i>	0.93	4.63	15.61	0.02	0.35
<i>Year 2014</i>	11.42	4.66	14.79	0.02	0.36
<i>Year 2015</i>	0	0.01	0.05	0	0
Total	14.6	22.61	60.34	0.07	46.47
Mitigated Conditions (Option 2)					
<i>Year 2011</i>	1.23	4.93	12.92	0.01	45.2
<i>Year 2012</i>	1.02	3.77	16.97	0.02	0.29
<i>Year 2013</i>	0.93	3.41	15.61	0.02	0.27
<i>Year 2014</i>	6.72	3.37	14.79	0.01	0.27
<i>Year 2015</i>	0	0.01	0.05	0	0
Total	9.9	15.49	60.34	0.06	46.03

Source: URBEMIS v.9.2.4

ROG = Reactive Organic Gases; NOx = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide

PM₁₀ = Particulate Matter, 10 Microns

Effectiveness of Mitigation: The mitigation measures above, which is a demonstration of Option 2 measures (enhanced mitigation measures) will help to reduce exhaust emissions but not

below the SJVAPCD thresholds for Phase 1 of the Project. This phase of construction will be *significant and unavoidable*.

Phase 3: The following construction fleet calculations were collected through URBEMIS 9.2.4.

Phase 3 consists of:

- 524 Dwelling units of detached senior adult housing at 3.71 trips/day;
- 10,000 SF of designated high turnover restaurant business at 127.15 trips/day;
- 5,000 SF of fast-food with drive through at 496.12 trips/day;
- 10,000 SF of medical and dental offices at 36.13 trips/day; and
- 25,000 SF of general office at 11.01 trips/day.

The construction fleet for Phase 3 consists of the following equipment:

Mass Grading

- 1 Excavator (168 hp) operating at a 0.57 load factor for 8 hours/day;
- 1 Grader (174 hp) operation at a 0.61 load factor for 8 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 8 hours/day;
- 2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours/day;
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day; and
- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 8 hours/day;
- 2 Paving Equipment (104 hp) operation at a 0.53 load factor for 8 hours/day; and
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours/day.

Building Construction

- 1 Crane (399 hp) operating at a 0.43 load factor for 7 hours/day;
- 3 Forklifts (145 hp) operation at a 0.3 load factor for 8 hours/day;
- 1 Generator Set (49 hp) operating at a 0.74 load factor for 8 hours/day;
- 3 Tractor/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours/day; and
- 1 Welder (45 hp) operating at a 0.45 load factor for 8 hours/day.

Conclusion: Air pollutant emissions by construction activities associated with the third phase of development will degrade local air quality. The calculated emissions exceed SJVAPCD thresholds and the impact is *potentially significant* for Phase 3.

**Table 3.3-5
Construction Equipment Exhaust Emissions (Tons/Year): Phase 3**

	ROG	NOx	CO	SO ₂	PM ₁₀
Unmitigated Conditions					
Year 2013	0.87	5.47	9.23	0.01	23.63
Year 2014	0.71	3.64	10.54	0.01	0.27
Year 2015	8.35	3.6	10.04	0.01	0.28
Year 2016	0	0.01	0.03	0	0
Total	9.93	12.72	29.84	0.03	24.18
Mitigated below Threshold (Option 1)					
Year 2013	0.87	4.16	9.23	0.01	23.63
Year 2014	0.71	2.9	10.54	0.01	0.2
Year 2015	8.35	2.86	10.04	0.01	0.2
Year 2016	0	0.01	0.03	0	0
Total	9.93	9.93	29.84	0.03	24.03

ROG = Reactive Organic Gases; NOx = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide
 PM₁₀ = Particulate Matter, 10 Microns
 Source: URBEMIS v.9.2.4

Mitigation Measures #3.3.1c: To reduce emissions and thus reduce air quality impacts, the following Option 1 measures shall be implemented for Phase 3.

Option 1 mitigation measures:

1. The use of aqueous diesel fuel for the construction vehicles.
2. Use of diesel oxidation catalysts capable of a 15% reduction in NOx emissions on all diesel equipment for grading and paving subphases.
3. Use of diesel oxidation catalysts capable of a 20% reduction in NOx emissions on all diesel equipment for the building construction subphase.

Effectiveness of Mitigation: Option 1 mitigation measures are presented above and are required to reduce emissions of the construction phase to under the SJVAPCD threshold and will result in a *less than significant impact with mitigation incorporated*.

Phase 4: The following construction fleet calculations were collected through URBEMIS 9.2.4.

Phase 4 consists of:

- 625 Dwelling units of detached senior adult housing at 3.71 trips/day;
- 50,000 SF of general office at 11.01 trips/day; and
- 50,000 SF of shopping center complex at 42.94 trips/day.

The construction fleet for Phase 4 consists of the following equipment:

Mass Grading

- 1 Excavator (168 hp) operating at a 0.57 load factor for 8 hours/day;
- 1 Grader (174 hp) operation at a 0.61 load factor for 8 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 8 hours/day;
- 2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours/day;
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day; and
- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 8 hours/day;
- 2 Paving Equipment (104 hp) operation at a 0.53 load factor for 8 hours/day; and
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours/day.

Building Construction

- 1 Crane (399 hp) operating at a 0.43 load factor for 7 hours/day;
- 3 Forklifts (145 hp) operation at a 0.3 load factor for 8 hours/day;
- 1 Generator Set (49 hp) operating at a 0.74 load factor for 8 hours/day;
- 3 Tractor/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours/day; and
- 1 Welder (45 hp) operating at a 0.45 load factor for 8 hours/day.

**Table 3.3-6
Construction Equipment Exhaust Emissions (Tons/Year): Phase 4**

	ROG	NO _x	CO	SO ₂	PM ₁₀
Unmitigated					
Conditions					
<i>Year 2015</i>	0.78	4.77	9.18	0.01	28.49
<i>Year 2016</i>	0.64	3.22	10.67	0.02	0.26
<i>Year 2017</i>	10.19	3.17	10.15	0.02	0.26
Total	11.61	11.16	30	0.05	29.01
Mitigated below					
Threshold (Option 1)					
<i>Year 2015</i>	0.78	4.2	9.18	0.01	28.49
<i>Year 2016</i>	0.64	2.93	10.67	0.02	0.2
<i>Year 2017</i>	8.29	2.85	10.15	0.02	0.2
Total	9.71	9.98	30	0.05	28.89

ROG = Reactive Organic Gases; NO_x = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide
 PM₁₀ = Particulate Matter, 10 Microns
 Source: URBEMIS v.9.2.4

Conclusion: Air pollutant emissions by construction activities associated with the fourth phase of development will degrade local air quality. The calculated emissions exceed SJVAPCD thresholds and the impact is considered *significant* for Phase 4.

Mitigation Measure #3.3.1d: To reduce emissions and thus reduce air quality impacts, the following Option 1 measures shall be implemented for Phase 4.

Option 1 mitigation measures:

1. The use of aqueous diesel fuel for the construction vehicles.
2. Use of diesel oxidation catalysts capable of a 15% reduction in NOx emissions on all diesel equipment for grading and paving subphases.
4. Use of low-volatile organic compound paints capable of reducing ROG emissions by 20% compared to existing architectural coating rules.

Effectiveness of Mitigation: Option 1 mitigation measures above will reduce construction exhaust emissions below the SJVAPCD thresholds for Phase 4 of the Project and will result in a *less than significant impact with mitigation*.

Phase 5: The following construction fleet calculations were collected through URBEMIS 9.2.4.

Phase 5 consists of:

- 502 Dwelling units of detached senior adult housing at 3.71 trips/day;
- 25,000 SF of general office at 11.01 trips/day; and
- 75,000 SF of shopping center complex at 42.94.

The construction fleet for Phase 5 consists of the following equipment:

Mass Grading

- 1 Excavator (168 hp) operating at a 0.57 load factor for 8 hours/day;
- 1 Grader (174 hp) operation at a 0.61 load factor for 8 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 8 hours/day;
- 2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours/day;
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day; and
- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 8 hours/day;
- 2 Paving Equipment (104 hp) operation at a 0.53 load factor for 8 hours/day; and
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours/day.

Building Construction

- 1 Crane (399 hp) operating at a 0.43 load factor for 7 hours/day;
- 3 Forklifts (145 hp) operation at a 0.3 load factor for 8 hours/day;
- 1 Generator Set (49 hp) operating at a 0.74 load factor for 8 hours/day;

- 3 Tractor/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours/day; and
- 1 Welder (45 hp) operating at a 0.45 load factor for 8 hours/day.

**Table 3.3-7
Construction Equipment Exhaust Emissions (Tons/Year): Phase 5**

	ROG	NO _x	CO	SO ₂	PM ₁₀
Unmitigated					
Conditions					
Year 2017	0.62	3.79	6.94	0.01	22.81
Year 2018	0.48	2.45	7.79	0.01	0.2
Year 2019	8.26	2.45	7.55	0.01	0.2
Year 2020	0	0.1	0.03	0	0
Total	9.36	8.79	22.31	0.03	23.21
Mitigated					
Conditions (Option 2)					
Year 2017	0.62	2.24	6.94	0.01	22.73
Year 2018	0.48	1.65	7.79	0.01	0.16
Year 2019	4.77	1.63	7.55	0.01	0.16
Year 2020	0	0.01	0.03	0	0
Total	5.87	5.53	22.31	0.03	23.05

ROG = Reactive Organic Gases; NO_x = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide
 PM₁₀ = Particulate Matter, 10 Microns
 Source: URBEMIS v.9.2.4

Conclusion: Air pollutant emissions by construction activities associated with the fifth phase of development will degrade local air quality. However, the overall development in Phase 5 will be less than that of the previous 4 phases, which in return will have less of an air quality impact from construction. The calculated emissions for Phase 5 do not exceed SJVAPCD thresholds and the impact is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Depot Parcel: The following construction fleet calculations were collected through URBEMIS 9.2.4.

The Depot Parcel consists of:

- 73,508 SF of shopping center use at 42.94 trips/day per 1,000 SF.

The construction fleet for Phase 3 consists of the following equipment:

Mass Grading

- 1 Grader (174 hp) operation at a 0.61 load factor for 6 hours/day;
- 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 6 hours/day;
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours/day; and

- 1 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours/day.

Paving

- 1 Paver (100 hp) operating at a 0.62 load factor for 7 hours/day;
- 4 Cement and Mortar Mixers (10hp) operating at a .56 load factor for 6 hours per day; and
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours/day.

Building Construction

- 1 Crane (399 hp) operating at a 0.43 load factor for 4 hours/day;
- 2 Forklifts (145 hp) operation at a 0.3 load factor for 6 hours/day;
- 1 Generator Set (49 hp) operating at a 0.74 load factor for 8 hours/day; and
- 1 Tractor/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours/day.

Conclusion: Air pollutant emissions by construction activities associated with the third phase of development will degrade local air quality, but to a level that is *less than significant*.

Mitigation Measures: No mitigation is required.

**Table 3.3-8
Construction Equipment Exhaust Emissions (Tons/Year): Depot Parcel**

	ROG	NOx	CO	SO ₂	PM ₁₀
Unmitigated					
Conditions					
<i>Year 2020</i>	0.02	0.15	0.13	0	0.21
<i>Year 2021</i>	0.81	0.37	0.52	0	0.08
<i>Year 2022</i>	0.01	0.04	0.05	0	0
Total	0.84	0.56	0.7	0	0.29

ROG = Reactive Organic Gases; NOx = Nitrogen Oxides; CO = Carbon Monoxide; SO₂=Sulfur Dioxide
 PM₁₀ = Particulate Matter, 10 Microns
 Source: URBEMIS v.9.2.4

Additional Project Requirements

For each phase of the Project, and in addition to the site-specific mitigation measures delineated for the Project, the applicant will be required to implement reasonably feasible management practices required by the San Joaquin Valley Air Pollution Control District, or any other federal or state air quality regulatory agency, for the purpose of mitigating any significant impacts from the emission of particulate matter, fine particulate matter, reactive organic gases, nitrogen oxide, and any other criteria air pollutant or precursor emanating from the construction of the Project.

Below is a list of several tables of construction mitigation measures from the SJVAPCD.

The Community Plan Area

The Community Plan area outside of the Friant Ranch Specific Plan and inside the Community Plan Update Boundary is not being analyzed using URBEMIS, except for the Depot Parcel project, because the property does not currently have any types of development planned; however, when the properties do develop, the construction operations must not emit air pollutants above the SJVAPCD thresholds. If the future projects are analyzed and contain air pollutants above the SJVAPCD thresholds, then the implementation of either the mitigation measures provided above for Phases 1-4 of the Friant Ranch Specific Plan or other compatible mitigation measures that will bring the emissions below the SJVAPCD thresholds should occur.

Regulation VIII, by law, must be followed for all phases of the projects as iterated below.

The SJVAPCD does not have a threshold for PM₁₀ but instead requires a series of rules known as Regulation VIII as seen in the tables listed below. The purpose of Regulation VIII (Table 3.3-9) is to reduce the amount of PM₁₀ entrained into the atmosphere as a result of emissions generated from anthropogenic fugitive dust sources. Compliance with Regulation VIII does not constitute mitigation because it is already required by law. Table 3.3-10 contains Enhanced and Additional Control Measures that will provide a greater degree of PM₁₀ reduction than will compliance with Regulation VIII.

Impact #3.3.2 – Violation of Air Quality Standards by Area and Operational Emissions [Impact Evaluation Criteria (a), (b), (c), (d)]

Adoption of the proposed Community Plan Update and Friant Ranch Specific Plan will result in additional development and urbanization in the Friant Community, which would in turn increase criteria air pollutants in an area that is currently designated as a severe non-attainment area.

The URBEMIS software was used to estimate area and operational emissions for the proposed Friant Ranch Specific Plan and the future build-out of the proposed Community (see Appendix C).

Operational and Area emissions at build-out under the proposed Community Plan are estimated to be approximately 107 tons per year for ROG, 786 tons per year for CO, 1.56 tons per year for SO₂, 99 tons per year for NO_x, and 114 tons per year for PM₁₀.

Nearly all development projects in the San Joaquin Valley, from general plans to individual site plans, have the potential to generate pollutants that will reduce air quality or make it more difficult for state and national air quality standards to be attained. The SJVAPCD has prepared the GAMAQI and Air Quality Element Guidelines as advisory documents that provide Lead Agencies with uniform procedures for addressing air quality in environmental documents.

**Table 3.3-9
Regulation VIII Control Measures**

Regulation VIII Control Measures. – The following controls are required to be implemented at all construction sites. (Includes changes effective May 15, 2002)
<ul style="list-style-type: none"> ▪ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover. ▪ All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. ▪ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ▪ With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. ▪ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. ▪ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. <i>(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)</i> ▪ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. ▪ Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. ▪ Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), SJVAPCD

**Table 3.3-10
Enhanced and Additional Control Measures for Construction Emissions of PM₁₀:**

<p>Enhanced Control Measures. – The following controls should be implemented at construction sites when required to mitigate significant PM₁₀ impacts. (Note, these measures are to be implemented in addition to Regulation VIII requirements):</p> <ul style="list-style-type: none"> ▪ Limit traffic speeds on unpaved roads to 15 mph; and. ▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
<p>Additional Control Measures. – The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions:</p> <ul style="list-style-type: none"> ▪ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; ▪ Install wind breaks at windward side(s) of construction areas; ▪ Suspend excavation and grading activity when winds exceed 20 mph; and* ▪ Limit area subject to excavation, grading, and other construction activity at any one time. <p>* Regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.</p>

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**Table 3.3-11
Other Construction Equipment Mitigation Measures**

Emission Source	Mitigation Measure
<p>Heavy duty equipment (scrapers, graders, trenchers, earth movers, etc.)</p>	<ul style="list-style-type: none"> ▪ Use of alternative fueled or catalyst equipped diesel construction equipment. ▪ Minimize idling time (e.g., 10 minute maximum). ▪ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use. ▪ Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set). ▪ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. ▪ Implement activity management (e.g., rescheduling activities to reduce short-term impacts).

Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), SJVAPCD

**Table 3.3-12
Air Quality Emissions in Tons/Year (Unmitigated)
Friant Ranch Specific Plan, and Friant Community Plan
Remainder (Worst-Case Scenario for Future Build-Out)**

	ROG	NO _x	CO	SO ₂	PM ₁₀
Friant Ranch Specific Plan 2020 Conditions					
<i>Area</i>	39.99	9.52	138.6	0.4	20.2
<i>Operational</i>	17.03	21.37	157.45	0.25	21.62
Total	57.02	30.89	296.05	0.65	41.82
Community Plan: Area outside Friant Specific Plan (includes Depot Parcel) Future Conditions					
<i>Area</i>	9.95	3.78	38.99	0.11	5.47
<i>Operational</i>	42.55	67.52	475.49	0.84	70.09
Total	52.50	71.30	514.48	.95	75.56
Project Total	190..52	102.19	810.53	1.6	117.38

Source: URBEMIS 9.2.4

*Note: Represents worst case scenario without any mitigation

Proposed Goals and Policies related to Air Quality:

Friant Ranch Specific Plan:

Goals: *Provide diverse housing types and designs that accommodate varying lifestyles and income levels of Active Adults (55+).*

Conceive a roadway network that accommodates both traditional and alternative modes of transportation, but not limited to, nature and multi-purpose trail systems, bicycle lanes and pathways and travel lanes for Neighborhood Electric Vehicles (NEV's).

Dedicate over one third of the Friant Ranch Specific Plan Area as open space in the form of parks, parkways, landscaped slopes, undisturbed open space and revegetated open space slopes.

Provide a comprehensive on-site trail system accessible to the public.

Provide opportunities for parks, parkways and landscape slopes within residential, commercial and public areas.

Policies: *Require that residential development within the Medium Density Residential and Medium High Density Residential areas include neighborhood parks and parkways, at a rate of 5 to 8 acres per 1,000 dwelling units.*

Require that development within the Village Core (Community Commercial) include 5 acres parks, parkways, and town greens.

Require a minimum of 245 acres to be preserved as undisturbed permanent open space within the Specific Plan area.

Provide a variety of housing types that may include, but not be limited to, single-family detached homes, cluster homes, courtyard homes, alley-loaded homes, townhomes and apartments.

Friant Community Plan

Land Use Element Goals and Policies:

Goals: *Expand opportunities for maintaining and improving health and wellness.*

Protect and preserve open spaces.

Maximize the distribution of open space and public spaces in community areas.

To preserve productive prime agricultural land within the Friant Community Plan Area.

Policies: *Promote walkability within Friant Community Plan Area for access to regional recreation areas through coordination and marketing of the Lost Lake Recreation Area and Millerton Lake.*

Create pedestrian linkages across Friant Road that will allow uninterrupted pedestrian trail connections between Lost Lake Recreation Area/San Joaquin River Parkway and new development east of Friant Road.

For projects, requiring Site Plan Review, encourage development that is pedestrian-friendly with a village-like character.

Condition new development projects, as appropriate, to provide streetscaping, sidewalks, and adequate lighting with a rustic/rural character in order to create more pedestrian-friendly areas that connect established residential neighborhoods to commercial areas along Friant Road.

Require that new development provide pedestrian linkages to existing neighborhoods, where feasible, to facilitate pedestrian movement between neighborhoods.

Encourage the development of a trail system that provides linkages between Lost Lake Recreation Area and the commercial and residential areas within the Friant Community Plan Area.

Allow for the development of a wide variety of housing types in Friant including large-lot single family, moderate-lot single family, small-lot single family, apartments, townhomes and condominiums.

Through future Specific Plans and zoning ordinances, facilitate moderate increases in density for multi-family units within Medium High Density Residential areas.

As new development projects are approved along Friant Road, require the projects to provide landscaping and street trees along the project frontage.

Encourage the establishment of open space corridors along drainageways, slopes, in valleys and in other constrained areas, whenever possible.

Require new development to create parks and parkways within residential neighborhoods, public, and commercial areas.

Transportation Element Goals and Policies:

Goals: *Provide multi-modal transportation linkages to Fresno, within the region and town.*

Policies: *Promote a street and highway system that can accommodate alternative modes of travel.*

Support efforts to establish multiple forms of transit within the Community of Friant, including utilizing the existing rail right-of-way for trails for bicycles and pedestrians, Neighborhood Electric Vehicle access and a potential future light rail route.

Promote the establishment of a town-wide pedestrian walkway and trail network that promotes the safe movement of people throughout the Community of Friant.

Encourage the development of multi-use trails throughout the Friant Community Plan Area for bicyclists and pedestrians.

Environmental Resources Management Element Goals and Policies:

Goals: *Incorporate green building and other sustainable building practices into development projects.*

Policies: *Implement land use patterns and policies that incorporate smart growth practices, including placement of higher densities near transit centers, providing alternative modes of transportation, and encouraging and accommodating pedestrian-friendly environments.*

Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Facilitate the use of green building standards and Leadership in Energy and Environmental Design (LEED) in both private and public projects, where feasible.

Promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and encourage energy-efficient design elements, as appropriate.

Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction, and operation of the built environment, where feasible.

Encourage the use of domestic and commercial solar energy in the Friant Community Plan Area in an effort to conserve fossil fuels and improve air quality.

Conclusion: The Friant Ranch Specific Plan and Community Plan Update propose to add land for residential, public facilities, commercial uses, public and open space and park uses. The primary source of emissions is from vehicular traffic. The impact will be lessened by policies of the proposed Specific Plan and Community Plan, as mentioned above, which will promote the use of alternative transportation, air quality mitigation for new developments, and strategies to minimize the number and length of vehicle trips. However, there are no known additional feasible mitigation measures which will reduce the impact to a less than significant level. These projects will create a *significant* impact in regards to the area and operational emission content. While the following mitigation measures won't reduce the impact to a less than significant level, they are included to reduce air quality impacts as a result of the proposed project.

Mitigation Measure #3.3.2: Implementation of the following mitigation measures will substantially reduce air quality impacts related to human activity within the entire Project area, but not to a level that is less than significant:

The following guidelines shall be used by the County during review of future project- specific submittals for non-residential development within the Specific Plan area and within the Community Plan boundary in order to reduce generation of air pollutants with intent that specified measures be required where feasible and appropriate:

- *Trees shall be carefully selected and located to protect building(s) from energy consuming environmental conditions, and to shade paved areas. Trees selected to shade paved areas should be varieties that will shade 25% of the paved area within 20 years;*
- *Equip HVAC units with a PremAir or similar catalyst system, if reasonably available and economically feasible at the time building permits are issued. Catalyst systems are considered feasible if the additional cost is less than 10% of the base HVAC unit cost;*

- *Install two 110/208 volt power outlets for every two loading docks.*

Implement the following, or equivalent measures, as determined by the County in consultation with the APCD:

The following measures shall be used singularly or in combination to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of the 2008 State of California Title 24:

- *Use of air conditioning systems that are more efficient than the 2008 Title 24 requirements;*
- *Use of high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, and furnaces;*
- *Establishment of tree-planting guidelines that require residents to plant trees to shade buildings primarily on the west and south sides of the buildings. Use of deciduous trees (to allow solar gain during the winter) and direct shading of air conditioning systems shall be included in the guidelines; and*
- *Establish paving guidelines that encourage businesses, if feasible, to pave all privately-owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to Portland cement concrete. The use of a paving substance with reflective attributes similar to Portland cement concrete is considered feasible under this measure if the additional cost is less than 10% of the cost of applying a standard asphalt product.*

Bicycle usage shall be promoted by requiring the following:

- *All non-residential projects shall provide bicycle lockers and/or racks; and*
- *All apartment complexes or condominiums without garages shall provide at least two Class I bicycle storage spaces per unit.*

Transportation related mitigation measures (Extended Conditions of approval):

- *Commute options: to inform Specific Plan area occupants of the alternative travel amenities provided, including ridesharing and public transit availability/schedules;*
- *Maps showing the Community Plan's pedestrian, bicycle, and equestrian paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas; and*
- *Information regarding SJVAPCD programs to reduce county-wide emissions.*

The County and SJVAPCD may substitute different air pollution control measures for individual projects, that are equally effective or superior to those proposed herein, as new technology and/or

other feasible measures become available in the course of build-out within the Friant Community Plan boundary.

Effectiveness of Mitigation: The above mitigation measures would reduce project air quality impacts, but not below the SJVAPCD thresholds of significance; therefore, project impacts on air quality would be *significant and unavoidable*.

Impact #3.3.3 – Project could cause objectionable odors and the potential for odor complaints

[Evaluation Criteria (e)]

Construction activity will require the operation of equipment which may generate exhaust from either gasoline or diesel fuel. Construction of new buildings will also require the application of architectural coatings and the paving of roads which would generate odors from materials such as paints and asphalt. These odors are of a temporary or short-term nature and quickly disperse into the surrounding atmosphere.

Future residential development will also involve minor, odor-generating activities, such as backyard barbecue smoke, garden equipment exhaust, and the application of exterior paint for home improvement activities. These types of odors are typical of most residential communities and are not considered significant generators of odor impacts.

Conclusion: The majority of the odors resulting from the project area will be temporary or short-term and will not be a permanent nuisance therefore, the impact is considered *less than significant*.

Mitigation Measure: No mitigation measures are required.

3.4 Biological Resources

INTRODUCTION

This section of the DEIR identifies the significant biological resources occurring on and near the Friant Ranch Specific Plan Area and the Friant Community Plan Area including wetlands, sensitive plant communities, special status plants, and special status animals. The potential effects on those resources are addressed at a project level for the Friant Ranch Specific Plan Area, herein also referred to as the Friant Ranch Site, Specific Plan Site, or Site. See Chapter 1.1 of this DEIR for a description of Specific Plan actions. Mitigation measures are presented that will reduce impacts to a degree that is less than significant.

Although the Friant Community Plan includes the Specific Plan Site for planning purposes, the information on biological resources, analysis of impacts, and mitigation measures are presented separately for each. It follows that the Community Plan Area and Specific Plan Site must be separated into distinct entities. Therefore, in this section the Community Plan Area is considered to be exclusive of the Specific Plan Site, except where specifically indicated. This reduced Community Plan Area is herein referred to as the Existing Community Plan Area. The potential effects on biological resources are addressed at a programmatic level for the Existing Friant

Community Plan Area, with three exceptions. The Beck Property, the Water Treatment Facility (and associated pumping station), and the Depot parcel are contained within the Existing Friant Community Plan Area, but are addressed at a project level because upgrades to those facilities are associated with the Friant Ranch Specific Plan. Although these three areas are technically within the Existing Friant Ranch Community Plan Area, they are grouped with the discussions of the Specific Plan Site because of their close association with that project and because of the similar project-level analysis.

The information contained in this DEIR is primarily based upon a biological evaluation of the Specific Plan Site that was conducted by Live Oak and Associates (LOA 2007) and subsequent biological evaluations by Live Oaks Associates on the Beck Property, the Water Treatment Facility site, and the Depot parcel. This DEIR is also based upon information contained in an analysis of cumulative impacts (LOA 2008) and site visits to the Specific Plan Site and Existing Community Plan Area by Quad Knopf biologists. The biological evaluation of the Specific Plan Site prepared by LOA is included as Appendix E. Other investigations and documents of prime importance that were used in the preparation of this DEIR are a wetlands delineation and report that was prepared for the Specific Plan Site (Identification of Waters of the U.S., Appendix F), an evaluation of the effects of the Friant Ranch Wastewater Treatment Plant on the San Joaquin River (RBI 2008, Appendix G, Final Friant Ranch Aquatic Species Assessment), the Friant Ranch Specific Plan (EDAW 2008a), Friant Community Plan (EDAW 2008b), a water supply assessment (Provost and Prichard Engineering Group, Inc. 2008, Appendix B), and a water quality impact assessment (Provost and Prichard Engineering Group, Inc. 2007). Other pertinent information was gathered from standard sources including the California Natural Diversity Database (CDFG 2008a), the California Native Plant Society rare plant inventory database (CNPS 2008), the National Wetland Inventory on-line database (USFWS 2008a), and California Department of Fish and Game and United States Fish and Wildlife sensitive species lists (CDFG 2008a and b, USFWS 2008b). Information from these other standard sources was used to verify and update information contained in the project specific studies and reports.

3.4.1 REGULATORY SETTING

This section provides a discussion of those laws and regulations that protect wetlands and native wildlife, fish, and plants.

Federal Endangered Species Act

The primary focus of the Federal Endangered Species Act (FESA) of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA has been amended several times to correct perceived and real shortcomings. FESA contains four key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the unauthorized “taking” of a listed species by anyone, including private individuals, and State and local agencies. Section 10 provides a process allowing for the legal take of threatened and endangered species by non-federal parties. The FESA is enforced by the United States Fish and Wildlife Service and the National Marine Fisheries Service (NMFS).

Section 9 of FESA as amended, prohibits the unauthorized “take” of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, “take” of fish or wildlife species listed as threatened is prohibited to the extent specifically declared by regulation. “Take, ” as defined by FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Recent court cases have found “harm” includes not only the direct taking of a species itself, but the destruction or modification of the species’ habitat resulting in actual injury of the species. As such, “harm” is further defined to mean “an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR 17.3).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

California Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA), which is administered by the California Department of Fish and Game under §2050 of the Fish and Game Code. The basic policy of the CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

If proposed projects would result in impacts to a State listed species, take authorization originating under §2081 or 2081.1 of the Fish and Game Code would be necessary. CDFG will provide take authorization only if:

1. the authorized take is incidental to an otherwise lawful activity;
2. the impacts of the authorized take are minimized and fully mitigated;
3. the measures required to minimize and fully mitigate the impacts of the authorized take:
 - a. are roughly proportional in extent to the impact of the taking on the species;
 - b. maintain the project applicant’s objectives to the greatest extent possible; and
 - c. are capable of successful implementation.
4. adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

CDFG cannot issue authorization for the take of a species for which the Legislature has imposed strict prohibitions on all forms of take. These species are listed in several statutes (Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517) that identify “fully protected” species and “specified birds.” If a project is planned in an area where a “fully protected” species or a “specified bird” occurs, an applicant must design the project to avoid all take, as defined in the California Fish and Game Code.

California Fish and Game Codes [§§ 3503, 3503.5, 3511, and 3513]

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the “take, possession, or destruction of birds, their nests or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a “take.” Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §40. Protected Amphibians), protected amphibians may only be intentionally killed or injured if authorized by a special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations. However, these regulations do not prohibit death or injury that occurs incidental to an otherwise lawful activity, such as construction of a development project consistent with local land use regulations.

Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into “waters of the United States” (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register “waters of the United States” are defined as, “...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce...” (33 CFR Section 328.3).

Section 401 of the Clean Water Act

The State Water Resources Control Board (SWRCB) and Regional Water Control Board (RWQCB) regulate activities in “waters of the State” (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps permit authorized for a proposed project must obtain certification by the RWQCB to ensure protection of beneficial uses of the waters of the state.

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge” with the RWQCB through an application for waste discharge. The term “waters of the State” is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). Pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB may also regulate “isolated wetlands,” or those wetlands considered to be outside of the Corps’ jurisdiction. The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any “threat” to water quality.

National Pollutant Discharge Elimination System (NPDES)

In 1972 the Clean Water Act was amended to provide that the discharge of pollutants to waters 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 Clean Water Act (CWA) added Section 402(p) which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction sites that encompass 5 or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address storm water discharges from construction sites that disturb land equal to or greater than 1 acre.

Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, the California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG typically considers to include its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect existing fish, wildlife or vegetative resources, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing with work in the stream. Prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

The California Oak Protection Act

Senate Bill 1334 established Public Resources Code (PRC) section 21083.4, which sets conservation standards for oak woodlands. PRC section 21083.4 mandates that any county that has oak woodlands must prepare and implement an oak woodland management plan and sets statewide minimum mitigation standards for significant impacts to oak woodland under CEQA. Tulare County has not yet met the requirements of adopting a management plan for oak woodlands.

Oak woodlands are defined as areas having a 10% or greater canopy cover of *Quercus* species with individual trees having a diameter at breast height of 5-inches or more. This definition is only applicable to defining whether oak woodland under SB 1334 exists and does not establish thresholds for determination of significance of oak losses. Nor does it restrict a county from imposing greater requirements for oak conservation or mitigation. For CEQA significant impacts to oak woodlands, the PRC section provides four mitigation alternatives to proportionally mitigate significant impacts to oak woodlands habitat. These include one or more of the options: (1) conserve oak woodlands, through the use of conservation easements; (2) plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees; (3) contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of section 1363 of the Fish and Game Code, or (4) other mitigation measures developed by the county. Further, planting of oaks shall not fulfill more than 50 percent of the required mitigation.

The Oak Woodlands Conservation Program

Chapter 588, Statutes of 2001 offers landowners, conservation organizations, cities and counties an opportunity to obtain funding for projects designed to conserve and restore California's oak woodlands. While the program is statewide in nature, it provides opportunities to address oak woodland issues on a regional priority basis.

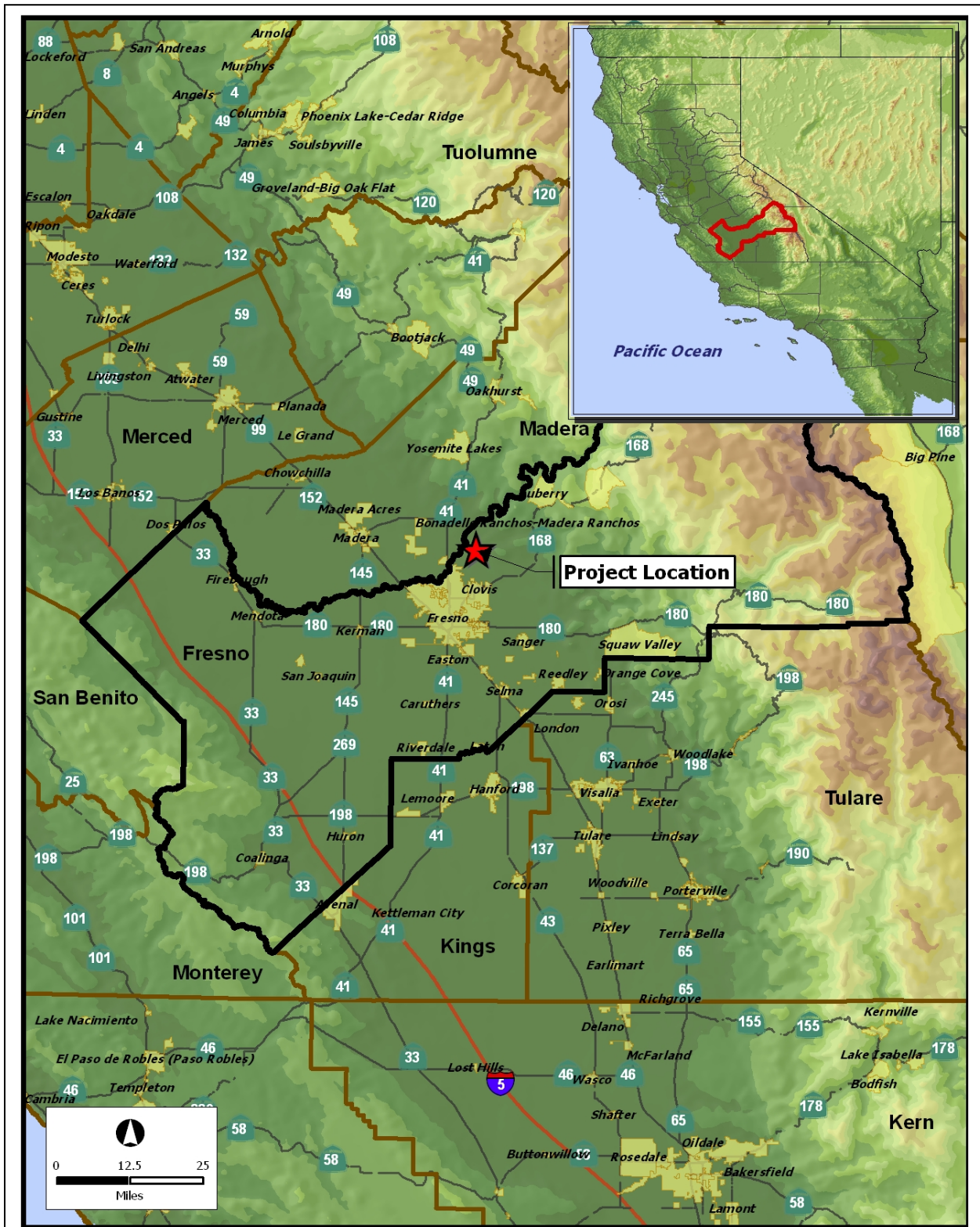
The California State Oak Woodlands Program

The California State Oak Woodlands Program is the implementing program for the Oak Woodland Conservation Act (Fish & Game Code 1360-1372). This program supports and encourages voluntary, long-term private stewardship and conservation of California oak woodlands by: offering landowners financial incentives to protect and promote biologically functional oak woodlands; providing incentives to protect and encourage farming and ranching operations that are operated in a manner that protect and promote healthy oak woodlands; providing incentives for the protection of oak trees with superior wildlife values on private land; and encouraging planning that is consistent with oak woodlands preservation.

3.4.2 PHYSICAL SETTING

Friant Ranch Specific Plan Site

The 942.2 acre Specific Plan Site is located east of Friant Road, east and south of the town of Friant (an unincorporated portion of Fresno County), and south of Millerton Lake; approximately 7 miles north of the City of Fresno (Figure 3.4-1). The Friant-Kern Canal is the site's eastern boundary, while the Existing Friant Community Plan Area is its northwestern boundary (Figure 3.4-2). The San Joaquin River is located approximately 0.3 miles to the northwest of the site, adjacent to the northwest side of the Existing Friant Community Plan Area.



 <p>Quad Knopf</p>	<p>REGIONAL LOCATION OF THE FRIANT COMMUNITY PLAN AREA</p>	<p>Figure 3.4 - 1</p>
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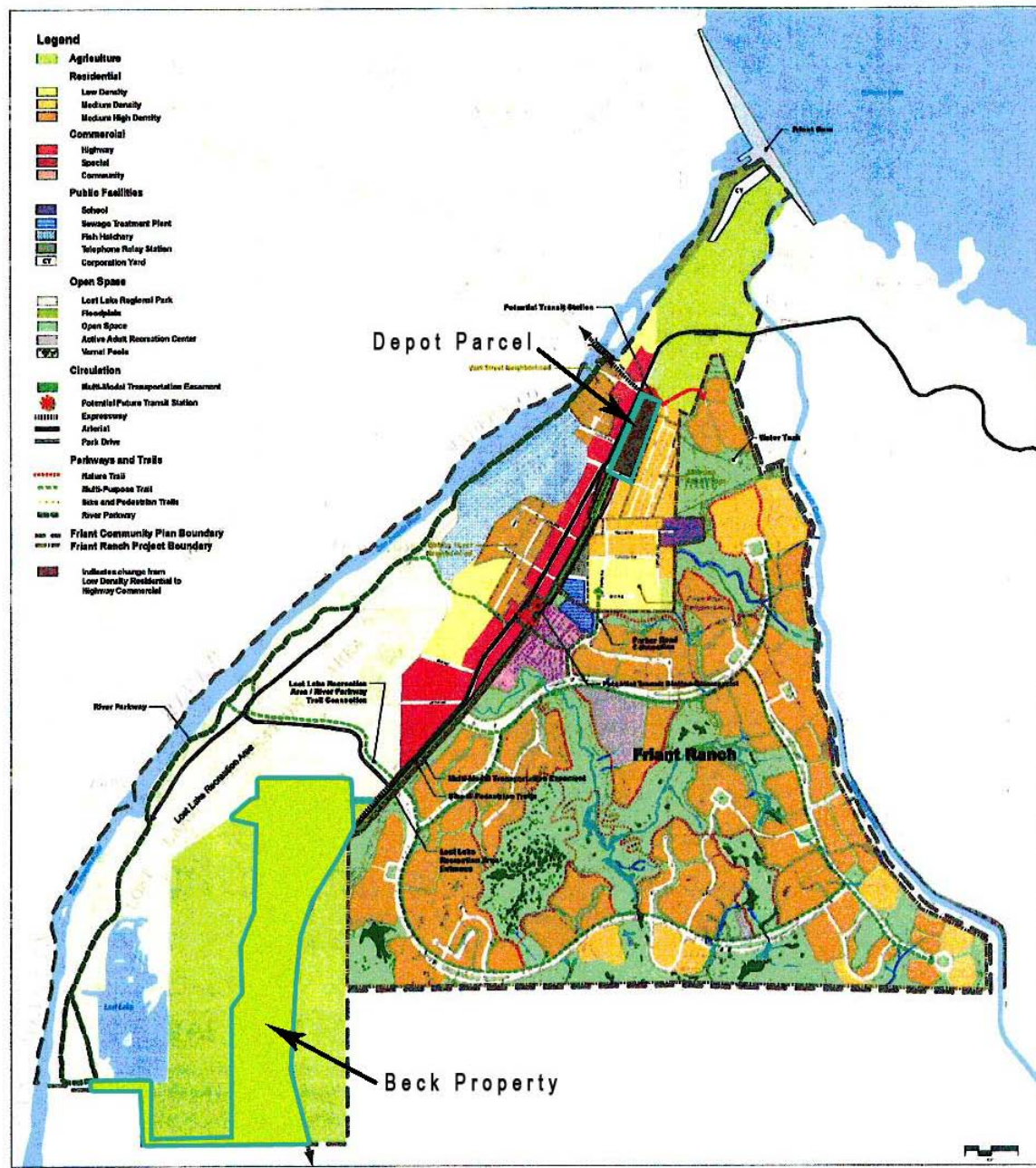



Figure 3: Friant Community Plan

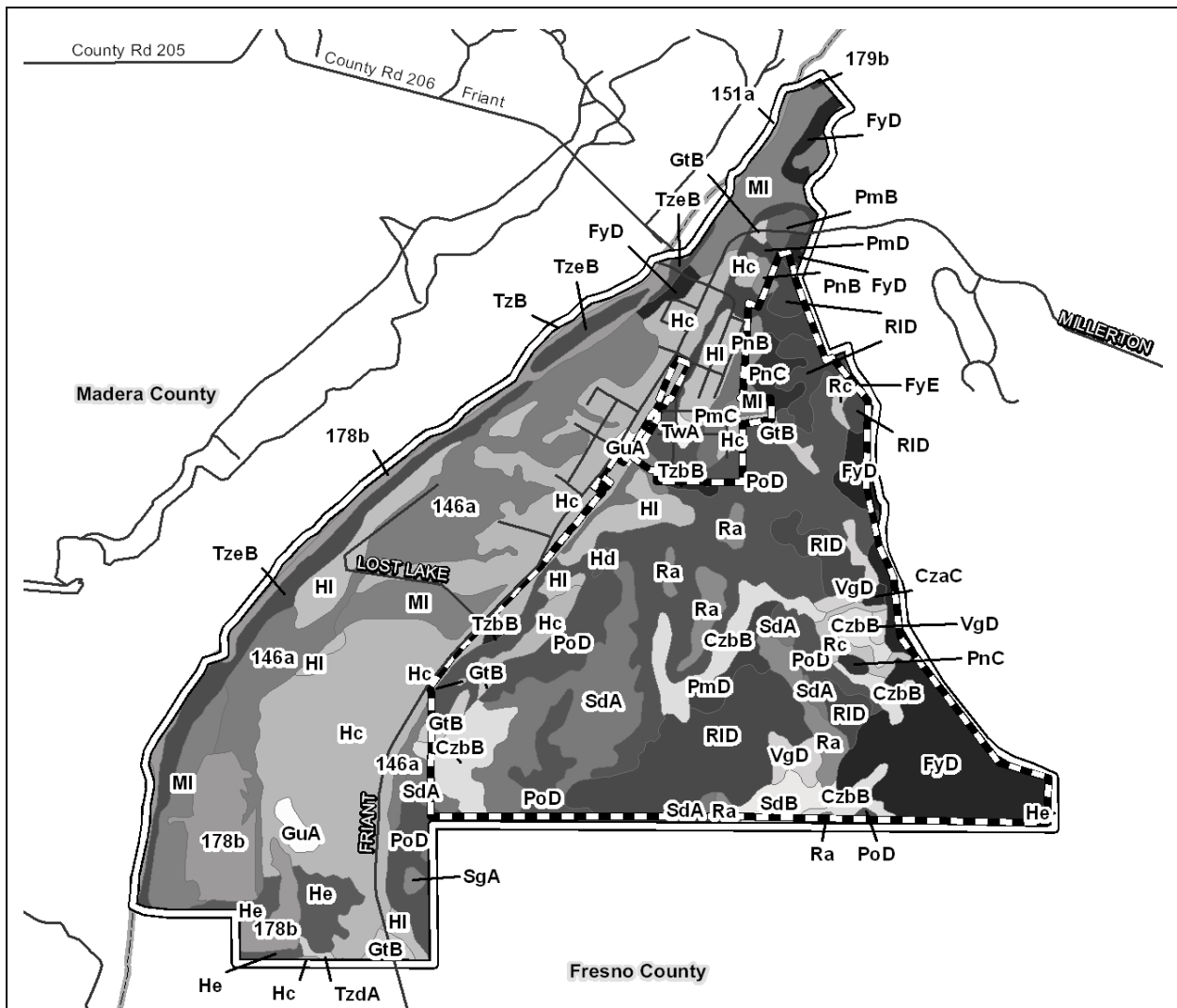
	<p>LOCATIONS OF THE FRIANT SPECIFIC PLAN SITE AND THE FRIANT COMMUNITY PLAN AREA, SHOWING THE FRIANT KERN CANAL, FRIANT ROAD, AND THE SAN JOAQUIN RIVER</p>	<p>Figure 3.4 - 2</p>
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The Specific Plan Site consists of gently rolling to increasingly hilly terrain that ranges in elevation from approximately 330 feet in the southwest corner of the site to 694 feet near the northern portion of the site. Approximately 907.2 acres of the site consist of non-native grasslands that are currently utilized for cattle grazing. Seasonal wetlands are interspersed with the grassland habitat, occurring on approximately 35 acres of the site. A narrow strip of land approximately 5.4 acre in size forms a small panhandle off the northwestern corner of the site. That area generally follows the southern edge of Friant Road and contains fallow fields and a fenced storage lot. Portions of this area are currently used for parking and temporary storage of earthen fill. Soils on the site are primarily Pollasky-Montpellier Complex, Rocklin Sandy Loam, and Friant Fine Sandy Loam, but several other soil types also are present (Figure 3.4-3 and of this DEIR).

Dominant plant species that inhabit the grasslands of the site include ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), rattail fescue (*Vulpia myuros*), red-stem filaree (*Erodium cicutarium*), broad-leaf filaree (*Erodium botrys*), and smooth cat's-ear (*Hypochaeris glabra*). A variety of annuals and perennials such as rusty popcorn flower (*Plagiobothrys nothofulvus*), bi-colored lupine (*Lupinus bicolor*), dove weed (*Eremocarpus setigerus*), and Herman's tarweed (*Holocarpha heermanii*) also are present (LOA 2007). The disturbed areas along Friant Road support weedy non-native grasses and forbs, with vegetation in this area consisting of soft chess brome, ripgut brome, red-stem filaree, and a small stand of trees-of-heaven (*Ailanthus altissima*), an invasive tree species. Common wildlife species are predicted to occur on the site, including the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus oreganus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), feral cat (*Felis domesticus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and many others. The cluster of trees located in the panhandle of the site have the potential to provide nesting and foraging habitat for a variety of avian species including western scrub jay (*Aphelocoma californica*), northern flicker (*Colaptes auratus*), bushtit (*Psaltriparus minimus*), and Brewer's blackbird (*Euphagus cyanocephalus*) (LOA 2007). Summer and winter migrants may include black-headed grosbeak (*Pheucticus melanocephalus*), black-chinned hummingbirds (*Archilochus alexandri*), ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), and white-crowned sparrow (*Zonotrichia leucophrys*) (LOA 2007).

The Depot Parcel is adjacent to the northern tip of the Friant Ranch Specific Area along the east side of Friant Road. It is a flat, 6.75 acre parcel which is graded on a yearly basis. This parcel contains highly disturbed ruderal habitat with weedy annual species dominating the vegetation. Existing habitat conditions, supported by evaluations made from Friant Road and the inspections of aerial photos, indicate that this site is not likely to contain sensitive biological resources.

The Beck Property is the former 150-acre CEMEX gravel extraction facility located south and east of Lost Lake Park. The site contains a 25-acre highly disturbed mining pit. The Beck Property contains substantially altered vegetative communities that are highly disturbed by past mining activities. The proposed pipelines associated with this facility, which would carry the treated effluent from the wastewater treatment plant to the mining pit and agricultural lands, will be located under or immediately adjacent to existing roadways as shown in Figure 3.14-4,

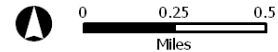


Legend

- Friant Ranch Specific Plan
- Friant Community Plan

Soils

- AHWAHNEE AND VISTA VERY ROCKY COARSE SANDY LOAMS, 30 TO 75 % SLOPES (ArF)
- COMETA LOAM, 2 TO 9 % SLOPES (CzbB)
- COMETA SANDY LOAM, 9 TO 15 % SLOPES (CzaC)
- DAMS (179b)
- FRIANT FINE SANDY LOAM, 30 TO 45 % SLOPES (FyE)
- FRIANT FINE SANDY LOAM, 9 TO 30 % SLOPES (FyD)
- GREENFIELD SANDY LOAM, 0 TO 3 % SLOPES (GuA)
- GREENFIELD SANDY LOAM, 3 TO 9 % SLOPES (GtB)
- HANFORD GRAVELLY SANDY LOAM (HI)
- HANFORD SANDY LOAM (Hc)
- HANFORD SANDY LOAM, BENCHES (Hd)
- HANFORD SANDY LOAM, GRAVELLY SUBSTRATUM (He)
- MERCED CLAY, MODERATELY SALINE (MI)
- PITS (146a)
- POLLASKY FINE SANDY LOAM, 2 TO 9 % SLOPES (PnB)
- POLLASKY FINE SANDY LOAM, 9 TO 15 % SLOPES (PnC)
- POLLASKY SANDY LOAM, 15 TO 30 % SLOPES (PmD)
- POLLASKY SANDY LOAM, 2 TO 9 % SLOPES (PmB)
- POLLASKY SANDY LOAM, 9 TO 15 % SLOPES (PmC)
- POLLASKY-MONTEPELLIER COMPLEX, 15 TO 30 % SLOPES (PoD)
- RAMONA LOAM (Rc)
- RAMONA SANDY LOAM (Ra)
- RIVERWASH (151a)
- ROCKLIN SANDY LOAM, PUMICEOUS VARIANT, 3 TO 30 % SLOPES (RID)
- SAN JOAQUIN LOAM, SHALLOW, 0 TO 3 % SLOPES (SgA)
- SAN JOAQUIN SANDY LOAM, SHALLOW, 0 TO 3 % SLOPES (SdA)
- SAN JOAQUIN SANDY LOAM, SHALLOW, 3 TO 9 % SLOPES (SdB)
- TUJUNGA AND HANFORD SOILS, CHANNELED, 0 TO 8 % SLOPES (TzB)
- TUJUNGA COBBLY LOAMY SAND, 0 TO 3 % SLOPES (TzdA)
- TUJUNGA LOAMY SAND, 0 TO 3 % SLOPES (TWA)
- TUJUNGA LOAMY SAND, 3 TO 9 % SLOPES (TzbB)
- TUJUNGA SOILS, CHANNELED, 0 TO 9 % SLOPES (TzeB)
- VISTA COARSE SANDY LOAM, SHALLOW, 9 TO 30 % SLOPES (VgD)
- WATER (178b)



**SOILS MAP OF THE FRIANT
SPECIFIC PLAN SITE AND
THE FRIANT COMMUNITY PLAN AREA**

**Figure
3.4 - 3**

Section 3.14, this DEIR. Habitats within these areas are highly disturbed and are composed primarily of ruderal, highly disturbed, and weedy vegetation or are completely devoid of vegetation.

The Wastewater Treatment Plant and associated Water Pumping Station straddles the boundary between the Existing Friant Community Plan Area and the Specific Plan Area, in the northwest portion of the Specific Plan Area. The portions of these proposed facilities that occur on the Existing Community Plan Area are within ruderal, disturbed, and degraded lands. , The portions of these facilities that occur within the Specific Plan Area are in rolling topography vegetated with non-native grassland and located within habitat that is likely to contain sensitive biological resources.

Existing Friant Community Plan Area

The Friant Community Plan Area is approximately 1,800 acres in size (which includes the Friant Ranch Specific Plan Site). The Community Plan Area is bounded by the San Joaquin River and Madera County to the west, Friant Dam and Millerton Lake to the north, and the Friant-Kern Canal to the east (see Figure 3.4-2). Friant Road crosses the Community Plan Area from the southwest to northeast. The Friant Community Plan Area contains residential and commercial developments, agricultural lands, and public recreational facilities and open space. Primary public facilities within the Community Plan Area include Lost Lake Recreational Area and portions of the San Joaquin River. The Existing Friant Community Plan Area is predominantly residential and commercial development, but also includes Lost Lake Recreational Area and portions of the San Joaquin River.

Much of the native habitat in the Existing Community Plan Area (that area exclusive of the Friant Ranch Specific Plan Site) has been disturbed by various types and levels of development and commercial activities, but there are some areas that retain natural landscapes and provide valuable habitat for plant and wildlife species. The most important areas of natural vegetative communities within the Existing Friant Community Plan Area are the San Joaquin River and Lost Lake State Recreation Area. These areas contain extensive stands of riparian woodlands and grasslands. Most of the grassland habitats in the Existing Friant Community Plan Area, including those within the Lost Lake State Recreation Area, are degraded from past and present disturbances associated with urban development and aggregate mining. Restoration of the San Joaquin River and the establishment of the San Joaquin River Parkway are of regional importance.

Occurrences of Significant Biological Resources

The central and southern San Joaquin Valley historically supported a diverse assemblage of natural vegetation communities and plant and animal species. Conversion of large expanses of native plant communities to agricultural, urban, oil field, and associated infrastructure developments have resulted in many natural communities and species becoming endangered, threatened, rare, or otherwise considered sensitive. This section provides an overview of the sensitive natural communities, special status plants, special status wildlife and other significant biological resources that occur on or near the Friant Ranch Specific Plan Site and Existing Friant Community Plan Area.

Sensitive natural communities and wetlands

There are six sensitive natural communities which occur in the Friant region that could potentially occur on the Friant Ranch Specific Plan Site and within the Existing Friant Community Plan Area (Table 3.4-1). Only Great Valley Mixed Riparian Forest occurs within the Existing Community Plan Area. Only the Northern Hardpan Vernal Pool natural community occurs in the Friant Ranch Specific Plan Area. The Depot Parcel, Water Treatment Plant Site, and Beck Property do not support sensitive natural communities. These communities are absent because soils and other conditions (e.g., water availability, slope aspect) are not suitable or because prior disturbance has eliminated these communities.

The Northern Hardpan Vernal pool natural community, consisting of expanses of interconnected and individual vernal pools, is located throughout the Specific Plan Site (LOA 2007 and LOA 2009). Seasonal wetlands occur on approximately 35 acres of the site and include northern hardpan vernal pools, wetland swales, and wetland channels. Many of these hydrologic features form an interconnected network of wetland drainages and seasonal pools that are concentrated in specific locations of the Site. Many, but not all of these features connect directly to the San Joaquin River (LOA 2007). These wetlands provide habitat for a variety of special status species. The Depot Parcel, Wastewater Treatment Plant Site, and Beck Property do not contain Northern Hardpan Vernal Pools.

The Existing Friant Ranch Community Plan Area is not likely to contain Northern Hardpan Vernal Pools although there are some areas of man-made depressional features in the Lost Lake Recreation Area. These features can fill with rainwater in winter months, but are not likely to support vernal pool plant species. There are expanses of Great Valley Mixed Riparian Forest located along the San Joaquin River and at Lost Lake State Recreation Area.

Special Status Plants

There are 17 special status plant species which occur in the Friant region that could potentially occur within the Friant Ranch Specific Plan and Existing Friant Community Plan areas (Table 3.4-1). These plants occur in a variety of habitats including chaparral, valley and foothill grasslands, vernal pools, and cismontane woodlands. Four of these species are known within a five kilometer distance of the project site (Figure 3.4-4).

Two species of special status plants, succulent owl's clover and Hartweg's golden sunburst, occur on the Friant Ranch Specific Plan Site. All other special status plant species are deemed absent because suitable habitat does not occur, there are no historic records of the plants existing on the site, and because field surveys in 1994, 1995, and in the spring 2006 and 2007 failed to locate any additional special status plants. One additional special status plant, the spiny-sepaled button celery is known from a historic California Natural Database Record occurring on the Existing Friant Ranch Community Plan Area. The specific distributions of these species on the Specific Plan Site and within the Existing Community Plan Area are:

Table 3.4-1

List of Special Status Species, their Habitat Requirements, and Probability of Occurrence

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
Sensitive Natural Communities					
<i>Great Valley Mixed Riparian Forest</i>	Great Valley Mixed Riparian Forest	RARE	This is a tall, dense, winter-deciduous, broadleaved riparian forest. It exists in relatively fine-textured alluvium, somewhat back from active river channels. These sites experience overbank flooding (with abundant alluvial deposition and groundwater recharge) but not severe physical battering or erosion.	Absent. Great Valley Mixed Riparian Forest does not occur on the Friant Ranch Specific Plan Site, or on the Depot Parcel, Water Treatment Plant Site, or Beck Parcel.	Present: Great Valley Mixed Riparian Forest occurs along the margins of the San Joaquin River within the Existing Community Plan Area.
<i>Great Valley Valley Oak Forest</i>	Great Valley Valley Oak Forest	RARE	This community is dominated by Valley Oaks (<i>Quercus lobata</i>). This habitat is declining throughout California.	Absent. Great Valley Valley Oak Forest does not occur on the Friant Ranch Specific Plan Site, or on the Depot Parcel, Water Treatment Plant Site, or Beck Parcel.	Absent. This habitat association does not occur along the San Joaquin River within the Existing Community Plan Area.
<i>Northern Basalt Flow Vernal Pool</i>	Northern Basalt Flow Vernal Pool	RARE	Northern Basalt Flow Vernal Pools are formed by an impervious bedrock layer of volcanic origin. These pool types are found on the eastern and coastal portions of the Central Valley, and tend to be small and restricted in distribution. Northern Basalt Flow Vernal Pools occur at greater elevations than other vernal pool types.	Absent. Soils within the Friant Ranch Specific Plan Site or on the Depot Parcel, Water Treatment Plant Site, or Beck Parcel, are not suitable to support this type of vernal pool habitat.	Absent. Soils within the Existing Friant Community Plan Area are not suitable to support this type of vernal pool habitat.
<i>Northern Claypan Vernal Pool</i>	Northern Claypan Vernal	RARE	Northern claypan vernal pools occur on fairly old, circum-neutral to	Absent. Soils within the Friant Ranch Specific Plan	Absent. Soils within the Existing Friant

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
	Pool		alkaline, Si-cemented hardpan soils. Often more or less saline. Intergrades via Cismontane Swale with Cismontane Alkali Marsh which has water present throughout the year.	Site, or on the Depot Parcel, Water Treatment Plant Site, or Beck Parcel, are not suitable to support this type of vernal pool habitat.	Community Plan Area are not suitable to support this type of vernal pool habitat
<i>Northern Hardpan Vernal Pool</i>	Northern Hardpan Vernal Pool	RARE	Northern Hardpan Vernal Pools occur on old, very acidic, Fe-Si cemented hardpan soils (Redding, San Joaquin, and similar series soils). The microrelief on these soils typically is hummocky, with mounds intervening between localized depressions. Winter rainfall perches on the hardpan, forming pools in the depressions. Evaporation (not runoff) empties pools in the spring.	Present. Northern Hardpan Vernal Pools exist throughout the Specific Plan Site. Northern Hardpan vernal pools are absent from the Depot Parcel, the Water Treatment Plant Site, and the Beck Property.	Absent. Northern Hardpan Vernal Pools are not found in the Existing Friant Ranch community Plan Area.
<i>Sycamore Alluvial Woodland</i>	Sycamore Alluvial Woodland	RARE	Sycamore Alluvial Woodlands are open to moderately closed, winter-deciduous broadleaved riparian woodlands. They inhabit braided, depositional channels of intermittent streams, usually with cobbly or bouldery substrate.	Absent. Sycamore Alluvial Woodlands do not exist within the Friant Ranch Specific Plan Site, the Depot Parcel, the Water Treatment Plant Site, or the Beck Property.	Absent. Sycamore Alluvial Woodlands do not occur with the Existing Friant Community Plan Area.
			Special Status Plants		
<i>Carpenteria californica</i>	tree-anemone	CT, 1B.2	Tree-anemone is an extremely localized endemic species that occurs only about 30 miles northeast of Fresno in eastern Fresno County and in one small population in Madera County. It grows on well-drained granitic soils and is most abundant on north-facing ravines	Absent. The Friant Ranch Specific Plan Site, Depot Parcel, Water Treatment Plant Site, and Beck Property do not contain suitable habitat to support this species.	Absent. The Existing Friant Community Plan Area does not contain suitable habitat to support this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Castilleja campestris ssp. succulenta</i>	succulent owl's-clover	FT, CE, 1B.2	and drainages in chaparral and cismontane woodland communities. The total range of the species covers an area of approximately 225 square miles, within which there are six extant native populations. Succulent owl's clover occurs in the margins of vernal pools, swales and some seasonal wetlands, often on acidic soils.	Present. This plant was documented in two vernal pools within the Friant Ranch Specific Plan Site. This plant is absent from the Depot Parcel, Water Treatment Plant Site, and Beck Parcel.	Absent There are no known records of this plant occurring within the Existing Community Plan Area, and vernal pools which could support this species are not present.
<i>Caulanthus californicus</i>	California jewel-flower	FE, CE, 1B.1	This plant occurs on sandy soils with chenopod scrub, pinyon juniper woodland, and grasslands.	Absent. All known and extirpated populations of this species are located in the western San Joaquin Valley and the Carrizo Plain areas. Although suitable habitat exists on the Friant Ranch Specific Plan Site, this species has not been observed on-site. Suitable habitat for this species does not exist on the Depot Parcel, Water Treatment Plant Site, or Beck Property.	Absent. All known and extirpated populations of this species are located in the western San Joaquin Valley and the Carrizo Plain areas. Although suitable habitat occurs in the Existing Friant Community Plan Area, this species has not been observed on-site.
<i>Downingia pusilla</i>	dwarf downingia	2	This plant is found in vernal pools from Fresno, Merced and Mariposa counties in the south to Tehama County in the north. Sonoma	Absent. Although suitable habitat to support this species is present in the Friant Ranch Specific Plan Site, it was not observed	Absent. The Existing Friant Community Plan Area does not contain suitable habitat for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Eryngium spinosepalum</i>	spiny-sepaled button-celery	1B.2	County is the only coastal county known to support this species. Spiny-sepaled button celery is associated with vernal pools, depressions within grasslands, and moist grasslands.	during focused field surveys. The Depot Parcel, Water Treatment Plant Site, and Beck Property do not contain suitable habitat for this species. Absent. Spiny-sepaled button celery was not observed on the Specific Plan Site during field surveys in 1994, 1995 or in 2006 and 2007. Habitat capable of supporting this species is absent from the Depot Parcel, Water Treatment Plant Site, and Beck Property.	Possible. Spiny-sepaled button celery historically occurred within the Existing Community Plan Area, as evidenced by a CNDDDB record. However, it has not been confirmed to currently exist. Some areas of suitable habitat do occur and it is possible that this species is still extant.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	CE, 1B.2	Bogg's Lake hedge-hyssop occurs in vernal pools, lake or reservoir margins in shallow water or moist ground on adobe soil. In grassland, oak woodlands, sagebrush-juniper and pine forest habitat types.	Absent. Although habitat exists to support this species, it was not observed in the Specific Plan Site during field surveys in 1994, 1995 or in 2006 and 2007. Habitat suitable of supporting this species is absent from the Depot Parcel, Water Treatment Plant Site, and Beck Property.	Unlikely. Although some poor quality habitat for this species exists within the Existing Community Plan Area, it is not likely that it occurs.
<i>Imperata brevifolia</i>	California satintail	2	This plant occurs in chaparral, coastal scrub, riparian and	Absent. The Friant Ranch Specific Plan Site, Depot Parcel, Water Treatment	Absent. The Existing Friant Community Plan Area does not contain

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Leptosiphon serrulatus</i>	Madera leptosiphon	1B.2	Mojavean desert scrub habitat. It is found in alkali meadows and seeps. This plant species occurs in cismontane woodland and lower montane coniferous forests and annual grasslands.	Plant Site, and Beck Property do not contain suitable habitat to support this species. Absent. Although habitat exists to support this species, it was not observed on the Friant Ranch Specific Plan Site during field surveys in 1994-1995 or in 2006 and 2007. It is not likely to occur on the Depot Parcel, Water Treatment Plant Site, or the Beck Property.	suitable habitat to support this species Absent. The Existing Community Plan Area does not contain suitable habitat to support this species.
<i>Lupinus citrinus var. citrinus</i>	orange lupine	1B.2	This species occurs in foothill woodlands on decomposed granite domes on the western slope of the Sierra Nevada in southwestern Mariposa County, south of the town of Mariposa.	Absent. The Friant Ranch Specific Plan Site, Depot Parcel, Water Treatment Plant Site, and Beck Property do not contain suitable habitat to support this species.	Absent. The Existing Friant Community Plan Area does not contain suitable habitat to support this species.
<i>Mimulus acutidens</i>	Kings River monkeyflower	3	This plant occurs in cismontane woodland and lower montane coniferous forest habitat at elevations above 900 feet.	Absent. The Specific Plan Site, Depot Parcel, Water Treatment Plant Site, and Beck Property do not contain suitable habitat to support this species.	Unlikely. The Existing Community Plan Site is below the known elevation of this plant species and suitable habitat is not likely to occur.
<i>Orcuttia inaequalis</i>	San Joaquin Valley orcutt grass	FT, CE, 1B.1	San Joaquin Valley orcutt grass is restricted to vernal pools.	Absent. Although suitable habitat exists to support this species, it was not observed on the Specific Plan Site during field surveys in	Absent.. Suitable habitat to support this species does not occur within the Existing Community Plan Area.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Orcuttia pilosa</i>	hairy orcutt grass	FE, CE, 1B.1	Hairy orcutt grass is restricted to vernal pools.	1994, 1995, or in 2006 and 2007. Suitable habitat to support this plant does not occur on the Depot Parcel, the Water Treatment Plant Site, or the Beck Property. Absent. Although suitable habitat exists to support this species, it was not observed on the Specific Plan Site during field surveys in 1994, 1995 or in 2006 and 2007. Suitable habitat to support this species does not occur on the Depot Parcel, the Water Treatment Plant site, or the Beck Property.	Absent.. Suitable habitat to support this species does not occur within the Existing Community Plan Area.
<i>Pseudobahia bahiifolia</i>	Hartweg's golden sunburst	FE, CE, 1B.1	Hartweg's golden sunburst occurs on clay soils in cismontane woodland and valley and foothill grassland.	Present. Four populations of this plant are known to occur within the Friant Ranch Specific Plan Site. Suitable habitat to support this species does not occur on the Depot Parcel, the Water Treatment Plant site, or the Beck Property.	Unlikely. Habitat that would support this species is extremely rare within the Existing Community Plan Area. None-the-less, there is a slight possibility that it could occur, especially in the foothills within the extreme northeastern portion of the area. Absent. Soils that would support this species are absent from the Existing Community Plan Area.
<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	FT, CE, 1B.1	San Joaquin adobe sunburst is associated with abode clay soils within foothill woodlands and grasslands.	Absent. Soils that would support this species are absent from the Specific Plan Site, the Depot Parcel,	Absent. Soils that would support this species are absent from the Existing Community Plan Area.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	1B.2	This plant occurs in shallow, standing, fresh water and sluggish waterways within marshes, swamps, ponds, vernal pools and lakes, reservoirs, sloughs, ditches, canals, streams and rivers.	the Water Treatment Plant site, and the Beck Property. Absent. The Specific Plan Site, the Depot Parcel, the Wastewater Treatment Plant site and the Beck Property do not contain suitable habitat to support this species.	Possible. The Existing Community Plan Area contains some habitat for this species, particularly in slow moving portions and backwaters of the San Joaquin River. Lost Lake does not appear to contain appropriate habitat.
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	CR, 1B.1	This plant occurs in valley and foothill grassland habitat. There is one record from Fresno County (Fresno North Quadrangle), but the last known sighting of this species was near Mount Diablo in 1957, until it was rediscovered in 2000 at Fort Hunter Liggett.	Absent. This species was not observed on the Specific Plan Site, the Depot Parcel, the Water Treatment Plant site or the Beck Parcel during field surveys in 1994, 1995 or in 2006 and 2007. Furthermore, this plant is presumed to be extirpated from the one historically known location in Fresno County.	Unlikely. The only habitat within the Existing Community Plan Area that could support this species is highly degraded.
<i>Tuctoria greenei</i>	Greene's tuctoria	FE, 1B.1	Greene's tuctoria occurs in small or shallow vernal pools or the early drying sections of large, deep vernal pools in the Central Valley.	Absent. Although habitat suitable for this species exists within the Specific Plan Site, it was not observed during field surveys in 1994, 1995 or in 2006 and 2007. The Beck Property, the Depot Parcel and the Water Treatment	Absent. No suitable habitat hat could support this species exists within the Existing Community Plan Area..

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Lepidurus packardi</i>	vernal pool tadpole shrimp	FE	Vernal pool tadpole shrimp occur in large vernal pools containing clear to highly turbid water.	Unlikely. Although vernal pool habitat suitable for this species is present on the Friant Ranch Specific Plan Site, given the range of the species, its unique habitat requirements, and the failure of other surveys in the immediate vicinity of the project site to locate this species in nearby areas, it is unlikely that this species occurs on the site. Habitat suitable to support this species is absent from the Depot Parcel, the Water Treatment Plant site, and the Beck Property.	Absent. Vernal pool habitat suitable to support this species is not found within the Existing Community Plan Area.
<i>Lampetra hubbsi</i>	Kern Brook Lamprey	Fish CSC	Slow moving backwater areas and gravelly substrates.	Absent: There are no aquatic habitats suitable for this species on the Friant Ranch Specific Plan Site, Depot Parcel, the Water Treatment Plant site or the Beck Property.	Likely: The Kern Brook lamprey is known from the San Joaquin River and many of its tributaries. This species is also known to occur in the Friant-Kern Canal.
<i>Mylopharodon conocephalus</i>	hardhead	CSC	This species occurs in pools and side pools of rivers and creeks.	Absent. There are no aquatic habitats suitable for this species on the Friant Ranch Specific Plan Site, Depot Parcel, the Water Treatment Plant site or the Beck Property.	Absent: Hardhead are known from the San Joaquin river and its tributaries, but they are not known to be present below Friant Dam.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT, NMFS	Central Valley steelheads inhabit cool, clear waters of Pacific Ocean drainages. They require access to natal streams.	Absent. There are no aquatic habitats suitable for this species on the Friant Ranch Specific Plan Site, Depot Parcel, the Water Treatment Plant site or the Beck Property.	Absent: Although the San Joaquin river once supported Central Valley Steelhead, the installation of Friant Dam and associated water diversions have eliminated Steelhead from the upper reaches of the San Joaquin River. Planned restoration of the San Joaquin River is focused on recovery of Central Valley steelhead.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon	Spring-run: FT; fall-run: FCT and CSC	Anadromous, adults migrating to breeding habitat in inland waters.	Absent: There are no aquatic habitats suitable for this species on the Friant Ranch Specific Plan Site, Depot Parcel, the Water Treatment Plant site or the Beck Property.	Absent: The San Joaquin River no longer supports this species, but restoration efforts will focus on recovery of salmon.
Amphibians					
<i>Ambystoma californiense</i>	California tiger salamander	FT, CSC	California tiger salamanders occur in natural ephemeral pools or ponds that mimic them, that remain inundated for 12 weeks or more. They require nearby upland habitat that provides refugia such as small mammal burrows or crevices.	Present. This species has been documented in vernal pools within the Friant Ranch Specific Plan Site. There is no habitat suitable for this species on the Friant Ranch Specific Plan Site, Depot Parcel, the Water Treatment Plant site or the Beck Property.	Possible. Man-made depressional features (gravel pits) in the Lost Lake area may potentially provide breeding habitat for this species.. Degraded foraging habitat also exists.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Gambelia sila</i>	blunt-nosed leopard lizard	FE, CE, CDFG Fully-Protected Species	Blunt-nosed leopard lizards reside in sparsely vegetated alkali and desert scrub habitats and grasslands, in areas of low topographic relief. They seek cover in mammal burrows, under shrubs, or in the shade of structures such as fence posts.	Absent. Suitable habitat for this lizard does not exist on the Specific Plan Site, the Depot Parcel, the Water Treatment Plant site or the Beck Property. The site is outside of the natural habitat range of the blunt-nosed leopard lizard.	Absent. Suitable habitat for this lizard does not exist on the Specific Plan Site. The site is outside of the natural habitat range of the blunt-nosed leopard lizard.
<i>Thamnophis gigas</i>	giant garter snake	FT, CT	Giant garter snakes require permanent or semi-permanent marshes and sloughs.	Absent. Aquatic habitat required by the giant garter snake is absent from the Specific Plan Area, the Depot Parcel, the Water Treatment Plant site and the Beck Property.	Absent. Giant garter snakes are not known from the portions of the San Joaquin river that occur within the Community Plan Area.
Birds					
<i>Agelaius tricolor</i>	tricolored blackbird	CSC, MBTA	Tricolored blackbirds live near fresh water, and prefer emergent wetland vegetation with tall, dense cattails or tules, but they also are found in thickets of willow, blackberry, wild rose, and tall herbs. They forage in grasslands and agricultural fields.	Likely. Tricolored blackbirds were observed within the Friant-Kern Canal corridor by LOA biologists. These sightings were off of, but near the Friant Ranch Specific Plan Site. It is likely that tricolored blackbirds forage on the Site, but suitable breeding habitat is not present. Suitable habitat for this species is not present on the Depot Parcel, the Water Treatment Plant site or the Beck Property.	Likely. Suitable breeding and foraging habitat is present at Lost Lake and suitable grassland foraging habitat is present within the Friant Community Plan Area.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Aquila chrysaetos</i>	golden eagle	CSC, CDFG Fully-Protected Species	Golden eagles require nest sites (cliffs or large trees, transmission towers) near foraging areas, which are open lands containing small and medium sized mammals.	Present. A golden eagle was observed on the Friant Specific Plan Site in 1995. Foraging habitat is present, but suitable nesting habitat is not. Nesting habitat is present at Millerton Lake. No nesting habitat for this species is found on the Depot Parcel, the Water Treatment Plant site or the Beck Property.	Likely. Suitable foraging habitat occurs within the Friant Community Plan Area. Potential nesting habitat occurs along the San Joaquin River within the Community Plan Area.
<i>Athene cunicularia</i>	burrowing owl	CSC, MBTA	Burrowing owls occur in open, dry grassland and desert habitats. They require rodent or other burrows for roosting and nesting cover. They forage in open plains, grasslands, and prairies.	Present. This bird has been observed on the Specific Plan Site. The site contains a suitable prey base and nesting habitat for burrowing owls. Possible habitat for this species exists on the Depot Parcel. No suitable habitat for this species is found on the Water Treatment Plant site or the Beck Property.	Possible. This bird has been observed near the Community Plan Area and suitable foraging and breeding habitat exists.
<i>Buteo swainsoni</i>	Swainson's hawk	CT, MBTA	Swainson's hawks occur in riparian forests and other forested areas. They roost in a variety of trees and forage widely over forests, grasslands, and shrublands. They are easily disturbed by human activities.	Present. A Swainson's hawk was observed foraging on the project site in 2006. However, it is not likely that Swainson's hawks would nest on the Site. Potential nesting sites are extremely limited, consisting of several power poles and a single	Likely. A Swainson's hawk has been observed near the Community Plan Area and there is suitable foraging habitat present, indicating that it is likely that Swainson's hawks forage in the area, at least occasionally. There is potential

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	FC, CE, MBTA	Western yellow-billed cuckoos are found in riparian woodlands; preferably with a dense sub-canopy layer dominated by willows.	<p>cottonwood tree. No nesting habitat for this species is found on the Depot Parcel, the Water Treatment Plant site or the Beck Property.</p> <p>Absent. Suitable habitat for this species does not exist on the Specific Plan Site. The nearest sighting of the western yellow-billed cuckoo was in 1913 on Fancher Creek, approximately 14 miles southeast of Site (CNDDDB 2008). No suitable habitat for this species is found on the Depot Parcel, the Water Treatment Plant site or the Beck Property.</p>	<p>nesting habitat along the San Joaquin River within the Community Plan Area. It is possible that Swainson's hawks nest within or near the Community Plan Area.</p> <p>Absent. Some degraded, but marginally suitable habitat for this species exists along the San Joaquin River within the Existing Community Plan Area. However, this bird is not expected to be present because of its extreme rarity. The nearest sighting of the western yellow-billed cuckoo was in 1913 on Fancher Creek, approximately 14 miles southeast of Site (CNDDDB 2008).</p>
Mammals					
<i>Antrozous pallidus</i>	pallid bat	CSC	Pallid bats occur in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. They are most common in open, dry habitats. They roost in a variety of situations, including rock crevices, mines, caves, buildings, and trees. They	<p>Possible. Foraging habitat is present on the Friant Ranch Specific Plan Site, the Depot Parcel, the Water Treatment Plant site and the Beck Property, but roosting habitat is not present.</p>	<p>Possible. Potential roosting sites and foraging habitat is present within the Friant Community Plan Area.</p>

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Dipodomys nitratoides exilis</i>	Fresno kangaroo rat	FE, CE	are a locally common species in low elevations in California. Fresno kangaroo rats are found in alkali sink-open grassland habitats in western Fresno County. They require bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs and grasses.	Absent. Suitable habitat for this species does not exist within the Specific Plan Site, the Depot Parcel, the Water Treatment Plant site and the Beck Property. The Fresno kangaroo rat may be extinct; the last individual captured was in 1992 at the Alkali Sink Ecological Reserve.	Absent. Suitable habitat for this species does not exist within the Community Plan Area. The Fresno kangaroo rat may be extinct; the last individual captured was in 1992 at the Alkali Sink Ecological Reserve.
<i>Euderma maculatum</i>	spotted bat	CSC	The spotted bat is distributed in a fairly broad and extremely patchy area. It is highly associated with prominent rock features. This preference limits it to very small geographic areas with specific geologic features. It has been found in extreme, low desert habitats to high elevation forests. Spotted bats prefer to roost on rock-faced cliffs and are thought to have non-colonial specific roosts.	Unlikely. Although the Friant Ranch Specific Plan Site, the Depot Parcel, the Water Treatment Plant site and the Beck Property contain suitable foraging habitat, roosting and breeding habitat is absent. Moreover, this species is more frequently encountered high in the Sierra or east of the Sierra.	Unlikely. Although the Friant Community Plan Site contains suitable foraging habitat, roosting and breeding habitat is absent. Moreover, this species is more frequently encountered high in the Sierra or east of the Sierra.
<i>Eumpos perotis californicus</i>	western mastiff bat	CSC	The mastiff bat roosts in crevices in cliff faces, high buildings, trees and tunnels. In California the mastiff bat is most commonly encountered in broad open areas, but occurs in many semi-arid to arid habitats, including dry desert washes, flood plains, conifer and deciduous woodlands, coastal scrub, annual	Possible. Roosting and breeding habitat is absent from the Friant Ranch Specific Plan Area, the Depot Parcel, the Water Treatment Plant site and the Beck Property. Potential foraging habitat is present. Accordingly, this species	Likely. Both roosting and foraging habitat is present within the Friant Community Plan Area.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
<i>Taxidea taxus</i>	American badger	CSC	and perennial grasslands, montane meadows, palm oases, chaparral, desert scrub, urban, and agricultural areas. American badgers occur in dry, open grasslands, edges of farmlands and pastures.	would only be expected to forage over the project site. Likely. Badgers and badger dens have been observed to the north and south of the project site (LOA 2007). Breeding and foraging habitat is present in the Specific Plan Area., The Depot Parcel, the Water Treatment Plant site and the Beck Property do not contain habitat suitable to support this species.	Likely. Badgers and badger dens have been observed near the Community Plan Area (LOA 2007). Breeding and foraging habitat is present within the Community Plan Area. Past disturbance and current human activity area may reduce the potential for occurrence in some areas, but it would not completely eliminate the possibility of badgers being present.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE, CT	San Joaquin kit foxes occur in open, dry grassland and shrub and open forest habitats on the floor of the San Joaquin Valley and surrounding foothills.	Unlikely. In the early 1990's a single kit fox was seen in the vicinity of Friant (CNDDDB 2008). Records do not indicate the proximity of the kit fox to the Specific Plan Site. Suitable habitat for the kit fox exists on the Specific Plan Area and in the vicinity. Several focused surveys for the kit fox have been conducted recently in the project vicinity (LOA	Unlikely. In the early 1990's a single kit fox was seen in the vicinity of Friant (CNDDDB 2008). Records do not indicate the proximity of the kit fox to the Community Plan Area. Suitable habitat for the kit fox exists within the Area and in the vicinity of the Area. Several focused surveys for the kit fox have been

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence on the Friant Ranch Specific Plan Area (and Beck Property, Depot Parcel, and Water Treatment Plant site)	Probability of Occurrence within the Existing Friant Community Plan Area (outside of the Specific Plan area)
				2002, Stebbins 1997). No kit foxes or evidence of kit foxes have been observed. This species is known to occur in eastern Merced County (east of Hwy. 99) in extremely low numbers. No suitable habitat for this species is found on the Depot Parcel, the Water Treatment Plant site or the Beck Property.	conducted recently in the vicinity of the Community Plan Area (LOA 2002, Stebbins 1997). No kit foxes or evidence of kit foxes have been observed. This species is known to occur in eastern Merced County (east of Hwy. 99) in extremely low numbers.

Sources:

California Department of Fish and Game. 2008. California Natural Diversity Data Base, California Department of Fish and Game, Sacramento, CA.
California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants, Rare Plant Scientific Advisory Committee. California Native Plant Society, Sacramento, CA.
United States Fish and Wildlife Service (USFWS). 2008. Critical Habitat Portal, Critical Habitat Map, United States Fish and Wildlife Service, Sacramento, CA.
United States Fish and Wildlife Service (USFWS). 2008. Federal Endangered and Threatened Species List, Sacramento Fish and Wildlife Office, Sacramento, CA.
United States Fish and Wildlife Service (USFWS). 2008. Wetlands Geodatabase, Wetlands Mapper, United States Fish and Wildlife Service.

Topographic Quads:

Friant, Millerton Lake West, Millerton Lake East, Lanes Bridge, Fresno North, Little Table Mountain, Academy, Clovis and Round Mountain.

Abbreviations:

FE Federal Endangered Species
FT Federal Threatened Species
MBTA Species Protected Under the Auspices of the Migratory Bird treaty Act
NMFS Species Protected under the National Oceanic & Atmospheric Administration Fisheries Service
CE California Endangered Species
CT California Threatened Species
CR California Rare Species
FSC Federal Species of Special Concern.
CSC California Department of Fish and Game Species of Special Concern
1B California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere
1B.1 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Seriously Threatened in California
1B.2 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Fairly Threatened in California
3 California Native Plant Society List 1B Species-Plants Categorized as Plants about Which We Need More Information

*Potential Occurrence Definitions:

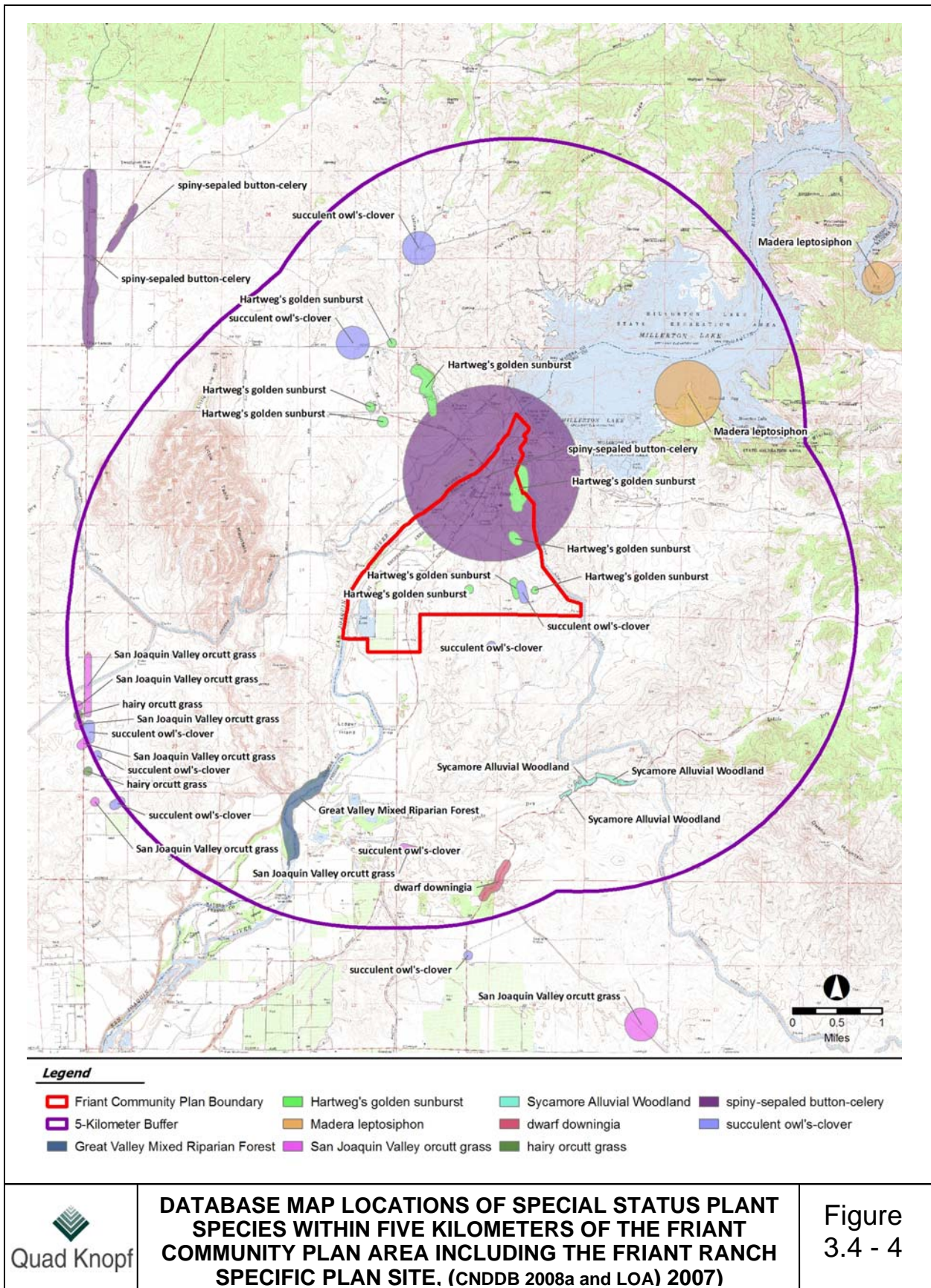
Present: Species or sign of their presence observed on site at time of the field survey.

Likely: Species not observed on site, but may reasonably be expected to occur there on a regular basis. Or, species not observed on the site, exceptional habitat exists, and additional surveys needed to verify presence.

Possible: Species not observed on site, but could occur there from time to time. Or, species not observed on the site, suitable habitat exists, and additional surveys needed to verify presence

Unlikely: Species not observed on site, and would not be expected to occur there except, perhaps, as a transient. Or, species not observed on the site, marginally suitable habitat exists, and additional surveys needed to verify presence.

Absent: Species or sign of their presence not observed on site, and precluded from occurring there because habitat requirements not met.



DATABASE MAP LOCATIONS OF SPECIAL STATUS PLANT SPECIES WITHIN FIVE KILOMETERS OF THE FRIANT COMMUNITY PLAN AREA INCLUDING THE FRIANT RANCH SPECIFIC PLAN SITE. (CNDDb 2008a and LOA) 2007)

Figure 3.4 - 4

Hartweg's golden sunburst (Pseudobahia hartwegii)

Four populations of Hartweg's golden sunburst were found on the Friant Ranch Specific Plan Area by Live Oak Associates (LOA) (Figure 3.4-5, LOA 2007). A fifth population is shown on Figure 3.4-5, which is from CNDDDB records. This additional population was not found at the time of the LOA surveys. The largest population mapped by LOA is on a hill where an existing water tank for the community of Friant is located. A portion of this population (approximately 1.45 acres) has been protected by a conservation easement held by the Sierra Foothill Conservancy (LOA 2007). This easement protects the largest and densest part of this population, but portions of the population remain unprotected. The other populations were observed in three locations in the southern portion of the Specific Plan Area. The aggregate area of these small sub-populations is 677 square feet or 0.016 acre (LOA 2007).

Hartweg's golden sunburst is not known to occur within the Depot Parcel, Wastewater Treatment Plant Site, Beck Property, or within the Existing Community Plan Area. This species is closely associated with gentle slopes and soils derived from a volcanic origin, which are typically not present in the Existing Community Plan Area. Hence, it is unlikely that this plant occurs in the lower elevations and disturbed grasslands found in the Existing Community Plan Area.

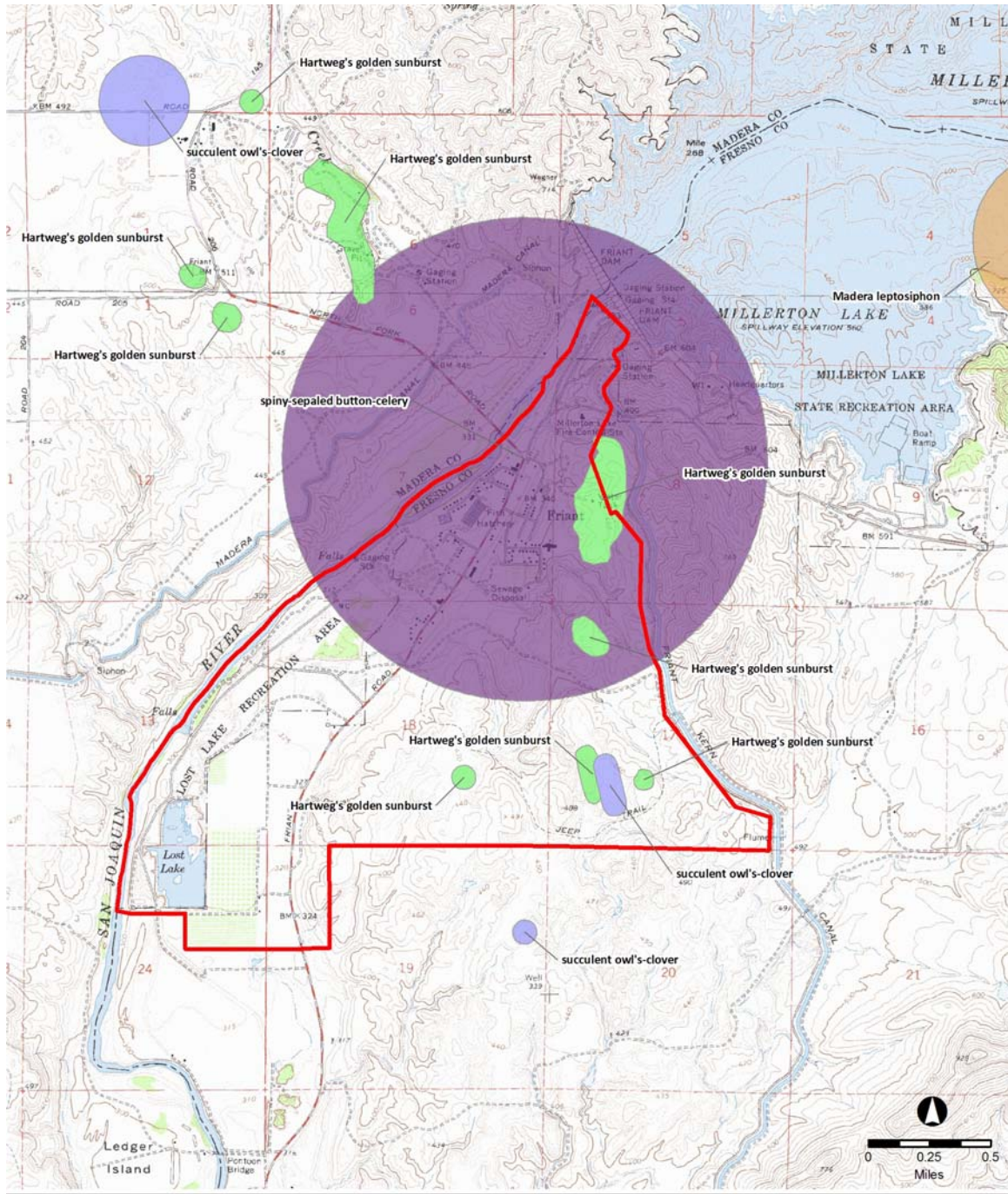
Succulent owl's clover (Castilleja campestris ssp. succulenta)

Students and faculty from California State University, Fresno surveyed the vernal pools on the project site for vernal pool plants and invertebrates in 1991, at which time succulent owl's-clover was documented in two pools located adjacent to the main drainage passing through the center of the Specific Plan Area (LOA 2007). The succulent owl's clover observed in the two vernal pools by the Fresno State students was observed again during the 1995 survey (LOA 2007). Succulent owl's clover is also known to occur in other localities within five kilometers of the Specific Plan Area and the Existing Community Plan Area (see Figure 3.4-3).

Succulent owl's clover is not known from within the Existing Community Plan Area, however, it is known from the Specific Plan Area (see Figures 3.4-4 and 3.4-5). Depressional features in the Lost Lake of the Community Plan area are not suitable habitat for this species. No suitable habitat for this species is found on the Depot Parcel, the Wastewater Treatment Plant site or the Beck Property.

Spiny-sepaled button celery (Eryngium spinosepalum)

The spiny-sepaled button celery has not been observed on the Specific Plan Site during various surveys; it is unlikely but possible that it occurs there (LOA 2007). This plant is unlikely to be present within the Depot Parcel, Wastewater Treatment Plant Site, and the Beck Property. Spiny-sepaled button celery is known from one California Natural Diversity Database record from 1928 within the Existing Community Plan Area (see Figure 3.4-4). This record is an approximate location, with the large bubble on Figure 3.4-4 representing a location accuracy of 1 mile. This recorded population was not observed by Live Oak biologists during any of their floristic surveys (LOA 2007) and it may not be extant. However, this species may occur within ephemeral pools and swales within the Existing Community Plan Area. Past and present



Legend

- Friant Community Plan Boundary
- Madera leptosiphon
- succulent owl's-clover
- Hartweg's golden sunburst
- spiny-sepaed button-celery



DATABASE MAP LOCATIONS OF SPECIAL STATUS PLANT POPULATIONS IN THE FRIANT RANCH COMMUNITY PLAN AREA INCLUDING THE SPECIFIC PLAN AREA

Figure 3.4 - 5

disturbances within the Existing Community Plan Area may reduce the potential for this species to occur, but it sometimes persists even in relatively disturbed situations (e.g., areas intensively grazed by cattle), and it is not an obligate ephemeral pool species. No suitable habitat for this species is found on the Depot Parcel, the Wastewater Treatment Plant site, or the Beck Property.

Special Status Wildlife

There are 27 special status wildlife species which occur in the Friant region that could potentially occur on the Friant Ranch Specific Plan Site and within the Existing Friant Community Plan Area (Table 3.4-1). Many of the special status wildlife species known from the region can be summarily dismissed due to the absence of habitats near Friant that could support these species. However, other special status wildlife species exist in the vicinity of the Friant Ranch Specific Plan Site and the Existing Community Plan Area, which could be affected.

Only the California tiger salamander, vernal pool fairy shrimp, and western spadefoot have been previously recorded by the California Natural Diversity Database (CDFG 2008a) within five kilometers of the Friant Specific Plan Site and Existing Community Plan Area (Figure 3.4-6). Seven special status wildlife species were observed on or adjacent to the Specific Plan Site during the field surveys; the vernal pool fairy shrimp, California tiger salamander, western spadefoot, tricolored blackbird, golden eagle, burrowing owl, and Swainson's hawk. These and other species may occur within the Existing Friant Community Plan Area including the Valley elderberry longhorn beetle, Kern Brook lamprey, and western pond turtle.

These species are separated by taxonomic group and discussed below. Similarly, other species which are not present, but which could none-the-less be affected are discussed (e.g., the Chinook salmon and Central Valley steelhead). In some cases, those species which do not occur are also discussed because an explanation of their absence is beneficial.

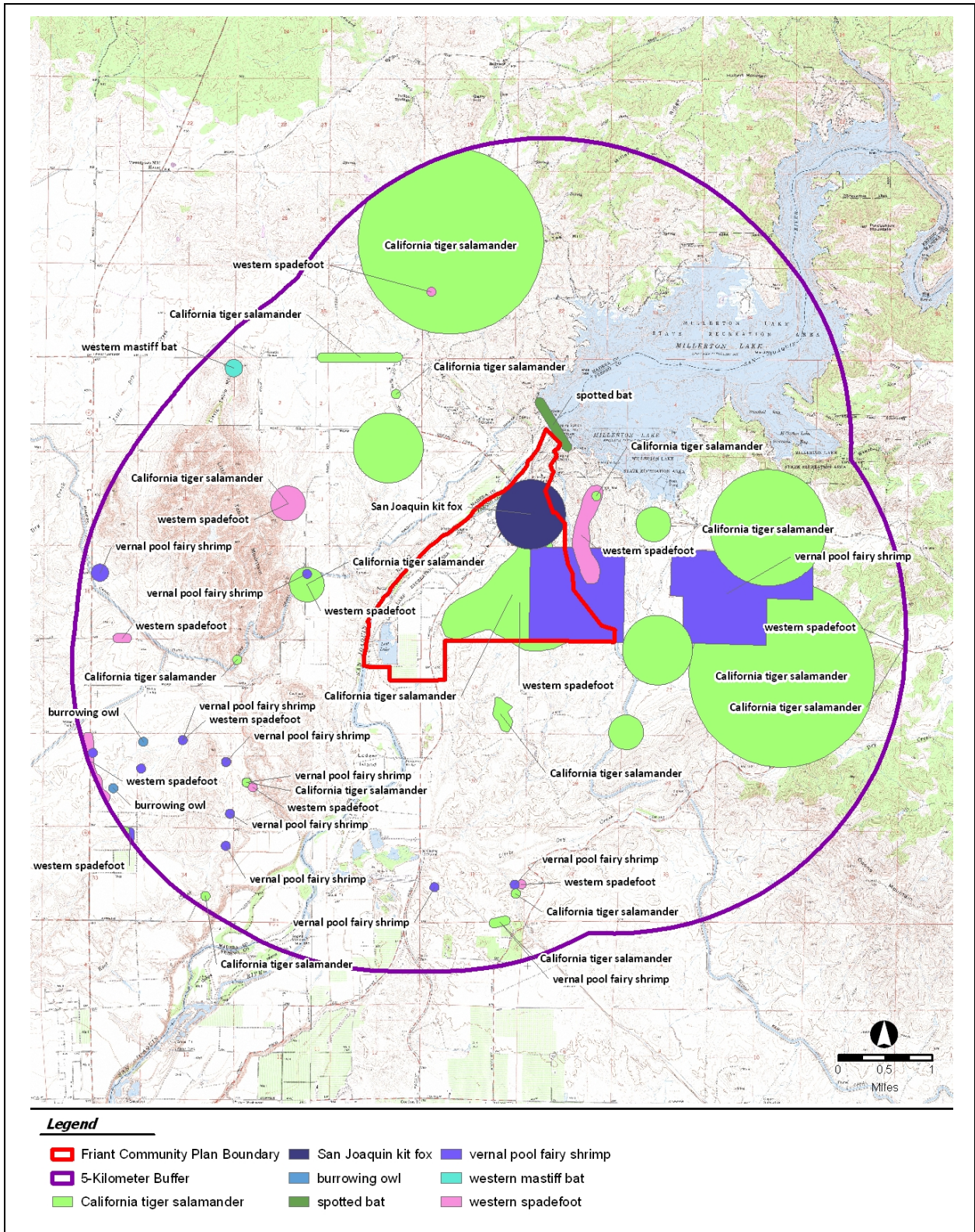
Special Status Invertebrates

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp occur in many of the ephemeral pools which are located throughout much of the Friant Ranch Specific Plan Site (LOA 2007). Vernal pool fairy shrimp also have been located adjacent to the site along the easement of the Friant-Kern Canal and the property located to the south. Suitable habitat for this species does not exist within the Depot Parcel, Wastewater Treatment Plant Site, or the Beck Property (LOA 2009), but may exist in other portions of the Existing Community Plan Area.

Valley Elderberry Longhorn Beetle

There are no elderberry bushes, which are required habitat for the Valley elderberry longhorn beetle, on the Friant Specific Plan Site. Accordingly, elderberry beetles are absent from the Site. There are no elderberry bushes within the Depot Parcel and Wastewater Treatment Plant Site, thus Valley elderberry beetles would be absent from those areas. The Valley elderberry



RECORDED LOCATIONS OF SPECIAL STATUS WILDLIFE SPECIES WITHIN FIVE KILOMETERS OF THE FRIANT COMMUNITY PLAN AREA (INCLUDING THE FRIANT RANCH SPECIFIC PLAN SITE)

Figure 3.4 - 6

longhorn beetle may occur in elderberry bushes that are potentially present within the Existing Community Plan Area. The occurrence of elderberry bushes would be, especially likely in the Great Valley Mixed Riparian Forest located along the San Joaquin River.

Conservancy fairy shrimp and vernal pool tadpole shrimp

The conservancy fairy shrimp is considered absent from the Friant Specific Plan Site, the Depot Parcel, the Wastewater Treatment Plant Site, the Beck Property, and the Existing Community Plan Area because these sites are not within the known range of this species. The vernal pool tadpole shrimp is considered absent from these areas because it has not been found during extensive surveys of the Specific Plan Site and within other properties in the vicinity.

Special Status Fish

Kern brook lamprey

There are no records in the CNDDDB for the Kern brook Lamprey on the Friant Ranch Specific Plan Site (Figure 3.4-6). However, Kern brook lampreys are known to exist in the San Joaquin River and the Friant-Kern Canal (Brown and Moyle 1987, 1992, 1993). Suitable habitat for this species does not occur on the Friant Specific Plan Site, Depot Parcel, Wastewater Treatment Plant Site, or Beck Property, but it has been reported to exist in the San Joaquin River within the Existing Friant Community Plan Area.

Hardhead

In the San Joaquin drainage, populations of hardhead are scattered in the tributary streams, but are absent from the valley reaches of the San Joaquin River (Moyle and Nichols 1973, Saiki 1984, Brown and Moyle 1987). This species is not expected to be present in the San Joaquin River below Friant Dam. This fish is absent from all project components.

Chinook Salmon

Chinook salmon are an anadromous fish once occurring in the San Joaquin River and its tributaries. In fact, the San Joaquin River supported the southernmost run of Chinook salmon in the United States. Chinook salmon are born in freshwater, immigrate to the ocean where they spend most of their adult lives, and then return to freshwater rivers and streams to spawn. Salmon runs in the Central Valley were historically among the largest on the Pacific Coast. Habitat conditions suitable for spawning include water depths ranging from a few inches to several feet, velocities ranging from one to 2.6 feet per second, water temperatures that generally remain below 65 degrees Fahrenheit, and coarse gravels for spawning.

Historically, two runs were known from the San Joaquin River, a spring run that occurred between the months of April and June, and a fall run that Moyle (2002) divides into a fall run and late fall run, both of which occur in the early to late fall as the name of the run suggests. Friant Dam, which was constructed between 1939 and 1941, served as an insurmountable barrier to upstream movement, and diversions from the Dam into the Friant-Kern and Madera Canals dried up much of the river for much of the year between Gravelly Ford and the river's

confluence with the Merced River. Both runs have been extinct since the late 1940s, which means that Chinook salmon does not occur in that reach of river passing through Friant, or any reach of the river between Friant and the river's confluence with the Merced River.

Although the Chinook salmon is no longer present within the Existing Friant Community Plan Area, restoration of the San Joaquin River will focus on recovery of viable salmon populations. Hence, proposed projects within the Friant Community Plan Area should be evaluated for their compatibility with recovery efforts and San Joaquin River restoration, which is why this species is included in this EIR.

Central Valley Steelhead

Steelheads are an anadromous form of rainbow trout. This form of rainbow trout are born in freshwater, immigrate to the ocean where they spend most of their life, and then return to freshwater rivers and streams to spawn. Winter run Central Valley steelheads were once widely distributed throughout California's Central Valley in the Sacramento River, San Joaquin River and their tributaries. Spawning commonly occurred from December through April (McEwan 2001). Habitat conditions suitable for spawning include water depths ranging from 6 to 36 inches, velocities ranging from one to 3.6 feet per second, water temperatures that generally remain below 56 degrees Fahrenheit, and gravels for spawning ranging from 0.2 to 4 inches in diameter.

Historically, Central Valley steelhead occurred in the San Joaquin River and all of its tributaries south to the Kings River. Central Valley Steelhead once occurred in the San Joaquin River where it passed through the Friant Community Plan Area. The completion of Friant Dam in 1941, and the subsequent diversion of water from the main channel downstream of Friant Dam to the Friant-Kern and Madera Canals, dewatered much of the San Joaquin River between Gravelly Ford and the River's confluence with the Merced River. Thus, Central Valley steelhead no longer can access the San Joaquin River upstream of its confluence with the Merced River. The result is that Central Valley steelheads have not used the reach of San Joaquin River in the Friant Community Plan Area since the late 1940s or early 1950s.

Although the Central Valley Steelhead is no longer present within the Friant Community Plan Area, restoration of the San Joaquin River will focus on recovery of viable salmon populations, including steelhead. Hence, proposed projects within the Friant Community Plan Area should be evaluated for their compatibility with recovery efforts and San Joaquin River restoration, which is why this species is included in this EIR.

Special Status Amphibians

California tiger salamander

California tiger salamanders are known to occur at various locations on the Friant Ranch Specific Plan Site (LOA 2007) and at various locations near the Friant Community Plan Area (Figure 3.4-6). Although much of the habitat capable of supporting breeding and aestivating populations of California tiger salamanders within the Existing Community Plan Area is highly degraded, potential breeding habitat exists in seasonally inundated gravel pits in the Lost Lake

area. Suitable habitat for this species is not present on the Depot Parcel, the Beck Property, or the Wastewater Treatment Plant site.

Western spadefoot

The closest known record of a western spadefoot is approximately 0.1 mile east of the Friant Specific plan Area (Figure 3.4-6). Numerous sightings of the western spadefoot were made during field surveys, which confirm their presence on the Site (LOA 2007). Much of the habitat capable of supporting breeding and aestivating populations of western spadefoots within the Community Plan Area is highly degraded. Nevertheless, it is likely that this species occurs within the Friant Community Plan Area. There is no suitable habitat for this species on the Depot Parcel, the Wastewater Treatment Plant site, or the Beck Property.

Special Status Reptiles

Western pond turtle

The closest known record of the pond turtle is approximately 5 miles east of the Friant Community Plan Area (Figure 3.4-6). Suitable habitat for this species (large waterways or ponds) does not exist on the Friant Specific Plan Site and they are expected to be absent. Suitable habitat to support this species exists within the Friant Community Plan Area; both the San Joaquin River and Lost Lake may support this species. Suitable habitat for this species is not present on the Depot Parcel, the Beck Property, or the Wastewater Treatment Plant site.

Birds

Burrowing owls

Burrowing owls were observed at several locations on the Friant Ranch Specific Plan Site (LOA 2007). They are expected to be winter visitors as well as summer residents on the site. Similarly, suitable habitat occurs in the grasslands of the Friant Community Plan Area and this species is likely to occur. Marginal habitat capable of supporting this species is found on the Depot Parcel. Habitat suitable to support this species is absent from the Wastewater Treatment Plant site and the Beck Property.

Swainson's hawk

The closest known record for a nesting Swainson's hawk is approximately 5 miles northwest of the Friant Community Plan Area (CNDDDB 2008a). However, a Swainson's hawk was observed foraging on the Friant Ranch Specific Plan Site during field surveys (LOA 2007). Suitable nesting habitat is extremely limited on the Specific Plan Site, being limited to only a few small trees and power poles. No potential nests were observed during surveys of the site. Suitable nesting and foraging habitat does occur within the Friant Community Plan Area, particularly in the Great Valley Mixed Riparian Forests along the San Joaquin River. No nesting or roosting habitat for this species is found on the Depot Parcel, the Wastewater Treatment Plant site, or the Beck Property.

Golden eagle

The closest known record of a golden eagle is approximately 11 miles northeast of the Friant Community Plan Area (CNDDDB 2008a). Suitable nesting habitat for the golden eagle does not occur on the Friant Ranch Specific Plan Site, but a golden eagle was observed foraging on the site in 1995 (LOA 2007). Nesting habitat is present within the Friant Community Plan Area, particularly within the Great Valley Mixed Riparian Forest along the San Joaquin River. Potential nesting habitat also is present in the vicinity of the Community Plan Area, including in the wooded foothills surrounding Millerton Lake. No nesting or roosting habitat for this species is found on the Depot Parcel, the Wastewater Treatment Plant site, or the Beck Property.

Tricolored blackbirds

Tricolored blackbirds are known to forage on the Friant Ranch Specific Plan Site, but suitable breeding areas are not present (LOA 2007). Suitable breeding habitat does occur at small, scattered locations within the Friant-Kern Canal easement, to the east of the Site. Suitable breeding and foraging habitat is present at Lost Lake Park and suitable grassland foraging habitat is present within the existing Friant Community Plan Area.

Other special status birds

The Live Oak Associates biological evaluation (LOA 2007) also included evaluations of the horned lark, merlin, and prairie falcon. These species have been removed from the list of California Species of Special Concern and are not addressed in this EIR.

Mammals

American Badger

The closest known record for an American badger is approximately 6 miles north of the Friant Community Plan Area (CNDDDB 2008). American badgers were not observed on the Friant Ranch Specific Plan Site during field surveys, but badgers and badger dens have been observed south of the Specific Plan Site and directly to the north within the Community Plan Area (LOA 2007). Denning and foraging habitat exists on the Friant Specific Plan Site, the Beck Property, the Depot Parcel and the Wastewater Treatment Plant site, and in other portions of the Friant Community Plan Area. It is reasonable to assume that American badgers are occasional to frequent visitors.

Pallid bat

The closest known record for the pallid bat is approximately 6 miles northwest of the Friant Community Plan Area (CNDDDB 2008). Although foraging habitat exists on the Friant Ranch Specific Plan Site, the Depot Parcel, the Wastewater Treatment Plant site, and the Beck Property, suitable roosting habitat is not present. It is likely that the pallid bat forages over the Specific Plan Site and the other listed project components from time to time, but it would not be a resident. The Friant Community Plan Area contains trees and buildings that are suitable roosting

habitat. Foraging habitat is also present. This species is likely to be present, at least seasonally, on the Community Plan Area.

Western mastiff bat

The closest known record for the western mastiff bat is approximately 3 miles northwest of the Friant Community Plan Area (CNDDDB 2008). Foraging habitat exists on the Specific Plan Site, the Depot Parcel, the Wastewater Treatment Plant site, and the Beck Property, but there is no roosting habitat. Accordingly, this bat is a transient forager on the site, but not a resident. The Friant Community Plan Areas contains both foraging and roosting habitat, especially within the Great Valley Mixed Riparian Forest along the San Joaquin River. This bat would be expected as a resident within the Friant Community Plan Area.

San Joaquin kit fox

There is a single record for the San Joaquin kit fox from within the Friant Community Plan Area (Figure 3.4-6). All other records are from the valley floor to the west of the area, near Highway 99 and the San Joaquin River. Many recent surveys on the Specific Plan Site and other sites near Friant have failed to locate any evidence that San Joaquin kit foxes are present in the vicinity. Accordingly, it is unlikely that San Joaquin kit foxes inhabit the Friant Ranch Specific Plan Site, the Depot Parcel, the Wastewater Treatment Plant site, the Beck Property, or other portions of the Friant Community Plan Area.

Designated Critical Habitat

There is no designated Critical Habitat located within the Friant Community Plan Area. The project area is located outside, and approximately 350 feet to the west, of critical habitat designated for the California tiger salamander.

Water Transfers

The water supplies for the 2,000 acre feet transfer will be made available in part through the operation of LTRID's Tule River Intertie project, which is currently under construction. The Intertie project was evaluated under a separate CEQA process and, with mitigation measures developed for the intertie project, will result in no significant impacts to biological resources. See the section below which addresses project impacts for more complete analysis of potential impacts due to water transfers.

Potential Wildlife Movement Corridors and Linkages

There are no designated wildlife movement corridors or linkages within the Friant Community Plan Area or the Friant Ranch Specific Plan Site. The Friant Community Plan Area does, however, contain the San Joaquin River and associated Great Valley Mixed Riparian Forest habitat. The river and riparian corridor provide the opportunity the east-west movements for a variety of wildlife. Fish, amphibians, reptiles, birds, and mammals are all expected to use this area as a movement corridor.

The Friant Ranch Specific Plan Site is bounded on three sides by physical barriers that inhibit wildlife movements. The north side of the site is generally constrained by the existing community of Friant; existing housing and a mobile home park are adjacent to the north side of the Site. The concrete-lined Friant-Kern Canal is adjacent to the eastern boundary of the Site. The canal is bordered along both sides by an elevated gravel road, with grassland habitat adjacent to the roads but within the canal property owned by the United States government. There is one existing over-crossing which is gated at both sides. That crossing provides vehicular access for ranching operations and for the Friant Water Users Authority, which is charged with maintaining the canal. There are two concrete culverts which cross under the canal, which allow precipitation water from the hills to the east of the canal, to pass under the canal and drain to the west. These culverts may allow some wildlife movements to occur. Friant Road is to the west of, and down slope of the Site. Friant Road is currently two-lanes, but it is in the processes of being converted to a four-lane expressway. Due to the volume of traffic, Friant Road creates a significant barrier to wildlife.

3.4.3 IMPACT EVALUATION CRITERIA

Public Resources Code Section 21001(c) finds and declares that it is the policy of the State to prevent the elimination of fish or wildlife species due to human activities, ensure that fish and wildlife populations do not drop below self-sustaining levels, and preserve for future generations representations of all plant and wildlife communities and examples of the major periods of California history. *Section 15065(a)* of the *CEQA Guidelines* states that a project may have a significant effect on the environment if it has the potential to substantially reduce the habitat of a fish or wildlife species or 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 an endangered, rare or threatened species.

Criteria for evaluation of impacts to biological resources are:

Would the project:

- 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.*
- b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*
- c) *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, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

- 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 native wildlife nursery sites.*
- e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*
- f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

Section 15380 of the CEQA Guidelines defines endangered, threatened, and rare species that must be addressed under evaluation criteria (a), listed above, as:

- 1) *“Endangered” when its survival and reproduction in the wild are in immediate jeopardy from one or more causes including loss of habitat, over-exploitation, predation, competition, disease, or other factors; or*
- 2) *“Rare” (all animals designated as rare by the Fish and Game Commission prior to January 1, 1985, were automatically reclassified as threatened by Fish and Game Code Sec. 2067) when either:*
 - (a) *Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or*
 - (b) *The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the Federal Endangered Species Act; or*
 - (c) *A species of animal or plant shall be presumed to be endangered, rare or threatened, if it is listed in:*
 - (1) *Sections 670.2 or 670.5, Title 14, California Administrative Code of Regulations; or*
 - (2) *Title 50, Code of Federal Regulations Sections 17.11 or 17.2 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.*
 - (d) *A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b); or*
 - (e) *This definition shall not include any species of the Class Insecta which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding task to man as determined by:*
 - (1) *The Director of Food and Agriculture with regard to economic pests; or*

(2) *The Director of Health Services with regard to health risks.*

3.4.4 IMPACT ANALYSIS

This section is divided into three subsections; impact analysis and mitigation measures for the Friant Ranch Specific Plan Site; impacts analysis and mitigation measures associated with the Existing Friant Community Plan Area (exclusive of the Specific Plan Site); and impacts analysis and mitigation measures covering the water transfers associated with the Friant Ranch Specific Plan Site. This section is so divided to distinguish between a project-level evaluation performed on the Specific Plan Site, and a programmatic evaluation of the Community Plan Area.

The proposed Wastewater treatment facility will be constructed in association with the Friant Ranch Specific Plan Site, but it will have the capacity to serve the entire Community Plan Area. The Wastewater treatment plant is evaluated along with the Friant Ranch Specific Plan Site because:

- The Wastewater treatment facility is located within the Friant Ranch Specific Plan Site;
- Biological resources on the site were evaluated at the project level; and
- The timing of construction of the Wastewater treatment plant would coincide with that of the Friant Ranch development.

Similarly, the expanded water treatment facility (and pipeline improvements), the Depot parcel, and the Beck Property are associated with the Friant Specific Plan Site and project-level impacts and mitigation measures are addressed in the subsection covering the Specific Plan Site.

In all cases, the impact evaluation and mitigation measures follow Appendix G of the CEQA Guidelines (The Office of Administrative Law 2007). Impacts and mitigation measures are identified by the evaluation criteria listed in Appendix G of those Guidelines. When impacts are considered significant, corresponding mitigation measures are provided that would reduce the level of impacts to less than significant.

Impact Analysis and Mitigation Measures for the Friant Ranch Specific Plan Site

Impact #3.4.1 - Impacts to candidate, sensitive, or special status species within the Friant Ranch Specific Plan Area [Evaluation Criteria A]

Impact #3.4.1a – Impacts to succulent owls clover

As designed, the Friant Ranch Specific Plan development will avoid direct impacts to succulent owls clover by avoiding wetlands that contain that species. Currently, the site is grazed by cattle.

Conclusion: Although direct impacts to this species are not expected to occur, indirect and *significant* impacts may occur through degradation of water quality in occupied wetlands and through changes in land management practices.

Mitigation Measure #3.4.1a: To ensure that indirect impacts to succulent owls clover will be less than significant; the following mitigation measures will be implemented:

1. The wetlands on the Friant Ranch Specific Plan Site that contain succulent owls clover will be maintained as undisturbed open space, as required in mitigation measure 3.4.1c(4).
2. Prior to issuance of a grading permit that would result in activities affecting the succulent owls clover, a Land Management Plan will be prepared for the open space that exists on the Specific Plan Site. That Land Management Plan will include continued management by cattle grazing and will:
 - be developed in cooperation with the California Department of Fish and Game and the United States Fish and Wildlife Service;
 - describe management goals and objectives;
 - include provisions for monitoring existing populations of protected biological resources (including succulent owls clover);
 - include the use of adaptive management to ensure that results of the monitoring efforts are incorporated into management actions, and follow the management goals and objectives; and
 - identify remedial actions and alternatives for protection (which may include off-site compensation) if management fails to protect on-site resources to the level established for each resource.

Effectiveness of Mitigation: Implementation of Mitigation Measure #3.4.1a will reduce the level of impacts to succulent owls clover to a level that is *less than significant*.

Impact #3.4.1b – Impacts to Hartweg’s golden sunburst

All of two populations and a portion of a third population of Hartweg’s golden sunburst are located within the development footprint of the Friant Ranch Specific Plan. The combined area which will be subject to loss is approximately 0.02 acres, or approximately 1.4% of the on-site area that is occupied by this species as mapped by Live Oak Associates. Most of the largest on-site population is currently preserved under a conservation easement held by the Sierra Foothill Conservancy. Additional areas contiguous with that population will be preserved as “undisturbed open space”. Upon Project completion, approximately 1.45 acres occupied by this species will be in undisturbed and permanently preserved open space.

Conclusion: The loss of 0.02 acres of Hartweg's golden sunburst is considered a *significant* adverse environmental impact of the project. Furthermore, project impacts to this species would be subject to provisions of the state and federal endangered species acts.

Mitigation Measure #3.4.1b: The following measures will be implemented to reduce the level of impacts to Hartweg's golden sunburst to a level that is less than significant.

1. In the spring preceding project construction, pre-construction surveys for this species will be conducted to locate any populations not already documented. These surveys will be conducted during the flowering period of this plant (March to May).
2. Prior to the issuance of a grading permit that would result in activities affecting the Hartweg's golden sunburst populations, the on-site open space which contains the species will be protected in perpetuity through a conservation easement to be held by a non-profit land trust.
3. The designated open space will be managed to preserve in perpetuity the populations of Hartweg's golden sunburst. Prior to issuance of a grading permit that would result in activities affecting the Hartweg's golden sunburst, a Land Management Plan will be prepared (see mitigation measure #3.4-1a2) that will include the protection of the golden sunburst population from human foot traffic and off road vehicles by restricting access to open space through fencing and signage.
4. Prior to issuance of an occupancy permit, an informational brochure will be prepared that educates Friant Ranch Community members about the sensitivity of this species to human trampling, discouraging trespass into conserved open space.
5. Where avoidance is not possible, the project applicant will have a qualified biologist develop a Restoration Plan to salvage populations of Hartweg's golden sunburst located in proposed development areas that would be destroyed during construction activities. A draft of this plan will be submitted to the California Department of Fish and Game and the U.S. Fish and Wildlife Service for review, comment, and approval. The plan will be finalized and implemented by the project applicant prior to issuance of a grading permit for the areas inhabited by Hartweg's golden sunburst. Elements of the Restoration Plan shall include the collection of mature seed prior to natural dispersal (late April or early May), the storage of the seed in a cool dry location until the fall, and the dispersal of the seed onto proposed open space areas of the Site where suitable Rocklin soils are known to be present. The selected planting areas would be mapped using GIS, fenced to reduce grazing pressure, and monitored after planting for a minimum of four years during a 7 year monitoring period. An annual monitoring report will be prepared and submitted to CDFG and the USFWS. The salvage and relocation of this species will be considered successful when a self-sustaining population of Hartweg's golden sunburst has been established on approximately 0.06 acres of the designated open space (representing a 3:1 ratio).
6. The Restoration Plan described in number 5 above shall include alternatives or contingencies for ensuring that appropriate compensation for the loss of Hartweg's golden sunburst is met

(at a ratio of 3:1) should the initial relocation of the Hartweg's golden sunburst populations not meet established success criteria. These alternatives shall be approved by the CDFG and USFWS.

Effectiveness of Mitigation: Implementation of mitigation measures 3.4.1b will reduce impacts to Hartweg's golden sunburst to level that is *less than significant*.

Impact #3.4.1c – Impacts to vernal pool fairy shrimp

Vernal pool fairy shrimp have been documented in a number of vernal pools on the Friant Ranch Specific plan Site and are presumed present in most of the ephemeral pools on the site. The direct loss of vernal pool habitat from the Project will result in the take of an unknown number of vernal pool fairy shrimp.

Indirect impacts to vernal pool fairy shrimp may occur in those pools which would be preserved in undisturbed open space. Proposed development surrounding designated open space could result in the discharge of polluted water into pools. The hydrology could be altered by changes in drainage patterns, resulting in some vernal pools being de-watered. Additionally, any reduction in grazing could result in increased invasion by non-native plant species that could degrade ephemeral pool habitat through the build-up of thatch.

Conclusion: The likely mortality of vernal pool fairy shrimp from direct loss of habitat and the possible degradation of habitat in designated open space would constitute a *significant* adverse environmental impact of the project. Furthermore, project impact to this species would be subject to provisions of the federal Endangered Species Act.

Mitigation Measure #3.4.1c: The following measures shall be implemented to ensure that impacts to vernal pool fairy shrimp are less than significant.

1. The Project will avoid vernal pool fairy shrimp to the maximum extent feasible. The Friant Ranch Specific Plan has been designed to avoid the majority of vernal pools on the site. Of the 14.38 acres of vernal pool habitat identified on the project site, 12.09 acres of vernal pools will be protected within approximately 233 acres of designated undisturbed open space that will be placed under a conservation easement. The area of vernal pool fairy shrimp habitat to be protected within designated on-site open space will be at a ratio of 5 acres of protected vernal pool habitat for each acre of such habitat directly or permanently disturbed by grading and construction associated with the development of the project.
2. Prior to the issuance of a grading permit the project applicant will compensate for the loss of vernal pool habitat through the creation/restoration of additional vernal pool habitat at a ratio of one acre of creation/restoration for each acre of such habitat directly and permanently disturbed by grading and construction associated with the project development. Creation/restoration of vernal pool habitat will be accomplished by one or a combination of the following three mitigation alternatives:

- a. Off-Site Creation/Restoration. The project applicant will conserve through acquisition or conservation easement off-site lands suitable for vernal pool creation/restoration in Fresno, Madera, or Merced County. Such lands will consist of the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species will be absent (i.e., these lands will have been previously disturbed by farming, or some other intensive use); vernal pools once occurred on these lands naturally; the underlying hardpan layer is still intact; and the natural topography has not been eliminated through land leveling. Topographic depressions will be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. The depressions will hold water for approximately three months of every year. When full, the depth of the filled pools will vary from 6 to 18 inches. The depressions will be revegetated with vernal pool species native to the area; soil collected from existing pools in the region will be distributed on the bottoms of the constructed pools in order to enhance the prospects for establishing vernal pool fairy shrimp populations. Efforts to establish fairy shrimp populations in the constructed pools will only occur after receiving formal authorization to do so from the USFWS, as required by law. The components of this mitigation and monitoring plan will be consistent with standard USACE guidelines.
 - b. Purchase of Vernal Pool Creation/Restoration Credits from a Conservation Bank. The project applicant will pay the market rate for Vernal Pool Creation/Restoration Credits at the stipulated 1:1 ratio from a Conservation Bank whose service area includes the Friant Ranch Specific Plan Area.
 - c. Payment into the Vernal Pool Fund. Should a conservation bank having vernal pool creation credits for sale not exist south of the Fresno River, the project applicant will pay the going rate per acre into the Vernal Pool Fund managed by the Center for Natural Lands Management. These funds may only be used for the purchase of vernal pool creation credits in a local conservation bank.
3. The designated open space proposed for the project site will provide buffers of 100 to 450 feet between developed areas of the project site and vernal pools, to reduce encroachment into pools by foot and off-road vehicle traffic.
 4. Prior to issuance of a grading permit for the project site, a Drainage Plan will be prepared for the undisturbed open space of the site. Elements of this plan will include:
 - a. Design plans to ensure that winter stormwater runoff into open space areas of the project site will mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved vernal pools will be roughly equivalent to pre-project conditions.
 - b. All runoff originating in developed areas of the site will pass through retention basins, bio-filtration swales, or both, which will act together as stormwater filters such that water quality will not be significantly reduced from pre-project conditions.

- c. Irrigation runoff from landscaped areas will be routed away from vernal pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions.
- d. A grazing management plan will be developed and implemented to control the proliferation of non-native annuals in grassland and vernal pool habitats of the on-site open space areas, and to control the build-up of flammable thatch.
- e. Access to the open space areas will be controlled in order to minimize impact to vernal pools and other habitats, and to ensure that cattle are confined to the open space areas when grazing is permitted. This plan will be submitted to the USFWS for review and approval.

Effectiveness of Mitigation: Implementation of the above mitigation measures will reduce project impacts to vernal pools to a *less than significant level*. In addition to the mitigation measures, a considerable amount of additional fairy shrimp habitat would likely be preserved off-site, incidental to mitigation measures required for project impacts to the California tiger salamander. Creation/restoration of vernal pool habitat will ensure no net loss of regionally available fairy shrimp habitat. Due to the disturbed nature of lands to be targeted for vernal pool creation/restoration, the absence of natural wetlands, and the absence of habitats suitable for special status-species, vernal pool creation/restoration is *not expected to result in significant adverse environmental impacts* to sensitive biological resources.

Impact #3.4.1d – Impacts to the California tiger salamander

The federally threatened California tiger salamander (CTS) has been documented within wetland and grassland habitats on the project site. A maximum of 14.38 acres of potential vernal pool breeding habitat occurs on the site. The entire non-vernal pool habitat of the Specific Plan site (the 942.2-acre site includes 927.82 acres of non-vernal pool habitat) provides potential aestivation habitat for this species. Of the 942.2-acre Specific Plan area, 696.8 acres will be converted from natural to disturbed habitats associated with project development. With the exception of 2.29 acres of vernal pools, all of this habitat would potentially serve as aestivation habitat for the CTS (vernal pools typically do not provide aestivation habitat for CTS, because burrowing rodents that create suitable aestivation habitat do not commonly occupy wetlands that are inundated for much of the winter and spring). Therefore, the Specific Plan development will result in significant impacts to CTS habitat as follows:

- Affected vernal pools (potential breeding habitat to be lost from development) = 2.3 acres; and
- Affected grasslands, channels, vernal swales, non-wetland channels (potential aestivation habitat to be lost due to development) = 694.5 acres.

The elimination of this habitat would result in the mortality of an unknown number of CTS. The reduction of habitat for this species resulting from project construction activities would permanently reduce the population of CTS now occurring on the project site.

Conclusion: Expected impacts to CTS inhabiting the project site would constitute a *significant* adverse environmental impact of the project. Project impact to this species would be subject to provisions of the federal Endangered Species Act and, if listed by the Fish and Game Commission prior to project development, the California Endangered Species Act.

Mitigation Measure #3.4.1d: The following measures will be implemented to ensure that impacts to the California tiger salamander are at levels that are *less than significant*.

1. The Project will be designed to avoid elimination of breeding and aestivation habitat to the maximum extent possible. The project applicant has designed the project to avoid a substantial amount of on-site habitats suitable for CTS. Of the 14.38 acres of on-site vernal pool habitat potentially used as breeding habitat by the CTS, 12.09 acres of vernal pools will be protected in designated undisturbed open space (Table 3.4-2). The area of California tiger salamander breeding habitat to be protected within designated open space will be at a ratio of 5 acres of protected vernal pool habitat for each acre of such habitat directly and permanently disturbed by grading and construction associated with project development. Of the 927.82 acres of potential aestivation habitat now present in the Specific Plan Area, approximately 233 acres of undisturbed aestivation habitat will be preserved within the proposed open space. An additional 30 acres of the site that are contiguous with undisturbed open space and that are to be temporarily disturbed by site grading will be restored to native vegetation and managed as part of the proposed open space area. Open space areas and vernal pool complexes of the completed project, totaling 275.4 acres, will be linked to one another to facilitate the movements of CTS from one preserved habitat area to another, and linked to significant breeding and aestivation habitats on lands to the south of the Site.
2. Management of the undisturbed open space, as required in mitigation for vernal pool fairy shrimp set forth in mitigation measure 3.4.1c, will ensure that vernal pools protected in open space areas of the Site will continue to provide breeding habitat for CTS and that grasslands will continue to provide habitat for burrowing rodents, which create aestivation habitat for CTS.
3. Prior to issuance of a grading permit for all or any portion of the project site, the project applicant will preserve grassland habitats suitable for CTS aestivation under conservation easement at a minimum ratio of two acres of habitat preservation for every acre of such habitat directly or permanently disturbed by project grading and construction. Such preservation will include on-site (i.e., open space areas) and off-site habitat in Fresno and/or Madera Counties south of the Fresno River. Should the project be constructed in phases, preservation can be phased concurrent with development phases as long as the 2:1 ratio is met for the acreage subject to the grading permit.

At full buildout the project will eliminate approximately 694.5 acres of suitable on-site aestivation habitat. Under this mitigation measure, the applicant will preserve two times that amount of known and created CTS aestivation habitat on-site and off-site in suitable habitat located on other parcels within Fresno, Madera and Merced Counties.. Parcels that could meet the requirements of this mitigation measure and are available for mitigation purposes

have been identified in Tables 3.4-2 and 3.4-3. These representative parcels provide up to 31.21 acres of breeding habitat in the form of vernal pools and 1,282.19 acres of aestivation habitat in the form of grasslands and other habitats supporting populations of burrowing animals such as California ground squirrels and pocket gophers. To meet the 2:1 preservation requirement set forth in the above mitigation measure the project applicant may identify additional or alternative parcels similar to those identified in Tables 3.4-2 and 3.4-3.

**Table 3.4-2
On-Site CTS habitat to be Preserved and Managed Under Conservation Easement
on the Friant Ranch Specific Plan Site**

Project Site	Vernal Pools (potential breeding habitat)	Grasslands, channels, vernal swales, non-wetland channels (potential aestivation habitat)	Total Area
Open Space Preserve (Site)	12.09 acres	233.31 acres	245.4 acres
Graded Slopes to be restored to native vegetation and managed as part of the Open Space Preserve	0.00 acres	30.00 acres	30.0 acres
Total	12.09 acres	263.31 acres	275.4 acres

**Table 3.4-3
Off-Site CTS Habitat that Could be Preserved and Managed Under Conservation
Easement on Parcels Near the Friant Ranch Project**

Project Site	Vernal Pools (potential breeding habitat)	Grasslands, channels, vernal swales, non-wetland channels (potential aestivation habitat)	Total Area
Open Space Preserve (east of Friant-Kern Canal)	0.04 acres	208.36 acres	208.4 acres
Open Space Preserve (Norhnberg Parcel)	15.37 acres	567.53 acres	582.9 acres
Open Space Preserve (Klein-Morgan Parcel)	3.71 acres	242.99 acres	246.7 acres
Total by Type of Habitat	19.12 acres	1,018.88 acres	1,038 acres

Effectiveness of Mitigation: Implementation of these mitigation measures would reduce impacts to regional CTS population(s) to a level that is *less than significant*.

Impact #3.4.1e – Impacts to the Western Spadefoot

The western spadefoot has been documented on the project site and occupies the same breeding and aestivation habitats as the California tiger salamander. The Project would result in the mortality of an unknown number of western spadefoots, and would permanently eliminate some of the breeding habitat and much of the aestivation habitat used by this species.

Conclusion: Mortality to the western spadefoots would be a *significant* adverse environmental impact.

Mitigation Measure #3.4.1e: To reduce impacts to western spadefoots to a level that is *less than significant*, the following measures will be implemented:

1. The western spadefoot utilizes the same habitats as the California tiger salamander for breeding and aestivation (i.e., the western spadefoot breeds in vernal pools and aestivates in rodent burrows of surrounding grasslands). Therefore, implementation of mitigation measures for the California tiger salamander (Mitigation Measures 3.4.1d) would reduce the impact to the western spadefoot to a *less than significant level*.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.1e (by reference including mitigation measure 3.4.1d) would reduce impacts to regional population(s) of western spadefoots to a *less than significant level*.

Impact #3.4.1f - Impacts to Swainson's hawks

A Swainson's hawk was observed foraging on the Friant Ranch Specific Plan Site. Nesting Swainson's hawks were not observed on or near the Site. The Project would remove approximately 942.2 acres of Swainson's hawk foraging habitat.

Conclusion: The loss of foraging habitat would be *less than significant* in a regional context, particularly because Swainson's hawks are not known to nest within 5 miles of the project site and the only potentially available nesting location on the site are several power poles and a Fremont's cottonwood tree. Moreover, the Project conserves 460 acres of foraging habitat onsite in a region where considerable foraging habitat exists.

Mitigation Measures: No mitigation measures are required.

Impact #3.4.1g –Impacts to Burrowing Owls

Burrowing owls are known to forage and may nest on the Friant Ranch Specific Plan Site. The loss of approximately 942.2 acres of foraging habitat would be a *significant* adverse impact. However, the project will conserve approximately 460 acres of potential foraging habitat on site and up to an additional 1,016 acres of off-site habitat could be protected as required in mitigation measure 3.4.1d.

Conclusion: The loss of burrowing owl foraging habitat would be fully mitigated and is *less than significant*. Because burrowing owls potentially nest on the Site and on the Depot Parcel, any disruption of breeding activities or take of individual birds would be a *significant* adverse impact.

Mitigation Measure #3.4.1g: The following measures will be implemented to ensure that impacts to the burrowing owl are *less than significant*.

1. A pre-construction survey shall be conducted on the Specific Plan Site and on the Depot Parcel for ground nesting raptors, including burrowing owls, within 14 to 30 days prior to

initiation of site grading activities. If the grading activities are implemented in phases, then so shall the surveys be conducted in phases. If more than 30 days lapse between the time of the preconstruction survey (s) and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted (e.g., graded and developed). The survey shall be completed in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation*.

2. If burrowing owls are identified onsite or within the area of influence of the project site (within 1,000 feet of the project site), during surveys required in mitigation measure 3.4.1g (1) above, an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be $2 \times 6.5 = 13$ acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be $3 \times 6.5 = 19.5$ acres). Two natural or artificial nest burrows will be provided on the mitigation site for each burrow in the project area that will be rendered biologically unstable.
3. If burrowing owls are present on the site and require relocation, an upland mitigation site for burrowing owls shall be designated as provided for in item 2 above. This site may be located within the on-site open space area or it may be located off site. The mitigation site must consist of grassland habitat, contain small mammals (or other prey), and ground squirrel burrows. Habitat protected for the CTS (see mitigation measure #3.4.1e) may be sufficiently suitable. The mitigation site must be approved by the California Department of Fish and Game. The area shall be preserved in perpetuity as wildlife habitat through a conservation easement that designates the California Department of Fish and Game, or any other qualified conservation organization as the Grantee of the easement. The mitigation area need not be identified prior to finding burrowing owls on the Site, however advance planning would reduce the potential for construction delays.
4. If a Conservation Easement is established for burrowing owl mitigation onsite, the project applicant shall provide the Grantee of the easement with an endowment to cover the management of the Conservation Easement within six months of breaking ground on the project site. The endowment amount necessary for the conservation easement will be established after negotiations between the applicant, easement holder/land trust, and the regulatory agencies. The management fund shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.
5. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a

fenced 500 foot buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, as approved by the California Department of Fish and Game, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG and the County within two months of the relocation. That report can be incorporated into the monthly monitoring reports as required in item 6 below.

6. Monitoring of the project site shall occur on a weekly basis to identify any burrowing owls that may move into the construction area. Monitoring will be conducted by a qualified biologist provided by the project applicant. Monthly reports of monitoring activities will be submitted by the biologist to the project applicant, the County of Fresno, and the California Department of Fish and Game. A final report of all monitoring application will be prepared by the biologist and submitted to the project applicant, the County of Fresno, and the California Department of Fish and Game within 90 days of project completion.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.1g will reduce impacts to burrowing owls to a level that is *less than significant*.

Impact #3.4.1h – Impacts to the American Badger

American badgers are known to occur on lands adjacent to the Friant Ranch Specific Plan Site. The Site contains habitats similar to those where badgers are known to occur and there are suitable den structures on the Site. Although no badgers have been identified on the Specific Plan Site, they are likely transient foragers on site and may also den on the site.

Conclusion: Mortalities to badgers caused by construction activities would be a *significant* adverse impact.

Mitigation Measure #3.4.1h: The following measures shall be implemented to ensure that impacts to American badgers are *less than significant*.

1. Pre-construction surveys shall be conducted in development zones no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the American badger. If construction activities (including ground disturbing activities) are phased, then so shall the pre-construction surveys be phased.

2. If dens are found within the construction area and require removal, they shall be monitored for badger presence using a tracking medium or a video probe. Tracking medium must be monitored for 3 consecutive days to provide evidence of vacancy. All dens and burrows within the construction area and which contain badger sign must be hand excavated by a trained wildlife biologist. Dens must be replaced at a ratio of 2 artificial den for each natural dens removed. Replacement dens may be constructed within grassland habitat on-site, within the open space, conservation area. Replacement dens shall consist of 6 inch diameter plastic corrugated sewer pipe cut to a 6 foot length. One end of the pipe shall be buried no deeper than 2 feet and no less than 1 foot below grade. The other end of the pipe shall remain above ground. Dirt shall be mounded above the pipe to a depth of at least 1 foot above grade, with the opening exposed. If a badger is found during construction on the site, a qualified biologist with the appropriate permits shall trap the badger and physically relocate it to the onsite undisturbed open space.
3. If dens are located within 100 feet of construction areas, but not within construction areas, they shall not be removed. Instead, exclusion fencing shall be constructed around the den (s). The exclusion fencing shall consist of plastic construction fencing held in place by t-posts every 25 feet, or by a rope and flagging fence. The purpose of the fencing is to exclude construction activities occurring near the den (s).
4. Project-related vehicles shall observe a 20-mph speed limit while on the project site, except on County roads and State and Federal highways. This is particularly important at night (between sunset and sunrise) when American badgers are most active. Construction activities at night (sunset to sunrise) should be prohibited, unless:
 - a. The construction area is appropriately fenced to exclude American badgers. Appropriate fencing would consist of a 4-foot chain link fence or similar material (e.g., 2 inch mesh stock fence) buried at least 6 inches below grade.
 - b. The area within any such fence should be inspected by a qualified biologist for badger dens, all dens must be removed, and the site determined to be uninhabited by American badgers prior to initiation of construction.
5. Off-road construction traffic outside of designated construction areas shall be prohibited.
6. To prevent inadvertent entrapment of American badgers or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by a qualified biologist or trained monitor.
7. American badgers are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored in an unfenced storage yard (see item 4a and b above for appropriate fencing and clearance conditions) for one or more overnight periods

should be thoroughly inspected for American badgers before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. Inspections may be conducted by a qualified biologist or trained monitor. If necessary, and under the direct supervision of a biologist, a pipe inhabited by a badger may be moved once to remove it from the path of construction activity, until the animal has escaped.

8. During construction, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from the construction site.
9. No firearms shall be allowed on the project site during construction activities.
10. A representative should be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure an American badger, or who finds a dead, injured or entrapped individual. The representative's name and telephone number should be provided to the CDFG.
11. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. If an entrapped animal is incapable of escaping or is otherwise trapped for an excess of 12 hours, the California Department of Fish and Game should be contacted for advice.
12. Any contractor, employee(s), or other personnel who inadvertently kills or injures an American badger should immediately report the incident to their representative. This representative should contact the CDFG immediately in the case of a dead, injured or entrapped American badger. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

Effectiveness of Mitigation: Implementation of mitigation measures 3.4.1h will reduce project impacts to American badgers to a level that is *less than significant*.

Impact #3.4.1i – Impacts to nesting raptors

The Friant Ranch Specific Plan Site provides nesting habitat for some ground nesting raptor species including the northern harrier, burrowing owls, and other ground nesting birds. There are also potential nesting structures on and near the Site that, if occupied by raptors could result in significant impacts. Although LOA did not identify nesting raptors on the Site, potential impacts to nesting raptors could result from the loss of nesting habitat, loss of foraging habitat, and disturbance to nearby nesting birds due to construction related disturbances (e.g., noise and activity caused by site grading, road construction, installation of utilities, and installation of buildings). These disturbances could result in the disruption of breeding behaviors, abandonment of nest sites, disruption of feeding behaviors resulting in reproductive failure and/or abandonment of young and death of adults and/or young.

Conclusion: Breeding raptors on and within 1,000 feet of the Site would be at risk from construction related disturbances. These would be *significant* adverse project related impacts.

Mitigation Measure #3.4.1i: To protect breeding raptors, the following measures shall be implemented:

1. The typical breeding period for raptors is March 1 to September 1. If construction commences between March 1 and September 1, surveys will be conducted 30 days prior to the start of construction for the project. The raptor nesting surveys shall include examination of all trees and shrubs on the project site and within a 1,000 foot area of influence surrounding the Site. If construction begins between September 2 to February 28, nest surveys will not be required since this is outside the typical breeding period for raptors.
2. If nesting raptors are identified during the surveys on the project site, a 300-foot radius buffer around the nest tree or shrub must be fenced with orange construction fencing or rope and flagging. If a nest site is on an adjacent property, the portion of the buffer that occurs on the Site shall be fenced with orange construction fencing. The 300-foot buffer may be reduced in size if a qualified biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. The buffer areas shall not be reduced in size to less than a radius of 200 feet. When construction buffers are reduced in size, the biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the qualified biologist shall re-implement the full 300-foot buffer.
3. No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by early July, but September 1 is considered the end of the nesting period unless otherwise determined by a qualified biologist. Once raptors have completed nesting and young have fledged, disturbance buffers will no longer be needed and can be removed, and monitoring can be terminated.

Effectiveness of Mitigation: The implementation of mitigation measure 3.4.1i would reduce impacts to nesting raptors to a level that is *less than significant*.

Impact #3.4.1j – Impacts to common and special status nesting birds

The grasslands of the Friant Ranch Specific Plan Site provide potential nesting habitat for common bird and special status bird species. Birds protected pursuant to the Migratory Bird Treaty Act of 1918 and California Department of Fish and Game Code §3503 and §3800 could nest on the Site and may be disturbed to an extent that eggs and/or young would be lost.

Conclusion: The removal of active birds nests and the disruption of breeding behaviors would be a *significant* adverse impact.

Mitigation Measure #3.4.1j: To protect common and special status nesting birds, the following measures shall be implemented:

1. A nesting bird survey shall be conducted prior to commencing with construction work (including site grading and vegetation removal) if that work would commence between March 15th and August 31st. The nesting bird survey shall be conducted no greater than 30 days prior to commencement of work, nor sooner than 14 days prior to commencement of work. If the construction activities are conducted in phases, then so shall the survey be conducted in phases.
2. If special status birds are identified nesting on the construction area or within a 250 foot area of influence, a 150-foot non-disturbance radius around the nest must be fenced using orange plastic construction fencing or rope and stake fencing as previously described (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within the 150-foot buffer until it is determined by a qualified biologist that the nest is no longer occupied and young have fledged (that is, left the nest and attained sufficient flight skills to avoid project construction activities). This typically occurs by July 1st, but the date may vary, and would need to be confirmed by a qualified biologist. Similarly, the qualified biologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities.
3. If non-special status birds are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified biologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds. The mitigation measure shall be implemented by the project applicant and the construction contractor.
4. Results of the surveys and monitoring shall be provided in monthly monitoring reports submitted to the project applicant, County of Fresno, and the California Department of Fish and Game.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.1j will reduce the impacts to common and special status nesting birds to a level that is *less than significant*.

Impact #3.4.2 – Impact of Friant Ranch Specific Plan development (including wastewater treatment plant and disposal) to riparian habitat or other sensitive natural communities
[Evaluation Criteria b]

Northern hardpan vernal pool habitat is the only sensitive natural community that occurs on the Friant Ranch Specific Plan Site. Approximately 2.3 acres of northern hardpan vernal pool habitat will be removed as a result of this project. The loss of this vernal pool habitat is a *significant* adverse impact. The project will have no impact on riparian habitat or other sensitive natural vegetative communities (which do not occur within the Specific Plan Area). Wastewater discharge options include treatment and subsequent discharge into the San Joaquin River and

onto the Beck Property. Wastewater effluent may be transported to the Beck Property at the southwest corner of the Specific Plan Area via pipelines installed along Friant Road. No sensitive habitats or habitat containing sensitive species is found on the Beck Property or along the 1,200-foot wastewater conveyance route connecting Friant Ranch to the Beck Property (LOA 2009). Potential impacts of discharge into the San Joaquin River is discussed in Chapter 3.8. No *significant* adverse impacts to riparian habitat or sensitive species along the San Joaquin River are anticipated from treated discharge (Robertson-Brown, Inc, 2008, Appendix G, Final Friant Ranch Aquatic Species Assessment).

Use of the abandoned pond at the Beck Property for storage of effluent prior to irrigation would create a pond nearly 25 acres in size that would attract winter and resident waterbirds. The quality of the water in the pond would be sufficiently high, that adverse effects to waterbirds using the pond are not expected. Title 22 water for unrestricted use meets standards that are much more stringent than those for wildlife use. Furthermore, municipal wastewater treatment plants of the San Joaquin Valley (Los Banos, for example) commonly employ the use of large oxidation ponds for primary and secondary effluent treatment that provide significant loafing and foraging habitat for winter waterfowl. Other treatment facilities utilize wetlands as part of the treatment process (e.g., City of Stockton, City of Davis, for example). The effluent pond on the Beck Property will provide similar loafing and foraging habitat, but the quality of the water will be significantly greater than most municipal sewage ponds.

Conclusion: The loss of this vernal pool habitat is a *significant* adverse impact. The project will have *no impact* on riparian habitat or other sensitive natural vegetative communities (which do not occur within the Specific Plan Area).

Mitigation Measure #3.4-2: The following measure will be implemented to reduce impacts to the northern hardpan vernal pool sensitive natural community to a level that is *less than significant*.

1. Implementation of mitigation for federally protected wetlands and jurisdictional Waters (Mitigation Measure #3.4.3) will ensure the long-term conservation of northern hardpan vernal pools in the region. That measure provides for the acquisition, preservation, and management of large patches of vernal pool and grassland habitats in the project region.

Effectiveness of the Mitigation: Implementation of mitigation measure #3.4.3 for the protection of federal jurisdictional waters would reduce impacts to northern hardpan vernal pools to a *less than significant* level. No other mitigation measures are warranted.

Impact #3.4.3 – Impact of Friant Ranch Specific Plan development (including wastewater treatment plant and disposal) to federally protected wetlands and other waters
[Evaluation Criteria c]

The United States Army Corps of Engineers issued a jurisdictional determination on October 1, 2008 for the Specific Plan site. A total of 35.00 acres of wetlands were delineated on the project site. Of those 35 acres, the United States Army Corps of Engineers verified 31.35 acres of jurisdictional Waters of the U.S. and 3.65 acres of isolated, non-jurisdictional waters.

Approximately 22.7 acres of the jurisdictional and isolated waters will be avoided by the project, resulting in Project impacts to jurisdictional and isolated waters totaling 12.33 acres (10.88 acres of jurisdictional wetlands and 1.45 acres of isolated wetlands will be impacted, Table 3.4-4).

**Table 3.4-4
Impacts to Jurisdictional and Isolated Waters on the Friant Ranch Specific Plan Site**

Project Site (acres)	Waters	Wetland Channel (acres)	Vernal Swale (acres)	Vernal Pools (acres)	Total Acreage of Waters Impacted
942.2	Jurisdictional	2.01	7.12	1.75	10.88
	Isolated	0.00	0.91	0.54	1.45
	Total	2.01	8.03	2.29	12.33

Conclusion: The loss of these jurisdictional and isolated waters constitutes a *significant* adverse environmental impact.

Mitigation Measure #3.4.3a: The following measures will be implemented to reduce impacts to wetlands and other waters to a level that is *less than significant*:

1. Mitigation measures for vernal pool fairy shrimp and California tiger salamanders (mitigation measures 3.4.1c and 3.4.1d) are designed to ensure the long-term conservation of wetlands and other waters in the region. Implementation of these measures will result in the preservation under conservation easement of wetlands and other waters. For example, mitigation parcels currently under evaluation to meet mitigation measures for vernal pool fairy shrimp and CTS would result in preservation of 22.67 acres of wetlands on-site and up to 60.30 acres off-site (Tables 3.4-5 and 3.4-6), for a combined total of 82.97 acres.

**Table 3.4-5
Wetlands and Other Waters to be Preserved and Managed
Within the Friant Ranch Specific Plan Site**

Project Site	Waters	Wetland Channel (acres)	Vernal Swale (acres)	Vernal Pools (acres)	Total Acreage of Waters Preserved
Open Space Preserve	Jurisdictional	6.23	4.31	9.93	20.47
	Isolated	0.00	0.04	2.16	2.20
	Total	6.23	4.35	12.09	22.67

As can be seen in these tables (Tables 3.4-5 and 3.4-6), the preservation under conservation easement of wetlands and other waters pursuant to mitigation measures for vernal pool and Conservancy fairy shrimp and CTS could achieve preservation ratios of:

- **Wetland Channels:** 1 acre of disturbed habitat to every 11.1 acres of preserved habitat;
- **Vernal Swales:** 1 acre of disturbed habitat to every 3.7 acres of preserved habitat; and
- **Vernal Pools:** 1 acre of disturbed habitat to every 13.6 acres of preserved habitat.

**Table 3.4-6
Wetlands and Other Waters That Could be Preserved and Managed Under Conservation
Easement on Parcels Near the Friant Ranch Specific Plan Site**

Project Site	Wetland Channel	Vernal Swale	Vernal Pools	Total Acreage of Potential Jurisdictional Waters by Parcel
Open Space Preserve (east of Friant-Kern Canal)	1.81 acres	3.63 acres	0.04 acres	5.48 acres
Open Space Preserve (Norhnberg Parcel)	14.32 acres	18.16 acres	15.37 acres	47.85 acres
Open Space Preserve (Klein-Morgan Parcel)	0.00 acres	3.26 acres	3.71 acres	6.97 acres
Total by Type of Wetland or Other Water Body	16.13 acres	25.05 acres	19.12 acres	60.30 acres

2. Prior to the issuance of a grading permit, the project applicant shall create/restore wetlands to compensate for any wetlands and other water bodies subject to the jurisdiction of the USACE that are directly and permanently disturbed by grading and construction associated with the project. The creation/restoration of such wetlands and other waters will be at a ratio of one acre of created/restored wetlands and other jurisdictional waters for each acre of jurisdictional wetlands and other waters directly and permanently disturbed by grading and construction associated with the project development. Mitigation measure for vernal pool fairy shrimp (mitigation measure 3.4.1c) provides specifically for the creation/restoration of vernal pool habitat. This mitigation measure provides for the creation/restoration of wetlands and other waters such as wetland and non-wetland channels and vernal swales. Creation/restoration of wetland habitat and other water bodies will be accomplished by one or a combination of the following two mitigation alternatives:
 - a. Off-Site Creation/Restoration. The Project applicant will conserve through acquisition or conservation easement, off-site lands suitable for the creation/restoration of wetlands and other water bodies in Fresno, Madera, or Merced County. Such lands will have the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species will be absent (i.e., these lands will have been previously disturbed by farming, or some other intensive human use); native wetlands and/or other water bodies once occurred on these lands naturally; the soils and hydrology of these lands are suitable for the creation of naturally occurring wetlands and other water bodies; and the natural topography has not been eliminated through land leveling. Topographic depressions, swales and naturalistic drainage channels will be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. These engineered features must be inundated and/or experience soil saturation for a duration sufficient to naturally support hydrophytic vegetation native to wetlands of the region. All engineered wetlands and other water bodies will be revegetated with native hydrophytic species. The wetland creation/restoration plan

prepared by the biologist will provide for long-term management of the mitigation site, mitigation objectives by which the success of the mitigation can be measured, and a monitoring plan for determining the success of the mitigation. The components of this mitigation and monitoring plan will be consistent with standard USACE guidelines.

- b. Purchase of Wetland Creation Credits from a Conservation Bank. The Project applicant will pay the market rate for Wetland Creation Credits at a 1:1 ratio from a Conservation Bank whose service area includes the Friant Ranch Specific Plan Site.

Effectiveness of Mitigation: Compliance with the mitigation measures set forth in 3.4.3a above would reduce impacts to jurisdictional wetland habitats and other water bodies to a *less than significant* level. Creation/restoration of wetlands will ensure no net loss of regional wetland habitat. Due to the disturbed nature of lands to be targeted for wetland creation/restoration, the absence of natural wetlands, and the absence of habitats suitable for special status species, wetland creation/restoration is *not expected to result in significant adverse environmental impact to sensitive biological resources*.

Impact #3.4.3b – Impacts to water quality in seasonal creeks, reservoirs, and other downstream waters

Extensive grading often leaves the soils of construction zones barren of vegetation and vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks, which may be deposited in creek beds and adjacent wetlands. Several ephemeral and seasonal creeks located on the Friant Specific Plan Site convey most of the runoff from the site, under Friant Road, eventually to be discharged into the San Joaquin River. During major winter storm events, those on-site creeks provide a conduit for the transport of eroded sediment off site and into the San Joaquin River, potentially affecting water quality in the river as well as potentially affecting fish and other wildlife species. Similarly, water runoff from streets, buildings, and other facilities has the potential to degrade water quality in downstream creeks, reservoirs, and other downstream waters. Stormwater and irrigation runoff leaving roofs, streets, and landscaped areas will potentially be polluted with oil, grease, heavy metals, and pesticide and herbicide residues.

Conclusion: The possible erosion of construction areas, deposition of silt into downstream waters, and the introduction of pollutants (both during construction and post-construction) into stormwater runoff entering the San Joaquin River represent a *potentially significant* adverse environmental impact of the project.

Mitigation Measure #3.4.3b: To ensure protection of water quality in seasonal creeks, reservoirs, and other downstream waters, the following measures will be implemented:

1. Prior to the onset of construction, an erosion control plan will be prepared by a qualified engineer consistent with the requirements of a Fresno County grading permit and a General Construction Permit (an NPDES permit issued by the Regional Water Quality Control Board for projects in which one or more acres of land are graded). Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The project site must then be monitored periodically throughout the rainy season to ensure that the erosion

control measures are successfully preventing on-site erosion and the associated deposition of sediment off the project site. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of an erosion control plan typically include:

- a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.
 - b. Protection of natural drainage channels from sedimentation. Hay bale check dams should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter the creek.
 - c. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular project site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from “hardscapes” into grassy swales, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.
2. Where possible, project construction should be confined to the dry season, when the chance for significant rainfall and stormwater runoff is very low. Construction during the spring, summer, and fall will not eliminate the need to implement erosion control measures described in mitigation measures above, but will ensure that the threat of soil erosion has been minimized to the maximum extent possible.
 3. All post-construction runoff will be routed through a system of grease traps, stormwater retention/detention basins, and bio-filtration swales to ensure that water quality of on-site and off-site wetlands, creeks and rivers are maintained at roughly pre-project levels.

Effectiveness of Mitigation: Compliance with these mitigation measures would reduce impacts to the quality of stormwater runoff leaving the project site to a *less than significant level*.

Potential impacts to water quality related to wastewater disposal and storm water runoff are addressed in Chapter 3.8, Hydrology and Water Quality. No further mitigation measures are warranted.

Impact #3.4.4 – Impacts of Friant Ranch Specific Plan development (including wastewater treatment plant and disposal) to fish or wildlife movement corridors
[Evaluation Criteria d]

The Friant Ranch Specific Plan Area is surrounded by Friant Road to the west and the concrete-lined Friant-Kern Canal to the east. The existing community of Friant is directly to the north of the Site. Friant Road is a heavily traveled two lane road that creates a significant hazard to

terrestrial species moving between the project site and the riparian corridor of the San Joaquin River. These features reduce the potential to wildlife movements through the site, although some wildlife movements are expected to occur. Terrestrial species can move from the project site onto lands to the south, but these lands are similarly affected by barriers to wildlife movement on the east and the west. The Specific Plan Area does not represent a movement corridor or substantial linkage for wildlife. Development of Site would not significantly affect wildlife movement in the region.

Conclusion: The project will result in a *less than significant* impact on fish or wildlife movement corridors and no mitigation measures are warranted.

Similarly, the Friant Ranch Specific Plan project, which includes construction of a wastewater treatment facility, would not result in a reduction of water quality to the San Joaquin River (RBI 2008, see Chapter 3.8). Therefore, there will be *no impacts* of the project on the San Joaquin River's function as a movement corridor for fishes and other wildlife. The project also would not jeopardize the restoration potential of the San Joaquin River to support Central Valley steelhead or Chinook salmon.

Impact #3.4.5 –Consistency of the Friant Ranch Specific Plan with local policies or ordinances protecting biological resources
[Evaluation Criteria e]

The Project is subject to provisions of the Open Space and Conservation Element “Natural Resources” of the Policy Document of the Fresno County General Plan. A number of policies are not relevant to this project due to the absence of certain biological resources from the project site. For example, General Plan policies related to riparian habitats, oak woodlands, and the San Joaquin and Kings Rivers are not relevant to the Friant Ranch Specific Plan Area. Other policies are, however, relevant to the project. With the implementation of the project design, criteria related to preserving on-site water quality, maintaining open space areas, landscaping with native and other drought-tolerant plant species, and with the application of the mitigation measures, the project will be consistent with several key policies relevant to the project.

Various project elements have the potential, without appropriate mitigation, to be inconsistent with certain County General Plan policies and result in *significant* project related impacts. Fresno County General Plan Policies OS-D.1 through OS-D.3 support the ACOE's “no net loss” policy for wetlands, mandate mitigation for loss of wetland functions and values, and direct project proponents to control pollutants and siltation so as not to degrade wetlands and other waters. Policy OS-D.5 states “The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with wetland and riparian areas.” Implementation of the Friant Ranch Specific Plan will remove wetlands and associated upland habitat, and has the potential to degrade waters from siltation and the introduction of pollutants.

Fresno County General Plan Policy OS-D.7 supports the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats. Other General Plan policies relevant to wildlife species potentially affected by this

project include Policies OS-E1, 2,5, 6, and 17, which direct project proponents to implement mitigation for loss of wildlife habitat, to maintain of buffer zones around significant wildlife resources, to preserve of habitats of special status species, to preserve open spaces of native vegetation, and preserve to the maximum extent possible, habitats for rare or endangered species, consistent with State and Federal Statutes. Policies OS-F.3 specifically mandates preservation of vernal pools.

Conclusion: Various project elements have the potential, without appropriate mitigation, to be inconsistent with certain County General Plan policies and result in *significant* project related impacts.

Mitigation Measure #3.4.5: Mitigation Measures #3.4.1c and #3.4.1d will be implemented to preserve pools as breeding habitat and open space for aestivation habitat for tiger salamanders and western spadefoots, through a combination of on-site and off-site conservation easements. These measures will also serve to maintain buffer zones around wetland features, preserve vernal pool vegetation, maintain habitat functions and values and control siltation and pollutant entry into these habitats. Implementation of Mitigation Measure 3.4.3a would create/restore wetland habitats to preserve the “no net loss” policy of the ACOE, and mitigate for the loss of wildlife habitat. Implementation of Mitigation Measure 3.4.3b establishes best management practices for preventing impacts to waters via pollutants, siltation, etc. Along with mitigation measures prescribed in Chapter 3.8 of this EIR, “Hydrology and Water Quality”, the mitigation measures just described will ensure consistency with local ordinances and policies, including the County General Plan Policies. Moreover a considerable amount of additional wildlife habitats and wetlands would be preserved off-site incidental to the mitigation measures required for project impacts to California tiger salamanders.

Effectiveness of Mitigation: Compliance with these mitigation measures would reduce inconsistencies with local policies and ordinances to a *less than significant level*.

Impact #3.4.6 –Consistency of the Friant Ranch Specific Plan with adopted Habitat Conservation plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plan
[Evaluation Criteria f]

There are no local, regional, or State Habitat Conservation Plans or Natural Community Conservation Plans that include the Friant Ranch Specific Plan Site.

Conclusion: There are no conflicts with any such plan and mitigation measures are not warranted. Thus, there will be *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact Analysis and Mitigation Measures Associated with the Water Transfers

The water supplies for the 2,000 acre feet transfer will be made available in part through the operation of LTRID’s Tule River Intertie project, which is currently under construction. The

Intertie project was evaluated under a separate CEQA process and, with mitigation measures developed for the Intertie project, will result in no significant impacts to biological resources. This water distribution facility allows LTRID to divert Tule River water to groundwater recharge either by direct or in lieu recharge methods. The additional water so recharged will become available to LTRID water users and pumped to meet consumptive crop demands under their rights to groundwater as overlying landowners, offsetting the District's need to provide an equivalent amount of LTRID's annual CVP surface water supplies (thus freeing up water that can be transferred to WWD 18 to serve the Project). This transfer will not affect the amount of stored water diverted from the San Joaquin River at Friant Dam; however, 2,000 acre-feet of water that were previously sent down the Friant Kern Canal to LTRID will now be taken out at the dam and conveyed to WWD 18's treatment plant. The change in conveyance of this 2,000 acre-feet of water will not cause significant impacts to biological resources. As noted above, the loss of 2,000 acre-feet from the CVP Friant Division within the LTRID boundaries will be made up through the operation of the Intertie and anticipated groundwater recharge program. This change in surface water supplies within the LTRID boundaries will not cause significant impacts to biological resources within LTRID boundaries.

The Tule River Intertie construction underwent independent environmental analysis pursuant to CEQA. The species addressed in the biological report for that project (Vanherweig 2007) included assessments of:

- blunt-nosed leopard lizard (State and federally endangered);
- burrowing owl (State Species of Special Concern);
- San Joaquin antelope ground squirrel (State threatened);
- Tipton kangaroo rat (State and federally endangered);
- San Joaquin pocket mouse (State Species of Special Concern);
- American badger (State species of Special Concern);and
- San Joaquin kit fox (State endangered and federally threatened).

The potential impacts associated with the water transfers for the Friant Community Plan are composed of two separate, but integrated issues:

- impacts associated with transport of water from the Friant –Kern Canal to WWD-18, the treatment of that water for domestic use, and on-site transportation of the treated water; and
- impacts associated with replacement of the transferred water including potential changes in land use and the construction of new facilities for the transfer of water.

Impact #3.4.7 - Potential biological impacts resulting from the transport and treatment of water

The physical transfer of water from the Friant-Kern Canal to the existing WWD-18 treatment facility will be through an existing United States Bureau of Reclamation owned 24 inch pipeline. No additional facilities for the transfer will be constructed. The transport of water from the Friant-Kern Canal to the WWD-18 treatment facility will *not result in significant impacts* to biological resources. Upgrades to the treatment facility may be needed to process the additional

2,000 acre feet of annually delivered water. Increasing the capacity of WWD-18 facility may require construction operations, and plans have been made for expansion of the facility. Construction activities at WWD-18 would *not have significant impacts* to sensitive wildlife species or result in loss of sensitive species habitat, because that area does not support sensitive biological resources, with the possible exception of potential aestivation habitat for California tiger salamanders.

Mitigation Measure #3.4.7: Because the treatment facility is located immediately adjacent to the Friant Ranch Specific Plan Area, and potential impacts associated with its expansion are treated at a project level, all potential impacts and mitigation measures which would apply to construction associated with increasing treatment capacity would be covered by impact and mitigation measures #'s 3.4.1 to 3.4.6 of this DEIR. Similarly, potential impacts to biological resources resulting from construction of on-site conveyance systems, which would be needed to transport the treated water to end users, are covered by impacts and mitigation #'s 3.4.1 through 3.4.6 (for areas within the Friant Ranch Specific plan Site) and #'s 3.4.9 through 3.4.14 (for areas within the Friant Community Plan Area). No additional mitigation measures are warranted.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.7 (and by reference 3.4.1 through 3.4.6) will reduce impacts of on-site water transfers and possible expansion of the WWD-18 treatment facility to levels that are *less than significant*.

Impact #3.4.8 - Biological impacts associated with replacement of transferred water

The replacement of transferred water within the Lower Tule River Irrigation District will occur through construction of the Tule River Intertie Project.

Conclusion: The Tule River Intertie project was evaluated under a separate CEQA process and, with mitigation measures developed for that project, biological impacts associated with replacement of transferred water will result in *no impacts* to biological resources. No additional biological mitigations measures are warranted.

Mitigation Measures: No mitigation measures are required.

Impact Analysis and Mitigation Measures for the Existing Friant Community Plan Area

The Existing Friant Community Plan Area has been evaluated for the presence of biological resources during reconnaissance level surveys conducted by Live Oak Associates and Quad Knopf biologists. Quad Knopf biologists visited the site on 27 July 2008. Specific descriptions and extent of individual projects within the Community Plan Area (other than the Friant Ranch Specific Plan and Friant Depot Parcel) are not available, which dictates programmatic level impact evaluations.

Impact #3.4.9 – Impacts of the Friant Community Plan to Candidate, Sensitive, or Special status Species

[Evaluation Criteria a]

Impact #3.4.9a - Swales and depressions in the Friant Community Plan Area potentially contain spiny-sepaled button celery. Projects within the Area have the potential to eliminate this species through grading and construction activities.

Conclusion: Removal of spiny-sepalled button celery would be a *potentially significant impact*.

Mitigation Measure #3.4.9a: To ensure that there is no take of spiny-sepaled button celery, the following measures will be implemented:

1. Prior to the issuance of a grading permit within the Existing Friant Community Plan Area, a biological survey will be conducted on the project site during the appropriate phonological period for spiny-sepaled button celery. This period generally occurs between April 1 and May 31, but this species persists and is identifiable through July of most years.
2. If spiny-sepaled button celery is not present, no further action is warranted. If spiny-sepaled button-celery is found to occur on a project site, then the following actions will be taken.
 - a. Any population of spiny-sepaled button celery will be completely avoided by grading and construction activities and there will be no modifications to existing land management practices; or
 - b. If any population of spiny-sepaled button celery cannot be avoided, then the project proponent must:
 - Compensate for the loss of spiny-sepaled button celery at a ratio of 3 acres for each 1 acre of take, either through implementation of a conservation agreement or through purchase of conservation credits in an approved mitigation bank.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9a will ensure that impacts to spiny-sepaled button celery from projects within the Existing Friant Community Plan Area are *less than significant*.

Impact #3.4.9b – Impacts to vernal pool fairy shrimp

Vernal pool fairy shrimp are likely to occur in ephemeral pools, roadside ditches, and other seasonal water sources within portions of the Existing Friant Ranch Community Plan Area. The direct loss of ephemeral pool habitat may result in the take of an unknown number of vernal pool fairy shrimp. Direct mortalities to vernal pool fairy shrimp would be a *significant* adverse impact.

Indirect impacts to vernal pool fairy shrimp may also occur in those pools occurring within an off-site area of influence of any particular project. The area of influence would be variable depending upon surface topography and drainage patterns. Development could result in the discharge of polluted water into pools. The site-specific hydrology could be altered by changes in drainage patterns, resulting in some pools being de-watered.

Conclusion: The likely mortality of vernal pool fairy shrimp from direct loss of habitat and the possible degradation of habitat would constitute a *significant* adverse environmental impact. Furthermore, impacts to this species would be subject to provisions of the federal Endangered Species Act.

Mitigation Measure #3.4.9b: The following measures shall be implemented to ensure that impacts to vernal pool fairy shrimp are *less than significant*.

1. Prior to issuance of a grading permit, the project proponent must ensure that a qualified biologist conduct a survey for wet areas which potentially support vernal pool fairy shrimp. That survey must be conducted during the wet season (October through April), and immediately after a substantial rainfall event (of 0.5 inches of rainfall or more). If habitat is found on the project site that is suitable for supporting vernal pool fairy shrimp, then the project applicant must ensure that a qualified biologist implement a standard vernal pool fairy shrimp protocol survey. If vernal pool fairy shrimp or other sensitive vernal pool invertebrates are not found, then no other actions are warranted. If vernal pool fairy shrimp are found, then the following measures will be implemented:
 - a. The Project will avoid vernal pool fairy shrimp to the maximum extent feasible.
 - b. Prior to the issuance of a grading permit the project applicant will compensate for the loss of occupied ephemeral pool habitat through the conservation of vernal pool habitat at a ratio of two acres of conservation for each acre of such habitat directly and permanently disturbed by grading. Conservation of occupied ephemeral pool habitat will be accomplished by placing a conservation easement on existing pools, either on-site or off-site, or by purchasing credits in an approved conservation bank that has the Existing Friant Community Plan Area within its service boundaries.
 - c. A Section 10(a) 1b permit for take must be acquired from the United States Fish and Wildlife Service, or a Section 7 consultation must be conducted, whichever is appropriate.
 - d. Prior to issuance of a grading permit for a project site, a Drainage Plan will be prepared for the site. Elements of this plan will include:
 - Design plans to ensure that winter stormwater runoff into open space areas of the project site will mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved ephemeral pools will be roughly equivalent to pre-project conditions;

- All runoff originating in developed areas of the site will pass through retention basins, bio-filtration swales, or both, which will act together as stormwater filters such that water quality will not be significantly reduced from pre-project conditions; and
- Irrigation runoff from landscaped areas will be routed away from ephemeral pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions.

Effectiveness of Mitigation: Implementation of the mitigation measure #3.4.9b will reduce impacts to vernal pool fairy shrimp to a *less than significant level*.

Impact #3.4.9c - Impacts to the Valley elderberry longhorn beetle

The Valley elderberry longhorn beetle may occur within the Existing Friant Community Plan Area.

Conclusion: Mortality to elderberry longhorn beetles or to elderberry bushes, their sole habitat, would constitute a *significant* adverse environmental impact. Furthermore, impacts to this species would be subject to provisions of the federal Endangered Species Act.

Mitigation Measure #3.4.9c: The following measures will be implemented to ensure that impacts to the Valley elderberry longhorn beetle are at levels that are *less than significant*.

1. Prior to issuance of a grading permit, the project proponent must ensure that a qualified biologist conduct a survey for elderberry bushes. If elderberry bushes with stem diameters of 1 inch or greater are found on or within 100 feet of the project site, then standard stem counts and searches for sign (e.g., exit holes) of the Valley elderberry beetles must be conducted.
2. If elderberry bushes do not occur on or within 100 feet of the project site, then no further actions are warranted.
3. If elderberry bushes are found on or within 100 feet of the project site, then the following measures shall be implemented:
 - a. For those bushes in which the beetle does not occur, construction within the 100 foot buffer area will be allowed, provided that:
 - A letter of concurrence will be obtained from the United States Fish and Wildlife Service authorizing construction within the buffer area;
 - A biologist is present on-site during construction within the 100 foot buffer area to monitor construction activities and ensure that there are no impacts to the elderberry bushes;
 - Restoration of habitat within the 100 foot buffer area occurs once construction is complete, except in those instances where permanent facilities are constructed. The

- applicant must provide a written description to the USFWS of how the buffer areas are to be restored, protected, and maintained after construction is completed. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment);
- All areas to be avoided during construction activities will be fenced and flagged. In areas where encroachment on the 100-foot buffer has been approved by the Service, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.;
 - Erect signs every 50 feet along the edge of the avoidance area with the following information: “This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment. ” The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction;
 - A qualified biologist will conduct a training program for all construction contractors that will be working on the project to inform workers of the need to avoid damaging elderberry plants and the possible penalties for not complying with these requirements. The training program must include information on the status of the beetle and the need to protect its elderberry host plant;
 - No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant; and
 - Other protection measures and replacement of elderberry bushes, when applicable, are implemented as outlines in *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999, Appendix H).
- b. For each bush in which the Valley elderberry longhorn beetle is found, the 100 foot buffer area will be observed during the activity period of the Valley elderberry longhorn beetle (from April to July). Construction activities may occur within the 100 foot buffer area during other periods provided the mitigation measures outlined above are implemented and restoration within the buffer area is completed by beetle emergence (April).
- c. If elderberry bushes that contain elderberry longhorn beetles cannot be avoided and must be removed, then:
- Compensation for the loss of elderberry beetles must be accomplished through replanting of elderberries and other native plant species at ratios provided in

Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999, Appendix H); and

- A Section 10(a) 1B permit for take must be acquired from the United States Fish and Wildlife Service or a Section 7 consultation must be conducted.

If the elderberry longhorn beetle is de-listed by the United States Fish and Wildlife Service prior to implementation of the Project, then these measures need not apply.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9c will ensure that significant impacts to the Valley elderberry longhorn beetle will be *less than significant*.

Impact #3.4.9d – Impacts to the California tiger salamander

The California tiger salamander may breed within the Existing Friant Community Plan Area and it has been documented in breeding pools within 1.25 mile of the Existing Friant Community Plan Area. This 1.25 mile distance is well within the typical migratory distance of tiger salamanders from breeding pools. Construction projects within the Existing Friant Community Plan Area could potentially result in the loss of an unknown number of breeding California tiger salamanders or result in the loss of an unknown number of aestivating tiger salamanders and aestivation habitat (grasslands with small mammal burrows). Currently, the grassland habitats within the Friant Community Plan Area are highly degraded, but nonetheless, may support California tiger salamanders.

Conclusion: The mortality of California tiger salamanders or the loss of aestivation habitat would constitute a *significant* adverse environmental impact. Impact to this species would be subject to provisions of the federal Endangered Species Act and, if listed by the Fish and Game Commission prior to project development, the California Endangered Species Act.

Mitigation Measure #3.4.9d: The following measures will be implemented to ensure that impacts to the California tiger salamander are at levels that are *less than significant*:

1. Prior to issuance of a grading permit, the Applicant shall provide sufficient documentation that determines whether the site contains wetlands that could potentially support breeding California tiger salamanders. If so, the project proponent must ensure that a qualified biologist conduct a survey for wetlands which potentially support breeding California tiger salamanders. That survey must be conducted during the wet season (October through April), and immediately after a substantial rainfall event (of 0.5 inches of rainfall or more).
2. If wetlands are found on a project site that are suitable for supporting breeding California tiger salamanders, then the project applicant must either presume presence in all wetlands onsite and mitigate as prescribed in section 3(a) through (d) below as if breeding California tiger salamanders were found or ensure that a qualified biologist implement a standard California tiger salamander protocol survey (see Appendix I, California Tiger Salamander Protocol Survey).

3. If pools containing breeding California tiger salamanders are found, then the following measures will be implemented:
 - a. The Project will avoid California tiger salamanders to the maximum extent feasible.
 - b. Prior to the issuance of a grading permit the project applicant will compensate for the loss of occupied ephemeral pool habitat through the conservation of suitable ephemeral pool habitat at a ratio of two acres of conservation for each acre of such habitat directly and permanently disturbed by grading. Conservation of suitable ephemeral pool habitat will be accomplished by placing a conservation easement on existing pools, either on-site or off-site, or by purchasing credits in an approved conservation bank that has the Friant Community Plan Area within its service boundaries.
 - c. A Section 10(a) 1b permit for take must be acquired from the United States Fish and Wildlife Service, or a Section 7 consultation must be conducted. A 2080 or 2081 Management Agreement with the California Department of Fish and Game may also be needed if the California tiger salamander is listed as a State threatened or endangered species prior to development.
 - d. Prior to issuance of a grading permit for the project site, a Drainage Plan will be prepared for the site. Elements of this plan will include:
 - Design plans to ensure that winter stormwater runoff into open space areas of the project site will mimic to the maximum extent possible pre-project conditions. Upon project completion, surface and subsurface flows of runoff to preserved vernal pools will be roughly equivalent to pre-project conditions;
 - All runoff originating in developed areas of the site will pass through retention basins, bio-filtration swales, or both, which will act together as stormwater filters such that water quality will not be significantly reduced from pre-project conditions; and
 - Irrigation runoff from landscaped areas will be routed away from vernal pool habitats during the summer and fall to ensure that the hydrology of these habitats mimics pre-project conditions.
4. If grassland habitat is present on a project site that is capable of supporting aestivating California tiger salamanders (as determined by a qualified biologist), then compensation for the loss of aestivation habitat will occur prior to issuance of a grading permit. Compensation will be provided at a ratio of 0.5 acres for each 1 acre removed. Compensation will be provided by establishing a permanent conservation easement on on-site or off-site grassland habitat that supports aestivating California tiger salamanders or by purchasing credits in an established California tiger salamander Conservation Bank that includes the Friant Community plan within its service area.

Effectiveness of Mitigation: Implementation of these mitigation measures would reduce impacts to regional CTS population(s) to a *less than significant level*.

Impact #3.4.9e – Impacts to the Western spadefoot

The western spadefoot may breed in ephemeral pools within the Existing Friant Community Plan Area. Grassland habitat is degraded, but may provide upland aestivation habitat for the western spadefoot. Projects within the Existing Friant Community Plan Area may result in the mortality of an unknown number of western spadefoots, and could permanently eliminate much of the potential aestivation habitat.

Conclusion: Mortality to western spadefoots would be a *significant* adverse environmental impact.

Mitigation Measure #3.4.9e: To reduce impacts to western spadefoots to a level that is *less than significant*, the following measures will be implemented:

1. The western spadefoot utilizes the same habitats as the California tiger salamander for breeding and aestivation (i.e., the western spadefoot breeds in vernal pools and aestivates in rodent burrows of surrounding grasslands). Therefore, implementation of mitigation measures for the California tiger salamander (Mitigation Measures 3.4.9d) would reduce the impact to the western spadefoot to a *less than significant* level.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9e (by reference including mitigation measure 3.4.9d) would reduce impacts to regional population(s) of western spadefoots to a *less than significant level*.

Impact #3.4.9f - Impacts to the western pond turtle

Suitable habitat to support western pond turtles exists within the Existing Friant Community Plan Area; both the San Joaquin River and Lost Lake likely support this species. Direct mortalities to western pond turtles could result from construction activities and decreased population viability could result from degradation in water quality.

Conclusion: Direct mortalities to western pond turtles or the degradation of their habitat would constitute a *significant* adverse environmental impact.

Mitigation Measure #3.4.9f: The following measures will be implemented to ensure that impacts to the western pond turtle are at levels that are *less than significant*:

1. Projects within the Existing Friant Community Plan Area will maintain a 100 foot construction setback area from the Ordinary High Water Mark of the San Joaquin River (including any backwaters) and from the Ordinary High Water Mark of Lost Lake to protect potential basking sites and upland aestivation sites for the western pond turtle.
2. Projects exceeding one acre in size within the Existing Friant Community Plan Area will be required to implement a stormwater pollution prevention plan and implement other protective

measures as required in mitigation measure 3.4.11b for the protection of downstream water quality.

Effectiveness of Mitigation: Implementation mitigation measure 3.4.9f will ensure that the regional and local populations of western pond turtles will *not be reduced to below self sustaining levels* as a result of projects within the Existing Friant Community Plan Area. Thus the impacts will be *less than significant*.

Impact #3.4.9g- Impacts to Swainson's hawks

A Swainson's hawk was observed foraging on the Friant Ranch Specific Plan Site and some foraging activity could occur within the Existing Friant Community Plan Area. However, the Community Plan Area (excluding the Specific Plan Site) experiences intense human activity which would likely reduce the occurrence of foraging in the area. The Great Valley Mixed Riparian Forest along the San Joaquin River is potential nesting habitat for Swainson's hawks. The removal of foraging habitat or the disruption of breeding activities caused by construction related activities would constitute a *significant* adverse environmental impact. Because much of the Existing Friant Community Plan Area are developed and densely-populated, potential impacts to Swainson's hawk associated with construction activities occurring within small parcels (especially those not directly adjacent to the San Joaquin River) would not likely affect Swainson's hawks.

Conclusion: Impacts to Swainson's hawks would be *less than significant*, and no mitigation would be warranted. However, grading in areas greater than 5 acres in size, particularly in the Lost Lake area, may result in a *potentially significant* affect to Swainson's hawks. The following mitigation measures would reduce the potential for significant impacts to Swainson's hawks.

Mitigation Measure #3.4.9g: The following measures will be implemented to ensure that impacts to breeding and foraging Swainson's hawks are *less than significant*:

1. Prior to the issuance of any grading permits exceeding 5 acres in the southern half of the Existing Friant Community Plan Area (exclusive of the Friant Specific Plan Area and the Depot Parcel), a qualified biologist shall survey the site for Swainson's hawks. The survey area will encompass all trees within 0.5 mile of the individual project site. Several projects proposed for construction within a single nesting period may use the results from a single survey, provided the surveyed is conducted within 0.5 mile or more from all individual project boundaries. The survey will consist of:
 - a. All trees within the survey area suitable for nesting by hawks shall be inspected by a qualified biologist.
 - b. Survey periods and survey lengths shall be:

- Period I. January-March 20. All trees shall be inspected at least once during this period to locate potential nests. The survey(s) may be conducted throughout daylight hours;
 - Period II. March 20 to April 5. Survey sunrise to 1000 and 1600 to sunset. Three complete surveys are recommended within this period to locate hawks preparing to nest;
 - Period III. April 5 to April 20. Survey sunrise to 1200 and 1630 to Sunset. Three surveys within this period recommended within this period to locate hawks preparing to nest;
 - Period IV. April 21 to June 10. Monitor known nest sites only; and
 - Period V. June 10 to July 30 (post-fledging). Survey sunrise to 1200 and 1600 to sunset.
2. If Swainson's hawks are not found to nest within the survey area, then no further action is warranted.
 3. If Swainson's hawks are found to nest within the survey area then the following measures shall be implemented:
 - a. Foraging habitat will be replaced at a ratio of 1 acre of grassland habitat known to provide foraging habitat for Swainson's hawk for each 1 acre of grassland habitat subject to grading and construction within the Community Plan Area.
 - b. If construction is to occur within the breeding period for Swainson's hawk (15 February to 15 September), then a 2,500 foot radius no construction area is to be installed around each active Swainson's hawk nesting site. If a construction area falls within this nesting site, construction must be delayed until the young have fledged (left the nest). The 2,500 foot radius no construction zone may be reduced in size. A qualified biologist must conduct construction monitoring on a daily basis, inspect the nest on a daily basis, and ensure that construction activities do not disrupt breeding behaviors. In no case shall the no construction zone be reduced to less than 500 feet.
 - c. Take of active or inactive Swainson's hawk nests shall be prohibited within the Existing Community Plan Area.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9g will reduce project impacts to a level that is *less than significant*.

Impact #3.4.9h –Impacts to burrowing owls

Burrowing owls may forage and nest within the Existing Friant Ranch Community Plan Area. They are known to forage and may nest on the Friant Ranch Specific Plan Site. If burrowing owls are

present within the Existing Friant Community Plan Area, they would be potentially subject to direct mortality, disruption of breeding behaviors including nest abandonment, and loss of foraging habitat.

Conclusion: The loss of burrowing owl foraging habitat would constitute a *significant* adverse environmental impact. Any disruption of breeding activities or take of individual birds would be a *significant* adverse impact.

Mitigation Measure #3.4.9h – The following measures will be implemented to ensure that impacts to the burrowing owl are *less than significant*:

1. A pre-construction survey shall be conducted for ground nesting raptors, including burrowing owls, within 14 to 30 days prior to initiation of site grading activities. If the grading activities are implemented in phases, then so shall the surveys be conducted in phases. If more than 30 days lapse between the time of the preconstruction survey (s) and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted (e.g., graded and developed). The survey shall be completed in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation*.
2. If burrowing owls are identified onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be $2 \times 6.5 = 13$ acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be $3 \times 6.5 = 19.5$ acres). Two natural or artificial nest burrows will be provided on the mitigation site for each burrow in the project area that will be rendered biologically unstable.
3. If burrowing owls are present on the site and require relocation, an upland mitigation site for burrowing owls shall be designated as provided for in item 2 above. This site may be located within the on-site open space area or it may be located off site. The mitigation site must consist of grassland habitat, contain small mammals (or other prey), and ground squirrel burrows. The mitigation site must be approved by the California Department of Fish and Game. The area shall be preserved in perpetuity as wildlife habitat through a conservation easement that designates the California Department of Fish and Game, or any other qualified conservation organization as the Grantee of the easement. The mitigation area need not be identified prior to finding burrowing owls on the site, however advance planning would reduce the potential for construction delays.

4. If a Conservation Easement is established for burrowing owl mitigation, an endowment to cover the management of the area must be provided. The management fund shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.
5. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 500 foot buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, as approved by the California Department of Fish and Game, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG and the County within two months of the relocation. That report can be incorporated into the monthly monitoring reports as required in item 6 below.
6. Monitoring of the project site shall occur on a weekly basis to identify any burrowing owls that may move into the construction area. Monitoring will be conducted by a qualified biologist provided by the project applicant. Monthly reports of monitoring activities will be submitted by the biologist to the project applicant, the County of Fresno, and the California Department of Fish and Game. A final report of all monitoring application will be prepared by the biologist and submitted to the project applicant, the County of Fresno, and the California Department of Fish and Game within 90 days of project completion.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9h will reduce impacts to burrowing owls to a level that is *less than significant*.

Impact #3.4.9i –Impacts to other nesting raptors

The Existing Friant Community Plan Area provides nesting habitat for some ground nesting raptor species including the northern harrier, burrowing owls, and other ground nesting birds. There are also potential nesting structures on and near the Area, particularly along the San Joaquin River. Potential impacts to nesting raptors could result from the loss of nesting habitat, loss of foraging habitat, and disturbance to nearby nesting birds due to construction related disturbances (e.g., noise and activity caused by site grading, road construction, installation of utilities, and installation of buildings). These disturbances could result in the disruption of breeding behaviors, abandonment of nest sites, disruption of feeding behaviors resulting in reproductive failure and/or abandonment of young and death of adults and/or young.

Conclusion: Breeding raptors on and within 1,000 feet of the Area would be at risk from construction related disturbances. These would constitute *significant* adverse project related impacts.

Mitigation Measure #3.4.9i: To protect breeding raptors, the following measures shall be implemented:

The typical breeding period for raptors is March 1 to September 1. If construction commences between March 1 and September 1, surveys will be conducted 30 days prior to the start of construction for the project. The raptor nesting surveys shall include examination of all trees and shrubs on the project site and within a 1,000 foot area of influence surrounding the Site. If construction begins between September 2 to February 28, nest surveys will not be required since this is outside the typical breeding period for raptors.

1. If nesting raptors are identified during the surveys on the project site, a 300-foot radius buffer around the nest tree or shrub must be fenced with orange construction fencing or rope and flagging. If a nest site is on an adjacent property, the portion of the buffer that occurs on the Site shall be fenced with orange construction fencing. The 300-foot buffer may be reduced in size if a qualified biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. The buffer areas shall not be reduced in size to less than a radius of 200 feet. When construction buffers are reduced in size, the biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the qualified biologist shall re-implement the full 300-foot buffer.
2. No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by early July, but September 1 is considered the end of the nesting period unless otherwise determined by a qualified biologist. Once raptors have completed nesting and young have fledged, disturbance buffers will no longer be needed and can be removed, and monitoring can be terminated.

Effectiveness of Mitigation: The implementation of mitigation measure 3.4.9i would reduce impacts to nesting raptors to a level that is *less than significant*.

Impact #3.4.9j – Impacts to common and special status nesting birds

The grasslands, Great Valley Mixed Riparian Woodlands, and other wooded areas of the Existing Friant Community Plan Area provide potential nesting habitat for common bird and special status bird species. Birds protected pursuant to the Migratory Bird Treaty Act of 1918 and California Department of Fish and Game Code §3503 and §3800 could nest within the Area and may be disturbed to an extent that eggs and/or young would be lost.

Conclusion: The removal of active birds nests and the disruption of breeding behaviors would be a *significant* adverse impact.

Mitigation Measure #3.4.9j: To protect common and special status nesting birds, the following measures shall be implemented:

1. A nesting bird survey shall be conducted prior to commencing construction work (including site grading and vegetation removal) if that work would commence between March 15th and August 31st. The nesting bird survey shall be conducted no greater than 30 days prior to commencement of work, nor sooner than 14 days prior to commencement of work. If the construction activities are conducted in phases, then so shall the survey be conducted in phases.
2. If special status birds are identified nesting on the construction area or within a 250 foot area of influence, a 150-foot non-disturbance radius around the nest must be fenced using orange plastic construction fencing or rope and stake fencing as previously described (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within the 150-foot buffer until it is determined by a qualified biologist that the nest is no longer occupied and young have fledged (that is, left the nest and attained sufficient flight skills to avoid project construction activities). This typically occurs by July 1st, but the date may vary, and would need to be confirmed by a qualified biologist. Similarly, the qualified biologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities.
3. If non-special status birds are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified biologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds. The mitigation measure shall be implemented by the project applicant and the construction contractor.
4. Results of the surveys and monitoring shall be provided in monthly monitoring reports submitted to the project applicant, County of Fresno, and the California Department of Fish and Game.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9j will reduce the impacts to common and special status nesting birds to a level that is *less than significant*.

Impact #3.4.9k – Impacts to the American Badger

American badgers are known to occur on lands adjacent to the Existing Friant Community Plan Area. The Existing Friant Community Plan Area contains suitable den structures and habitats

capable of supporting American badgers.. Badgers are likely transient foragers on the Existing Community Plan Area , but may also den within the Area.

Conclusion: Mortalities to badgers caused by construction activities would be a *significant* adverse impact.

Mitigation Measure #3.4.9k: The following measures shall be implemented to ensure that impacts to American badgers are *less than significant*:

1. Pre-construction surveys shall be conducted in development zones no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the American badger. If construction activities (including ground disturbing activities) are phased, then so shall the pre-construction surveys be phased.
2. If dens are found within the construction area and require removal, they shall be monitored for badger presence using a tracking medium or a video probe. Tracking medium must be monitored for 3 consecutive days to provide evidence of vacancy. All dens and burrows within the construction area and which contain badger sign must be hand excavated by a trained wildlife biologist. Dens must be replaced at a ratio of 2 artificial den for each natural dens removed. Replacement dens may be constructed within grassland habitat on-site, within the open space, conservation area. Replacement dens shall consist of 6 inch diameter plastic corrugated sewer pipe cut to a 6 foot length. One end of the pipe shall be buried no deeper than 2 feet and no less than 1 foot below grade. The other end of the pipe shall remain above ground. Dirt shall be mounded above the pipe to a depth of at least 1 foot above grade, with the opening exposed.
3. If dens are located within 100 feet of construction areas, but not within construction areas, they shall not be removed. Instead, exclusion fencing shall be constructed around the den (s). The exclusion fencing shall consist of plastic construction fencing held in place by t-posts every 25 feet, or by a rope and flagging fence. The purpose of the fencing is to exclude construction activities occurring near the den (s).
4. Project-related vehicles shall observe a 20-mph speed limit while on the project site, except on County roads and State and Federal highways. This is particularly important at night (between sunset and sunrise) when American badgers are most active. Construction activities at night (sunrise to sunset) should be prohibited, unless:
 - a. The construction area is appropriately fenced to exclude American badgers. Appropriate fencing would consist of a 4-foot chain link fence or similar material (e.g., 2 inch mesh stock fence) buried at least 6 inches below grade.
 - b. The area within any such fence should be inspected by a qualified biologist for badger dens, all dens must be removed, and the site determined to be uninhabited by American badgers prior to initiation of construction.

5. Off-road construction traffic outside of designated construction areas shall be prohibited.
6. To prevent inadvertent entrapment of American badgers or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by a qualified biologist or trained monitor.
7. American badgers are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored in an unfenced storage yard (see item 4a and b above for appropriate fencing and clearance conditions) for one or more overnight periods should be thoroughly inspected for American badgers before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. Inspections may be conducted by a qualified biologist or trained monitor. If necessary, and under the direct supervision of a biologist, a pipe inhabited by a badger may be moved once to remove it from the path of construction activity, until the animal has escaped.
8. During construction, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from the construction site.
9. No firearms shall be allowed on the project site during construction activities.
10. A representative should be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure an American badger, or who finds a dead, injured or entrapped individual. The representative's name and telephone number should be provided to the CDFG.
11. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. If an entrapped animal is incapable of escaping or is otherwise trapped for an excess of 12 hours, the California Department of Fish and Game should be contacted for advice.
12. Any contractor, employee(s), or other personnel who inadvertently kills or injures an American badger should immediately report the incident to their representative. This representative should contact the CDFG immediately in the case of a dead, injured or entrapped American badger. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

Effectiveness of Mitigation: Implementation of mitigation measures 3.4.9k will reduce project impacts to American badgers to a level that is *less than significant*.

Impact #3.4.9I – Impacts to the pallid bat and western mastiff bat

The Existing Friant Community Plan Area contains trees and buildings that are suitable roosting habitat for the pallid bat and the western mastiff bat. Foraging habitat is present, particularly along the San Joaquin River and at Lost Lake.

Conclusion: The removal of roosting sites (trees and buildings) and disruption of breeding behaviors would constitute a *significant* adverse environmental impact.

Mitigation Measure # 3.4.9I: Implementation of the following measures will reduce impacts to the pallid bat and the western mastiff bat to levels that are *less than significant*:

1. Prior to the removal of trees or the demolition of buildings, a qualified biologist will conduct a pre-construction survey between 14 and 30 days prior to activities, to inspect buildings and trees for the presence of bats. If pallid bats or western mastiff bats are identified to be roosting in the trees or structures, those trees or structures will not be removed until:
 - a. Permanent, elevated bat houses have been installed outside of, but near the construction area. Placement and height will be determined by a qualified biologist, but the height of bat house will be at least 15 feet. Bat houses will be multi-chambered and be purchased or constructed to the specifications provided in Appendix J (bat house design). The number of bat houses required will be dependant upon the size and number of colonies present, but at least 1 bat house will be installed for each pair of bats (if occurring individually) or each colony of bats found.
 - b. Bats have been passively relocated from the tree or structure by progressively boarding up any entrances at night while bats are foraging away from the tree or structure. Relocation of bats may not be performed during the breeding season (March 1 to September 15).

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.9I will ensure that regional and local populations of the pallid bat and western mastiff bat do not fall below self sustaining levels. Thus, implementation of mitigation measure 3.4.9I will reduce project impacts to pallid bats and western mastiff bats to a *less than significant* level.

Impact #3.4.10 – Impacts to riparian habitat or other sensitive natural communities within the Existing Friant Community Plan Area **[Evaluation Criteria b]**

Within the Existing Friant Community Plan Area, Great Valley Mixed Riparian Forest and other riparian habitats occur along the San Joaquin River and within Lost Lake.

Conclusion: The loss of these natural communities would constitute a *significant* adverse impact.

Mitigation Measure #3.4.10: The following measure will be implemented to reduce impacts to riparian habitats and other sensitive natural communities to a level that is *less than significant*:

1. The distribution of riparian habitats and other sensitive natural communities within the Existing Friant Community Plan Area will be mapped prior to issuance of any grading permit. All mapping will be accomplished using high resolution aerial photographs (1 meter accuracy or better) and be verified by ground inspections using sub-meter GPS. The final map of the distribution of these habitat types will be rendered using GIS at sub-meter accuracy. All riparian areas and other sensitive natural communities will be avoided by construction activities, including grading, unless the following measures are implemented prior to site grading:
 - a. The following measures shall be conducted prior to removal of riparian habitat or other sensitive natural community:
 - A Stream Alteration Agreement (SAA) must be obtained prior to removal of riparian habitat, unless it is determined by the California Department of Fish and Game that SAA is not necessary;
 - For each 1 acre of riparian habitat or other sensitive natural community removed, a total of 3 acres of in-kind habitat will be acquired by fee title, placed into a permanent conservation easement, and a management endowment provided. Any riparian habitat acquired must be located along the San Joaquin River in Fresno or Madera Counties; and
 - Temporary disturbance to riparian habitat may be mitigated by restoration. A restoration plan must be prepared in cooperation with the California Department of Fish and Game and a SAA must be obtained if required by the California Department of Fish and Game.

Effectiveness of Mitigation: Implementation of these mitigation measures will reduce impacts to riparian habitat or other natural community in the region to a level that is *less than significant*.

Impact #3.4.11 – Impacts to federally protected wetlands and other waters within the Existing Friant Community Plan Area
[Evaluation Criteria c]

The San Joaquin River and Lost Lake occur within the Existing Friant Community Plan Area. There are no tributaries to those features within the Area, but other wetland features within the Area may fall under the jurisdiction of the USACE. Although it is not expected that the San Joaquin River or Lost Lake would be directly impacted by construction activities (e.g., insertion of fill or removal of dredge material), other impacts to those and other wetland features within the Area could be caused by degradation of water quality.

Conclusion: The loss of wetlands and other waters constitutes a *significant* adverse environmental impact. The degradation of water quality constitutes a *significant* adverse environmental impact.

Mitigation Measure #3.4.11a: The following measures will be implemented to reduce impacts to wetlands and other waters to a level that is *less than significant*:

1. Prior to issuing a grading permit for a project within the Existing Friant Community Plan Area, a survey for potential wetlands shall be conducted. If potential wetlands are present, a wetland delineation to ACOE standards shall be conducted for the project site. Either a single wetland delineation can be prepared for the entire Existing Community Plan Area, or individual delineations can be prepared for each project. Regardless, the USACE must verify the delineation(s) and, if necessary, appropriate Clean Water Act 401 and 404 permits be obtained.
2. Prior to the issuance of a grading permit in areas containing jurisdictional wetlands the project applicant will acquire, or purchase and donate a conservation easement on, suitable off-site lands in Fresno and/or Madera County for the creation/restoration of wetlands and other waters to compensate for any wetlands and other water bodies subject to the jurisdiction of the USACE that are directly and permanently disturbed by grading and construction associated with the project. The creation/restoration of such wetlands and other waters will be at a ratio of one acre of created/restored wetlands and other jurisdictional waters for each acre of jurisdictional wetlands and other waters directly and permanently disturbed by grading and construction associated with the project development. Creation/restoration of wetland habitat and other water bodies will be accomplished by one or a combination of the following two mitigation alternatives:
 - a. Off-Site Creation/Restoration. The Project applicant will conserve through acquisition or conservation easement, off-site lands suitable for the creation/restoration of wetlands and other water bodies in Fresno, Madera, or Merced County. Such lands will have the following characteristics: natural undisturbed native wetlands and habitat suitable for threatened and endangered plant and animal species will be absent (i.e., these lands will have been previously disturbed by farming, or some other intensive human use); native wetlands and/or other water bodies once occurred on these lands naturally; the soils and hydrology of these lands are suitable for the creation of naturally occurring wetlands and other water bodies; and the natural topography has not been eliminated through land leveling. Topographic depressions, swales and naturalistic drainage channels will be created/restored on these lands according to a “mitigation and monitoring plan” prepared by a qualified biologist. These engineered features must be inundated and/or experience soil saturation for a duration sufficient to naturally support hydrophytic vegetation native to wetlands of the region. All engineered wetlands and other water bodies will be revegetated with native hydrophytic species. The wetland creation/restoration plan prepared by the biologist will provide for long-term management of the mitigation site, mitigation objectives by which the success of the mitigation can be measured, and a monitoring plan for determining the success of the mitigation. The components of this mitigation and monitoring plan will be consistent with standard USACE guidelines.

- b. Purchase of Wetland Creation Credits from a Conservation Bank. The Project applicant will pay the market rate for Wetland Creation Credits at a 1:1 ratio from a Conservation Bank whose service area includes the Friant Community Plan Area.

Effectiveness of Mitigation: Compliance with these mitigation measures would reduce impacts to jurisdictional wetland habitats and other water bodies to *a less than significant level*. Creation/restoration of non-vernal pool wetlands will ensure no net loss of regional wetland habitat. Due to the disturbed nature of lands to be targeted for wetland creation/restoration, the absence of natural wetlands, and the absence of habitats suitable for special status species, wetland creation/restoration is *not expected to result in significant adverse environmental impact to sensitive biological resources*.

Impact #3.4.11b - Impacts to water quality in seasonal creeks, reservoirs, and other downstream waters

Extensive grading often leaves the soils of construction zones barren of vegetation and vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks, which may be deposited in creek beds and adjacent wetlands. Much of the Existing Friant Community Plan Area drains into the San Joaquin River, and any discharge produced would likewise be discharged into the River. During major winter storm events, the transport of eroded sediment off site and into the San Joaquin River would potentially affect water quality in the river as well as potentially affecting fish and other wildlife species. Similarly, water runoff from streets, buildings, and other facilities has the potential to degrade water quality in the San Joaquin River and other downstream waters. Stormwater and irrigation runoff leaving roofs, streets, and landscaped areas will potentially be polluted with oil, grease, heavy metals, and pesticide and herbicide residues.

Conclusion: The possible erosion of construction areas, deposition of silt into downstream waters, and the introduction of pollutants (both during construction and post-construction) into stormwater runoff entering the San Joaquin River constitutes a potentially *significant* adverse environmental impact.

Mitigation Measure #3.4.11b: To ensure protection of water quality in the San Joaquin River and other downstream waters, the following measures will be implemented:

1. Prior to the onset of construction which would disturb one acre or more, an erosion control plan will be prepared by a qualified engineer consistent with the requirements of a Fresno County grading permit and a General Construction Permit (an NPDES permit issued by the Regional Water Quality Control Board for projects in which one or more acres of land are graded). Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. Each project site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing on-site erosion and the associated deposition of sediment off the project site. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of an erosion control plan typically include:

- a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.
 - b. Protection of natural drainage channels from sedimentation. Hay bale check dams should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter the creek.
 - c. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular project site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from “hardscapes” into grassy swales, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.
2. Where possible, project construction should be confined to the dry season, when the chance for significant rainfall and stormwater runoff is very low. Construction during the spring, summer, and fall will not eliminate the need to implement erosion control measures described in mitigation measures above, but will ensure that the threat of soil erosion has been minimized to the maximum extent possible.
 3. All post-construction runoff will be routed through a system of grease traps, stormwater retention/detention basins, and bio-filtration swales to ensure that water quality of on-site and off-site wetlands, creeks and rivers are maintained at roughly pre-project levels.

Effectiveness of Mitigation: Compliance with these mitigation measures would reduce impacts to the quality of stormwater runoff leaving each project site to a *less than significant level*.

Impact #3.4.12 – Impacts to Fish or Wildlife Movement Corridors within the Existing Friant Community Plan Area
[Evaluation Criteria d]

The only substantial fish and wildlife movement corridor through the Existing Friant Community Plan Area is the San Joaquin River and associated riparian habitat zone. Terrestrial species can move from upstream areas around Millerton Lake to downstream habitats that are preserved as part of the San Joaquin River Parkway. Development of lands near the River corridor would not significantly affect fish and wildlife movement in the region.

Conclusion: Degradation of the riparian habitat corridor could obstruct wildlife movements and result in *significant* adverse environmental impacts.

Mitigation Measure #3.4.12: Implementation of mitigation measures 3.4.10, 3.4.11a and 3.4.11b will ensure that the riparian zone around the San Joaquin River and water quality in the

San Joaquin River are maintained at level that are appropriate for fish and wildlife migratory movements. No other mitigation measures are warranted.

Effectiveness of Mitigation: Implementation of mitigation measure 3.4.12 (and 3.4.10, 3.4.11a and 3.4.11b by reference) will ensure that movements of fish and wildlife within the San Joaquin River and adjacent riparian zone are maintained at levels that would not jeopardize local or regional populations of fish and wildlife. The impact is *less than significant*.

Impact #3.4.13 –Consistency with local policies or ordinances protecting biological resources within the Friant Community Plan Area
[Evaluation Criteria e]

The Existing Friant Community Plan Area is subject to provisions of the Open Space and Conservation Element “Natural Resources” of the Policy Document of the Fresno County General Plan. A number of policies are not relevant to this project due to the absence of certain biological resources from the project site. Other policies are, however, relevant to the project. With the implementation of criteria related to preserving on-site water quality, and with the application of the mitigation measures, the project will be consistent with several key policies relevant to the project.

Various project elements have the potential, without appropriate mitigation, to be inconsistent with certain County General Plan policies. Fresno County General Plan Policies OS-D.1 through OS-D.3 support the ACOE’s “no net loss” policy for wetlands, mandate mitigation for loss of wetland functions and values, and direct project proponents to control pollutants and siltation so as not to degrade wetlands and other waters. Policy OS-D.5 states “The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with wetland and riparian areas.” Implementation of the projects within the Community Plan Area have the potential to remove riparian and associated upland habitat, and has the potential to degrade waters from siltation and the introduction of pollutants.

Fresno County General Plan Policy OS-D.7 supports the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats. Other General Plan policies relevant to wildlife species potentially affected by this project include Policies OS-E1, 2,5, 6, and 17, which direct project proponents to implement mitigation for loss of wildlife habitat, to maintain of buffer zones around significant wildlife resources, to preserve of habitats of special status species, to preserve open spaces of native vegetation, and preserve to the maximum extent possible, habitats for rare or endangered species, consistent with State and Federal Statutes.

Removal of oak trees consequent to projects in the Friant Community Plan Area would be subject to statutes under the California Oak Protection Act and County provisions for protection of oaks.

Conclusion: The Existing Friant Community Plan has the potential to conflict with these ordinances and policies, resulting in potentially *significant* impacts. To reduce these potential

imparts to levels that are *less than significant*, the following mitigation measures shall be implemented.

Mitigation Measure #3.4.13a: Mitigation Measures to Ensure Consistency with Local Policies or Ordinances Protecting Biological Resources: Implementation of mitigation measures 3.4.9a through 3.4.9l will compensate for potential loss of foraging and/or breeding habitat for special status plant and wildlife species. Mitigation Measures #3.4.10, #3.4.11a and #3.4.11b provide for protection and compensation of riparian and wetland habitats potentially affected by projects within the Existing Friant Community Plan Area, and mitigation for potential impacts to water quality downstream of projects. These measures will also serve to maintain habitat functions and values in riparian and wetland areas and control siltation and pollutant entry into these habitats. Along with mitigation measures prescribed in Chapter 3.8 of this EIR, “Hydrology and Water Quality”, the mitigation measures just described will ensure consistency with local ordinances and policies, including the County General Plan Policies.

Mitigation Measure #3.4.13a: Implementation of the various mitigation measures described in the preceding paragraph required for projects within the Existing Friant Community Plan Area will ensure compliance with County General Plan Policies.

Mitigation Measure #3.4.13b: To ensure compliance with State and local ordinances protecting oak trees and oak woodland habitat, the following measure will be implemented:

Replanting of individual oak trees removed: To compensate for individual oak trees removed by project construction, oaks will be replanted at a ratio of 1:2 for every oak removed, or compensation will be in the form of contribution of funds to the Oak Woodlands Conservation Fund.(Section 1363 of the Fish and Game Code), or some combination of these.

Effectiveness of Mitigation: Implementation of this Mitigation Measure #3.4.13b will reduce impacts to oaks to *less than significant* by restoration of oak trees to pre-project levels.

Impact #3.4.14 – Consistency of the Existing Friant Community Plan with adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plan
[Evaluation Criteria f]

There are no local, regional, or State Habitat Conservation Plans or Natural Community Conservation Plans that include the Friant Community Plan Area.

Conclusion: There are no conflicts with any such plan and mitigation measures are not warranted.

Mitigation Measures: No mitigation measures are required.

3.5 Cultural Resources

INTRODUCTION

This section evaluates the potential impact of the Project on cultural resources (“cultural resources” herein refers to any tangible or observable evidence of past human activity, regardless of significance, found in direct association with a geographic location, including tangible properties possessing intangible traditional cultural values, including archaeological, paleontological, and historical resources). Phase I and II studies have been conducted within the Friant Ranch Specific Plan Area, (including analysis of the Beck Property) as documented in the reports entitled *An Update of Wren's 1992 Archaeological Survey of the Bigelow Property (Friant Ranch), Friant, Fresno County, California* (Roper 2008) and the *Phase Two Archaeological Testing and Evaluation of Prehistoric Site CA-FRE-2653, Friant, Fresno County, California* (Sierra Valley Cultural Planning, May 2008) and the Addendum to the aforementioned report dated June 2009. Detailed surveys have not been conducted for all vacant lands within the existing Community Plan are and are therefore analyzed at a programmatic level. This section also contains a discussion of the regulatory context for the Project.

The 2008 study conducted by Roper within the Friant Ranch Specific Plan Area resulted in the re-recording of three prehistoric period resources and two historic period resources. These resources have been evaluated under the significance criteria identified below. The only significant cultural resource discovered in the Friant Ranch Specific Plan is a prehistoric period site CA-FRE2653. Figure 3.5-1 shows the location of each potential cultural resources site.

This analysis also addresses the potential for other cultural resources to be present within the Project Area, including prehistoric and historic period archaeological resources, as well as potential effects of the Project on these resources.

Significant Cultural Resources

Virtually any physical evidence of past human activity can be considered a cultural resource, although not all such resources are considered to be significant. They often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

Once a cultural resource is evaluated, if it is found to be significant, it is then called a historic property under federal law, or a historical resource under California law, depending on whether federal and/or state regulations apply. For purposes of this analysis, significant cultural resources include: (1) any historical resource (or historic property) that meets the criteria for listing on the National Register of Historic Places or the California Register of Historical Resources; (2) a resource that is included in a local register of historical resources; (3) any unique archaeological resource; or (4) any other resource that the County deems to be a historical resource as defined in Public Resource Code sections 5020.1(j) and 5024.1. Under state and federal law, this analysis need not consider impacts to insignificant cultural resources.

The criteria for listing on the California Register of Historical Resources include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- 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
- Has yielded, or may be likely to yield, information important in prehistory or history.

The criteria for listing on the National Register of Historic Places include the following:

- Districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
 - a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
 - b. that are associated with the lives of persons significant in our past; or
 - c. that 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. that have yielded, or may be likely to yield, information important in prehistory or history.
- Cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years , if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
 - a. a religious property deriving primary significance from architectural or artistic distinction or historical importance; or
 - b. a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

- c. a birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- d. a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- g. A property achieving significance within the past 50 years if it is of exceptional importance.

CEQA Section 21083.2(g) defines a “unique archaeological resource” as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; and
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Pursuant to Public Resources Code section 5020.1, “historical resources” include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

3.5.1 REGULATORY SETTING

Federal, state, and local governments have developed laws and regulations designed to protect significant cultural resources that could be affected by actions that they undertake or regulate. The National Environmental Policy Act (NEPA), the National Historic Preservation Act of 1966 (NHPA), the Antiquities Act, and CEQA are the principal federal and state laws governing preservation of historic and archaeological resources of national, regional, state, and local significance.

Paleontological resources on federal lands are protected under various laws relating to the protection of public properties; these laws are enforced through the issuance of permits by the appropriate agencies. However, paleontological resources existing on private property within California are generally unprotected under State law.

Federal

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementation regulations, "Protection of Historic Properties," are found in 36 Code of Federal Regulations (CFR) Part 800. 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. The criteria for determining National Register eligibility are listed in the introductory section above and found in 36 CFR Part 60. Amendments to the NHPA (1986 and 1992) and subsequent revisions to the implementing regulations have, among other things, strengthened the provision for Native American consultation and participation in the Section 106 review process. Although federal agencies must follow federal regulations, most projects of private developers and landowners do not require this level of compliance. Federal regulations only apply in the private sector if a project requires a federal permit or if it uses federal money (federal nexus). Federal permits and federal agency NHPA review will be required prior to the implementation of the Friant Ranch Specific Plan development (e.g., Bureau of Reclamation approval of the water transfer agreement, a United States Army Corps of Engineers' Clean Water Act Section 404 permit, etc.). As such, the Friant Ranch Specific Plan has a federal nexus and this analysis, as it relates to the Friant Ranch Specific Plan, complies with federal requirements.

Under the NHPA, the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, material, handiwork, feeling, and association. Additionally, the National Register of Historic Places requires consideration of significance for any structure over 45 years old.

State

State historic preservation regulations affecting this Project include the statutes and guidelines contained in CEQA (Public Resources Code Sections 21083.2 and 21084.1, and Sections 15064.5 and 15126.4(b) of the CEQA Guidelines). CEQA requires lead agencies to carefully consider the potential effects of a project on significant cultural resources, including historical resources and unique archaeological resources. CEQA defines "an historical resource" as a "resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources...are presumed to be historically or culturally significant for purposes of this section." (Pub. Resources Code, §21084.1). Under CEQA, significant cultural resources also include, but are not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code Section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources* (1994). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097 et seq.).

The Native American Heritage Commission (NAHC) was notified of the Project during the Notice of Preparation period and the NAHC submitted a comment letter dated November 1, 2007.

California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

The California Office of Historic Preservation's (OHP) Project Review Unit is charged with ensuring that projects and programs carried out or sponsored by federal and state agencies comply with federal and state historic preservation laws and that projects are planned in ways that avoid or minimize adverse effects to heritage resources. OHP reviews and comments on several thousand projects annually.

Federal and federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the National Historic Preservation Act. Section 106 of the National Historic Preservation Act (NHPA), as amended, requires federal agencies to consider the effects of proposed federal undertakings on historic properties. NHPA's implementing regulations found in 36 Code of Federal Regulations Part 800, require federal agencies (and their designees, permittees, licensees, or grantees) to initiate consultation with the State Historic Preservation Officer (SHPO) as part of the Section 106 review process.

State programs and projects are reviewed pursuant to Sections 5024 and 5024.5 of the California Public Resources Code. Additionally, Section 5024 requires consultation with OHP when a project may impact historical resources located on State-owned land.

OHP also reviews and comments on a select number of projects pursuant to CEQA, which requires public agencies to consider the effects of their actions on historical resources eligible for listing in the California Register of Historical Resources.

California Health and Safety Code Sections 7050.5, 7051, and 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission (NAHC) as the entity responsible to resolve disputes regarding the disposition of such remains.

Senate Bill (SB) 18/922

Senate Bill 18, signed into law by Governor Schwarzenegger in September 2004, requires cities and counties to notify and consult with California Native American tribes about proposed adoption of, or changes to, general plans and specific plans for the purpose of protecting Traditional Tribal Cultural Places. Interim tribal consultation guidelines were published by OPR on March 1, 2005. The Project falls under the SB 18 requirements as defined by OPR, and Fresno County is required to contact NAHC and request consultation.

A letter requesting consultation on the Friant Ranch Specific Plan was submitted to NAHC on September 18, 2007. In response, NAHC provided a consultation list of tribes with traditional lands or cultural places located within the area of potential effect. The NAHC consultation list included the following tribes: Big Sandy Rancheria of Mono Indians; Dumna Tribal Government, North Fork Mono Tribe, Santa Rosa Rancheria, Traditional Cholnumni Tribe, Cold Springs Rancheria of Mono Indians, Table Mountain Rancheria, and Dumna WO-Wah Tribal Government. Each listed tribe was sent a consultation request letter, followed up by a telephone call. As of the date of this writing, the only tribe to engage in consultation on the Friant Ranch Specific Plan was the Table Mountain Rancheria. Requests and information provided through this consultation have informed the analysis herein. Copies of the final testing report will be sent to all listed tribes.

Fresno County General Plan

The following existing Fresno County General Plan policies pertain to cultural resources and are most applicable to the Project:

Policy OS-J.1 The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing

environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

Policy OS-J.2 The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.3 The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.6 The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

Policy OS-J.8 The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

Policy Consistency

Consistent with General Plan Policy OS-J.1, Phase I and II surveys have been conducted within the Friant Ranch Specific Plan Area (including analysis of the Beck Property) to identify any historical, archeological, paleontological, and cultural sites. The Friant Ranch Specific Plan development has been designed to avoid two of the three known cultural resource sites identified within the Friant Ranch Specific Plan Area. These two sites will be protected within an open space area subject to a conservation easement. Mitigation measures identified below in section 3.5.4 for any affected cultural resources within the Friant Ranch Specific Plan Area comply with County policy for Project-level mitigation.

For any buildout within the Existing Friant Community Plan Area, the Project includes the following proposed Friant Community Plan policies:

Policy 2.7 Support the preservation of cultural and historic resources that provide ties to the Community of Friant's past.

Policy 6.1 Protect and preserve historic and archeological sites in open space easements, where feasible, and document such sites when preservation is not feasible.

Consistent with General Plan Policy OS-J.1, these Community Plan policies establish avoidance and preservation of cultural resources as the preferred option for addressing historic and archaeological sites potentially affected by development. This EIR also sets forth Program-level mitigation requirements to ensure that development within the Existing Community Plan Area protects important historical, archaeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible (General Plan Policy OS-J.1.).

Consistent with Policy OS-J.2, the County will maintain confidentiality regarding the site location of any potential cultural resources found within the Project Area. Consistent with Policy OS-J.3, the County has consulted the NAHC regarding potential sites of cultural importance in the Project Area. Consistent with Policy OS-J.6, the County will place historical markers on adjacent Friant roadways if the Project Area is found to include any important historic resource sites. Consistent with Policy OS-J.8, the County will support the efforts of other agencies/organizations to preserve and enhance any historic resources within the Project Area.

3.5.2 PHYSICAL SETTING

Prehistoric Context

Little archaeological work has been done in the central San Joaquin Valley in general or specifically in the Project Area. The closest excavations to the Project Area are at Hidden Reservoir, Buchanan Reservoir, and in the Millerton Lake vicinity. Prehistoric sequences developed from these excavations provide an understanding of culture change during the last 2,000 to 3,000 years. Archaeological excavations to the south of this area suggest that the San Joaquin Valley was occupied as early as 11,000 to 12,000 years ago, but it is unclear whether these early cultural phases extended to the Project Area.

Several sites have been recorded along the San Joaquin River in the Project region, and many small processing stations and temporary campsites have been found along seasonal drainages near the lower foothills, suggesting a pattern of widespread but possibly transient or intermittent use of the area during the late Holocene (1000 B.C. to A.D. 1850).

Ethnographic Setting

The Project Area lies in the territory controlled at the time of Euro-American contact by either the Northern Yokuts or the Foothill Yokuts. Determining the specific group affiliation is problematic. Villages of both groups have been identified near the Project Area.

The Project Area was frequented during the prehistoric and post-contact time periods, whatever the tribal affiliation, based on the presence of nearby ethnographic villages and numbers of archaeological sites in the area. The San Joaquin River provided abundant salmon during the spring and fall. The riparian vegetation along the river and adjacent drainages provided sources for food, medicine, basket-making and tool-making.

The arrival of the Spanish explorers followed by later military expeditions beginning in the early 1800s led to the abandonment of many traditional use areas. The spread of disease was also a contributing factor in the demise of the native population.

Historic Setting

Although there were many expeditions into the San Joaquin Valley, settlement of the region did not begin until after the 1848 discovery of gold in the foothill region. Early settlers were drawn by the lure of gold mining, but in turn discovered the value of the lands of the surrounding areas for their agricultural potential. The land with available water was claimed for farming, with grain farming predominating on the valley floor. The open hill country was found to be suitable for ranching; both cattle and sheep were raised in the region. The advent of large-scale water conveyance systems allowed the establishment of a wider range and types of crops in the region.

Residential occupancy of the Project Area was quite limited, as the land apparently was used primarily for grazing purposes.

Identification of Historical Resources in the Project Area

Previous Studies

The Friant Ranch Specific Plan applicant hired consultant, Kristina Roper of Sierra Valley Cultural Planning, to conduct the cultural resource identification within the Friant Ranch Specific Plan Area in several phases. The consultant first conducted a cultural resources records search through the Southern San Joaquin Valley Information Center of the California Historical Resources Information System at California State University, Bakersfield on May 11, 2007 to identify previous surveys in or near the Friant Ranch Specific Plan Area, and to identify any previously recorded sites in or near the Friant Ranch Specific Plan Area. The search included the following resources: National Register of Historic Places, the CRHR, California Points of Interest, California Inventory of Historic Resources, and California State Historic Landmarks. The cultural resources records search is in Appendix K of this DEIR.

The results of the records search indicated that three cultural resource studies have been conducted on (and around) portions of the Friant Ranch Specific Plan Area (Wren 1992; Flint and Price 2001; and Kipps 1982).

The entire Friant Ranch Specific Plan Area was field surveyed in 1992 by Wren. This study resulted in the recordation of three prehistoric sites: CA-FRE-2651, -2652, and -2653. Two of the sites are bedrock milling sites (CA-FRE-2651 and -2652); the third is a milling feature with an associated midden deposit and possible housepit (CA-FRE-2653).

In 1999, a segment of the former San Joaquin Railroad/Pollasky Grade was recorded at the western edge of the Friant Ranch Specific Plan Area by Flint and Price (2001). The site was assigned the trinomial CA-FRE-3109H. This site was evaluated and determined to not be eligible for the National Register of Historic Places (Palmer, Price and Flint 2001). This team also recorded a fragment of a glass bottle dating to the 1920s, which is an isolated find and not a site.

A second historic period site was identified by Kipps in 1982. This resource, recorded as CA-FRE-1390H, includes a rectangular pit and associated wooden boards. While Kipps initially speculated that the feature may date to the building of Friant Dam and was possibly used to store explosives, U.S. Bureau of Reclamations personnel provided contrary information, noting that such storage facilities were located on the Madera County side of the dam construction site, since the worker camp was located nearby in the town of Friant. The pit feature was more likely the result of excavation to seal off a water pipe, and thus of relatively modern construction. No further management recommendations were thus offered for CA-FRE-1390H.

A large area within the Friant Ranch Specific Plan Area was assigned a trinomial (CA-FRE-2323) based on a letter from a Native American individual who believed that a site existed in that portion of the Friant Ranch Specific Plan Area. Wren's 1992 survey did not locate any cultural materials within the area identified as the site.

Current Study Effort

A Phase I re-survey of the Friant Ranch Specific Plan Area was conducted by Sierra Valley Cultural Planning in 2007. The field team re-located the three prehistoric period resources, CA-FRE-2651, -2652, and -2653, and prepared site record updates for each. Sierra Valley Cultural Planning was unable to re-locate any evidence that would suggest that the reported site, CA-FRE-2323, exists within the Friant Ranch Specific Plan Area.

CA-FRE-3109H is not considered a significant resource because it was documented to current standards and formally evaluated in 2001 and found not be significant.

CA-FRE-1390H is not considered a significant resource because it is modern in origin and does not meet the eligibility criteria for listing in either the National Register of Historic Places or the California Register of Historical Resources.

At the request of Friant Ranch LLP, Sierra Valley Cultural Planning (SVCP) conducted testing and evaluation of prehistoric archaeological sites CA-FRE-2651, -2652, and -2653, located within the Friant Ranch Specific Plan Area. The purpose of this investigation was to evaluate the eligibility of cultural deposits and features contained within the three prehistoric sites for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CR), and to assess potential project effects on significant cultural resources as well as offer recommendations for treatment prior to development of a proposed active adult (55+) community.

On March 2, 2008, Sierra Valley Cultural Planning completed the testing at CA-FRE-2651, -2652, and -2653, three prehistoric sites situated south of Friant Road within the Friant Ranch Development Project Area. CA-FRE-2651 and -2652 contain only bedrock milling features. CA-FRE-2653 contains numerous bedrock milling stations, a possible housepit feature, possible midden soil, and a variety of low-density artifactual materials on the site surface suggested that the site may represent a complex deposit and may possibly contain human remains.

Subsurface testing at CA-FRE-2651 and -2652 included excavation of ten 50-cm diameter shovel test pits at each site, dug to a depth of approximately 50 cm. All units were screened using 3-mm mesh. No cultural material was noted in any of the shovel test pits. Based on these results, it is unlikely that these sites contain cultural material or features beyond the identified bedrock milling features, and are thus unlikely to meet eligibility criteria for listing on the National Register of Historic Places or the California Register of Historic Resources. As such, CA-FRE-2651 and -2652 are not significant cultural resources. The Friant Ranch Specific Plan indicates that CA-FRE-2651 and -2652 are located within planned undisturbed open space, and as such, potentially adverse effects to these resources will be avoided.

Subsurface testing at CA-FRE-2653 included excavation of two 1x2m units (10 cm in depth), two 1x1 units to bedrock (60 and 80 cm in depth respectively), and 20 30-cm diameter auger borings (depth up to 70 cm). All units were screened using 3-mm mesh. A diverse array of cultural material was recovered, with the deposit extending down to bedrock (which was about 70-80 cm). A localized midden area was also identified, also extending down to bedrock. Densities were not high, but there was a diverse array of material types. Obsidian was relatively rare (only 9 pieces were recovered and subsequently submitted for XRF/OH dating). No human remains were located, but it still is possible human remains exist within the CA-FRE-2653 site matrix.

Given the diversity of material types (flaked and ground stone, dietary bone, milling features, shell) and the depth of the deposit, CA-FRE-2653 appears to meet the eligibility requirements for listing in the National Register and California Register. Compound this with the fact that there are very few excavated prehistoric sites from the base of the foothills in this region, CA-FRE-2653 is a significant cultural resource.

At the request of Friant Ranch LLP, Sierra Valley Cultural Planning (SVCP) conducted testing and evaluation of the prehistoric archaeological site, CA-FRE-2653, located within the Friant Ranch Specific Plan Area. The purpose of this investigation was to evaluate the eligibility of cultural deposits and features contained within CA-FRE-2653 for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CR), and to assess potential project effects on significant cultural resources as well as offer recommendations for treatment prior to development of a proposed active adult (55+) community.

CA-FRE-2653 was found to be a localized, low-density, complex flake scatter with multiple milling features. While there is little visible cultural material on the site surface other than the milling features and locally darkened midden soil, a low density scatter of lithic flaking debris with small numbers of burned bone, shell, and groundstone artifacts was discovered below surface within a matrix of semi-developed midden soil. This cultural deposit extends down to bedrock which was reached at anywhere from 50 to 80 cm below surface. Although densities of various cultural materials were low, there was a diverse array of material types recovered during test excavations, suggesting that the site was more than just a task-specific milling locality. With the possible exception of two steatite bowl fragments, the manufacture and use of which appears to have a temporal signature, no temporally diagnostic artifacts were recovered. Numerous obsidian waste flakes (n=9) were the primary material that provided chronological information, suggesting a period of occupation and use during the Upper Archaic (2,500-1,000 B.P. ["Before

Present”]), with the presence of steatite sherds suggesting a somewhat later Emergent (beginning 1,000 B.P.) with the presence of steatite sherds suggesting a somewhat later Emergent (beginning 1,000 B.C.) period use. No human remains were recovered during test excavations.

CA-FRE-2653 appears to be eligible for listing in the NR under Criterion D (has yielded, or may be likely to yield, information important in prehistory or history), and in the CR under Criterion 4 (has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation). In terms of both NRHP and CR criteria, integrity of the cultural deposit is intact, the deposits apparently having suffered minimal stratigraphic mixing due to surface disturbances (erosion and grazing impacts) and sediment mixing due to rodent disturbance and other natural causes.

At the request of Friant Ranch LLP, SUCP prepared an Addendum to the [*Phase Two Archaeological Testing and Evaluation of Prehistoric Site CA-FRE-2653*] which evaluated the Beck Property and the proposed 1,200 foot effluent pipeline. No cultural resources were identified during a surface inspection conducted in June 2009 (see Appendix K). Cultural resources of the Beck Property were assessed in the supplemental EIR prepared for a prior project (Buada and Associates 1987) related to the aggregate mining operation. Impacts to cultural resources were determined to be less than significant at that time. The site continues to be highly disturbed, and significant cultural resources are no more likely to occur on the site in 2009 than in 1987.

Paleontological Resources

Paleontological resources include fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas. These resources are limited, nonrenewable, sensitive scientific and educational resources protected by federal environmental laws and regulations. As recognized here, paleontological resources include fossils preserved either as impressions of soft (fleshy) or hard (skeletal) parts, mineralized remains of skeletons, tracks, or burrows; other trace fossils; coprolites (fossilized excrement); seeds or pollen; and other microfossils from terrestrial, aquatic, or aerial organisms.

At this time, a paleontological study has not been conducted for the Project Area because it is not a known fossil bearing area. Fossils are not typically found in the eastern San Joaquin Valley; fossils are more likely to be discovered in the western San Joaquin Valley as it is closer to the coastal region.

3.5.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, a project will normally have significant adverse impacts associated with cultural resources if it would do any of the following:

- a) *Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5. Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be*

materially impaired. Pursuant 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 of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or*
 - *Demolishes or materially alters in an adverse manner those physical characteristics that 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 an 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 the evidence that the resources is not historically or culturally significant; or*
 - *Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.*
- b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. Pursuant to CEQA Guidelines section 15064.5(c), if an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment.*
- c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.*
- d) *Disturb any human remains, including those interred outside of formal cemeteries.*

Potential effects on significant cultural resources were considered with respect to local, state, and federal regulations as outlined in the Public Resources Code, Section 21083.2. If the lead agency determines that the Project may have a significant effect on a significant cultural resource, the Project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potentially significant effects. If avoidance is not feasible, an excavation program or some other form of mitigation must be developed to mitigate the impacts.

3.5.4 IMPACT ANALYSIS

Impact #3.5.1 – Substantial Adverse Changes in the Significance of Historical and/ or Archaeological Resources and Destruction of Unique Paleontological Resources [Evaluation Criteria (a), (b), (c)]

Based on the proposed Friant Ranch Specific Plan design, only one significant cultural resource, CA-FRE-2653, within the Project Area may be impacted by the proposed Friant Ranch Specific Plan development. There are concerns about access for the Native American community, and it is critical that their concerns be respected in this process.

Two insignificant cultural resources, CA-RE-2651 and -2652 are included within an undisturbed open space area of the Friant Ranch Specific Plan that will be subject to a conservation easement. As such, CA-FRE-2651, and -2652 will not be impacted, directly or indirectly, by the Project.

While it is the intention of the Friant Ranch Project proponents to avoid project-related impacts to cultural resources, this is not feasible for site CAFRE- 2653, which is located within the Friant Ranch Specific Plan Area development footprint.

It is possible that buried archaeological resources, which may be deemed significant cultural resources, will be found during construction within the Project Area. Resources could include midden deposits, artifact scatters, fire hearths, and historical dumps or trash pits. It is also possible that buried paleontological resources will be found during construction. Disturbance of any of these features could be a significant effect of the Project.

There are no known historical, archaeological, or paleontological resources within the existing Friant Community Plan Area and no detailed studies have been prepared. Mitigation measures below (specifically #3.5.1e through h) will ensure that if any cultural resources are found within the existing Friant Community Plan Area, they will be dealt with accordingly.

Conclusion: Implementation of the Project –will impact site 2653, which is judged to be significant for its potential to provide new information on California prehistory and for its eligibility for listing on the NRHP and CR. Sites 2651 and 2652 are situated within planned undisturbed open space areas and as such, would be avoided. Also, implementation of the Project may impact previously undiscovered, buried prehistoric and historic period resources or paleontological resources. These impacts are *potentially significant* and the following mitigation measures are required to address Project impacts.

Mitigation Measure #3.5.1a: Given that excavation is ultimately destructive and avoidance is generally the preferred alternative and consistent with Fresno County General Plan policy, the preferred mitigation is that the significant cultural resource site (CA-FRE-2653) be placed within a development exclusion zone, thus avoiding impacts to the significant cultural resource site (CA-FRE-2653). Subsurface testing suggests that the cultural deposit is contained within a limited area, which roughly coincides with the identified midden deposit and the area of bedrock

milling features. Prior to issuance of a grading permit affecting the area surrounding the significant cultural resource site (CA-FRE-2653), the developer shall do one of the following:

3.5.1a(1): Retain a qualified archaeologist to identify and mark the boundaries of the cultural deposit so that it is avoided during construction. The significant cultural resource site (CA-FRE-2653) shall be included within a designed open space within the Friant Ranch Specific Plan Area, which may include interpretive information regarding the archaeological site; or

3.5.1a(2): If avoidance of the significant cultural resource site (CA-FRE-2653) through design, during construction activities, and long-term protection are not feasible, then treatment of significant effects on the site(s) shall be accomplished through a program of controlled data recovery. A qualified archaeologist shall meet at the site and review the development plans vis-à-vis the significant cultural resource site (CA-FRE-2653) area and put together a data recovery plan (Phase III) to recover the information that would be lost as a result of Project development. The archaeologist shall excavate the significant cultural resource site (CA-FRE-2653) and recover the materials that would otherwise be destroyed. The bedrock milling features will be thoroughly documented; therefore any adverse impacts as a result of disturbance to these features would be mitigated. Such work is designed to compensate for the impacts of the Project by collecting a representative sample of the cultural remains and other data that would otherwise be destroyed.

Mitigation Measure #3.5.1b: A qualified archaeologist and a member of the Table Mountain Rancheria shall be retained by the developer to monitor construction activities around the significant cultural resource site (CA-FRE-2653) to ensure that there is no impact to any significant cultural resource. Prior to construction, the developer shall consult with a designated representative of the Table Mountain Rancheria on the appropriate course of action to be taken should unanticipated cultural materials, and specifically human remains, be discovered during construction.

Mitigation Measure #3.5.1c: Cultural resource sites protected pursuant to mitigation measure 3.5.1a(1) shall be protected after development from vandalism, illicit excavation or artifact collection. The County shall discuss measures for long-term protection with the Table Mountain Rancheria, and an appropriate plan for permanent protection of the resource shall be instituted by the developer prior to issuance of building permits for the Friant Ranch Specific Plan. The final plan could include any or all of the following: permanent fencing; funding for permanent maintenance of the fencing; annual or semi-annual monitoring by archaeologists and/or by the Table Mountain Rancheria with reports filed with the County and other agencies; acquisition of the site by a group such as the Archaeological Conservancy.

Mitigation Measure #3.5.1d: During construction within the Friant Ranch Specific Plan Area, protected cultural resource sites (including CA-FRE-2651, -2652, -2653) shall be protected from vandalism, illicit excavation or artifact collection, or inadvertent direct impact. This may be accomplished in part through the installation of orange protective fencing prior to initiation of any construction activities within 200 feet of the site area.

Mitigation Measure #3.5.1e: If unknown cultural resources are discovered during Project construction, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the developer, and approved by the County, to assess the significance of the find, make recommendations on its disposition, and prepare appropriate field documentation, including verification of the completion of required mitigation. If archaeological or paleontological resources are discovered during earth moving activities, all construction activities within 50 feet of the find shall cease until the archaeologist evaluates the significance of the resource. In the absence of a determination, all archaeological and paleontological resources shall be considered significant. If the resource is determined to be significant, the archaeologist, as appropriate, shall prepare a research design for recovery of the resource in consultation with SHPO that satisfies the requirements of Public Resources Code Section 21083.2. The archaeologist shall complete a report of the excavations and findings. Upon approval of the report, the developer shall submit the report to the regional office of the California Historical Resources Information System and Fresno County.

Mitigation Measure #3.5.1f: Construction personnel shall be informed of the potential for encountering significant archaeological or paleontological resources within the Project Area, and shall be instructed in the identification of artifacts, bone and other potential resources. For any construction within the Project area, all construction personnel shall be informed of the need to stop work on the construction site until a qualified archaeologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of cultural resources is prohibited.

Mitigation Measure #3.5.1g: If unknown cultural resources are discovered during future development in the existing Friant Community Plan Area, including the Depot parcel, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the developer, and approved by the County, to assess the significance of the find, make recommendations on its disposition, and prepare appropriate field documentation, including verification of the completion of required mitigation. If archaeological or paleontological resources are discovered during earth moving activities, all construction activities within 50 feet of the find shall cease until the archaeologist evaluates the significance of the resource. In the absence of a determination, all archaeological and paleontological resources shall be considered significant. If the resource is determined to be significant, the archaeologist, as appropriate, shall prepare a research design for recovery of the resource in consultation with SHPO that satisfies the requirements of Public Resources Code Section 21083.2. The archaeologist shall complete a report of the excavations and findings. Upon approval of the report, the developer shall submit the report to the regional office of the California Historical Resources Information System and Fresno County.

Mitigation Measure #3.5.1h: Future construction personnel shall be informed of the potential for encountering significant archaeological or paleontological resources within the existing Friant Community Plan Area, and shall be instructed in the identification of artifacts, bone and other potential resources. For any future construction within the existing Friant Community Plan Area, all construction personnel shall be informed of the need to stop work on the construction site until a qualified archaeologist has been provided the opportunity to assess the significance of

the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of cultural resources is prohibited.

Effectiveness of Mitigation: Implementation of the mitigation measures above will reduce the potential impacts to cultural resources to a *less than significant level*.

Impact #3.5.2 – Disturbance of Human Remains
[Evaluation Criteria (d)]

Human burials, in addition to being potential archaeological resources, have specific provisions for treatment in Section 5097 et seq. of the California Public Resources Code and Sections 7050.5, 7051, and 7054 of the California Health and Safety Code. Disturbing human remains could violate these provisions, as well as destroy the resource.

Human remains may be present at the significant cultural resource site (CA-FRe-2653), and it is possible that historic period or prehistoric period interments are present elsewhere in the Project Area. If the significant cultural resource site (CA-FRe-2653) is protected as described in the mitigation measures above, then there should be no impact to human remains. If human remains are found outside of the significant cultural resource site (CA-FRe-2653), potential significant impacts related to the inadvertent discovery may result unless mitigated.

Mitigation Measure 3.5.1b, set forth above, provides for consultation with the Table Mountain Rancheria to ensure that appropriate steps are taken in the event human remains are inadvertently discovered during construction activities.

Conclusion: Construction activities under the Project could result in the disturbance of human remains. This impact is *potentially significant* and the following mitigation measure is required to address the impact.

Mitigation Measure #3.5.2: If human remains are encountered during Project construction, all work shall cease within 50 feet of the find and the Fresno County Coroner’s Office shall be contacted and procedures implemented pursuant to California Public Resources Code Section 5097 et seq. and California Health and Safety Code Sections 7050.5, 7051, and 7054 with respect to treatment and removal, Native American involvement, burial treatment, and re-burial, if necessary.

Effectiveness of Mitigation: Implementation of the mitigation measure above will reduce the potential impact to a *less than significant level*.

3.6 Geology, Soils and Mineral Resources

INTRODUCTION

This section describes the regulatory framework and existing conditions related to geologic hazards, soils and mineral resources in and around the Project Area, and the potential geotechnical, soils and mineral resources impacts of the Project.

3.6.1 REGULATORY SETTING

Various Federal and State regulations include requirements for the safe construction of housing and other structures in geologically sensitive areas. Such regulations include Title 24 of the Uniform Building Code and the California Building Code, which set building construction standards for safety and protection in the event of ground shaking, and the Geologic Hazard Zones Act of the California State Mining and Geology Board, which requires the mapping of seismically active and hazardous areas. California's earthquake protection law (California Health and Safety Code 19100 et seq.) requires the design of buildings to include safety provisions to resist stresses produced by lateral forces caused by wind and earthquakes.

California Building Code

Development of the Project Area will be subject to the California Building Code (CBC), which provides a minimum standard for building design and construction. Codified in Title 24 of the California Code of Regulations, the CBC incorporates the Uniform Building Code, a widely adopted model building code in the United States. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the potential hazard of surface faults to structures for human occupancy. The main purpose of the Act is to prevent the construction of buildings used for human occupancy over active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and to issue maps to all affected cities, counties and State agencies for their use in planning and controlling development. Local agencies must regulate most development projects within the zones and there can generally be no construction within 50 feet of an active fault zone.

The California Geological Survey does not list the Project Area on its current list of areas affected by Alquist-Priolo Earthquake Fault Zones.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The SHMA states that, “It is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.” Section 2697(a) of the SHMA additionally requires that, “Cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard.” Fresno County has not been mapped under the SHMA yet since the State has targeted higher risk areas, such as the San Francisco Bay Area and the Los Angeles/Riverside areas. As discussed below, the Project Area has a relatively low risk of seismic hazards.

Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act (SMARA) of 1975, was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA requires the State Geologist to classify land according to the presence or absence of significant mineral deposits. Local governments must consider this information before land with important mineral deposits is committed to land uses incompatible with mining.

SMARA provides for the evaluation of an area’s mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. The Project area is characterized by geologic formations consisting of alluvial sand, silt, and gravel mixtures and bedrock consisting of sandstone or granite.

Fresno County General Plan

The following existing Fresno County General Plan policies and standards provide guidelines for protecting against seismic and geological hazards and the conservation of mineral resources:

Health and Safety Element

Policy HS-D.7 The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.

Policy HS-D.8 The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties.

Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

- Policy HS-D.9 The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.*
- Policy HS-D.10 The County shall require the preparation of drainage plans for development or public infrastructure projects in hillside areas to direct runoff and drainage away from stable slopes.*
- Policy HS-D.11 The County shall not approve a County permit for new development, including public infrastructure projects, where slopes are over thirty (30) percent unless it can be demonstrated by a California-registered civil engineer or engineering geologist that hazards to public safety will be reduced to acceptable levels.*
- Policy HS-D.14 Whenever zoning is employed to restrict the use of land subject to severe geologic hazards (e.g., landslides), the County shall designate parcels so restricted for open space uses.*

Open Space and Conservation Element

- Policy OS-C.1 The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.*
- Policy OS-C.2 The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in Fresno County General Plan Background Report.)*
- Policy OS-C.7 The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.*
- Policy OS-C.8 The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossings of haul routes are necessary, separate where feasible.*

A discussion of the Project's consistency/inconsistency with the policies above is located in the impact analysis section where applicable.

3.6.2 PHYSICAL SETTING

General Geologic and Soil Conditions

Friant is characterized by geologic formations consisting of alluvial sand, silt, and gravel mixtures and bedrock consisting of sandstone or granite. Locally, soils in the Project Area have varying amounts of plasticity, but are generally only slightly plastic.

The Project Area is a relatively low seismic region and considering the age and relative density of the subsurface sediments, liquefaction or seismically induced settlement is considered unlikely. No significant areas of mineral resources are known to exist in the Project vicinity.

Geologic Hazards

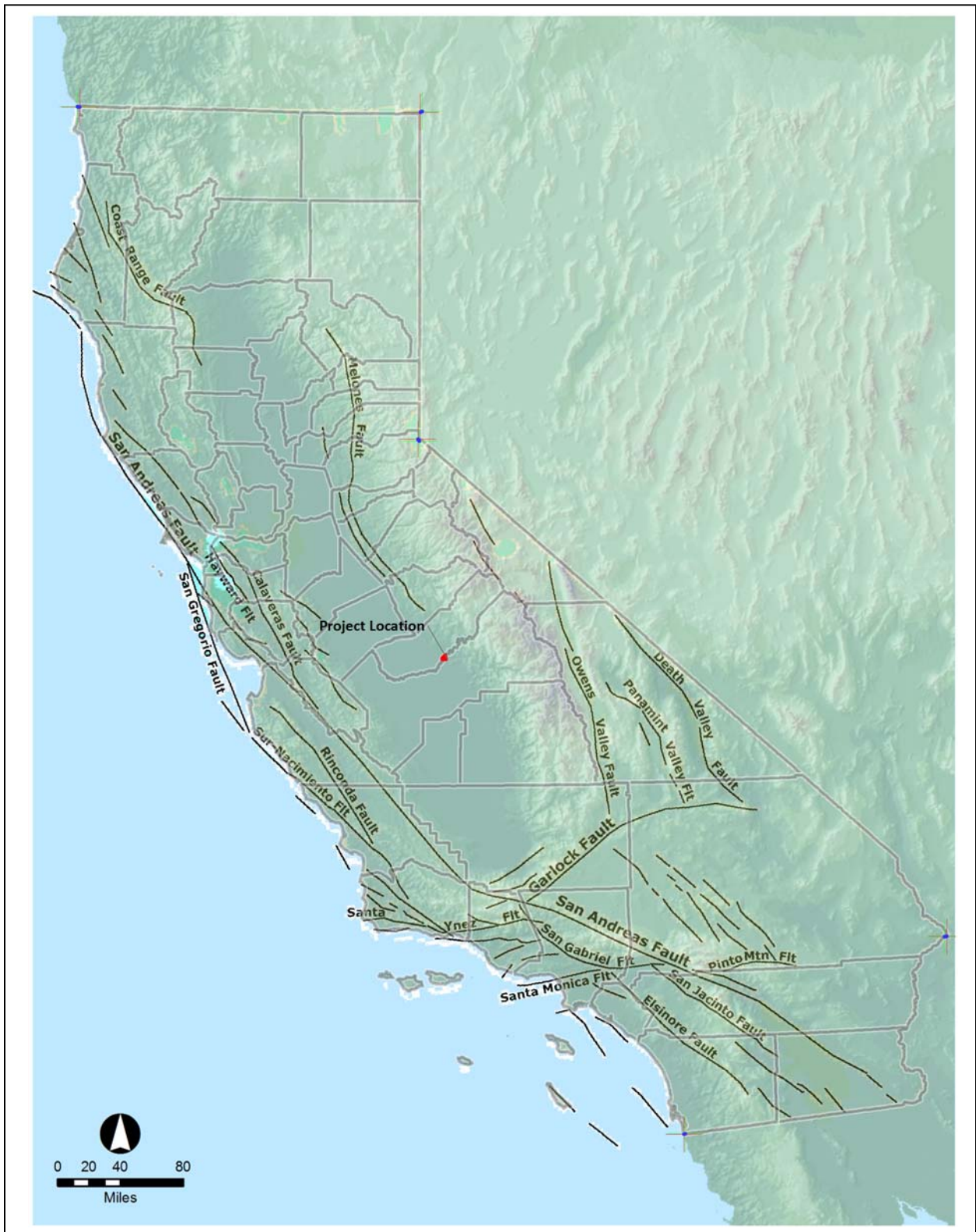
Seismicity/Faults

There are a number of active and potentially-active faults adjacent to Fresno County with only two located within its boundaries (reference Figure 3.6-1). Although most of Fresno County is situated within an area of relatively low seismic activity by comparison to other areas of the State, the faults and fault systems that lie along the eastern and western boundaries of the County, as well as other regional faults, have the potential to produce high-magnitude earthquakes throughout the County. Most of Fresno County, from approximately Interstate 5 and continuing east, is located in Seismic Zone 3, as defined by the CBC. Areas in the Coast Range foothills and a small area along the Fresno County-Inyo County border are located in Seismic Zone 4¹. The Project Area is located in Seismic Zone 3.

The earthquake fault zone quadrangle maps located within Fresno County include Alcalde Hills and Ortigalita Peak, which are both located along the Coast Range foothills

(California Geological Survey Website). There is only one identified earthquake fault within Fresno County, the Nunez fault, located very near the common border of Monterey and Fresno Counties. The fault is approximately two miles long and last ruptured in 1983 with an estimated magnitude of between 5.2 – 5.9. The City of Coalinga, approximately 80 miles southwest of Friant, experienced an earthquake in May of 1983 with a magnitude of 6.7. The earthquake was occasioned by creep along the San Andreas Fault. This earthquake was felt from the Los Angeles area north to Susanville and from the Pacific Coast to western Nevada. The Nunez fault is situated about 12 kilometers northwest of Coalinga. This information is from the most current data available from the U.S. Geological Survey and the California Department of Conservation, Division of Mines and Geology.

¹ A seismic zone is based on a statistical compilation of the number and the magnitude of past earthquakes. Zone 4 has a one in ten chance that an earthquake with an active peak will acceleration level of 0.04g (4/10 the acceleration of gravity) will occur within the next 50 years. Zone 3 has a one in ten chance that an earthquake with an active peak acceleration level of .01g (1.10 the acceleration of gravity) will occur within the next 50 years. (Understanding Seismic Zones, South)



 <p>Quad Knopf</p>	<h2>CALIFORNIA FAULTS</h2>	<p>Figure 3.6-1</p>
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Ground Motion and Liquefaction

Ground shaking is the primary seismic hazard in Fresno County due to its seismic setting and record of historical activity. According to the Fresno County General Plan Background Report, most urbanized locations in the east and west valleys and Sierra Nevada foothill areas, which includes the Project Area, are subject to less intense seismic effects than locations in the Coast Range foothills and Sierra Nevada mountain areas.

Areas most prone to liquefaction are those that are water saturated and consist of relatively uniform sands that are loose to medium density. No specific County-wide assessments to identify liquefaction hazards have been performed. Areas where groundwater is less than 30 feet below the surface occur primarily in the valley; however, soil types in the Project Area are not conducive to liquefaction because they are either too coarse or too high in clay content.

Landslides and Erosion

Landslides are a primary geologic hazard and are influenced by four factors:

- Strength of rock and resistance to failure, which is a function of rock type (or geologic formation);
- Geologic structure or orientation of a surface along which slippage could occur;
- Water (can add weight to a potentially unstable mass or influence strength of a potential failure surface); and
- Topography (amount of slope in combination with gravitational forces).

As of June 2008, the California Geological Survey had not developed landslide hazard identification maps for Fresno County; however, it is reasonable to assume that certain areas in Fresno County are more prone to landslides than others. Such areas can be found in the foothills and mountain areas where fractured steep slopes are present, where less consolidated or weathered soils overlie bedrock, or where inadequate groundcover accelerates erosion. Erosion and slumping of soils can also occur along bluffs along the San Joaquin River.

Other Geologic Hazards

Avalanche potential is greatest at the higher elevations of the Sierra Nevada mountains in eastern Fresno County. Avalanches are unlikely in the Project Area.

Soils

Information from the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) (unpublished), Eastern Fresno County California Soil Survey was reviewed to identify soil types present in the Project vicinity. The Soil Survey identified 27 soil types within the Project vicinity (see Table 3.6-1 and reference Figure 3.2-1 of this Draft EIR).

**Table 3.6-1
Soil Descriptions for the Friant Community Plan Area**

Soil Type	Map symbol	Approximate Percent in Area Of Interest (AOI)	Hydrologic Rating	Drainage Class	Liquid Limit (Percent)
Cometa sandy loam, 9 to 15 percent slopes	CzaC	0.1%	D	Moderately well drained	32.4
Cometa loam, 2 to 9 percent slopes	CzbB	4.3%	D	Moderately well drained	37.7
Friant fine sandy loam, 9 to 30 percent slopes	FyD	6.5%	D	Well drained	28.0
Friant fine sandy loam, 30 to 45 percent slopes	FyE	0.2%	D	Well drained	28.0
Greenfield sandy loam, 0 to 3 percent slopes	GuA	0.6%	B	Well drained	24.3
Hanford sandy loam	Hc	17.6%	B	Well drained	25.0
Hanford sandy loam, benches	Hd	0.1%	B	Well drained	25.0
Hanford sandy loam, gravelly substratum	He	1.9%	B	Well drained	25.0
Hanford gravelly sandy loam	Hl	4.2%	B	Well drained	25.0
Merced clay, moderately saline	Ml	5.7%	D	Very poorly drained	60.0
Pollasky sandy loam, 2 to 9 percent slopes	PmB	0.3%	B	Well drained	25.0
Pollasky sandy loam, 9 to 15 percent slopes	PmC	0.8%	B	Well drained	25.0
Pollasky sandy loam, 15 to 30 percent slopes	PmD	2.2%	B	Well drained	25.0
Pollasky fine sandy loam, 2 to 9 percent slopes	PnB	0.4%	B	Well drained	25.0
Pollasky fine sandy loam, 9 to 15 percent slopes	PnC	0.7%	B	Well drained	25.0
Pollasky-Montpellier complex, 15 to 30 percent slopes	PoD	15.4%	B	Well drained	28.3
Ramona sandy loam	Ra	2.0%	B	Well drained	26.5
Ramona loam	Rc	0.7%	B	Well drained	27.5
Rocklin sandy loam, pumiceous variant, 3 to 30 percent slopes	RID	8.0%	D	Well drained	27.3

**Table 3.6-1
Soil Descriptions for the Friant Community Plan Area (Continued)**

Soil Type	Map symbol	Approximate Percent in Area Of Interest (AOI)	Hydrologic Rating	Drainage Class	Liquid Limit (Percent)
San Joaquin sandy loam, shallow, 0 to 3 percent slopes	SdA	5.1%	D	Moderately well drained	37.7
San Joaquin sandy loam, shallow, 3 to 9 percent slopes	SdB	0.8%	D	Moderately well drained	37.7
San Joaquin loam, shallow, 0 to 3 percent slopes	SgA	0.1%	D	Moderately well drained	33.7
Tujunga loamy sand, 0 to 3 percent slopes	TzbA	0.1%	A	Somewhat excessively drained	0.0
Tujunga loamy sand, 3 to 9 percent slopes	TzbB	0.3%	A	Somewhat excessively drained	0.0
Tujunga cobbly loamy sand, 0 to 3 percent slopes	TzdA	0.1%	A	Somewhat excessively drained	0.0
Tujunga soils, channeled, 0 to 9 percent slopes	TzeB	3.1%	A	Somewhat excessively drained	0.0
Vista coarse sandy loam, shallow, 9 to 30 percent slopes	VgD	1.1%	C	Well drained	0.0

Source: NRCS Soils Survey – Eastern Fresno County, January 2007

Expansive Soils

Expansive soils are those that significantly increase in volume when they absorb water and shrink when they dry out. Expansion is measured by shrink-swell potential. When rated moderately high or above, damage to buildings, roads and other structures can occur if protective measures are not in place. According to the Fresno County General Plan Background Report, expansive soils are present to the south of the Friant community and not within the Project Area.

Erosion

Natural forces, both chemical and physical, are continually at work breaking down soils. Erosion poses two hazards; it removes soils, thereby undermining roads and buildings and producing unstable slopes; and it deposits eroded soils in reservoirs, lakes, drainage structures, and on roads as mudslides. In the eastern Fresno County area, soils exhibiting moderately high to high erosion potential are located in the Sierra Nevada foothills and generally coincide with land slope areas that exceed 30 percent. Many of these soils are located within the boundaries of the State and federal national forest, parklands and open space areas. The Friant Ranch Specific

Plan Area does include land with slopes 30 percent or greater, however; the remaining Friant Community Plan Area does not.

Mineral Resources

The California Department of Conservation, Division of Mines and Geology is responsible under the SMARA for the classification and designation of areas that contain, or could contain, significant mineral resources. The Project Area is characterized by geologic formations consisting of alluvial sand, silt, and gravel mixtures and bedrock consisting of sandstone or granite. Sand and gravel are mined to the south of the Project Area boundary, and southwest of the Friant Ranch Specific Plan Area. The San Joaquin River Resource Area has a MRZ-1 and MRZ-2 classification.² According to Figures 7-9 and 7-10 of the Fresno County Background Report, the Project Area includes land abutting San Joaquin River that is designated MRZ-1 and MRZ-2. In 1999 many locations along the San Joaquin River were reclassified to MRZ-1 to reflect the depletion of reserves by mining. Some of the land within the Project Area is still designated MRZ-2 and is located west of Friant Road at the southern boundary along San Joaquin River and not within Friant Ranch Specific Plan Area. Since 1999, this location (APN 300-160-50T and 51 for approximately 285 acres) has been mined for sand and gravel and is now depleted of reserves by mining. Limestone is found on the east side of the valley in the Sierra Nevada mountain range. These deposits are underlain by “white hardpan.” Production for local use is expected to continue. These minerals have the potential to be located near the Project Area, but; have not been found, within the Project Area (Fresno County General Plan Background Report, 2000).

3.6.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact associated with geology and soils if it would do any of the following:

- a) *Expose people or structures to 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.*
 - ii. *Strong seismic ground shaking.*
 - iii. *Seismic-related ground failure, including liquefaction.*
 - iv. *Landslides*

² MRZ-1 is where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. MRZ-2 is where adequate information indicates that significant mineral deposits are present, or where it is judged that there is a high likelihood for their presence.

- b) *Result in substantial soil erosion or the loss of topsoil.*
- c) *Be located on a geological 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.*
- d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.*
- 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.*

For purposes of this EIR, the Project may have a significant adverse impact associated with mineral resources if it would do any of the following:

- f) *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.*
- g) *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.*

3.6.4 IMPACT ANALYSIS

Impact #3.6.1 - Seismic and Related Hazards [Evaluation Criteria (a) i) ii) iii) iv)]

The Project Area is located in a seismically quiet area of California at the edge of the foothills of the Sierra Nevada. Fresno County is not affected by Alquist-Priolo Earthquake Fault Zones and the latest interim revisions of 2007 maps have not included the Project Area. There are no known earthquake faults, active or inactive, at or near the Project Area, although several faults are within a 60-mile radius of the Project Area. The Five-County Seismic Safety Element places the Project Area in an area of minimal ground shaking, with a very low possibility of ground failure or liquefaction. The Project Area is not identified as an area that could result in loss, injury, or death as a result of seismic events.

Slopes are minimal within the community of Friant and are slightly greater for the Friant Ranch Specific Plan Area. The potential for landslides will still remain minimal due to the minimal slopes present throughout the Project Area. The existing Friant Community Plan Area has slopes that are primarily less than 30 percent. The Friant Ranch Specific Plan calls for minimal grading and does not allow any structures to be built in areas with slopes in excess of 30 percent. These grading restrictions will alleviate potential impacts associated with landslides in the Friant Ranch Specific Plan Area because slopes in excess of 30 percent will not be built upon.

The County requires all building permit applications for new structures to adhere to the Zone 3 standards of the California Uniform Building Code (CUBC). These standards reduce risks associated with seismic and related hazards.

Conclusion: Because slopes in excess of 30 percent will not be built upon and new structures will be built in accordance with the CUBC, the potential seismic and landslide impacts as a result of the Project are *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.6.2 – Soil Erosion and Loss of Topsoil
[Evaluation Criteria (b)]

Slopes within the Project Area are minimal and soils are not considered to be highly erodible. The Fresno County General Plan Background Report has identified the area to the east of the Friant Ranch Specific Plan Area to be an area of erosion hazard. The Fresno County General Plan Background Report does not identify the Project Area as an area of erosion hazard.

The Friant Ranch Specific Plan calls for minimal grading in areas with slopes in excess of 30 percent to reduce erosion and loss of topsoil. In areas where hillside grading is necessary, the Specific Plan requires hillsides to be designed with contoured slopes and/or revegetated with native and water-wise landscaping to reduce erosion and loss of topsoil.

Conclusion: Development of the proposed Project will not create substantial soil erosion or loss of topsoil; therefore the potential impact will be *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.6.3 – Soil Instability
[Evaluation Criteria (c) and (d)]

Soils analysis within the Project Area revealed alluvial sediments consisting of silt, clay, poorly graded sand, silty sand, gravel and cobble, and soils that are generally only slightly plastic. Given low seismicity and the relative density of the subsurface sediments, loss to liquefaction and seismically induced settlement are considered unlikely.

There is no evidence to suggest that soils located within the Project Area are subject to lateral spreading. Subsidence is due to non-compacted, wind-deposited, soil consolidation under load; to oil or gas production; or to severe groundwater overdraft; no such soils, production or severe overdraft exist in the Project Area. Subsidence has not previously been a problem within the Project Area and surrounding area. The sinking or settling of the land surface due to natural or artificial causes could occur within any areas set aside or to be set aside as wetlands areas. These areas accrual deposits during the winter months when water increases in streams and creeks bring in new sediments then as the land begins to dry and settle during the summer month's minor subsidence may occur. The Friant Ranch Specific Plan has designated areas of this nature to remain as open space and for recreational trail uses. This will reduce the number of structures affected by such effects because these areas will remain as open space areas.

According to the Fresno County General Plan Background Report, expansive soils are present to the south of the Friant community and not within the Project Area.

The Friant Ranch Specific Plan calls for minimal grading in areas with slopes in excess of 30 percent. In areas where hillside grading is necessary, hillsides will be designed with contoured slopes and/or revegetated with native and water-wise landscaping.

Conclusion: New structures will be required by the County to comply with the Fresno County Grading Ordinance, Fresno County Improvement Standards, and the recommendations in the Friant Ranch Infrastructure Master Plan. The Project is located on stable soil and development will not result in on- or off-site soil instability circumstances, therefore the potential impact will be *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.6.4: Septic Tanks and Alternative Wastewater Disposal
[Evaluation Criteria (e)]

New development as a result of the Specific Plan adoption will rely on a public sewer system and will not be on a septic system or alternative wastewater disposal system. New development within the balance of the Proposed Community Plan Area (which is currently unsewered other than the Millerton Village Mobile Home Park) will rely upon septic systems until such time as the funding is available to construct a collection system to carry sewage to the treatment plant proposed within the Specific Plan Area. Such a collection system is not part of the Project. The continued use and/or installation of septic systems within the Friant Community Plan Area will not result in a significant impact as the soils are capable of adequately supporting the use of septic systems.

Conclusion: Because the Specific Plan development will rely on a public sewer system, *no impact* will result from the Specific Plan development. As to new development within the remaining portions of the Project Area, the use of septic systems or an alternative wastewater disposal system will *not result in a significant impact* because such system(s) will have to be permitted by the County.

Impact #3.6.5: Loss of Mineral Resources or Resource Recovery Site
[Evaluation Criteria (f) and (g)]

Regionally, the San Joaquin River has been used, and in some instances is still used, for sand and gravel mining. According to Figures 7-9 and 7-10 of the Fresno County Background Report, the Project Area includes land designated MRZ-1 and MRZ-2, however; the land designated MRZ-2 is located west of Friant Road along the San Joaquin River and not within the Friant Ranch Specific Plan Area. The MRZ-1 and MRZ-2 lands within the Project Area include APN 300-160-50T and 300-160-51. Both parcels have been mined and depleted of all accessible sand and gravel mineral reserves by mining development since last MRZ designation change in 1999. Consistent with General Plan policy OS-C.1 and OS-C.2, the Project does not propose to change the land use designation for these lands designated MRZ-2 along the San Joaquin River and these lands are not subject to development as a result of the Project. Consistent with General Plan Policy OS-C.7, the mining operations are located west of Friant Road, which serves as a

buffer from the proposed development within the Specific Plan Area situated east of Friant Road. Consistent with General Plan Policy OS-C.8, the trails contemplated by the Project are situated more than 300 feet from any active mining operations.

Conclusion: Adoption and implementation of the Project will not result in the loss of mineral resources or a MRZ-2 designated area, therefore; *no impact* has been identified.

Mitigation Measures: No mitigation measures are required.

3.7 Hazards and Hazardous Materials

INTRODUCTION

This section evaluates the potential for impacts from hazards and hazardous substances and/or waste contamination related to the Project.

3.7.1 REGULATORY SETTING

Regulatory

Hazardous Materials

A substance may be considered hazardous due to a number of criteria, including toxicity, ignitability, corrosivity, or reactivity. The term “hazardous material” is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

Once a hazardous material becomes ready for discard, it becomes a hazardous waste. A hazardous waste, for the purpose of this report, is any hazardous material that is abandoned, discarded, or (planned to be) recycled. In addition, hazardous wastes may occasionally be generated by actions that change the composition of previously non-hazardous materials. The same criteria (toxicity, ignitability, corrosivity, or reactivity) that render a material hazardous make waste hazardous.

The use of hazardous materials and disposal of hazardous waste are subject to numerous laws and regulations at all levels of government. Below is a brief overview of federal, state, and local laws and regulations.

Federal

Resource Conservation and Recovery Act 42 U.S.C. s/s 6901 et seq. (1976)

Under the Resource Conservation and Recovery Act (RCRA), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements. The U.S. Environmental Protection Agency (EPA) must approve state programs intended to implement federal regulations. In California, the California Environmental Protection Agency (Cal EPA) and the Department of Toxic Substances Control (DTSC), a department within Cal EPA, regulate the generation, transportation,

treatment, storage, and disposal of hazardous waste. EPA approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. DTSC has primary hazardous material regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe the management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in ordinary landfills. The generator must retain hazardous waste manifests for a minimum of three years. Hazardous waste manifests provide a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the state. The generator must match copies of hazardous waste manifests with receipts from treatment, storage, and disposal facilities.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act and associated Superfund Amendments provide EPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. California has enacted similar laws intended to supplement the federal program. The DTSC is primarily responsible for implementing California's Superfund Law.

State

California Code of Regulations, Title 22, §66261.20-24

Soils having concentrations of contaminants higher than certain acceptable levels must be handled and disposed as hazardous waste when excavated. The California Code of Regulations, Title 22, §66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste.

California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act)

The Business Plan Act requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored onsite;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher course.

Hazardous Materials Transportation Regulations (26 CCR)

The State of California has also adopted U.S. Department of Transportation (DOT) regulations for the intrastate movement of hazardous materials (26 CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the

state (26 CCR). Both regulatory programs apply in California. The two State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

California Vehicle Code §32000

Common carriers are licensed by the CHP, pursuant to California Vehicle Code §32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

California Emergency Services Act

Pursuant to the California Emergency Services Act, the state has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including Cal EPA, CHP, the California Department of Fish and Game (CDFG), the Regional Water Quality Control Boards (RWQCB), the local Air Pollution Control Districts, and local agencies.

California Accidental Release Prevention Program

California Accidental Release Prevention Program (CalARP) regulations became effective January 1, 1997, replacing the California Risk Management and Prevention Program. CalARP was created to prevent the accidental release of regulated substances. It covers businesses that store or handle certain volumes of regulated substances at their facilities. A list of regulated substances is found in Section 2770.5 of the CalARP regulations. If a business has more than the listed threshold quantity of a substance, an accidental release prevention program must be implemented and a risk management plan may be required. The California Office of Emergency Services is responsible for implementing the provisions of CalARP.

California Public Resources Code Section 4291

The California Public Resources Code of Regulations Section 4291 requires that all buildings or structures located adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, shall at all times be maintained around and adjoining buildings or structure, or to the property line if less than 100 feet, should be removed. Additionally, any trees adjacent to or overhanging buildings or structures should be maintained by removing leaves, needles, or other dead vegetative growth.

Local

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) was mandated by the State in 1993. The Unified Program was created to

consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for several hazardous materials programs. In January 1996, Cal EPA adopted regulations implementing the Unified Program. The program has six elements: hazardous waste generators and hazardous waste onsite treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Uniform Fire Code hazardous materials management plans and inventories. At the local level, this is accomplished by identifying a Certified Unified Program Agency (CUPA) that coordinates all of these activities to streamline the process for local businesses. The Fresno County Environmental Health Division is approved by Cal EPA as the CUPA for Fresno County. This division administers the Underground Storage Tank program in Fresno County, performs regular inspections of existing facilities, grants permits for new facilities, checks construction plans, and performs site mitigation and necessary enforcement actions.

Fresno County General Plan

The following Fresno County General Plan policies address hazards and hazardous materials:

Emergency Management and Response

Goal HS-A To protect public health and safety by preparing for, responding to, and recovering from the effects of natural or technological disasters.

Policy HS-A.1 The County shall, through the Fresno County Operational Area Master Emergency Services Plan, maintain the capability to effectively respond to emergency incidents, including maintenance of an emergency operations center.

Fire Hazards

Goal HS-B To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policy HS-B.1 The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.2 The County shall ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes.

Policy HS-B.4 The County shall require that foothill and mountain subdivisions of more than four (4) parcels provide for safe and ready access for fire and other emergency equipment, for routes of escape that will safely handle

evacuations, and for roads and streets designed to be compatible with topography while meeting fire safety needs.

Policy HS-B.5 The County shall require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress.

Policy HS-B.8 The County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

Hazardous Materials

Goal HS-F To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

Policy HS-F.1 The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.2 The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.7.2 and 3.7.4).

3.7.2 PHYSICAL SETTING

Existing uses within the Project Area include: single family residences, commercial services along Friant Road, a mobile home park, a fish hatchery, a closed elementary school, a wastewater treatment facility, vacant land, grazing land, and recreation/open space along the San Joaquin River. There are no public or private airports in the Project vicinity and no known past or present industrial sites in the Project Area.

Fire Protection

Fresno County, through contract with the California Department of Forestry (CDF), provides fire protection services in unincorporated areas of Fresno County.

Known Hazardous Materials Sites

The following databases, lists, or reports, compiled pursuant to Government Code Section 65962.5, were consulted in December 2007 in order to identify any recorded hazardous waste sites within the Project area. No recorded sites were identified.

Federal

National Priority List (NPL). Identifies sites for priority cleanup under the Superfund program.

Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS). Contains information on sites identified by the U.S. EPA as abandoned, inactive, or uncontrolled hazardous waste sites that may require cleanup. CERCLIS sites are in the evaluation stage to determine whether these sites are to be included on the federal NPL list.

No Further Remedial Action Planned (NFRAP). The NFRAP database contains information pertaining to sites that have been removed from the CERCLIS database.

Resource Conservation and Recovery Information System (RCRIS). Contains sites which generate, transport, store, treat, and/or dispose of hazardous waste.

Toxic Release Inventory System (TRIS). Contains all sites that have or may be prone to toxic material releases.

State

Active Work Plan List (AWP). This list, formerly called the BEP, identifies known hazardous waste sites that are targeted for cleanup. It is the state level equivalent to the federal NPL list.

CALSITES. This database lists sites that have potential or confirmed hazardous release properties. It is the state level equivalent to the federal CERCLIS list.

Leaking Underground (LUST) and Aboveground (LAST) Storage Tank Lists. Track all of the known leaking underground and aboveground storage tanks and provide some information on the status of the remedial action on those sites.

Permitted Underground (UST) and Aboveground Storage Tank (AST) List. Provides a listing of underground and aboveground storage tanks that are permitted within the state.

Solid Waste Information System (SWIS). Provides a listing of solid waste landfills, incinerators, and transfer stations maintained by the California Integrated Waste Management Board.

Hazardous Waste and Substances Sites (CORTESE). Provides a listing of hazardous materials release sites and their locations. This list is compiled by various state and local

government agencies including the California Department of Toxic Substances Control and the State Water Resources Control Board.

California Hazardous Materials Spill Information (RIMS). Contains information relating to reported hazardous materials incidents, such as accidental releases or spills. Maintained by the California Office of Emergency Services.

3.7.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact associated with hazards and hazardous materials if it would do any of the following:

- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.*
- 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 or risk of explosion.*
- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*
- 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.*
- 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 for people residing or working in the project area.*
- f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.*
- g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.*
- h) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.*
- i) *Create the potential for exposure to existing hazardous conditions, materials, soil contamination, or groundwater contamination. This potential for exposure includes members of the public, or workers on the project, and associated potential for health risks during construction or maintenance activities.*

Impact #3.7.1 – Hazardous Materials Transportation, Use and Disposal [Evaluation Criteria (a)]

The increase in development as a result of the Project could result in more hazardous materials being used, stored, transported to and discarded within the Project Area, which would increase the potential risk associated with hazardous materials and waste. The Draft Friant Community Plan Update and Draft Friant Ranch Specific Plan include policies and design features that are intended to limit the impact hazardous materials could have on the population and environment. Policy 6.3 of the Draft Community Plan ensures conformance with all applicable goals and policies for handling, disposing of or abatement of hazardous materials as identified in the Fresno County General Plan Health and Safety Element. Policy 5.39 of the Draft Specific Plan will enhance traffic safety by requiring a clear line of site across the corner of residential lots. All commercial facilities within Friant Ranch will be equipped with fire sprinklers. The Transportation Element of the Specific Plan contains vehicular and pedestrian routes, circulation, trails, scenic roadways and transit that will ensure safety and avoid an increase in traffic or transportation-related hazards to surrounding neighborhoods.

Residential growth that would occur over the lifetime of the Project could result in increased use of common household hazardous materials. Common household hazardous materials include but are not limited to: flammable/ignitable materials such as gasoline and paint thinner; explosive/reactive materials such as pool/spa chemicals; corrosive materials such as drain/rust removers; toxic materials such as pesticides, lead and mercury; and radioactive materials such as ionizing smoke detectors and static eliminators. General household use of hazardous materials is limited and is not considered a major hazard. Households within the Project area are not expected to differ from this general trend. Thus, due to the limited amount of hazardous materials that would be used by individual households within the Project Area, and the availability of proper disposal facilities provided for in the draft Community Plan Update and proposed Specific Plan, the risk from use of household hazardous materials would be less than significant.

Moreover, potential increases in industrial, public facility and commercial use of hazardous materials would be controlled by federal, State and County agencies, as discussed in the following paragraph, which would ensure that hazardous material use and transportation are controlled to minimize hazards.

State of California Hazardous Material Transportation Regulations (26 CCR) govern the transportation of hazardous waste originating/passing through the state. Adherence to California Vehicle Code Section 32000 will ensure that every motor carrier related to the Project who transports in excess of 500 pounds of hazardous materials is licensed to do so. Adherence to the CalARP and the Business Plan Act will prevent the accidental release of regulated substances from businesses that store or handle certain volumes of regulated substances at their facilities within the Project Area.

Conclusion: The Project would have a *less than significant* impact related to the transportation, use and disposal of hazardous materials.

Mitigation Measures: No mitigation measures are required.

**Impact #3.7.2 – Hazardous Materials Accidents
[Evaluation Criteria (b)]**

Due to the increase in non-residential land uses, such as commercial, that would result from the Project, there would be the potential for an increase in the risk of hazardous materials accidents such as spills. As noted previously in Impact #3.7.1 discussion, residential use of hazardous materials is generally limited and is not generally considered a major hazard due to the limited amount of hazardous materials that would be used by individual households, and the availability of proper disposal facilities. Although there can be no guarantee that no accident involving hazardous materials will occur as a result of the Project, the threat of accidents is maintained at a less than significant level by existing federal, State, and local regulations that control the production, use, disposal, emissions and transportation of hazardous materials. For example, the transport of hazardous materials by truck and rail is regulated by the DOT and the CALEPA is responsible for implementing federal hazardous materials laws and regulations. The County's Emergency Response Program is designed to respond to a wide range of emergency situations including potential hazardous materials incidents, in the event one was to occur.

Adherence to the Business Plan Act, described in section 3.7.1 Regulatory Setting, will ensure that any business that handles hazardous materials prepare a business plan which includes details of the facility and business conducted on the site, an inventory of hazardous materials that are handled or stored on site, an emergency response plan, and a safety and emergency response training program for new employees. Adherence to the CalARP will prevent the accidental release of regulated substances from businesses that store or handle certain volumes of regulated substances at their facilities within the Project Area.

Fresno County policies HS-F.1 and F.2 relate to hazardous materials and require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations, and that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage. Policy 6.3 of the Draft Friant Community Plan is consistent with Fresno County policies HS-F.1 and F.2 and states, "Ensure conformance with all applicable goals and policies for handling, disposing of or abatement of hazardous materials as identified in the Fresno County General Plan Health and Safety Element."

Implementation of the Project would result in the development of residential, commercial, and public facilities uses and related infrastructure. No significant environmental damage, such as an explosion of hazardous materials, is anticipated due to implementation of the Project. Compliance with federal, State and local regulations would reduce the possibility that hazardous substances within the Project Area would cause significant environmental damage due to an explosion.

Conclusion: Since activities within the Project Area must be carried out in compliance with established federally- and State-mandated guidelines for the handling of hazardous materials, the

risk associated with the potential for accidental release of hazardous materials into the environment or potential explosion would be *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.7.3 – Hazardous Materials Around Existing or Proposed Schools
[Evaluation Criteria (c)]

The Project Area is served by the Clovis Unified School District. Students in Friant attend Liberty Elementary School (K-6), Kastner Intermediate School (7-8), and Clovis West High School (9-12).

The Project does not include any future school sites and the one existing school site in the Project Area (located within the Existing Friant Community Plan Area and outside the Friant Ranch Specific Plan Area) is now in private ownership and is no longer operating as a school. No aspect of the Project is expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of the existing school site.

Conclusion: No aspect of the Project is expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of a school site. There is *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.7.4 – Hazardous Materials Site
[Evaluation Criteria (d) and (i)]

The databases, lists and or reports delineated above, in section 3.7.2 Physical Setting, were consulted in December 2007 in order to identify any recorded hazardous material and waste sites within the Project Area. No recorded sites were identified.

Conclusion: Since there are no known hazardous material sites or risks of contamination within the Project Area, the Project will have *no impact* as the Project will not be located on a hazardous site.

Mitigation Measures: No mitigation measures are required.

Impact #3.7.5 – Private or Public Airport Hazards
[Evaluation Criteria (e) and (f)]

There are no public airport or private airstrips within two miles of the Project Area, and no public or private airports, airstrips or airport related hazards exist within or near the Project Area.

Conclusion: The Project will have *no impact* related to private or public airport hazards because there is no public or private airport or airstrips within or near the Project Area.

Mitigation Measures: No mitigation measures are required.

Impact #3.7.6 – Emergency Preparedness
[Evaluation Criteria (g)]

Fresno County Office of Emergency Services (OES) coordinates the development and maintenance of the Fresno County Operational Area Master Emergency Services Plan. This plan serves as a guide for the County’s response to emergencies/disasters in the unincorporated areas of the County. The purpose of this plan is to ensure the most effective and economical use of all resources, material and manpower, for the maximum benefit and protection of effected populations in an emergency/disaster.

The Project will not interfere with this Plan as the Project is consistent with the Fresno County General Plan policies HS-F.1 and F.2. Policy 3.3 of the Draft Friant Community Plan says that prior to specific project approvals, new development will be required to demonstrate the ability to provide infrastructure and emergency response capabilities to support new development. Policy 5.1 of the Draft Friant Community Plan says that the Project will ensure that new development will not create a burden on adequate levels of emergency response services. The primary streets in the Friant Ranch Specific Plan Area are designed with more than one entry/exit thereby allowing adequate emergency access in the case of an accident.

The Project is consistent with policies in the County’s Health and Safety Element, which require new development to be designed and constructed in a manner that minimizes risks from fire, flood, seismic, geologic and noise hazards; and includes requiring adequate emergency access for fire and emergency vehicles. A distribution system from the water treatment plant will be installed throughout Friant Ranch, providing sufficient domestic and fire water supplies. All commercial facilities in Friant Ranch will be equipped with fire sprinklers. Friant Ranch will implement LID principles and the drainage system will be designed to incorporate seasonal flooding capacity. The use of designed channels will allow for the southerly drainage to be connected to the northerly drainage system. Culverts and the Friant-Kern Canal will assist in the reduction of peak flows through Friant Ranch and assist in the protection against a 100-year flood scenario. Friant Ranch also provides on-site and off-site drainage improvements, basins, wetland drainage and large swaths of open spaces that will assist in minimizing impacts from flooding. All buildings in the Project Area will be built to federal, State and local regulations for seismic and geologic requirements (reference Section 3.6). The use of Neighborhood Electric Vehicles within the active-adult community will reduce automobile trips and air and noise pollution.

Policy 3.3 of the Draft Friant Community Plan Update requires prior to subsequent project-level approvals, that new development demonstrate the adequate ability of infrastructure, landforms, physical constraints, and emergency response capabilities to support new development.

The Friant Ranch Specific Plan provides for the formation of a Community Facilities District (CFD), which will have two components. The CFD will be structured with an initial capital contribution through a per-unit payment and then will provide ongoing funds for fire protection operations and maintenance through a special tax assessment within the CFD boundaries.

Mitigation is necessary to ensure formation of this CFD. Adherence to the existing goals and policies of the Fresno County General Plan, the formation of a CFD pursuant to the Friant Ranch Specific Plan, and the goals and policies of the Draft Community Plan Update and Specific Plan will ensure that additional emergency services and personnel are provided and that new development will not proceed until sufficient emergency services are ensured.

Conclusion: The Project's impact on emergency preparedness is *potentially significant* because, without some assurance of additional funds for fire protection and law enforcement in the Project Area, the Friant Ranch Specific Plan could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Mitigation Measure #3.7.6a: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a Community Facilities District shall be formed to provide funding for additional fire protection services in the Project Area sufficient to satisfy the standards set forth in the Fresno County Health and Safety Element.

Mitigation Measure #3.7.6b: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD will be established to provide the funding necessary to maintain adequate law enforcement staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-G.2 and PF-G.4. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.

Effectiveness of Mitigation: Implementation of mitigation measures 3.7.6a and 3.7.6b will result in a *less than significant* impact on emergency preparedness because the additional funding from the CFD will ensure compliance with the Fresno County Health and Safety Element standards such that the Project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact #3.7.7 – Wildland Fires [Evaluation Criteria (h)]

Structural and wildland fire hazards can threaten life and property in Fresno County. Wildland fires resulting from either natural or manmade causes occur in forests, brush, grasslands, fallow agricultural areas, and vacant lots. Wildland fire is a potential threat within the Project vicinity. Policy 2.5 of the Draft Friant Ranch Specific Plan provides for 245 acres of undisturbed open space and 30 acres of revegetated slopes that will be maintained as natural vegetation. Open space lands are also east and south of the Friant Ranch Specific Plan Area. The close proximity of these open space areas affect the Project's potential to expose people or structures to harm from wildland fires.

Mitigation measure 3.4.1(B) (Biological Resources section) calls for grazing on the 245 acres of undisturbed onsite open space and the 30 acres of onsite revegetated slopes. This grazing will help manage the natural vegetation to minimize the potential fire hazard of the natural vegetation.

Policies 6.1 and 6.2 of the Draft Friant Community Plan Update ensure that new development does not create a burden on adequate levels of fire protection services and that the County will require that adequate fire protection be provided to all existing Friant Community residents.

The Draft Friant Ranch Specific Plan requires all commercial facilities to be equipped with fire sprinklers and requires that a CFD be formed in order to provide the needed funding to maintain the fire emergency response time and ISO ratings established as goals in the Fresno County General Plan. This requirement is also incorporated in mitigation measure 3.7.6a of this EIR.

As noted in the Regulatory Section (3.7.1), the County's standards include reviewing project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property; to ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes; require that foothill and mountain subdivisions of more than four (4) parcels provide for safe and ready access for fire and other emergency equipment, for routes of escape that will safely handle evacuations, and for roads and streets designed to be compatible with topography while meeting fire safety needs; require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress; and the County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards.

The Project is consistent with Fresno County General Plan policies HS-B.1, HS-B.2, HS-B.4 and HS-B.5 in that the Friant Ranch Specific Plan is designed and will be constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards; provides for safe and ready access for fire and other emergency equipment; and provides adequate access for fire and emergency vehicles and equipment.

All new development within the Project Area will adhere to California Public Resources Code of Regulations Section 4291 which requires that all buildings or structures located adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, shall at all times be maintained around and adjoining buildings or structure, or to the property line if less than 100 feet, should be removed.

Conclusion: Wildland fire is a potential threat to the community within and surrounding the Project Area. Taken together, existing County standards and policies, Project design guidelines and standards, and mitigation measure 3.7.6a are sufficient to reduce potential impacts to *less than significant* because the protective measures incorporated into the Project design and required by county standards and mitigation measure 3.7.6a, will minimize the exposure of people and structures to loss, injury, or death involving wildland fires.

Mitigation Measures: No mitigation measures are required.

3.8 Hydrology and Water Quality

INTRODUCTION

This section discusses those aspects of the Project that have the potential to impact existing hydrology and water quality in the Project area during and after implementation of the Project. Issues such as storm water drainage, groundwater depletion and recharge, water quality, waste water treatment, waste water effluent disposal and flooding are discussed in this section. The adequacy of the proposed Project water supply and related effects of any change in hydrology (i.e., snowpack and rainfall) due to climate change are addressed in section 3.15 Greenhouse Gas Emissions and Global Climate Change.

3.8.1 REGULATORY SETTING

Federal Water Pollution Control Act (Clean Water Act)

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. The Act specifies 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.

CWA Section 402 regulates point source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board (SWRCB) oversees the NPDES program, which is administered by the Regional Water Quality Control Boards (RWQCBs). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. The Project proposes to collect and treat wastewater from the new development at a new wastewater treatment facility that will be constructed near the project boundaries.

Section 402(p) of the CWA establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES permit program. Section 402(p) requires that stormwater associated with municipal and industrial activities that discharge either directly to surface waters or indirectly through separate municipal storm sewers be regulated by a NPDES permit. In 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated regulations for permitting storm water discharges from industrial sites (including construction sites that disturb five acres or more) and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. These regulations, known as the Phase I regulations, require operators of medium and large MS4s to obtain individual storm water permits. On December 8, 1999, U.S. EPA promulgated regulations, known as Phase II, requiring permits for storm water discharges from “regulated Small MS4s” and from construction sites disturbing between one and five acres of land. In California, regulated Small MS4s are subject to a General NPDES permit adopted by the SWRCB (Water Quality Order No. 2003-0005-DWQ (General Permit for Small MS4s)). An entity subject the General Permit includes a Small MS4 automatically designated by U.S. EPA pursuant to 40 CFR section 122.32(a)(1) because it is located within an urbanized area defined by the Bureau of the Census; or, because it has been so designated by the SWRCB or RWQCB after consideration of a number of factors including high population density, high growth or growth potential, interconnection to permitted MS4,

discharges to sensitive water bodies and significant contribution of pollutants to waters of the U.S. The community of Friant does not meet the definition of medium or large MS4 and is not a “regulated Small MS4.”

The SWRCB has adopted a statewide General Permit for all storm water discharges associated with construction activities. The General Permit for Construction Activities applies to all dischargers where construction activity disturbs one acre or more. Construction affecting more than one acre within the Project Area will require compliance with the SWRCB’s General Permit for Construction Activities.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Under Section 404, any person or public agency proposing to locate a structure, excavate, or discharge dredged or fill material into waters of the U.S. or to transport dredged material for the purpose of dumping it into ocean waters must obtain a permit for the proposed activity from the U.S. Army Corps of Engineers (Corps).

Under Section 401 of the CWA every applicant for a federal permit or license (such as a section 404 permit from the U.S. Army Corps of Engineers) for any activity which may result in a discharge to waters of the U.S. must obtain a Water Quality Certification from the Regional Water Quality Control Board (RWQCB) that the proposed activity will comply with applicable water quality standards.

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) provides for the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California’s major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Designated beneficial uses, together with the corresponding water quality objectives, also constitute water quality standards under the CWA. Therefore, the beneficial uses and water quality objectives form the regulatory references for meeting State and Federal requirements for water quality control. Water quality standards are primarily implemented through the NPDES permitting system and the issuance of waste discharge requirements (WDRs) to regulate waste discharges so that water quality objectives are met.

Basin plans and the water quality standards contained therein have been adopted for the Sacramento and San Joaquin River Basins and for the Tulare Lake Basin. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Sacramento-San Joaquin Basin Plan) establishes the water quality standards that are applicable to the proposed surface water discharge to the San Joaquin River. The Water Quality Control Plan for the Tulare Lake Basin (Tulare Lake Basin Plan) establishes water quality standards for the groundwater’s underlying the Project area and the proposed irrigation site for reclaimed wastewater. For the

proposed discharge to the San Joaquin River, the RWQCB is required to issue an NPDES permit that ensures the discharge will not cause or contribute to a violation of applicable water quality standards. (40 C.F.R § 122.44(d)(1)(i).) Likewise, the RWQCB is required to adopt water reclamation and/or waste discharge requirements for the use of reclaimed water to protect groundwater in a manner that is consistent with applicable water quality standards. (Water Code §§ 13263, 13523.)

San Joaquin River Beneficial Uses & Objectives

The designated beneficial uses for the portion of the San Joaquin River adjacent to the Project Area (reach No. 69, hydrologic unit 545 extending from Friant Dam to Mendota Pool) are identified in the Sacramento-San Joaquin Basin Plan at Table II-1 and identified in this report below in Table 3.8-1:

**Table 3.8-1
Beneficial Uses, San Joaquin River, from Friant Dam to Mendota Pool**

Municipal and domestic supply
Agriculture, irrigation
Agriculture, livestock watering
Industrial, process
Recreation, contact
Recreation, canoeing and rafting
Recreation, other non contact
Freshwater habitat, warm
Freshwater habitat, cold
Migration, warm
Migration, cold
Spawning, warm
Spawning, cold (potential)
Wildlife habitat

The Sacramento-San Joaquin Basin Plan (Basin Plan) contains numerous narrative and numeric water quality objectives that apply to this portion of the San Joaquin River. In addition to the water quality objectives contained in the Basin Plan, the U.S. EPA has adopted water quality criteria for priority toxic pollutants that also apply to surface waters in California (See 40 CFR §131.38 (“California Toxics Rule” or CTR) and 40 CFR §131.36 (“National Toxics Rule”). Considering the designated uses, over 150 water quality criteria/objectives apply to the San Joaquin River. Water quality objectives/criteria for certain constituents that may appear in the effluent and/or may be of interest to the RWQCB are identified below in Table 3.8-2. California Title 22 Maximum Contaminant Levels (MCLs) apply to all waters designated for municipal and domestic supply (including the San Joaquin River at Friant and the groundwater), and these are shown in Table 3.8-3.

**Table 3.8-2
Most Stringent Water Quality Objectives/Criteria for the
San Joaquin River – Constituents of Concern**

Parameter	Water Quality Objective/Criteria	Source
Ammonia (as N)	Acute Criteria (based on pH): 13.7 mg/L – 31.7 mg/L ^[1] Chronic Criteria (based on temperature and pH): 4.4 mg/L – 6.6 mg/L ^[1]	U.S. EPA Ambient Water Quality Criteria
Bacteria (as Fecal Coliform)	200 MPN/100mL (geometric mean of >4 samples in 30 days), No more than 10% above 400 MPN/100mL	Basin Plan
Chemicals		
General	Not present in concentrations that affect beneficial uses	Basin Plan
Inorganics	Shall not Exceed MCLs in Cal Title 22: Table 64431-A	Basin Plan
Fluoride	Shall not Exceed MCLs in Cal Title 22: Table 64433.2-A	Basin Plan
Organics	Shall not Exceed MCLs in Cal Title 22: Table 64444-A and Table 64533-A	Basin Plan
Secondary MCLs (for Consumer Acceptance)	Shall not Exceed MCLs in Cal Title 22: Table 64449-A	Basin Plan
Secondary MCLs-Ranges	Shall not Exceed MCLs in Cal Title 22: Table 64449-B	Basin Plan
Copper	1.32 ug/L ^[2]	California Toxics Rule
Dissolved Oxygen	7.0 mg/L at any time	Basin Plan
pH	Between 6.5 and 8.5, and shall not be changed by more than 0.5 units	Basin Plan
Salinity, Electrical Conductivity	150 micromhos/ cm, (90 th percentile)	Basin Plan
Zinc	17.2 ug/L ^[2]	California Toxics Rule

[1] Objective ranges were calculated from pH and temperature data collected by the Department of Fish & Game Water Quality Monitoring at the San Joaquin Fish Hatchery Receiving Water station from 1/06 and 3/07 (12 data points).

[2] Criteria calculated with ambient hardness of 10.1 mg/L as CaCO₃.

**Table 3.8-3
California Title 22 Maximum Contaminant Levels**

Constituent	Units	Title 22 MCLs
Table 64431-A: Inorganic Primary MCLs		
Antimony	µg/L	6
Arsenic	µg/L	10
Asbestos	MFL	7
Barium	mg/L	1
Beryllium	µg/L	4
Cadmium	µg/L	5
Chromium	µg/L	50
Cyanide	µg/L	150
Fluoride	mg/L	2
Mercury	µg/L	2
Nickel	µg/L	100
Nitrate (NO ₃ -N)	mg/L	45
Nitrate + Nitrite (sum as N)	mg/L	10
Nitrite (NO ₂ -N)	mg/L	1
Selenium	µg/L	50
Thallium	µg/L	2
Table 64444-A: Organic Primary MCLs		
Benzene	µg/L	1
Carbon Tetrachloride	µg/L	0.5
1,2-Dichlorobenzene	µg/L	600
1,4-Dichlorobenzene	µg/L	5
1,1-Dichloroethane	µg/L	5
1,2-Dichloroethane	µg/L	0.5
1,1-Dichloroethylene	µg/L	6
cis-1,2-Dichloroethylene	µg/L	6
1,2-Trans-Dichloroethylene	µg/L	10
Dichloromethane	µg/L	5
1,2-Dichloropropane	µg/L	5
1,3-Dichloropropylene	µg/L	0.5
Ethylbenzene	µg/L	300
Methyl-tert-butyl ether	µg/L	13
Chlorobenzene	µg/L	70
Styrene	µg/L	100
1,1,2,2-Tetrachloroethane	µg/L	1
Tetrachloroethylene	µg/L	5
Toluene	µg/L	150
1,2,4-Trichlorobenzene	µg/L	5
1,1,1-Trichloroethane	µg/L	200
1,1,2-Trichloroethane	µg/L	5
Trichloroethylene	µg/L	5
Trichlorofluoromethane	µg/L	150
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	1200
Vinyl Chloride	µg/L	0.5
Xylenes	µg/L	1750

**Table 3.8-3
California Title 22 Maximum Contaminant Levels (Continued)**

Constituent	Units	Title 22 MCLs
Additional Organics		
Alachlor	µg/L	2
Atrazine	µg/L	1
Bentazon	µg/L	18
Benzo(a)Pyrene	µg/L	0.2
Carbofuran	µg/L	18
Chlordane	µg/L	0.1
2,4-D	µg/L	70
Dalapon	µg/L	200
Dibromochloropropane (DBCP)	µg/L	0.2
Di(2-ethylhexyl)adipate	µg/L	400
Bis(2-Ethylhexyl)Phthalate	µg/L	4
Dinoseb	µg/L	7
Diquat	µg/L	100
Endothall	µg/L	100
Endrin	µg/L	2
Ethylene dibromide	µg/L	0.05
Glyphosate	µg/L	700
Heptachlor	µg/L	0.01
Heptachlor Epoxide	µg/L	0.01
Hexachlorobenzene	µg/L	1
Hexachlorocyclopentadiene	µg/L	50
gamma-BHC	µg/L	0.2
Methoxychlor	µg/L	30
Molinate	µg/L	20
Oxamyl	µg/L	50
Pentachlorophenol	µg/L	1
Picloram	µg/L	500
Polychlorinated biphenyls	µg/L	2
Simazine	µg/L	4
Thiobencarb	µg/L	70
Toxaphene	µg/L	3
2,3,7,8 TCDD or Dioxin	pg/L	30
2,4,5-TP (Silvex)	µg/L	50
Table 64533-A: Disinfection Byproducts Primary MCL		
Total trihalomethanes	µg/L	80
Table 64449-A: Secondary MCLs		
Aluminum	µg/L	200
Color	Units	15
Copper	µg/L	1000
Corrosivity		Non-corrosive
MBAS	µg/L	500
Iron	µg/L	300
Manganese	µg/L	50
Methyl-tert-butyl ether (MTBE)	µg/L	5

**Table 3.8-3
California Title 22 Maximum Contaminant Levels (Continued)**

Constituent	Units	Title 22 MCLs
Odor—Threshold	Units	3
Silver	µg/L	100
Thiobencarb	µg/L	1
Turbidity	NTU	5
Zinc	µg/L	5000

Table 64449-B: Secondary MCLs Ranges

Constituent	Units	Recommended	Upper	Short Term
TDS	mg/L	500	1000	1500
EC	µmhos/cm	900	1600	2200
Chloride	mg/L	250	500	600
Sulfate	mg/L	250	500	600

Table 64433.2-A: Fluoride

Annual Average of maximum daily air temperature		Units	Optimal Fluoride Level	Control Range	
Fahrenheit	Celsius			Low	High
50.0 to 53.7	10.0 to 12.0	mg/L	1.2	1.1	1.7
53.8 to 58.3	12.1 to 14.6	mg/L	1.1	1	1.6
58.4 to 63.8	14.7 to 17.7	mg/L	1	0.9	1.5
63.9 to 70.6	17.8 to 21.4	mg/L	0.9	0.8	1.4
70.7 to 79.2	21.5 to 26.2	mg/L	0.8	0.7	1.3
79.3 to 90.5	26.3 to 32.5	mg/L	0.7	0.6	1.2

Groundwater Beneficial Uses & Objectives

Ground Water beneficial uses designated for the portion (DAU 234) of the Kings River sub basin in which the Project Area lies are contained in the Tulare Lake Basin Plan, and are identified below in Table 3.8-4.

**Table 3.8-4
Beneficial Uses, Groundwater, Detailed Analysis Unit 234**

Municipal
Agricultural
Industrial

Groundwater quality objectives to protect the designated beneficial uses are also contained in the Tulare Lake Basin Plan and are identified below in Table 3.8-5.

**Table 3.8-5
Groundwater Quality Objectives**

Parameter	Criteria/Objective
Bacteria (as Total Coliform)	2.2 MPN/100mL (7 day average)
Chemicals:	
General	Not present in concentrations that affect beneficial uses
Inorganics	Shall not Exceed MCLs in Cal Title 22: Table 64431-A (see Table 3.8-3)
Fluoride	Shall not Exceed MCLs in Cal Title 22: Table 64431-B (see Table 3.8-3)
Organics	Shall not Exceed MCLs in Cal Title 22: Table 64444-A (see Table 3.8-3)
Secondary MCLs (for Consumer Acceptance)	Shall not Exceed MCLs in Cal Title 22: Table 64449-A (see Table 3.8-3)
Secondary MCLs- Ranges	Shall not Exceed MCLs in Cal Title 22: Table 64449-B (see Table 3.8-3)
Lead	15 ug/L (Basin Plan)
Pesticides	6444-A- Organics Chemicals
Radioactivity	Table 64443, Table 3.8-4
Salinity	Annual increase less than 4 umhos/ cm
Tastes/ odors	Shall not contain concentrations that create nuisance or adversely affect beneficial uses
Toxicity	Maintain free of toxic substances

Federal and State Antidegradation Policies

As discussed above, the CWA requires states to adopt, with U.S. EPA approval, water quality standards applicable to all its intrastate waters (33.U.S.C. §1313.). The CWA also requires state water quality standards to include an antidegradation policy to protect beneficial uses and prevent further degradation of high quality waters. (33 U.S.C. §1313(d)(4)(B); 40 CFR §131.12.) In California, the State’s antidegradation policy is embodied in Resolution 68-16 (“Resolution 68-16”). The federal antidegradation policy is contained in federal regulations and applies to the proposed surface water discharge of treated effluent to the San Joaquin River (40 CFR §131.12.). The State’s antidegradation policy in Resolution 68-16 applies to both the proposed surface water discharge of treated effluent as well as the irrigation of reclaimed water and potential impacts to groundwater. The RWQCB is required to ensure that the proposed new discharge to the San Joaquin River as well as the irrigation of reclaimed water is consistent with the federal and state antidegradation policies, as applicable, when it issues an NPDES permit for the surface water discharge and waste discharge requirements for the use of recycled water.

Water Reclamation Requirements

The California Water Code contains statutory requirements that govern the use of recycled water. (See Water Code §§13500 et seq.) More specifically, any person proposing to produce and/or use recycled water is required by law to provide the appropriate RWQCB a report containing information regarding the proposed production and/or use of recycled water unless the supplier or the distributor of the recycled water has obtained a master reclamation permit (“MRP”). In turn, the RWQCB is required to consult with the California Department of Public Health (DPH), and after any necessary hearing, prescribe water reclamation requirements. The DPH has

published regulations that govern the quality of recycled water and the purposes for which it may be used (22 C.C.R. §§ 60301 et seq.). All recycled water uses are subject to water reclamation requirements issued by the RWQCB and are required to comply with recycled water use criteria established by DPH.

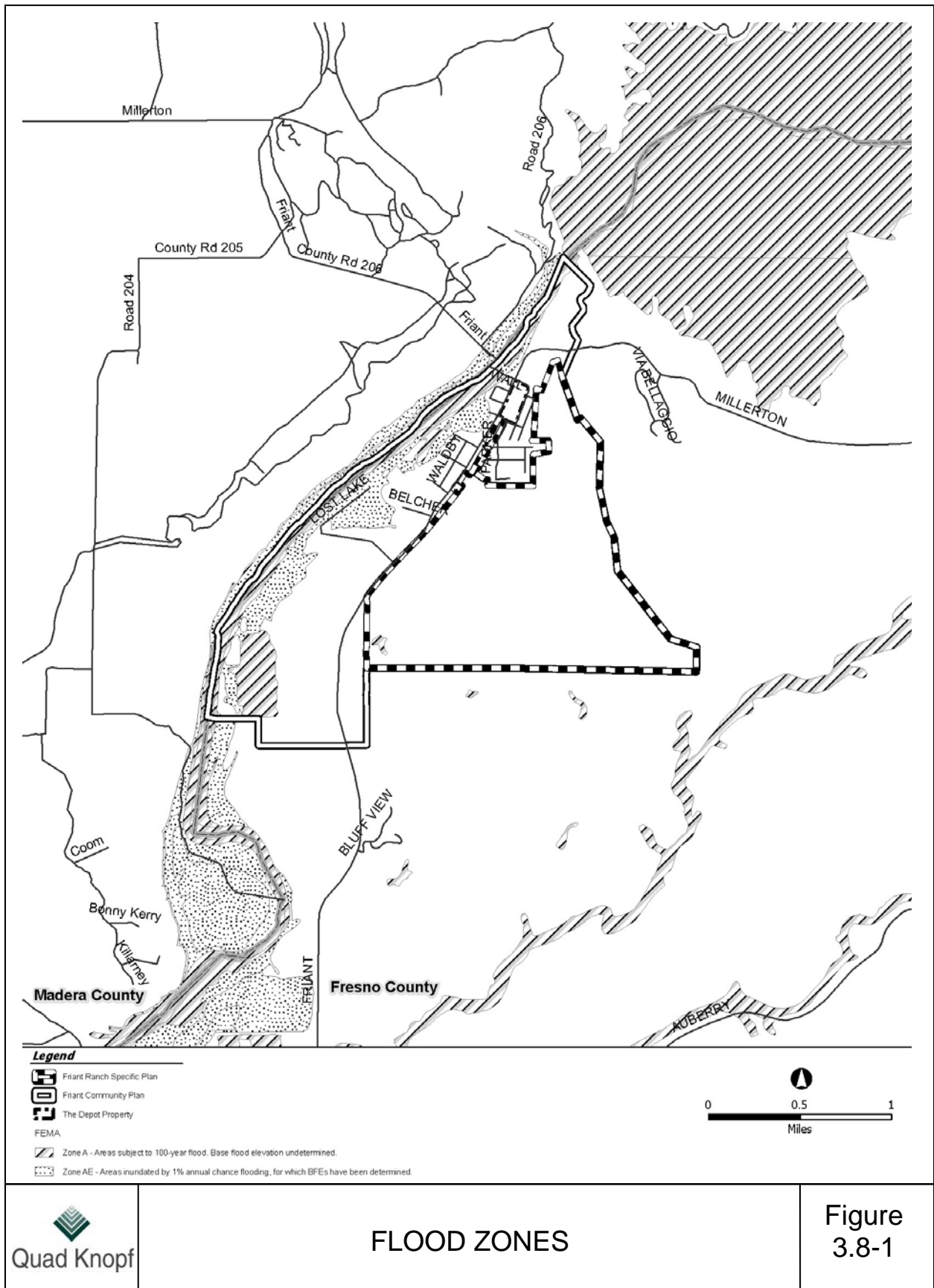
Federal Emergency Management Agency

Special Flood Hazard Areas (SFHA) are determined by the Federal Emergency Management Agency (FEMA), which creates Flood Insurance Rate Maps (FIRMs) designating SFHAs, commonly referred to as “flood plains.” These maps assist local jurisdictions in mitigating flooding hazards through land use planning and building permit requirements. To address the need for insurance to cover flooding issues, FEMA administers the National Flood Insurance Administration (NFIA) program. The NFIA program provides federal flood insurance and federally financed loans for property owners in flood prone areas. To qualify for federal flood insurance, the County must identify flood hazard areas and implement a system of protective controls. According to FEMA FIRM number 06019C1030F, dated July 19, 2001, there is one large vernal pool located in the southwestern corner of Friant Ranch which is shown to be within the Zone A, 100-year flood boundary (reference Figure 3.8-1). The 100-year floodplain is the area that has a one-percent chance of being flooded in any given year. Much of the area along the San Joaquin River, west of Friant Road and within the Community Plan boundary, is also within the 100-year flood boundary Zone A and Zone AE designations.

United States Bureau of Reclamation

The United States Bureau of Reclamation (USBR) is the sole source State of California water right permit holder for the stored San Joaquin River water impounded by, diverted, and released from Friant Dam. USBR provides service contracts for use of stored water from the CVP Friant Division to the 31 water agencies designated as CVP Friant Division “long-term contractors.” USBR has existing long-term service contracts with WWD #18 and LTRID.

Each of the separate renewal contracts expires on February 28, 2026, with one 25-year renewal provision. If a USBR contractor wishes to renew its respective contract pursuant to the 25-year renewal provision beyond the current expiration date, the contractor must submit a formal written request to the Secretary of the Interior two years prior to the date of expiration. In addition, each USBR contractor must also comply with certain conditions, such as: prepare a water conservation plan, implement the plan, operate and maintain all water measuring devices, use contract water supply in a reasonable and beneficial manner.



FLOOD ZONES

Figure 3.8-1

For a water transfer to qualify under subdivision (b) of the long-term renewal contract between USBR and WWD #18, such water transfer must: (i) be for irrigation purposes for lands irrigated within the previous three years, for M&I use, groundwater recharge, groundwater banking, similar groundwater activities, surface water storage, or fish and wildlife resources; not lead to land conversion; and be delivered to established cropland, wildlife refuges, groundwater basins or municipal and industrial use; (ii) occur within a single year; (iii) occur between a willing seller and a willing buyer; (iv) convey water through existing facilities with no new construction or modifications to facilities and be between existing Project Contractors and/or the Contractor and the U.S. DOI; and (v) comply with all applicable Federal, State, and local tribal laws and requirements imposed for protection of the environment and Indian Trust Assets, as defined under Federal law.

40 CFR Biosolids Regulations

The federal regulations, 40 CFR 503, became effective in 1994. The regulation is self-implementing and imposes requirements on the facilities that produce the biosolids and on the land applicators. The regulation establishes standards for pollutant limits, operational standards, management practices, and monitoring, record keeping, and reporting requirements. In order for the biosolids to qualify for land application, the biosolids must meet the maximum pollutant limitations for ten metals, and satisfy requirements for pathogen reduction and vector attraction reduction. A brief summary of the federal standards the biosolids must meet in order to comply with the 40 CFR 503 regulations follow.

Metals Limitations. The 40 CFR 503 regulations contain pollutant ceiling concentrations for metals that are the maximum allowable concentrations for any biosolids to be land applied (40 CFR 503.13 Table 1). In addition, there is a set of lower pollutant limits for biosolids to be defined as “exceptional quality” (EQ)_ Biosolids (see 40 CFR 503.13 Table 3).

Pathogen Reduction. In addition to pollutant concentrations, biosolids must not pose a public health risk. Performance-based pathogen reduction standards, contained in 40 CFR 503.32, classify biosolids as either Class A or Class B. Class A is material that has met Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503. Processes include composting, heat drying, and thermophilic aerobic digestion.

Class B biosolids is material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with CFR 503. Processes include aerobic digestion, composting, aerobic digestion, line stabilization and air drying.

The goal of Class A biosolids is to reduce pathogens to below detectable limits. The goal of Class B biosolids is to meet adequate pathogen reduction requirements and to rely on environmental factors at that reuse site to further reduce pathogens. Therefore, sites that use Class B biosolids must follow additional site restrictions concerning public access, animal grazing, and crop harvesting.

Vector Attraction Reduction. Vector attraction is any characteristic that attracts disease vectors, such as insects or animals that may transport or transmit infectious agents. The 40 CFR 503 regulation specifies ten alternatives for meeting the vector attraction reduction requirements. One alternative must be met in order for biosolids to be land applied. The applicable alternatives are provided below:

- Sewage sludge applied to the land surface or placed on a disposal site shall be incorporated into the soil within six hours after application to or placement on the land. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.
- Sewage sludge placed on a surface disposal site shall be covered with soil or other material at the end of each operating day.
- The pH of domestic septage shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes at 25 degrees Celsius.

Exceptional Quality Biosolids. Exceptional Quality (EQ) biosolids may be used and distributed in bulk or bag form and are not subject to general requirements and management practices other than monitoring, record keeping, and reporting to substantiate that the quality criteria have been met. EQ biosolids are exempt from cumulative loading rate restrictions on the soils. In order to be classified as EQ biosolids, the biosolids must meet the lower EQ pollutant limits, be classified as Class A, and meet one of the vector attraction reduction requirements.

Fresno County Waterworks District #18

WWD #18 consists of two main areas, Mira Bella and a portion of the Friant Community, divided by the Friant-Kern Canal and operating independently and separately.

WWD # 18's current service area encompasses 443 acres. 244 acres are located west of the Friant-Kern Canal, within the Friant Community Plan boundary (Western Service Area). The remaining 199 acres are located east of the Friant-Kern Canal (Eastern Service Area). The Eastern Service Area is not a surface water service area; rather the Eastern Service Area is a special groundwater service area.

WWD #18 delivers 150 acre-feet of treated surface water from Millerton Lake to 219 residential and 19 commercial/industrial customers within the Western Service Area. Water is delivered to the water treatment plant via a 6-inch diameter pipe that connects to a larger discharge pipe near the base of Friant Dam. Raw surface water from this connection point is treated with a series of clarifiers and pressure filters, and is disinfected using chlorination.

Lower Tule River Irrigation District

LTRID was formed in 1950 and is located in the southern third of Tulare County. LTRID encompasses an area of 103,000 acres. Water is conveyed to these lands through a system of 150 miles of canals.

Fresno County General Plan

The following existing Fresno County General Plan policies have been adopted to protect water quality and to reduce flood hazards.

Policy PF-C.18 In the case of lands entitled to surface water, the County shall only approve land use-related projects that provide for or participate in effective utilization of the surface water entitlement such as:

Constructing facilities for the treatment and delivery of surface water to lands in question;

Developing facilities for groundwater recharge of the surface water entitlement; and

Participating in the activities of a public agency charged with the responsibility for recharge of available water supplies for the beneficial use of the subject lands.

Policy PF-E.9 The County shall require new development to provide protection from the 100-year flood as a minimum.

Policy PF-E.14 The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.

Policy PF-E.20 The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

Policy OS-A.11 The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the County's groundwater.

Policy OS-A.14 The County shall permit and encourage, where economically, environmentally, and technically feasible, over-irrigation of surface water as a means to maximize groundwater recharge.

Policy OS-A.15 The County shall directly and/or indirectly participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the County. The program shall make use of flood and other waters to offset existing and future groundwater pumping.

Policy OS-A.17 The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.

Policy OS-A.19 The County shall, where economically, environmentally, and technically feasible, encourage the multiple use of public lands, including County lands, to include groundwater recharge.

Policy OS-A.21 The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts:

Identifying and controlling sources of potential contamination;

Protecting important groundwater recharge areas;

Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;

Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses);

Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;

Considering areas where recharge potential is determined to be high for designation as open space; and

Developing conjunctive use of surface and groundwater.

Policy OS-A.22 The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

A discussion of the Project's consistency with the above stated policies is found below in section 3.8.4 Impact Analysis.

3.8.2 PHYSICAL SETTING

Surface Water

The unincorporated community of Friant is at the base of Friant Dam and Millerton Lake, which supplies water for farmland via the Friant-Kern Canal and Madera Canal. The Friant community is close to natural water resources that local wildlife depends on, including the San Joaquin River.

The San Joaquin River, which is the second longest river in California at 330 miles, forms the western boundary of the Friant Community and is the boundary between Fresno and Madera

Counties. The river originates high in the western slopes of the Sierra Nevada and drains most of the area from the southern border of Yosemite south to Kings Canyon National Park.

Friant Dam and Millerton Lake are located immediately outside of the Friant Community Plan boundary, but their presence plays a pivotal role in Friant and Fresno County. Friant Dam, a 319-foot concrete gravity dam, was constructed in 1942 by the U.S. Bureau of Reclamation (USBR). USBR owns and operates the dam. Millerton Lake, which was created as a result of damming the San Joaquin River, has a capacity of approximately 520,500 acre-feet (af) and is approximately 15 miles long. The primary use for Millerton Lake is delivering irrigation water through the Madera and Friant-Kern Canals to a million acres of agricultural land in Fresno, Kern, Madera, and Tulare Counties. Secondarily, the lake is used to serve water for municipal and industrial uses as well as for flood control and recreation purposes.

USBR's Friant-Kern Canal forms the eastern boundary of the Friant Community Plan area boundary and transports water south from Millerton Lake to a point four miles west of Bakersfield, providing water to 28 water contractors along the way.

The San Joaquin River at the location of the proposed effluent discharge is of excellent quality. The river at this location reflects drainage and snowmelt from the Sierra Nevada Mountains and contains low levels of suspended solids, dissolved minerals. River temperatures are uniformly low throughout the year as a result of discharges of cold water from Millerton Lake. The river channel has a moderate gradient providing sufficient flow velocities to maintain rapid mixing and high dissolved oxygen levels. The Project area is located upstream of the lower elevation floor of the Central Valley, and thus is upstream of potential contaminant influences from agricultural drainage and urban stormwater runoff.

Although the Lower Tule River Irrigation District (LTRID) boundaries are located approximately 60 miles south of the Friant Community Plan Project Area, a brief description of the area within the LTRID boundaries is provided because of the proposed transfer of 2,000AF of CVP Friant Division Class 1 water from Lower Tule River Irrigation District (LTRID) to WWD18 to serve the proposed Project. The LTRID is comprised of approximately 103,086 acres extending approximately 10 miles west and eight miles east of the State Highway 99 corridor in Tulare County beginning at a point approximately four miles south of the City of Tulare and extending to a point approximately three miles north of the Community of Pixley. With exception of the small unincorporated communities of Poplar, Woodville and Tipton the entire LTRID consists of flat cultivated farmland (approximately 85,000 irrigated acres) traversed by over 150 miles of canals and rivers.

Wetlands

Several types of wetlands are found within the Project site, including vernal pools, wetland swales, wetland channels, and upland channels. A vernal pool is a shallow depression that fills with water during the wet winter and early spring months. Such pools are seasonal in nature and are dry for much of each year. Vernal pools provide a vibrant habitat for frogs, toads, fairy shrimp, and specialty adapted plants, but not for fish. Section 3.4, Biological Resources, of this Draft EIR addresses any potential impacts to these wetlands.

Within the Friant Ranch Specific Plan Area several ephemeral streams that have been classified as wetland channels and/or vernal swales depending on the location, convey most of the runoff from east-west to Friant Road. A portion of the Friant Ranch Specific Plan Area drains to the south where it either crosses Friant Road by culvert or has flowed into Little Dry Creek via unnamed ephemeral streams or White Fox Creek. Stormwater runoff in the remaining Community Plan Area, including Lost Lake Recreation Area, includes natural drainage areas and storm drain facilities eventually flowing to the San Joaquin River.

There is an existing area of drainage concern on the Project site, at the northwesterly corner where the existing natural drainage is conveyed beneath Friant Road. The size of that conveyance is such that water can be backed up on the east side of Friant Road, causing puddling, minor flooding and inconvenience to the local residents. While specific facility design is beyond the scope of the Friant Ranch Infrastructure Master Plan, this area has been noted and during project design, provision will be made to reduce the overall concentration of runoff to this point, mitigating the existing problems. Runoff to this point will be reduced by means of the LID methods discussed previously, including on-site retention, bio-swales and by redirection of flows to other storage facilities.

Groundwater

The community of Friant lies on the southeastern fringe of the Madera Subbasin³ of the San Joaquin River Hydrologic Region in the San Joaquin Valley Groundwater Basin, which encompasses 13,855 square miles within two different hydrologic regions. The Madera Subbasin encompasses 614 square miles and contains approximately 12.6 million acre-feet of water (to a depth of 300-ft estimated in 1995 by DWR) and generally flows to the southwest in the eastern part of the subbasin. On average, the subbasin water level has declined nearly 40-ft from 1970 through 2000. There are nine individual residences within the Friant community that rely on independent groundwater wells; no successful large-scale public groundwater wells exist within the community Plan Area due in part to lack of an adequately productive aquifer directly beneath the Area. Water quality in the area is a blend of water infiltrating from the San Joaquin River and Millerton Lake, and the naturally occurring groundwater flowing through the fractured bedrock. With the exception of relatively isolated areas of groundwater containing elevated gross alpha and uranium, water quality is generally high and meets or exceeds drinking water standards.

Wastewater

Nearly all of the buildings in the Friant Community Plan Area are serviced by individual septic systems. The Millerton Lake Village mobile home park is the only portion of the Friant Community Plan Area that is currently on a public sewer system. The current wastewater

³ The Department of Water Resources (DWR) California's Groundwater Bulletin 118, updated in 2003, gives generalized subbasin boundary descriptions that would place the Project Area in the Kings Subbasin instead of the Madera Subbasin. The bulletin mapping and DWR provided electronic shapefiles, however, use the more precisely defined boundaries that place the project in the Madera Subbasin. Both subbasins are in the San Joaquin Valley Groundwater Basin. The Bulletin describes the Project Area as being within the San Joaquin River Hydrologic Region, not the Tulare Lake Hydrologic Region containing the Kings Subbasin.

treatment system is owned and operated by Fresno County Service Area #44 and needs replacement due to operational dysfunction and capacity constraints. Currently, the lack of a wastewater treatment plant hinders economic development in the Friant Redevelopment Area.

Stormwater

Much of the highland area east of the Friant Ranch Specific Plan Area, east of the Friant-Kern Canal, drains naturally through the Project Area. Two existing drainage areas east of the canal cross under the canal in culverts and enter the Project Area at the Friant Ranch Specific Plan site. The largest of the drainage areas skirts the most southeasterly edge of Friant Ranch Specific Plan Area along the west side of the canal and continues on to the adjoining property to the south. The other drainage area enters the central portions of the Friant Ranch Specific Plan site, passes through natural swales and exits along the property's western edge as the drainage continues to flow toward and eventually into the San Joaquin River. Stormwater in the remaining Friant Community Plan Area including the Lost Lake Recreation Area is conveyed via storm drain outlets and culverts which ultimately drain into the San Joaquin River.

Flooding

The natural slope of the land within the Project Area is toward the San Joaquin River, which naturally minimizes flooding and facilitates drainage. Portions of Lost Lake Recreation Area are subject to intermittent flooding by the river during heavy rainfall conditions, particularly in the winter and spring months. Some localized drainage difficulties exist within the existing Friant Community Plan Area where the streets are not paved. Figure 3.8-1 portrays the Special Flood Hazard Areas within the project vicinity.

The Lost Lake Recreation Area is located within the Community Plan Area on the eastern bank of the San Joaquin River, just west of Friant Road. The park is made up of approximately 273 acres. Reclaimed water is planned to be used to irrigate a portion of Lost Lake Park, at the request of Fresno County, to enhance the recreational area. This use of reclaimed water for irrigation of Lost Lake Park will be carried out in phases, as reclaimed effluent volume increases with project build-out.

3.8.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, a project will normally have significant adverse impacts associated with hydrology, flooding and/or water quality if it would do any of the following:

- a) *Violate any water quality standards or waste discharge requirements.*
- b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).*

- c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.*
- d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.*
- e) *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.*
- f) *Otherwise substantially degrade water quality.*
- g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.*
- h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows.*
- i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.*
- j) *Inundation by seiche, tsunami, or mudflow.*

3.8.4 IMPACT ANALYSIS

Water Quality Impacts

Impact #3.8.1 –Water Quality Standards or Waste Discharge Requirements and Substantial Water Quality Degradation [Evaluation Criteria (a) and (f)]

The Project could result in a potentially significant impact from violation of water quality standards and waste discharge requirements, and degradation of water quality if applicable regulations are not followed. However, as designed, the Project must adhere to local, State and federal regulations as well as design policies and standards set forth in the proposed Friant Ranch Infrastructure Master Plan (July 2008), Community Plan Update, and Specific Plan.

The Project is consistent with Fresno County General Plan policies PF-C.18, OS-A.21, and OS-A.22 in that the development within the Friant Ranch Specific Plan and future development on the Depot Property will be designed and constructed in a manner requiring construction of facilities for the treatment and delivery of surface water while accomplishing groundwater recharge free from contamination and minimizing pollutants from entering stormwater or flowing waters.

Wastewater

The Project proposes a discharge of 0.80 million gallons per day (mgd) to the San Joaquin River from the new wastewater treatment plant (WWTP) between October 1 and April 30 of each year. Below Friant Dam, the San Joaquin River maintains a minimum flow of 35 cfs (see Appendix L, Water Quality Impact Analysis, Provost & Pritchard (2007)). The Project proposes to treat wastewater using biological and physical processes to achieve tertiary-quality effluent, meeting state recycled water use requirements for unrestricted use. The WWTP will be a Membrane Bio-reactor (MBR) design satisfactory to the RWQCB, and DPH. Disinfection is proposed to occur through ultraviolet disinfection thereby negating the need for chlorination and de-chlorination. The quality of the effluent is expected to be very high as the Project proposes to build a state-of-the-art facility that will meet stringent recycled water and surface water discharge requirements.

The Anti-Degradation Analysis-Part 1 *Water Quality Impact Assessment for Proposed Friant Ranch Wastewater Discharge to the San Joaquin River and Wastewater Reclamation to Lost Lake Park*, Provost & Pritchard (2007) (Water Quality Assessment), and the *Assessment of the Friant Ranch Wastewater Treatment Plant on the Aquatic Biological Resources of the San Joaquin River*, Robertson-Bryan, Inc. (2008) (Aquatic Assessment) collectively evaluated the proposed quality of the effluent as compared to current ambient water quality in the San Joaquin River to determine if the discharge of treated wastewater to the San Joaquin River will violate water quality objectives. Included in the Water Quality Assessment is a dilution study that establishes mixing zones and estimates available dilution in the San Joaquin River for the discharge of treated wastewater from the proposed WWTP. Under U.S. EPA and RWQCB policies, a mixing zone is an area near an outfall where ambient water quality criteria may be exceeded and is a small enough area so that the beneficial uses of the receiving water are maintained at the intended level of protection (i.e. ambient water quality meets applicable water quality objectives). Mixing zones are generally specified for each of the three types of water quality objectives: acute, chronic and human health. An acute mixing zone is sized to prevent lethality to passing organisms, the chronic mixing zone is sized to protect the ecology of the water body as a whole, and the human health mixing zone is sized to prevent significant human health risks. Given the critical flows in the San Joaquin River and modeled discharge scenarios, the amount of dilution available in this stretch of the San Joaquin River for the three types of water quality objectives are as follows: Acute (9.6), Chronic (17.7) and Human Health (82).

The assessments collectively evaluated individual receiving water constituent concentrations, as affected by the proposed project, relative to 1) adopted water quality criteria/objectives (or recommended criteria or technically supported thresholds if adopted criteria/objectives do not exist) to protect beneficial uses, and 2) existing water quality. More specifically, the assessments determined whether the project would cause change in a given constituent concentration/level in the receiving water with sufficient magnitude, frequency, and geographic extent to cause or substantially contribute to significant adverse impacts to one or more beneficial uses. Of the more than 200 constituents assessed collectively in the assessments, the proposed effluent quality is expected to be below all applicable water quality criteria and/or objectives as measured at the end-of-the pipe for all but 23 constituents. For the remaining 23 constituents of concern, the assessments further determined if the proposed effluent would cause a change in the receiving water that would occur with sufficient magnitude, frequency, and geographic extent to cause or

substantially contribute to significant adverse impacts to one or more beneficial uses. The 23 constituents of concern from both sources are shown below in Table 3.8-6.

Table 3.8-6
Constituents of Concern for
Proposed WWTP Effluent

4,4'-DDD
4,4'-DDE
4,4'-DDT
Aluminum
Cadmium
Chlordane
Copper
Dissolved Oxygen
Endosulfan I
Endosulfan II
Heptachlor epoxide
Lead
Nickel
Polychlorinated biphenyls 1016
Polychlorinated biphenyls 1221
Polychlorinated biphenyls 1260
Silver
Temperature
Turbidity
Whole effluent toxicity, acute
Zinc
Electrical Conductivity

Source: Friant Ranch WWTP Aquatic Biological Resources Assessment, Robertson-Bryan, Inc., 2008.

According to the Water Quality Assessment, although the proposed discharge of effluent to the San Joaquin River will significantly lower existing high quality water for copper, zinc and EC, the proposed discharge is not expected to cause or contribute to a violation of applicable water quality criteria or objectives in the receiving water. Further, based on the surface water dilution analysis, the proposed discharge of effluent is not expected to otherwise substantially degrade existing water quality because the proposed discharge of effluent will not cause or substantially contribute to significant adverse impacts to one or more beneficial uses. For all other identified constituents of concern, the proposed effluent discharge will not significantly lower existing high quality waters (groundwater and surface water), and the proposed effluent quality is expected to be below all other applicable water quality criteria and/or objectives.

The Aquatic Assessment conducted separate impact assessments for all of the constituents of concern identified in Table 3.8-6 except for electrical conductivity. Electrical conductivity was not assessed as part of the Aquatic Assessment because it is not a constituent of concern for aquatic life. According to the Aquatic Assessment, aluminum, cadmium, copper, dissolved oxygen, lead, nickel, silver, temperature, turbidity, whole effluent toxicity (acute and chronic), and zinc would all have a less-than-significant impact on the fish and aquatic resources of the San Joaquin River because the proposed discharge of effluent is not expected to cause or

contribute to a violation of applicable water quality criteria or objectives in the receiving water outside the initial zone of dilution, and because the proposed discharge of effluent is not expected to cause or substantially contribute to significant adverse impacts to one or more beneficial uses.

With regard to the remaining constituents of concern (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, endosulfan I, endosulfan II, heptachlor epoxide, and polychlorinated biphenyls 1016, 1221, and 1260), the Aquatic Assessment determined that it is not possible to predict whether these pesticides would be present in the WWTP effluent nor is it possible to predict their respective frequency of occurrence or concentrations. Further, the Aquatic Assessment indicated that many of these pesticides have been out of production or use for many years, and because of the bans or limits on uses in residential settings, one would not expect to find these pesticides in the proposed effluent. Also, the restrictions on use and the infrequent detections suggest that there is no constant source of these pesticides or that the concentrations are typically below analytical detection limits. If the identified pesticides were detected in the effluent, the Regional Water Board would be required to adopt effluent limitations that would prevent the effluent from causing or contributing to a violation of any applicable water quality criteria or objective, and that would also prevent the effluent from causing or substantially contributing to a significant adverse impact to one or more beneficial uses. Thus, the proposed discharge of effluent is not expected to cause or contribute to a violation of applicable water quality criteria or objectives in the receiving water, or cause or substantially contribute to significant adverse impacts to one or more beneficial uses.

The Water Quality Assessment also evaluated the potential impact of the use of recycled water on local groundwater quality. The use of recycled water is the preferred option under the Specific Plan and may be relied on in conjunction with surface discharge or potentially as the sole discharge option. The wastewater will be treated to a level that is consistent with Title 22 requirements for the unrestricted use of recycled water. Further, recycled water from the WWTP will be applied at agronomic rates, which will prevent excess nutrients from migrating to the groundwater underlying the reclamation area. Because of the proposed level of treatment and the application of recycled water at agronomic rates, the irrigation of Project landscaping, the Beck Property, and potentially portions of Lost Lake Park (or other similarly situated lands) with the proposed effluent is not expected to cause a significant lowering of water quality. Due to impermeable soil conditions, it is unlikely that a hydrologic connection exists between the groundwater and the surface water such that wastewater applied to irrigate onsite landscaping, the Beck Property, Lost Lake Park, or other similarly situated lands would seep into the San Joaquin River through the groundwater. However, in the event such hydrologic connection existed, the natural filtration provided by the soil would reduce the constituents of concern below the levels discussed above in the context of surface water discharge.

Biosolids

Biosolids generated by the Friant Ranch WWTP will be disposed to existing permitted landfill(s) that are operated in accordance with regulations contained in EPA regulations (40 CFR 503), and State Water Resources Control Board Water Quality Order 2000-01-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in

Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order)” As applicable.

Stormwater

Subject to the necessary RWQCB approvals, as applicable, storm water runoff from the Friant Ranch Specific Plan Area will be drained naturally using existing sloping topography and gravity flow, and supplemented by natural and artificial swales, pipes and channels where necessary.

The Friant Ranch Specific Plan Area will utilize Low Impact Development (LID) which is an innovative stormwater management approach with a basic principle taken from nature: manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID’s goal is to mimic a site’s predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate and detain runoff close to its source. Techniques are based on the premise that stormwater management should not be seen as stormwater disposal. Instead of conveying and managing / treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, LID addresses stormwater through small, cost-effective landscape features located primarily at the lot level. These landscape features, known as LID Integrated Management Practices (LID IMPS), are the building blocks of LID. The LID areas will be owned and maintained by an appropriate storm water entity. Almost all components of the urban environment have the potential to serve as an LID IMP. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks and medians. The key distinction of LID from other strategies is that it is an ecosystem-based approach. LID seeks to design the built environment to remain a functioning part of an ecosystem rather than exist apart from it.

The LID approach includes five basic tools: 1) encourage conservation measures, 2) promote impact minimization techniques such as reduction of impervious surfaces, 3) provide for strategic runoff timing by slowing flow using the landscape, 4) use an array of integrated management practices to reduce and cleanse runoff, and 5) advocate pollution prevention measures to reduce the introduction of pollutants to the environment.

The LID principles will be implemented by the policies of the Friant Ranch Specific Plan (policies 5.54 and 7.1 through 7.6 shown below) and the Friant Ranch Infrastructure Master Plan. The LID IMP’s will mimic the site’s predevelopment hydrology by using techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source.

Included in the Friant Ranch Infrastructure Master Plan is the concept that pretreated storm water will be disposed of through retention and detention basins prior to its release into open channel facilities that flow into the San Joaquin River. Treated storm water will then be released through weirs or other applicable outlet facilities that work with the retention and detention basin designs. The outlet feature of each basin shall be designed so that water released to existing drainage ways will be at a maximum of pre-development peak runoff rates. The Project impacts to stormwater will therefore be less than significant.

The following proposed policies of the Community Plan Update are most applicable with regard to water quality and waste discharge requirements:

- Policy 1.8* *Require that discretionary projects be consistent with watershed regulations as required by the U.S. Fish and Wildlife Service, Regional Water Quality Control Board, Environmental Protection Agency, and the U.S. Army Corps of Engineers.*
- Policy 2.3* *Minimize odors and other nuisances by requiring that the wastewater treatment facility be designed using the latest available technology.*
- Policy 2.4* *Encourage utilization of wastewater treatment facilities that provide for the reuse of wastewater for uses such as landscape watering, etc.*
- Policy 3.6* *Encourage drainage designs which retain or detain storm water runoff to minimize volume and pollutant concentrations.*

The following proposed policies of the Specific Plan are most applicable with regard to water quality, drainage and waste discharge requirements:

- Policy 5.54* *Incorporate, where warranted, landscaping bio-swales integral to the low impact drainage system to provide cleaning and filtration of drainage water before it is discharged from the project.*
- Policy 7.1* *Minimize the impact area and/or utilize sensitive grading techniques when grading on sites located adjacent to natural open space in order to minimize impacts on sensitive natural areas.*
- Policy 7.2* *Utilize techniques including, but not limited to, terracing, varying slope heights, contour grading, rounding tops and bottoms of slopes and screening with landscaping to soften the visual impact of long or high slope banks.*
- Policy 7.3* *Contour slopes in lieu of using retaining walls where space permits.*
- Policy 7.4* *Incorporate retaining walls into other design features such as stairs, ramps and planters, where retaining walls are necessary.*
- Policy 7.5* *Insure positive drainage by coordinating the grading concept with site drainage.*
- Policy 7.6* *Design should maintain the natural drainage pattern, and avoid diversion of flows from existing drainage courses, where possible.*

The Project proposes the use of reclaimed water to irrigate the Beck Property and, potentially, a portion of Lost Lake Park. Use of reclaimed water for irrigation of the Beck Property, Lost Lake Park, or other similarly situated properties will be carried out in phases, as reclaimed effluent volume increases with Project build-out.

Irrigating portions of the Project and surrounding areas such as Lost Lake Park using reclaimed water will be just one of many tools employed to achieve conjunctive reuse of treated effluent and help maintain a balance of water supply and demand in the Project area.

Nothing in the Friant Ranch Infrastructure Master Plan shall be construed as requiring exclusive use of reclaimed water for irrigation of any or all of the open spaces within the Project Area, but to the maximum extent lawful and practical, wastewater effluent produced during the irrigation season shall be conjunctively reused either as reclaimed water or for landscape irrigation.

Use of reclaimed water will not create any significant stormwater impacts to land adjacent to the irrigation areas or to the San Joaquin River. RWQCB restrictions against applying treated effluent 24 hours before or after rain will minimize the potential impact of stormwater carrying pollutants from onsite landscaping, the Beck Property, Lost Lake Park, or other similarly situated properties used for disposing effluent, to adjacent lands or the San Joaquin River. Stormwater impacts related to the use of treated effluent to irrigate onsite landscaping, the Beck Property, Lost Lake Park, or other similarly situated properties is less than significant.

Wetlands

It is anticipated that the proposed fill of jurisdictional wetlands and drainage areas draining east-west and to the south of the Project site will require permits under Section 404 of the Clean Water Act prior to grading of the site. The applicant has met with the Army Corps of Engineers to discuss the phased grading limits that contribute flows to the corresponding streams and obtain the necessary permits as part of the design development phase of the Project. The applicant has filed a Clean Water Act 404 permit application with the Army Corps of Engineers. The Central Valley Regional Water Quality Control Board will consider a Clean Water Act section 401 certification of the federal permitting action to ensure that the effects on wetlands will not violate State water quality standards.

Seasonal wetlands occur on approximately 35 acres of the site and include northern hardpan vernal pools, wetland swales, and wetland channels (LOA 2007). None of these wetlands connect directly to the San Joaquin River, but instead form an interconnected network of wetland drainages and vernal pools (LOA 2007). Proposed development will result in the direct loss of approximately 2.3 acres of the 14.38 acres of vernal pools on the Project site.

The Project has been designed to avoid the majority of vernal pools on the Project site. Of the 14.38 acres of vernal pool habitat identified on the Project site, 12.1 acres of vernal pools will be protected within 249.8 acres of designated undisturbed open space that will be placed under a conservation easement.

Section 3.4, Biological Resources, includes mitigation measures (#3.4-1b) to reduce the potential impacts to vernal pools to a less than significant level. The LID approach as noted previously will maintain stormwater runoff at pre-Project flow levels. The Project impact to wetlands/vernal pools will be less than significant.

Conclusion: The Project is not expected to cause or contribute to any violation of applicable water quality standards or substantially degrade existing water quality. Compliance with existing local, State and federal regulations, including the specific water quality standards set forth in the Tulare Lake Basin Plan and the Sacramento-San Joaquin Basin Plan, and adherence to the Fresno County General Plan policies, design of the proposed tertiary treatment wastewater facility, LID BMP's for stormwater as well as the policies described in the proposed Community Plan Update and Specific Plan will reduce this impact to a *less than significant* level.

Mitigation Measures: Mitigation Measures 3.8.3, 3.4-4. and 3.14.3 a-i will further reduce potential impacts to water quality degradation to a less than significant level. No additional mitigation measures are required.

Impact #3.8.2 – Depletion of Groundwater or Interference with Groundwater Recharge [Evaluation Criteria (b)]

As discussed in Section Five of the Water Supply Assessment (WSA) attached hereto as Appendix B, the Project will not rely on groundwater resources within the Friant Community Plan Area as the water supply for the Project development. WWD #18 also does not utilize groundwater supplies to serve existing users within the Friant Community, which is known as the “Western Service Area.” However, WWD #18 plans to use separate infrastructure to serve groundwater supplies to Mira Bella (which is outside the Friant Community and referred to as WWD 18’s “Eastern Service Area”). Additionally, nine individual residences within the Friant community rely on private groundwater wells. The Project will not change the amount of groundwater used in or out of the Project area and thus will have no effect on depletion of groundwater resources. Refer to Section 3.14 for a full discussion on Water Supply.

The WSA prepared for the Project (approved and adopted by Fresno County Waterworks District #18, Resolution 08-02) prepared for the Project (attached hereto as Appendix B) discusses the estimated water demands and proposed water sources for the Friant Ranch Specific Plan, in addition to existing and planned future uses for the remaining land within WWD #18 (i.e., the existing Friant Community Plan Area). According to the WSA, the Friant Ranch Specific Plan’s estimated average annual demand of 1,471 af (which is further explained in section 3.14 Utilities) will be met with the following water supplies:

- Long-term surface water availability for Friant Ranch is derived from an agreement in principle between WWD #18 and the Lower Tule River Irrigation District (LTRID) for 2,000 af per year of Class 1 supply from the Central Valley Project (CVP), Friant Division under a USBR contract with LTRID. Upon completion of environmental review and USBR approvals, LTRID and WWD #18 will consider authorization of the formal agreement to memorialize the water transfer (Water Supply Agreement). To make up to 2,000 acre feet of its CVP contract water supply available to WWD 18 for the Project each year, LTRID will utilize its new water distribution facilities, the Tule River Intertie, to divert Tule River water supplies to groundwater recharge either by direct or in-lieu recharge. The Tule River Intertie was subject to separate environmental review and was still under construction when this Draft EIR was drafted. This recharge operation, and subsequent use of Tule River supplies

recharged to the groundwater, will benefit other general groundwater recharge efforts within the LTRID boundaries and will not deplete the local groundwater supply in the LTRID area.

- Pre-1914 water from the Tule River will be used during critical dry periods of the hydrologic cycle to make up for an anticipated shortfall of 460 af in LTRID's CVP Class 1 supply. Tule River supplies will be pumped into the Friant-Kern Canal by LTRID and used to meet a portion of South Valley commitments which would normally be met with CVP Class 1 supplies, thereby freeing up Class 1 water to be delivered to WWD #18 pursuant to the Water Supply Agreement.
- Approximately 50 percent of the reclaimed wastewater resulting from each phase (and ultimately, full buildout) of the Friant Ranch Specific Plan will be reused to satisfy non-potable water demands of outdoor landscaping within each phase (and ultimately, full buildout) of the Friant Ranch Specific Plan. The total amount of reclaimed wastewater available for reuse after full buildout of the Friant Ranch Specific Plan will be 400 af annually (approximately 30 percent of the total consumptive water demand of Friant Ranch).

The portion of WWD #18 boundaries west of the Friant-Kern Canal, which generally comprises the developable areas of the Friant community, are referred to as the Western Service Area. As explained further in Section 3.14 Utilities, the current and proposed future uses within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, total an estimated average annual demand of 1,806 af.

The Project will also utilize Low Impact Development (LID) stormwater practices which will manage rainfall at the source and allow water to infiltrate, filter, store, evaporate and detain runoff close to the source. The proposed project is consistent with General Plan policies PF-E.14, OS-A.11, OS-A.15, OS-A.17, OS-A.19 and OS-A.21 as LID practices will mitigate past, present and potential future adverse effects of groundwater pumping within the County.

The use of CVP water for the Project will not have any indirect significant impacts to groundwater in the area as the remaining LTRID users have enough water to meet their needs and will not turn to groundwater to make up the difference for irrigation.

Conclusion: The Friant Ranch Specific Plan will use surface water rather than groundwater for its potable water needs, reclaimed wastewater for much of its landscape irrigation, and utilize LID stormwater practices and natural drainage to infiltrate, filter, store, evaporate, and detain runoff close to its source. The Project will have a positive effect on groundwater because the reclaimed water use and LID techniques will recharge the local aquifer. The Project includes a water transfer with LTRID that will bring surface water supplies to the Friant Community Plan Area sufficient to serve the existing and proposed uses within the Friant Community Plan Area (as proposed by the Friant Community Plan Update). Fresno County WWD #18 adopted Resolution 08-02 which approved and adopted the Water Supply Assessment for WWD #18 stating that the District has a reliable water supply to provide water to the Friant Ranch development. The proposed use of Tule River supplies to recharge the groundwater basin within the LTRID boundaries will also provide a positive benefit to groundwater recharge and will not

deplete groundwater supplies. Therefore, *no impact* to groundwater depletion or recharge has been identified.

Mitigation Measures: No mitigation measures are required.

Impact #3.8.3 – Alteration of the Existing Drainage Pattern and Stormwater Drainage Capacity

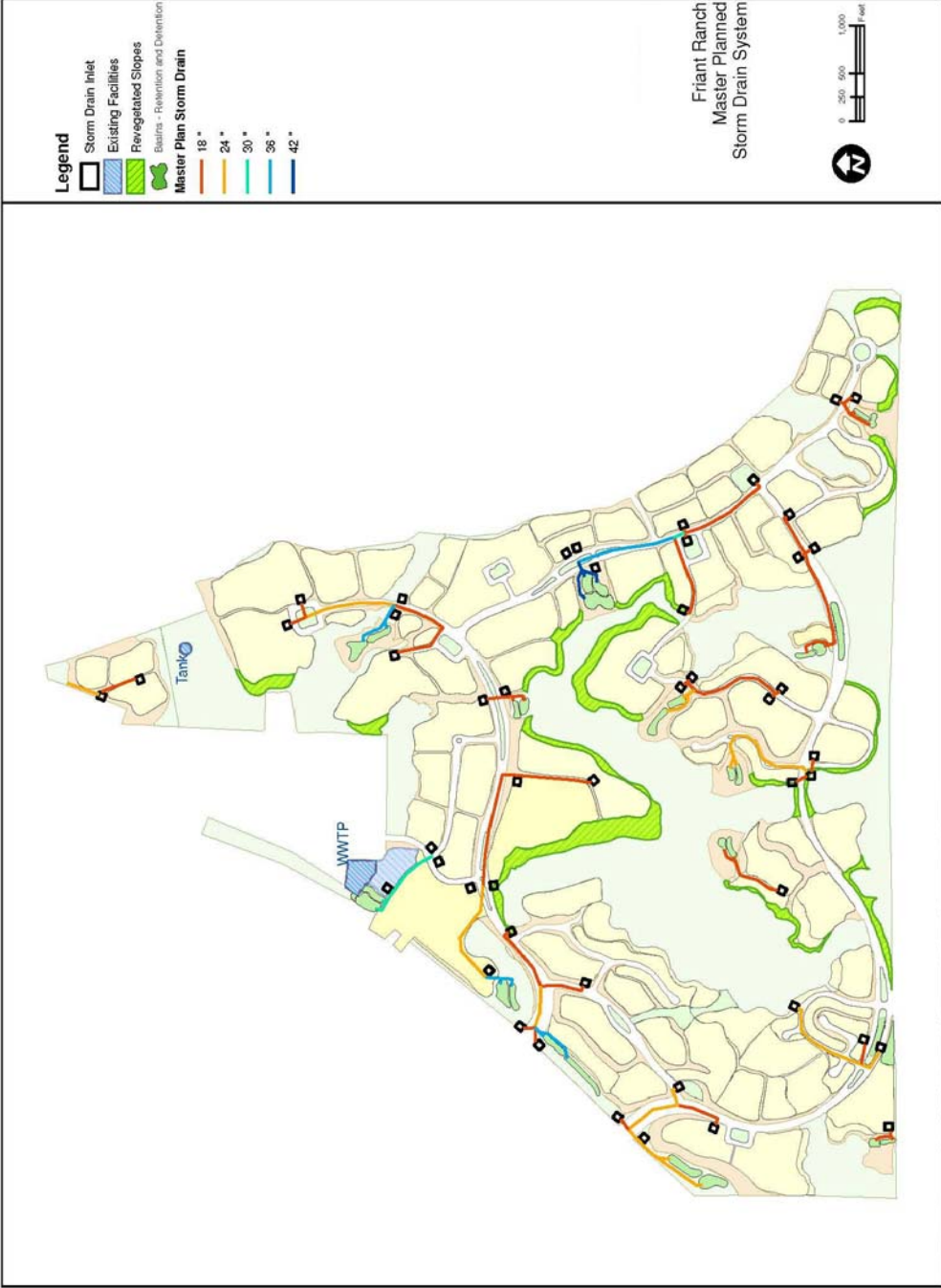
[Evaluation Criteria (c), (d), (e)]

The natural slope of the land within the Project Area toward the San Joaquin River minimizes flooding and facilitates natural drainage. Portions of Lost Lake Recreation Area are subject to intermittent flooding by the river, particularly in the winter and spring months during heavy rain events. Some localized drainage difficulties currently exist in the community of Friant where the streets are not paved.

With regard to stormwater drainage, the Friant Ranch Specific Plan will implement LID stormwater practices. Instead of conveying and managing/treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, LID addresses stormwater through small, cost-effective landscape features located primarily at the lot level. These landscape features, known as LID Integrated Management Practices (IMPs), are the building blocks of LID.

Policies PF-E.14, PF-E.18 and PF-E.20 of the Fresno County General Plan encourage the use of retention-recharge basins for the conservation of water and the recharging of pollution free groundwater supply and that the minimum number will be the most economical to acquire, develop, operate and maintain. The Specific Plan includes LID practices, which would be consistent with and effectuate the underlying goal of these General Plan policies because they will ensure that groundwater is recharged. Moreover, the Specific Plan includes examples of LID practices, and there are a number of conceptual retention/detention basins in the Specific Plan area as shown in Figure 3.8-2. Conceptual basin locations have been selected to work with the existing ground topography and the overall master planned drainage concept. Exact basin locations shall be determined by the developer, after precise site layouts are determined.

Development of the Friant Ranch Specific Plan Area will increase the impervious surface areas throughout the Project Area. The result of increased surface areas will increase the runoff volumes and increase the peak flow rates throughout the Project Area. The proposed project is consistent with General Plan policies PF-E.9 and OS-A.17 as increased runoff due to proposed project implementation will be mitigated with the design of IMPs (described earlier and included as mitigation for this impact) prior to the storm water being released into the natural drainage ways leading to the San Joaquin River. Therefore, the post development peak flow rates will be mitigated to the predevelopment flow rates prior to its release into the drainage ways/channels.



CONCEPTUAL RETENTION/DETENTION BASINS

Figure 3.8-2

The most applicable proposed policies of the Friant Community Plan Update with regard to stormwater are as follows:

- Policy 1.2* *Wherever possible, the natural terrain, drainage and vegetation of the community should be preserved with superior examples protected within open spaces, parks, or greenbelts.*

- Policy 1.4* *Encourage use of drainage improvements designed, with native vegetation where possible, to retain or detain storm water run-off, minimizing volume and pollutant concentrations.*

- Policy 1.5* *Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood-protection ordinances.*

- Policy 1.6* *Where appropriate, require new development to create "bio-swales" for reducing storm water velocities and for transporting and capturing storm water runoff, where feasible, rather than using storm water catch basins and mains.*

- Policy 1.7* *Reduce the spreading of high nitrate fertilizers, herbicides, pesticides, and other chemicals in landscaping that can contaminate water sources.*

- Policy 1.8* *Require that discretionary projects be consistent with watershed regulations as required by the U.S. Fish and Wildlife Service, Regional Water Quality Control Board, Environmental Protection Agency, and the U.S. Army Corps of Engineers.*

- Policy 3.4* *Promote the use of public/private partnerships to upgrade existing buildings, as well as encourage for new buildings energy efficiency, water conservation, and storm water run-off pollution reduction.*

- Policy 3.6* *Encourage drainage designs which retain or detain storm water runoff to minimize volume and pollutant concentrations.*

The most applicable proposed policies of the Friant Ranch Specific Plan with regard to stormwater are as follows:

- Policy 5.54* *Incorporate, where warranted, landscaping bio-swales integral to the low impact drainage system to provide cleaning and filtration of drainage water before it is discharged from the project.*

- Policy 5.71* *Provide bio-filtration areas and swales in landscaped parking islands and edges of parking lots, where feasible, to capture low-flow runoff in the parking areas and reduce toxin runoff into open space and natural drainages.*

Policy 5.102 Pursue opportunities to preserve significant natural landforms and drainage features such as valleys and natural depressions within or next to the site, where possible, and as indicated on the Friant Ranch Land Use Plan.

Policy 5.104 Plan natural drainage areas, where feasible, particularly avoiding environmental features such as wetlands, vernal pools and steep slopes, as indicated on the Friant Ranch Land Use Plan.

Policy 7.5 Insure positive drainage by coordinating the grading concept with site drainage.

Policy 7.6 Design should maintain the natural drainage pattern, and avoid diversion of flows from existing drainage courses, where possible.

Conclusion: Without mitigation, the Project may have a *potentially significant* impact on stormwater drainage. Compliance with applicable Fresno County General Plan policies, and adherence to the proposed Friant Community Plan Update policies and Specific Plan policies will help reduce the potential impacts to stormwater drainage alteration and capacity.

Mitigation Measure #3.8.3a: Storm drain design for the Friant Ranch Specific Plan portion of the Project shall be in accordance with approved LID management practices, as recommended in the Friant Ranch IMP and its appendices. The suggested management practices include but are not limited to the following:

1. LID IMPs:

- a. Bioretention (Rain Gardens) – A practice using landscaped areas on individual lots to hold and infiltrate stormwater.
- b. Dry Well – Small excavated trenches backfilled with stone, designed to hold and slowly release rooftop runoff.
- c. Filter/Buffer Strip – Bands of close-growing vegetation, usually grass, planted between pollutant source areas and a downstream receiving water body.
- d. Swales – Two types of swales may be used. Grass swales provide both quantity (volume) and quality control by facilitating stormwater infiltration. Wet swales use residence time and natural growth to reduce peak discharge and provide water quality treatment before discharge to a downstream location.
- e. Infiltration Trench – An excavated trench that has been backfilled with stone to form a subsurface basin. Stormwater runoff is diverted into the trench and is stored until it can be infiltrated into the soil.
- f. Pervious Concrete – A special structural concrete without fine aggregates. This creates 15 to 30 percent voids, allowing water to pass through to a gravel layer and the native soil underneath while maintaining the structural strength of standard concrete pavement.

Pervious concrete also provides demonstrable water quality treatment to the waters passing through its structure.

2. Inlet and Outlet Structures:

Inlet and Outlet Structures shall be a type and configuration rated to accept the SDMP design flow at the inlet and outlet locations shown on the SDMP.

3. Pipelines:

Storm drain pipeline design shall conform to the Storm Drain Master Plan (SDMP). Pipeline soffits shall be designed a minimum of one (1) foot below the hydraulic grade line (HGL) or to the soffit control elevation shown in the hydraulic calculations. The design of the storm drain pipeline below the HGL insures full pipe flow and reduces the chance of water seal breaks in the pipe and other hydraulic inefficiencies during pipeline use. Design of pipeline below the soffit control elevation insures proper pipeline performance in sections of the pipe where flow is in the open channel condition due to steep grade construction.

4. Culverts and Open Channels:

Culverts and open channels shall be designed to the standards of the Federal Highway Administration Hydraulic Design of Highway Culverts (HDS-5, September 2001 or current) and the Fresno County Design Standards. The culverts and channels shall be designed to convey the critical storm event for the Friant Ranch project.

5. Detention & Retention Basins:

Detention and Retention basin design calculations and minimum basin geometries are provided in Appendix A of the IMP (see Appendix N). The basin geometry for each watershed differs depending on many factors, including the contributing drainage area and the design flow volume. Retention basins are designed to maintain the predevelopment runoff volume by storing the peak storm runoff above a base flow; retention basins in this case have also been sized to provide the storage volume necessary to give the detention time required for water quality control.

Detention basin storage is designed to maintain the predevelopment peak runoff rate while capturing all runoff above that amount.

Conceptual basin locations are shown in the SDMP. These locations have been selected to work with the existing ground topography and the overall master-planned drainage concept. Exact basin locations shall be determined by the developer, after precise site layouts are determined. The basins shall be permitted to shift, so long as the function provided for in the SDMP is maintained, or appropriate modifications are made to the SDMP as discussed above.

Prior to issuance of a grading permit for the Friant Ranch Specific Plan, the Fresno County Engineering Department shall review the project detention and retention basin designs for

conformance with the basin calculations and conformance with the basin design guidelines provided in the Friant Ranch IMP.

Effectiveness of Mitigation: Implementation of the above mitigation measures will reduce the impact to a *less than significant* level.

Impact #3.8.4 – Placement of Housing or Other Improvements Within a 100-year Flood Hazard Area

[Evaluation Criteria (g) and (h)]

According to FEMA map number 0619C1030F, dated July 19, 2001, only a portion of the Friant Community Plan Area along the San Joaquin River, west of Friant Road, and the playa pool at the southwest corner of the Specific Plan area, are within the 100-year flood zone (reference Figure 3.8-1). The areas located within the 100-year flood zone are not being developed or altered from their existing state. Therefore, the Project will not result in a significant increase in exposure of the public to flood hazards defined by FEMA.

According to FEMA map number 06019C1030F, dated July 19, 2001, there is one large vernal pool located in the southwestern corner of the Friant Ranch Specific Plan area which is listed within the Zone A, 100-year flood boundary (reference Figure 3.8-1). This area is not proposed for development and will be left in its natural state pursuant to mitigation measure 3.4.1b in Section 3.4 Biological Resources.

Conclusion: The Project will have a *no impact* with regard to placing structures in a 100-year flood hazard area.

Mitigation Measures: No mitigation measures are required.

Impact #3.8.5 – Seiche, Tsunami, Mudflow, or Flooding as a Result of Dam Failure

[Evaluation Criteria (i) and (j)]

The Project Area is not located near a body of water which could generate seiche or tsunami effects. Site topography, as described in the physical setting section, would not result in mudflow events.

Friant Dam and Millerton Lake are located just north of the Project site. An inundation study completed in 1997 by the USBR redefined a worst-case scenario dam break of Friant Dam to include inundation of a significant portion of the City of Fresno and a much larger portion of Fresno County than previously described. In addition, failure of upstream dams on Shaver Lake, Edison, Huntington, Florence, and Mammoth Pool could contribute to flooding conditions on Millerton Lake and subsequently the San Joaquin River if downstream dam capacity is exceeded. According to Figure 9-8 of the Fresno County General Plan Background Report, only the portion of the Project Area along the San Joaquin River, west of Friant Road, would be subject to inundation as a result of the failure of Friant Dam. The majority of this land is currently used for recreation purposes and is not proposed for development by the Project.

Conclusion: The potential for seiche, tsunami, and mudflow impacts and flooding as a result of dam failure is *less than significant*.

Mitigation Measures: No mitigation measures are required.

3.9 Land Use and Planning

INTRODUCTION

This section describes the existing and proposed land uses and relevant land use policies for the Friant Community Plan Update and Friant Ranch Specific Plan. Pursuant to Section 15125(d) of the CEQA Guidelines, this section also provides a discussion of general plan consistency and describes the relationship between the Project and general plans for Fresno County and adjacent Madera County. The impact assessment focuses on changes in land use, land use compatibility, and general plan consistency, to the extent that potential general plan conflicts may lead to physical impacts on the environment.

3.9.1 REGULATORY SETTING

State law requires that all land use actions be consistent with locally adopted general plans. Land use actions include the adoption of specific plans, approval of rezoning applications, subdivision maps, and other discretionary actions such as conditional use permits.

The Fresno County General Plan is comprised of the following: General Plan Elements, Community Plans for Incorporated Cities, Unincorporated Community Plans, Regional Plans, and Specific Plans. The individual General Plan Elements provide goals, policies and programs that apply generally throughout the County. The regional plans are provided for areas outside incorporated cities and community plan areas. The General Plan also includes land use plans for the unincorporated areas surrounding all fifteen incorporated cities in the County. There are also separate plans for unincorporated communities and neighborhoods and specific plan areas. Together, the plans form a mosaic that governs land use for the unincorporated areas of the County.

Fresno County General Plan

The fundamental policy directive of the County's General Plan is to direct intensive development to cities, unincorporated communities, and other areas where public facilities and infrastructure are available. The County has a direct role in shaping the character of urban development as it continues to manage growth in the existing unincorporated communities and specific plan areas. At the same time, the County seeks to support and encourage the cities in their land use planning efforts to ensure that a quality living environment is provided for all existing and future residents of the County.

The Fresno County General Plan was adopted in October 2000. Relevant policies pertaining to land use and the Project are listed below.

Unincorporated Communities

Policy LU-G.21 The County shall administer those unincorporated areas identified in the community plan as urban as follows:

- a. Maintain zoning consistent with the community plan.*
- b. A holding zone may be applied to undeveloped or underdeveloped properties.*
- c. Consider subdivision, rezoning, or discretionary permit proposals on planned non-industrial properties where the proposed use is consistent with the community plan. As conditions of approval, the County will require: (1) community sewer and water service; and (2) completion of all roadways providing access to the development-as if they were part of the development-to the nearest fully developed street; and (3) safe collection and disposition of flood and storm waters in accordance with the plans and directives of the County of Fresno, Department of Public Works.*
- d. Consider rezoning and discretionary permit proposals in planned industrial areas consistent with the community plan.*

Policy LU-G.23 The County shall ensure that the expansion of unincorporated communities can be provided with necessary public services and such expansion is consistent with other General Plan policies.

Urban Commercial Development

Policy LU-F.24 The County shall require new commercial development to be designed to minimize the visual impact of parking areas on public roadways and maintain compatibility with surrounding land uses.

Policy LU-F.25 The County shall require that new commercial development be designed to encourage and facilitate pedestrian circulation within and between commercial sites and nearby residential areas rather than being designed primarily to serve vehicular circulation.

Friant-Millerton Regional Plan

Policy LU-H.8 The County shall prepare a regional plan for the Friant-Millerton area. The preliminary study area boundaries for the new regional plan depicted in Figure LU-5 are designed to encompass the area's major recreation facilities and open space resources, include the area's existing and potential residential growth areas, but exclude most productive agricultural land. In the near-to-mid-term, planning and development in the area should focus on expanding and enhancing the area's recreational

activities and resources. In the long-term, the area may be suitable for urban development as the unincorporated county's largest remaining area without productive agricultural soils near the Fresno-Clovis Metropolitan Area and recreational and scenic resources.

The new regional plan shall at a minimum address the following key issues:

- a. Expansion and enhancement of recreation activities and facilities centered on Millerton Lake and the San Joaquin River.*
- b. Open space and natural resource protection.*
- c. Implementation of appropriate policies of the San Joaquin River Parkway Master Plan.*
- d. Groundwater and surface water availability.*
- e. Wastewater disposal limitations and options.*
- f. Development of affordable housing, particularly for workers at recreational and related tourist facilities in the area.*
- g. Suitability of the area for future long term urbanization and options for how this might occur (e.g., County specific plan, city annexation, or city incorporation).*
- h. Provision of an adequate circulation/transportation systems, including mass transit.*

The General Plan also establishes specific land use designations for the parcels within the Project Area. These designations are explained within section 3.9.2.

Urban Residential Development Standards

Policy LU-F-14 The County may permit land designated Medium Density Residential to develop with less than six thousand (6,000) square foot lots and reduced development standards, subject to a discretionary permit. This increase in density and flexibility is intended to lower development costs and accommodate smaller homes than normally built in this designation. The following requirements shall apply:

- a. Minimum lot sizes shall not be less than four thousand five hundred (4,500) square feet if developed as part of a conventional subdivision. The development shall be compatible with existing and planned uses on adjacent properties.*

- b. *Small lot single family residential subdivisions require more attention to planning details related to siting units, exterior and interior design, parking, outdoor space, and privacy. Criteria to be considered include:*
 - 1. *A minimum of thirty (30) percent of each lot's net area shall be designed for usable yard areas and setbacks for garage openings facing the access street and shall not be less than twenty (20) feet. If roll-up garage doors are provided, the required setback for garage openings facing the access street may be reduced to eighteen (18) feet for projects located within the City of Fresno's Sphere of Influence.*
 - 2. *Front yard setbacks should be staggered with varied roofline treatment and housing styles. The street pattern should utilize curving streets, cul-de-sacs, and parking bays to improve the appearance of the neighborhood.*
 - 3. *A minimum of two (2) parking spaces in addition to the required covered parking should be required on each lot to compensate for reduce street frontages.*
- c. *Maximum density shall not exceed one (1) dwelling unit per four thousand five hundred (4,500) square feet for Planned Residential Developments.*

Policy LU-F.17 The County shall require new subdivided lots to be adequate in size and appropriate in shape for the range of primary and accessory uses designated for the area.

Policy LU-F.18 The County shall ensure that residential land uses are separated and buffered from such major facilities as landfills, airports, and sewage treatment plants.

Policy LU-F.19 The County shall require residential project design to consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.

Policy LU-F.20 The County shall require residential subdivisions to be designed to provide interconnected internal and external street and pedestrian systems.

Zoning Division of Fresno County

The Ordinance Code of Fresno County was adopted in 1960 and covers all unincorporated county areas, such as the Friant community. The Zoning Division clearly indicates the extent and type of development that can occur in the unincorporated areas. It also determines what type of permit would be necessary for a specific land use, and what standards would apply to development. According to Section 801, Intent and Purpose, the purpose of the Zoning Division is to classify and regulate the highest and best use of buildings, structures, and land located in the unincorporated area of the County of Fresno in a manner consistent with the Fresno County General Plan. The Zoning Division establishes specific zoning designations for the parcels within the Project Area. These designations are explained within section 3.9.2.

Fresno County LAFCo

LAFCOs are responsible for coordinating logical and timely changes in local governmental boundaries, conducting special studies that review ways to reorganize, simplify, and streamline governmental structure and preparing a sphere of influence for each city and special district within each county. The Fresno County LAFCo will be responsible for reviewing and approving the WWD #18 annexation of Project lands.

San Joaquin River Parkway Master Plan

The San Joaquin River Parkway Master Plan (Parkway Plan) establishes standards for the development of low-impact recreational uses, education and protection of natural resources for the San Joaquin River and surrounding areas. The Parkway Plan includes portions of Fresno and Madera County, the City of Fresno and the San Joaquin River portion of the Friant Community Plan area. The following are the fundamental goals of the Parkway Plan:

- FG1 Preserve and restore a riparian corridor of regional significance along the San Joaquin River from Friant Dam to the Highway 99;
- FG2 Protect wildlife species that depend on or prefer the river environment for at least part of their existence;
- FG3 Provide for conservation, education, and recreation, particularly a continuous trail, in a cooperative manner with affected landowners;
- FG4 Protect irreplaceable natural and cultural resources in a way that will also meet recreational and educational needs;
- FG5 Protect existing undeveloped areas of the riverbottom, which should remain non-urbanized and be retained in open space or agriculture if feasible; and
- FG6 Provide land use and management policies for the San Joaquin River and areas of the riverbottom included in the Parkway that will enhance the attractiveness of the Fresno-Madera metropolitan area and enhance the quality of life of its residents.

Rio Mesa Area Plan

The 15,000 acre Rio Mesa Master Plan is a policy document intended to provide Madera County with land use development decision-making guidance, and to provide a planning framework for the development of more detailed implementation plans and measures. The Rio Mesa Area Plan proposes up to 29,000 dwelling units and in excess of 1,200 acres of commercial and industrial development in the area situated north and west of the San Joaquin River, between Friant Dam and Highway 41.

Fresno General Plan

The 2025 Fresno General Plan provides long-range planning strategies for the continued development, enhancement, and revitalization of the Fresno Metropolitan area. These planning strategies acknowledge the consequences of past land development patterns; consider present problems, assets, and community values; and recognize the critical significance of land use, development and resource allocation decisions (both governmental and private) in determining the quality of life experienced by Fresno's residents in the future. The City of Fresno's SOI is approximately three miles south of the Project Area and the land use designation closest to the Project is Open Space.

Clovis General Plan

The Clovis General Plan encompasses what the City is now, and what it intends to be, and provides the overall framework of how to achieve this future condition. Estimates are made about future population, housing, employment, so that plans for land use, circulation and facilities can be made to meet future needs. The Clovis General Plan covers a 74 square mile project area which encompasses the City of Clovis, and unincorporated Fresno County, inclusive of the City's SOI. Clovis' SOI is approximately four miles south of the Project Area and the land use designations closest to the Project are Mixed Use, Low, Very Low, and Rural Residential and Agriculture.

3.9.2 PHYSICAL SETTING

Project Site

The Project Area, which includes all land within the Friant Community Plan boundary, is located in central Fresno County, north of the cities of Fresno and Clovis. Figures 2-1 and 2-2 show the regional and vicinity locations, respectively, and Figure 2-3 shows an aerial view of the Project Area and surrounding areas. The Project Area consists of the following: the Lost Lake Recreation Area and the San Joaquin River on the west; the existing community of Friant consisting of commercial uses along Friant Road, a mobile home park, residential units, a fish hatchery, a closed elementary school, and a wastewater treatment facility; vacant land; and agricultural grazing land on the east. The Friant Ranch Specific Plan Area is within the agricultural grazing land in the eastern Project Area and has been and continues to be used for cattle grazing.

Surrounding Land Uses

The Specific Plan Area is bounded by residential single-family homes to the north, Friant Road to the west, and vacant open space to the south and east beyond the Friant-Kern Canal, which runs along the eastern edge of the Specific Plan Area. The Specific Plan Area is in the vicinity of several neighborhoods within the Existing Community Plan Area. Nearby developments include but are not limited to Millerton New Town which is still being entitled (although some areas have been graded, significant portions of the proposed development are not yet under construction), Brighton Crest (with approximately 80 of the 420 approved lots built at this time) and Table Mountain Casino which is already built. (Please see Chapter Five – Cumulative Impacts for more information about regional developments.)

Current General Plan and Zoning Designations

Figure 3.9-1 shows the existing Fresno County General Plan land use designations for the Friant Community Plan Area as of the 1983 Friant Community Plan, which include Agriculture, Low Density Residential, Medium Density Residential, Medium High Density Residential, Highway Commercial, Special Commercial, Public Facilities, and Open Space. The Depot Parcel, which is within the Existing Community Plan Area, is currently designated for Low Density Residential use in the Fresno County General Plan and 1983 Friant Community Plan.

The majority of the Specific Plan Area is currently designated Agriculture in the Fresno County General Plan, with the exception of approximately 47 acres within the Specific Plan Area that are currently designated as Medium Density Residential (the northernmost tip of the Specific Plan Area) and Highway Commercial (along Friant Road frontage), which is designated Medium High Density Residential.

3.9.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, a project will normally have significant adverse impacts associated with land use planning if it would do any of the following:

- a) *Physically divide an established community.*
- b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.*
- c) *Conflict with any applicable habitat conservation plan or natural community conservation plan.*

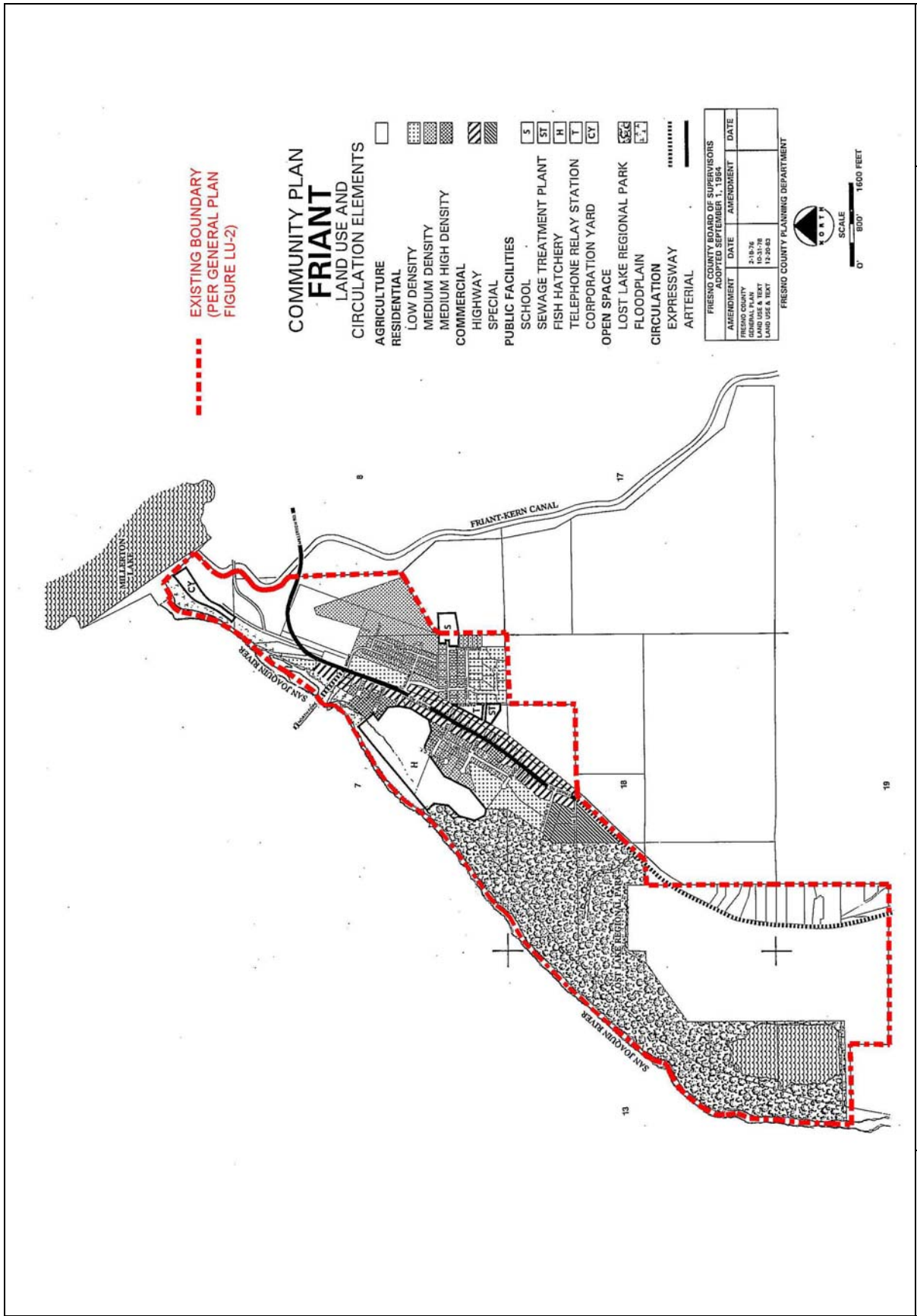


FIGURE
3.9 – 1

1983 FRIANT COMMUNITY LAND USE



3.9.4 IMPACT ANALYSIS

Impact #3.9.1– Physically Divide the Friant Community [Evaluation Criteria (a)]

If the Project were to develop in a piecemeal fashion or in some other way which would alienate the existing Friant community, this would be a potentially significant impact. However, according to the proposed Community Plan Update and the Specific Plan, the Project calls for buildout of the existing Friant Community Plan Area and the Friant Ranch Specific Plan development will commence from the areas abutting the existing community of Friant, including a planned Village Center to bring commercial uses to the Friant Redevelopment Area.

The Specific Plan Area is proposed to develop in five phases generally from west to east. It should be noted that the phasing is conceptual only; the actual phasing may vary from that identified in the Specific Plan. Phases may occur in any sequence and concurrently with one another provided, however, that the necessary infrastructure and utilities needed to support each phase are in place prior to issuance of any certificate of occupancy for that phase.

Furthermore, the Friant Ranch Specific Plan emphasizes the design feature of connecting the new growth to the existing community and the area's recreational amenities through trails and pedestrian linkages.

Conclusion: The growth contemplated for the Project is within and immediately adjacent to the existing community and will not result in the physical division of the Friant community. Therefore, the impact is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.9.2 – Potential Conflicts Between the Project and Applicable Land Use Plans, Policies and Regulations [Evaluation Criteria (b)]

Potential conflicts between the Project and the Fresno County General Plan, the existing Community Plan and other regional plans and documents adopted for the purpose of avoiding or mitigating an environmental effect could result in a potentially significant impact with regard to land use and planning. The Friant Community Plan Update, Friant Redevelopment Plan and Friant Ranch Specific Plan, however, were drafted to be consistent with Fresno County's General Plan, Fresno County's Zoning Ordinance, and regional plans and other documents including the San Joaquin River Parkway Master Plan. The Project includes amendments to the Fresno County General Plan and Zoning Division in order to accommodate the intended uses within the Friant Ranch Specific Plan Area.

Fresno County General Plan

The General Plan is the primary planning document that establishes long-term policy guidance for unincorporated areas of Fresno County, including the community of Friant.

The following relevant Fresno County General Plan policies are identified in Section 3.9.1 Regulatory Setting above: Policies LU-F.14, LU-F.17, LU-F.18, LU-F.19, LU-F.20, LU-F.24, LU-F.25, LU-G.21, LU-G.23, LU-H.8.

The Friant Ranch Specific Plan is consistent with Policy LU-F.14 as the proposed Friant Ranch Zoning Ordinance and Specific Plan maintains density requirements and development standards for the lands designated by the proposed General Plan Amendment as Medium Density Residential consistent with Policy LU-F.14 to ensure consistency with the General Plan. To implement the proposed development within this Specific Plan, detailed zoning and development standards are established through the “Friant Ranch Zoning Ordinance”. Eight special zoning districts are set up to assist Fresno County in implementing the Specific Plan. The Friant Ranch specific zoning designations allow for a departure from standard property development standards and incorporate the design features and amenities proposed for Friant Ranch. The specific Friant Ranch districts provide for maximum effective density on each site and improved aesthetics through increase flexibility in building design, creative use of permanent open space, and the preservation of significant natural features.

The Project ensures that vacant lands within the existing Community of Friant and outside the Friant Ranch Specific Plan that are designated Medium Density Residential are developed in a manner consistent with Policy LU-F.14 as existing zoning designations for these lands ensure such consistency.

The Project is consistent with Policy LU-F.17 as the proposed Friant Ranch Zoning Ordinance establishes minimum lots that are adequate in size and appropriate in shape for the range of uses designated for the Friant Ranch Specific Plan Area. The Project does not propose to change the shape or size of any vacant lots within the existing Community of Friant.

The Project is consistent with Policy LU-F.18 as the proposed Friant Community Plan Update provides separation between residential uses and the wastewater treatment plant. Moreover, the Specific Plan requires the wastewater treatment plant to be designed in such a manner as to enclose the treatment equipment such that the odors are retained within the unit and do not affect nearby land uses.

The Project is consistent with Fresno County General Plan policies LU-F.20, LU-F.24 and LU-F.25 in that the Friant Ranch Specific Plan will provide pedestrian-oriented commercial uses to meet the needs of adjacent residential uses. Policy 5.4.3 of the Specific Plan encourages strong pedestrian circulation throughout the Village Center linking parking areas, courtyards and plazas, street sidewalks, buildings and adjacent residential properties. Policy 5.4.7 of the Specific Plan says that off-street parking will be designed and located to minimize conflicts with pedestrians and minimize the physical and visual impact to the traditional streetscape.

The Project is consistent with Fresno County General Plan policies LU-H.6 and LU-H.7 in that the Specific Plan will include a mix of uses including a variety of residential types, commercial, recreation, medical office and open space uses. The Specific Plan will also include sewer and water facilities, adequate off-street parking, common open space, conservation of natural site

features, green building principles, and LID stormwater techniques (as described in Section 3.8 Hydrology).

The Project is consistent with Policy LU-F.19 as the proposed Specific Plan is designed to conserve the natural foothill character of the property with preservation of central canyons and vista and view corridors with an open space commitment of over one-third of the entire Specific Plan acreage. The Land Use Plan is designed with buffers and setbacks around significant habitat areas of endangered species and species of special concern to preserve the majority of these species. The Specific Plan plans for higher density residential uses around the Village Center and encourages connectivity by creating a pedestrian-friendly environment.

The Fresno County General Plan includes the following overall goal (LU-G) in the Incorporated City, City Fringe Area, and Unincorporated Community Development section of the Agriculture and Land Use Element: “To direct urban development within city spheres of influence to existing incorporated cities and to ensure that all development in city fringe areas is well planned and adequately served by necessary public facilities and infrastructure and furthers countywide economic development goals.” The Project Area is not within an incorporated area of the County. However, the project furthers the purpose of General Plan Goal LU-G and Policy LU-G.23 by providing adequate public facilities services to meet the needs of the development. The Specific Plan ensures adequate provision of utilities and services such as public and private transportation, sewage, water, drainage, solid waste disposal, energy and other essential facilities for residential and commercial developments. Moreover, the infrastructure and water supply provided for the Friant Ranch Specific Plan growth will have sufficient wastewater capacity to accommodate the future and existing uses within the current Friant Community Plan Area and will provide sufficient water supplies and domestic water treatment capacity to accommodate the existing and future uses within the current Friant Community Plan Area. The Project also furthers Countywide economic development goals by providing necessary infrastructure that will assist in achieving implementation of the Friant Redevelopment Plan.

The Project is consistent with Policy LU-G.21 as the Project includes the adoption of a new ordinance establishing zoning designations consistent with the proposed Friant Community Plan Update (which brings all of the Specific Area within its boundaries) and Fresno County General Plan Amendment. The proposed zoning designations are not consistent with the existing General Plan designations and thus necessitate the General Plan amendment. The Project also includes a change to the zoning and General Plan designations for the Friant Depot Parcel to ensure consistency and to facilitate the desired use.

The Project is consistent with Policy LU-H.8 because, although the County has yet to create a Friant-Millerton Regional Plan as called for within Policy LU-H.8, the Project proposes development consistent with the parameters set forth in Policy LU-H.8. The Project Area is within the area depicted in General Plan Exhibit LU-5 as part of the area’s potential residential growth area and outside the area’s productive agricultural land. The Project proposes to expand and enhance the area’s recreational activities and resources through the addition of a trail network to link the community with these recreational amenities as well as the inclusion of parks, parkways, and Active Adult (55+) recreational facilities. Consistent with Policy LU-H.8, the proposed Community Plan Update and Specific Plan emphasize open space and natural

resource protection, water availability, wastewater disposal, affordable housing for workers at recreational and related tourist facilities in the area (i.e., the non-age restricted multi-family housing contemplated within the Friant Ranch Specific Plan), and provision of adequate circulation and transportation through trails and alternative transportation for the Friant Community.

Friant Community Plan Update

The Community Plan has been updated concurrently with preparation of the Specific Plan so that both plans are consistent with each other. Development within the community of Friant is governed by the Friant Community Plan, including land outside of the Friant Ranch Specific Plan Area. The Community Plan includes goals and policies that directly address issues and features in the Specific Plan. The Community Plan includes land uses that are in the Specific Plan as well. In accordance with State law, both the Community Plan and Specific Plan are consistent with the General Plan.

Friant Redevelopment Plan

The Friant Redevelopment Plan, adopted in 1992, includes specific projects that are anticipated to encourage redevelopment in the community of Friant including the following:

- Secure new water sources;
- Design and construction of a sewage treatment and collection system;
- Construction of paved curbs, gutters, sidewalks and landscaping on Friant Road and Converse, Root and Waldby Streets;
- A multi-purpose building;
- Demolition and acquisition;
- Development of common areas with landscaping;
- Improvements in street lighting; and
- Refurbishments of existing commercial facades.

The development of Friant Ranch will help to facilitate some of the projects identified in the Redevelopment Plan. Friant Ranch proposes expanding and upgrading the existing Friant Wastewater Treatment Plant, not only for the Friant Ranch project, but to allow additional capacity for other areas in the community of Friant (the collection system for areas other than Friant Ranch and the Millerton Lake Village Mobile Home Park will have to be funded from other sources). Friant Road, contiguous to the project boundary, will be upgraded to include additional travel lanes, landscaping and concrete curbs, gutters and sidewalks. The Project includes the amendment of the Redevelopment Plan to extend its enactment another 20 years to facilitate the Redevelopment Agency's collection of redevelopment revenues resulting from new commercial uses planned within the Project. The proposed amendment also deletes the commercial standards set forth in the 1991 Redevelopment Plan.

San Joaquin River Parkway Master Plan

The San Joaquin River Parkway Master Plan (SJRPMMP) establishes standards for the development of low-impact recreational uses, education and protection of natural resources for the San Joaquin River and surrounding areas. The SJRPMMP boundary is shown in Figure 3.9-2.

Fundamental Goals

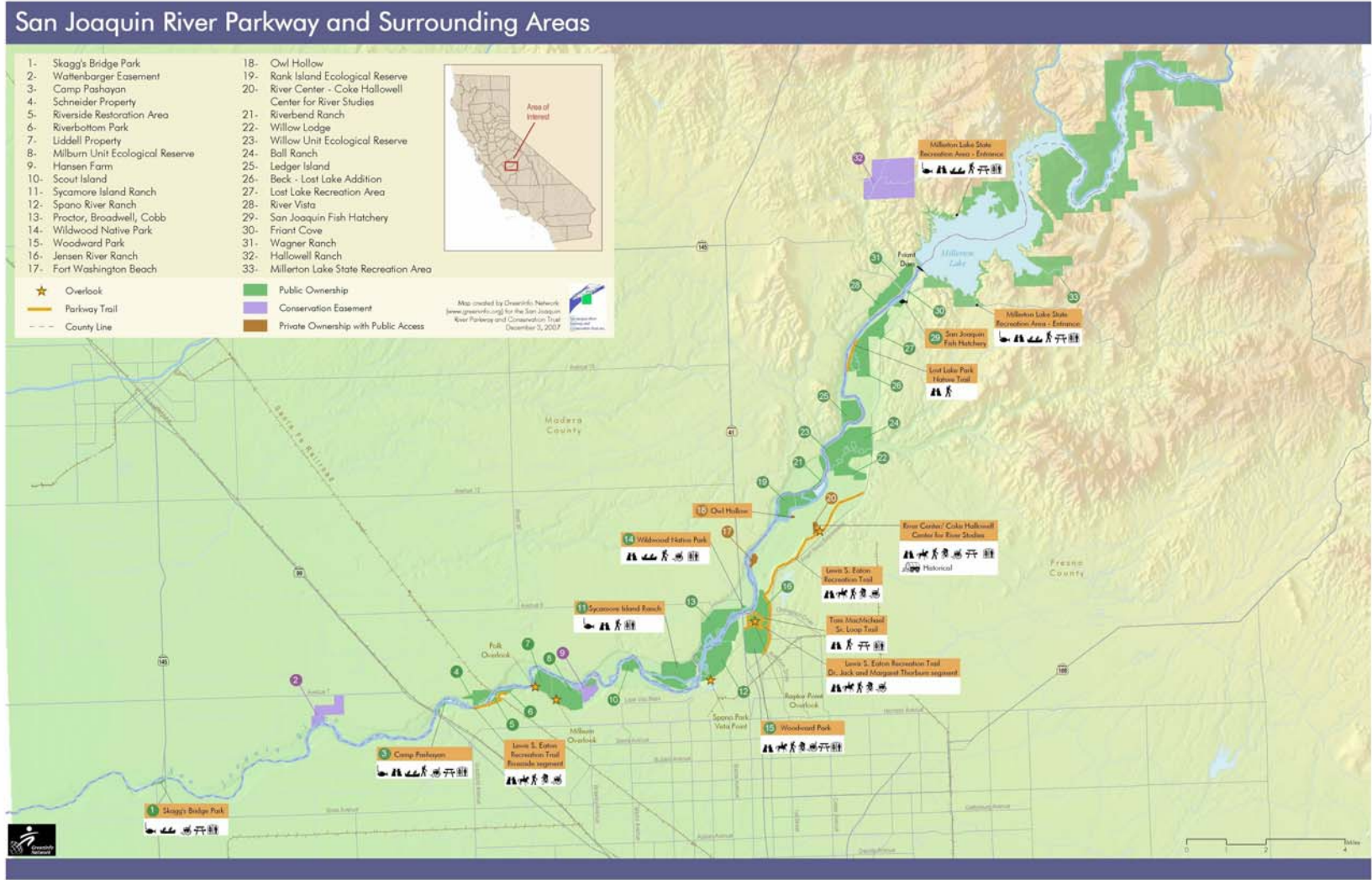
- Provide for conservation, education and recreation, particularly a continuous trail, in a cooperative manner with affected landowners.
- Protect irreplaceable natural and cultural resources in a way that will also meet recreational and educational needs.

The provisions of the Environmental Resources Element of the Specific Plan protect biological and archaeological resources by buffering with open space. In addition, implementation of Low Impact Development principles will maintain stormwater runoff into the San Joaquin River to pre-development levels. Road design and land use designations will maximize access to scenic views and increase opportunities for passive recreation along nature trails and multi-purpose trails. The Specific Plan also ensures that the land use and circulation layout do not negatively impact the noise and air quality levels of the site and surrounding areas. The site layout utilizes the undulating topography to minimize grading and to create meandering trails and routes accessible to residents and surrounding recreational areas. As set forth in the Cultural Resources Section of this DEIR, mitigation measures 3.5.1a through 3.5.1g ensure that cultural resources within the Friant Ranch Specific Plan Area will either be avoided for preservation within an open space or park area of the Specific Plan or removed from the site for research and protection. Also, the Specific Plan provides for trails to connect new growth within the Friant Ranch Specific Plan Area to the existing community of Friant as well as the recreational amenities in the region, including the San Joaquin River.

Buildout of the Friant Community Plan Area, not including Friant Ranch, which includes few vacant parcels, will adhere to the Friant Community Plan Update, which is consistent with the Fresno County General Plan, SJRPMMP, and Friant Redevelopment Plan.

Conclusion: The Community Plan Update includes goals, policies and land use standards and criteria, and the Specific Plan includes objectives, policies and design guidelines to ensure that new development is consistent with the overall intent of the General Plan and other applicable planning documents. The potential impact of the Project with regard to inconsistencies with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect is ***potentially significant***, however, the impact will be reduced to a ***less than significant level*** if the Project is approved.

Mitigation Measures: No mitigation measures are required.



SJRPMP BOUNDARY

FIGURE
3.9 – 2

Impact #3.9.3 – Potential Conflicts with a Habitat Conservation Plan or Natural Community Conservation Plan
[Evaluation Criteria (c)]

The County has not adopted a Habitat Conservation or Natural Community Conservation Plan. Friant Ranch will be designed around environmentally sensitive areas such as vernal pools and other wetland areas. Specific Plan policies are devoted to the preservation of these biological resources in perpetuity for future generations and to safeguard biodiversity in the region. Habitat management will ensure the quality, enhancement and preservation of sensitive habitat within the dedicated open space. Consultation and coordination with regional, State and federal agencies to minimize impacts to wildlife and botanical resources in the Specific Plan Area is crucial to proper biological resource management and maintaining habitat connectivity with off-site resources.

Conclusion: Since the County has not adopted a Habitat Conservation or Natural Community Conservation Plan, there is no conflict and therefore, *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.9.4 – Land Use Conflicts Could Occur Within and Adjacent to the Project Area Between Current Agricultural Uses and Proposed Development

Because development will occur over a number of years, it is anticipated that some owners of land within the Project Area will choose to retain their land in agriculture (primarily grazing land) for a period of time while neighboring parcels may choose to develop. In addition, properties surrounding the Project Area could remain in agriculture for some period of time. This has the potential to place incompatible land uses in proximity to one another. Conflicts between agricultural and urban uses more commonly occur where the agricultural operations involve aerial spraying or seeding and operation of heavy machinery, or produce substantial odors (such as concentrated animal feeding operations). Because surrounding agricultural uses are primarily grazing, the potential for significant conflicts would be minimal.

The General Plan also contains policies and programs to protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations (Policy LU-A.13, Policy LU-A.12, and Program LU-A.C). Consistent with Policy LU-A.15, the County will condition discretionary permits for new residential development adjacent to agricultural areas upon the recording of a Right-to-Farm Notice. The Specific Plan includes guidelines to provide open space buffers to minimize potential impacts to vernal pools and natural resources. The Community Plan Update includes a policy to require that any new use be compatible with the existing adjacent use(s) or require that adequate buffers (e.g., landscape buffers, fences, walls, etc.) are provided between the uses (Policy 2.6).

Within areas designated for urban development, the County's Right to Farm Ordinance is available to protect those continuing in agriculture and the State's nuisance laws are also

available to protect homeowners and the County. For the property surrounding the Project Area, where primarily grazing land will continue, Specific Plan policies are proposed that meet the standards prescribed by the General Plan for appropriate buffers between agricultural and non-agricultural uses.

Conclusion: Implementation of the goals, objectives and policies found in the Community Plan Update and Specific Plan will result in a *less than significant* impact in regard to potential land use conflicts between agricultural and non-agricultural uses.

Mitigation Measures: No mitigation measures are required.

3.10 Noise

INTRODUCTION

This section of the EIR analyzes the Project's potential impacts associated with noise. Noise generation and exposure to noise is generally of greatest concern for residential land uses, schools, libraries, hospitals, and other uses of land that are highly sensitive to disturbance from noise. Within the Project Area, noise from motor vehicles, commercial uses and construction are issues of primary concern.

Generally, noise is considered unwanted sound. Sound levels are measured in decibels (dB). Unless otherwise stated, all sound levels reported in this section are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards use A-weighted sound levels, as they correlate well with public reaction to noise. The noise descriptor "Day-Night Average Level," which is commonly used in this section, is abbreviated as "Ldn" or "DNL." The DNL abbreviation is used throughout this section since it is the more modern usage that avoids the cumbersome use of the subscripted term. Decibels and other technical terms are defined in Table 3.10-1.

The Environmental Noise Assessment ("Noise Assessment") (Brown-Buntin Associates, Inc., April 2008) was prepared to determine if significant noise impacts will be produced by the Project and to describe mitigation measures for noise if significant impacts are determined (reference Appendix M).

3.10.1 REGULATORY SETTING

Noise regulations that apply to the Project Area are local. No federal or state noise regulations apply to this Project. Although the Project Area is within Fresno County, potential noise impacts due to traffic generated by the Project could occur in neighboring jurisdictions as well. Following is a discussion of local noise regulations that could apply to the Project.

**Table 3.10-1
Acoustical Terminology**

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L _{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L _{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
L _{max} , L _{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or information content as well as the prevailing ambient noise level.

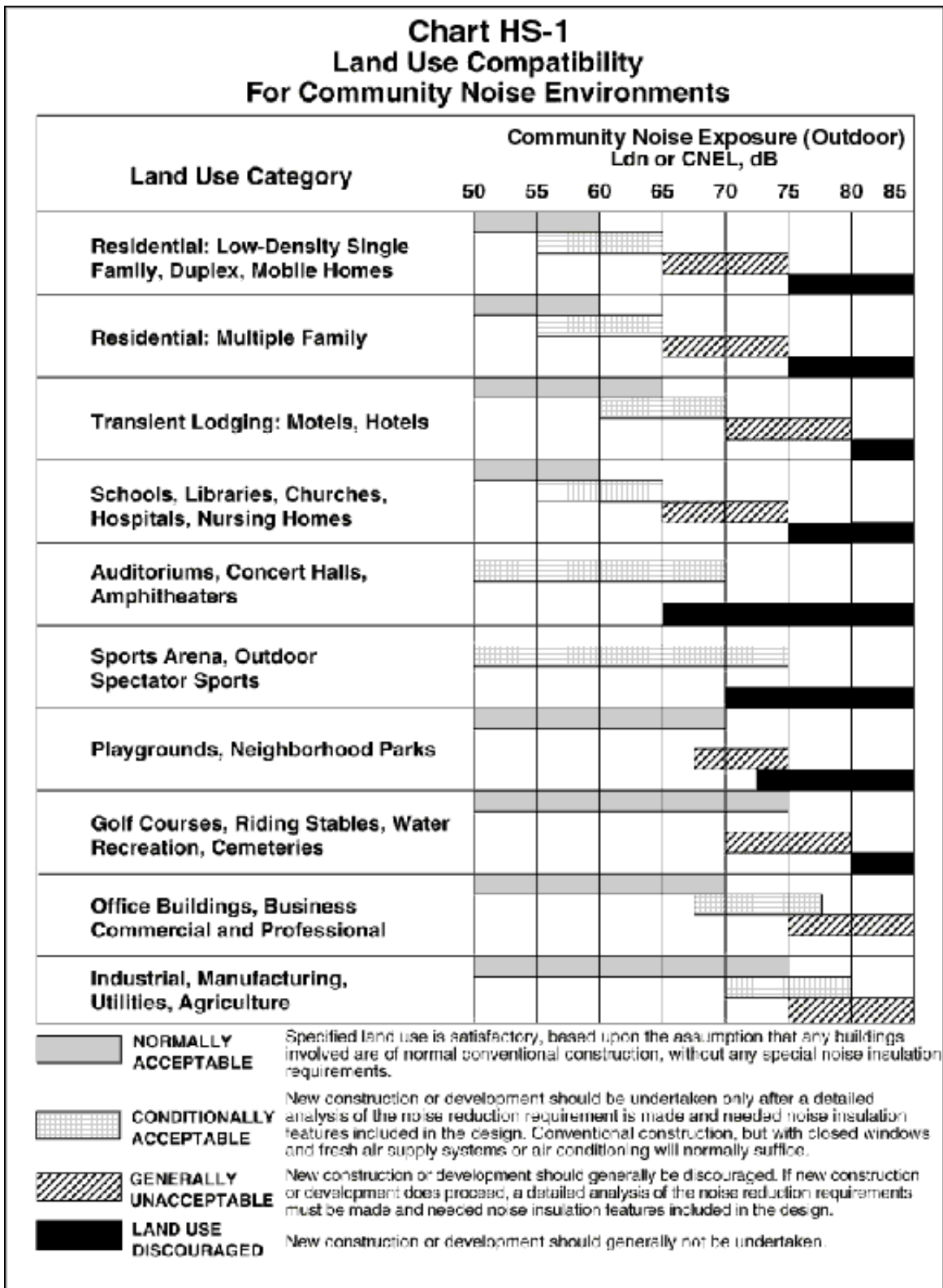
Fresno County General Plan Health and Safety Element

The Fresno County General Plan Health and Safety Element, which includes a Noise Section, specifies locational restrictions for different land uses (see Table 3.10-2). With regard to specific surrounding land uses for the Project Area (residential, schools, and playgrounds) average day-night noise levels (community noise equivalent or L_{dn}) in the range of 60 dB(A) or less is considered to be “normally acceptable” without any special construction or noise attenuation. The following Fresno County General Plan Policies are relevant to the Project:

Policy HS-G.1 The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

- Policy HS-G.2 The County shall require new roadway improvement projects to achieve and maintain the normally acceptable noise levels shown in Chart HS-1: “Land Use Compatibility for Community Noise Environments.”*
- Policy HS-G.3 The County shall allow the development of new noise-sensitive land uses (which include, but are limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are “acceptable” according to the Chart HS-1: “Land Use Compatibility for Community Noise Environments.” Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to these levels.*
- Policy HS-G.4 So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:*
- a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Chart HS-1: “Land Use Compatibility for Community Noise Environments;”*
 - b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.*
- Policy HS-G.5 Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.*
- Policy HS-G.6 The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County’s Noise Control Ordinance.*
- Policy HS-G.7 Where existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects, the County shall apply the following criteria to determine the significance of the impact:*

**Table 3.10-2
Fresno County Land Use Compatibility
for Community Noise Environments**



- a. Where existing noise levels are less than 60 dBLdn at outdoor activity areas of noise-sensitive uses, a 5 dBLdn increase in noise levels will be considered significant.
- b. Where existing noise levels are between 60 and 65 dBLdn at outdoor activity areas of noise-sensitive uses, a 3 dBLdn increase in noise levels will be considered significant; and
- c. Where existing noise levels are greater than 65 dBLdn at outdoor activity areas of noise-sensitive uses, a 1.5 dBLdn increase in noise levels will be considered significant.

Policy HS-G.8 The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, “Land Use Compatibility for Community Noise Environments.”

The Project’s consistency with these General Plan policies is discussed in Section 3.10.4.

Fresno County Noise Ordinance

The Fresno County Noise Ordinance (Chapter 8.40 of the Fresno County Ordinance Code) is applied to noise sources that can be regulated by local government, such as equipment related to commercial and industrial land uses. The Noise Ordinance does not apply to transportation noise sources such as traffic on public roads, rail operations, and aircraft in flight. Table 3.10-3 summarizes the Noise Ordinance Standards.

**Table 3.10-3
Exterior Noise Level Standards, dBA
Fresno County Noise Ordinance**

Category	Cumulative Min/hr. (Ln)	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am.)
1	30 (L ₅₀)	50	45
2	15 (L ₂₅)	55	50
3	5 (L _{8.3})	60	55
4	1 (L _{1.7})	65	60
5	0 (L _{max})	70	65

The Project’s compliance with the Fresno County Noise Ordinance is discussed in Section 3.10.4.

3.10.2 PHYSICAL SETTING

The principal noise sources in Friant are from traffic on nearby roads such as Friant Road.

Ambient Noise Level Measurements

Existing ambient noise level measurements were conducted at two locations within the Friant Ranch Specific Plan Area. Measurement equipment consisted of a Larson-Davis Model 820 sound level meter equipped with a B&K Type 4176 ½” microphone. The meter was calibrated before use to ensure the accuracy of the measurements. Figure 3.10-1 shows the measurement locations and Table 3.10-4 lists the measurement results. Site #1 was near the existing single-family residential area on the east side of Friant Road. The only noise source was an occasional car on local roads. Site #2 was off Friant Road on the east side. The background noise levels at this location were due to traffic on Friant Road.

**Table 3.10-4
Existing Ambient Noise Levels
July 31, 2008**

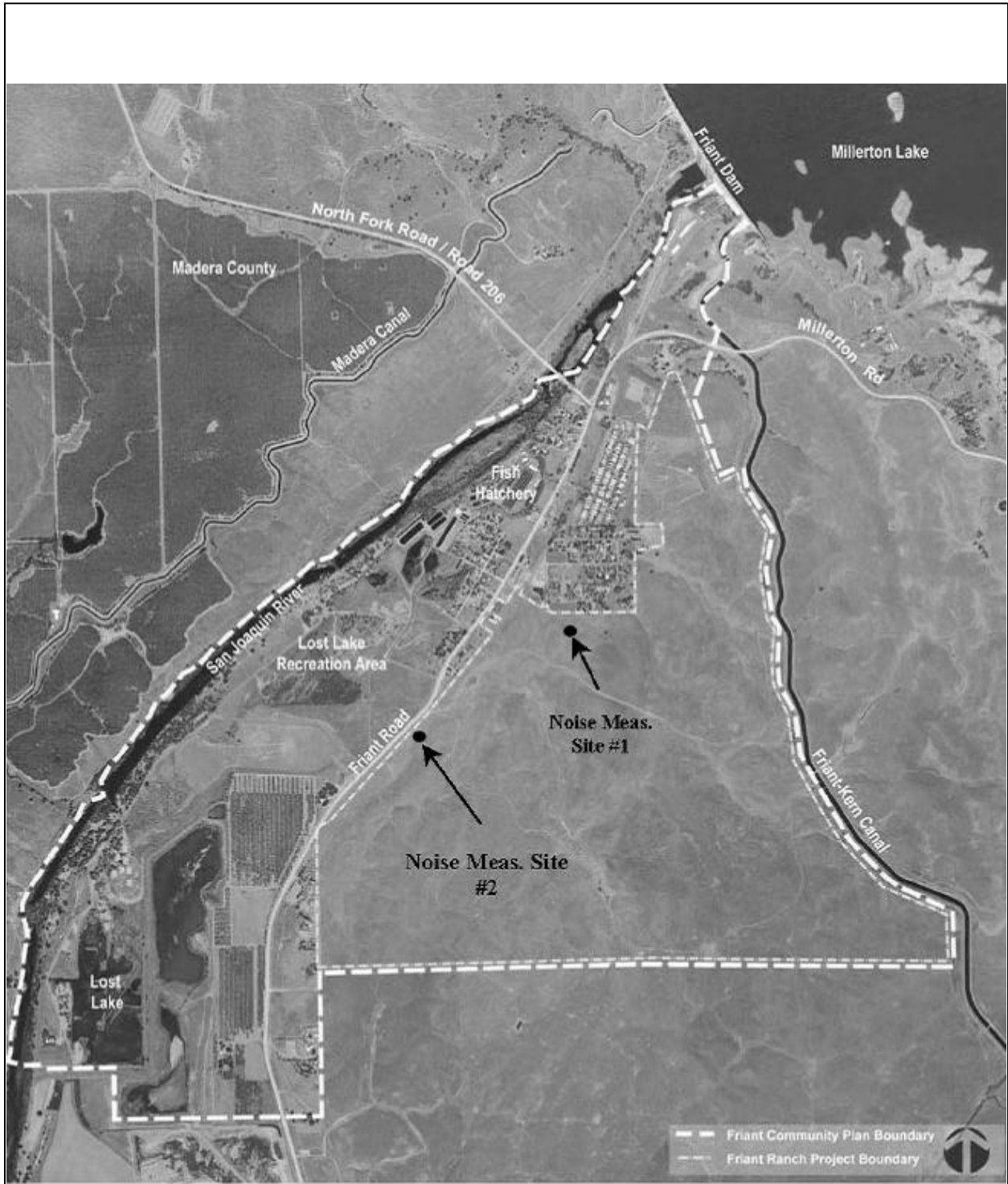
		A-Weighted Decibels (dBA)					
		Leq	Lmax	L ₅₀	L ₂₅	L _{8.3}	L _{1.7}
Site	9:30-9:45a	43.4	43.9	43.5	43.8	43.9	43.9
#1	11:30-11:45a	44.4	48.1	45.2	46.2	47	47.6
	2:15-2:30p	45.2	52.5	44.4	45.1	48.2	48.9
Site	10-10:15a	57.9	72	52	58	62.2	67.1
2	1:30-1:45p	58.1	69	55.2	56.2	58.5	61.4
	3-3:15p	59.2	70.3	56.8	54.4	59.2	63.5

Source: Brown-Buntin Associates, Inc.

Existing Traffic Noise Levels

Existing traffic noise levels from roadways that are near the Project Area were calculated using the FHWA Highway Traffic Noise Prediction Model (TNM). The TNM is a standard methodology for traffic noise prediction. Traffic volumes used in the Model were obtained from Peters Engineering Group. Other traffic inputs into the Model were obtained from field observations or assumed based on conditions for similar roadways. Appendix B of the Noise Assessment shows traffic data used in the Model. Table 3.10-5 shows existing traffic noise levels at locations along roads where existing residences were located. Along some locations only a few scattered rural residences were nearby. However, along some locations (portions of Willow Avenue) urban residences adjoined the road. In the urban locations, block walls were often located between the roads and residences. The noise barrier calculation routine of the TNM was used to calculate the typical noise reduction provided by these walls.

Table 3.10-5 shows that at existing residences bordering Friant Road and Willow Avenue existing traffic noise levels exceed Fresno County’s 60 dB DNL “Normally Acceptable” standard.



NOISE MEASUREMENT LOCATIONS

Figure 3.10 - 1

**Table 3.10-5
Existing Traffic Noise Levels**

Roadway	Roadway Segment	DNL @ Nearest Residences
Friant Road	206 to Root	61.3
	Root to Lost Lake	61.3
	Lost Lake to Willow	53.7
	Willow to Copper River	62.3
	Copper to Lakeview	59.4
	Lakeview to Champlain	60.4
	Champlain to Ft. Washington	60.9
	Ft. Washington to Shepherd	63.9
	Shepherd to Audubon	63.6
Willow Avenue	Friant to Copper	53.4
	Behymer to Perrin	54.7
	Perrin to Shepherd	55.9
	Shepherd to Teague	60.9
	Teague to Nees	63.2
	Nees to Alluvial	63.9
	Alluvial to Herndon	64.6
	Herndon to Sierra	65
	Sierra to Bullard	64.6
	Bullard to Barstow	64
Millerton Road	206 to Winchell Cove	56.4
	Winchell Cove to Brighton Crest	56.4
	Brighton Crest to Sky Harbour	56.7
	Sky Harbour to Table Mt.	56.5
	Table Mt. to Auberry	54
Parker Avenue	Friant to Project	47.8

Source: Brown-Buntin Associates, Inc.

3.10.3 IMPACT ANALYSIS CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project would have significant adverse noise impacts if it would do any of the following:

- a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
- b) *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*
- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*

- 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 expose people residing or working in the project area to excessive noise levels?*
- f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

Fresno County General Plan Policy HS-G.7 identifies the following criteria to determine the significance of noise impacts:

- Where existing noise levels are less than 60 dBLdn at outdoor activity areas of noise-sensitive uses; a 5 dBLdn increase in noise levels will be considered significant;
- Where existing noise levels are between 60 and 65 dBLdn at outdoor activity areas of noise-sensitive uses, a 3 dBLdn increase in noise levels will be considered significant; and
- Where existing noise levels are greater than 65 dBLdn at outdoor activity areas of noise-sensitive uses, a 1.5 dBLdn increase in noise levels will be considered significant.

3.10.4 IMPACT ANALYSIS

Impact #3.10.1 – Exposure to Excessive Noise Levels or Vibration [Evaluation Criteria (a), (b) and (c)]

The analysis of Project-related traffic noise impacts was based on the above-referenced TIS prepared by Peters Engineering Group. The traffic analysis examined impacts based on existing and future (years 2009, 2013, 2018 & 2030) conditions.

The previously described FHWA methodology was used to determine and compare traffic noise impacts without and with traffic generated by the Project. Traffic volumes in terms of Average Daily Traffic (ADT) were obtained from the Peters Engineering Group. Other traffic inputs to the FHWA Model were obtained from field observations or assumed based on conditions for similar roadways. As previously described, noise levels were adjusted at locations where block walls were located between roads and residences. Appendix B of the Noise Assessment lists traffic data used in the FHWA Model to calculate traffic noise levels with and without the Project.

Proposed land uses that are immediately adjacent to Friant Road are commercial, parkways, and open spaces. These land uses are usually not considered to be noise-sensitive, and buffer the proposed noise-sensitive uses, which are mostly single-family residences. The boundary of the single-family land uses is approximately 320 feet from the center of Friant Road at its nearest point. Worst-case traffic noise exposure from Friant Road would be during Year 2030 plus Project. At a distance of 320 feet the traffic noise exposure would be 58.4 dB DNL. The distance to the 60 dB DNL noise contour would be approximately 250 feet from the center of Friant Road. Since worst-case traffic noise exposure is less than 60 dB DNL criterion, the noise impact would be less than significant which would not require mitigation measures.

Table 3.10-6 compares off-site 2030 Project traffic noise levels at existing residences along Friant Road, Millerton Road, and Willow Avenue, and determines whether a significant impact results at residential areas along some segments of Friant Road and Willow Avenue. A significant impact occurs if the additional traffic noise due to the Project causes noise levels to exceed 60 dB DNL, or if a substantial increase in noise levels as defined in Table 3.10-7 results due to the Project.

**Table 3.10-6
Year 2030 Off-Site Traffic Noise Levels, DNL**

Roadway Name	Segment Description	2030 NP, dB	2030 WP, dB	Change, dB	Significant Impact?
Friant Road	206 to Root	64.1	65.8	1.7	No
	Root to Lost Lake	64.2	66.1	1.9	No
	Lost Lake to Willow	56.5	58.7	2.2	No
	Willow to Copper River	65.2	66.8	1.6	Yes
	Copper to Lakeview	61.8	62.9	1.1	No
	Lakeview to Champlain	61.9	62.9	1.0	No
	Champlain to Ft. Washington	62.3	63.2	0.9	No
	Ft. Washington to Shepherd	65.3	65.7	0.4	No
	Shepherd to Audubon	64.8	65.0	0.2	No
Willow Avenue	Friant to Copper	59.5	60.7	1.2	Yes
	Behymer to Perrin	58.5	59.2	0.7	No
	Perrin to Shepherd	59.7	60.2	0.5	Yes
	Shepherd to Teague	64.6	65.1	0.5	No
	Teague to Nees	65.6	66.0	0.4	No
	Nees to Alluvial	65.9	66.2	0.3	No
	Alluvial to Herndon	66.0	66.3	0.3	No
	Herndon to Sierra	66.0	66.2	0.2	No
	Sierra to Bullard	66.0	66.1	0.1	No
	Bullard to Barstow	65.9	66.0	0.1	No
Millerton Road	206 to Winchell Cove	58.7	59.1	0.4	No
	Winchell Cove to Brighton Crest	58.9	59.2	0.3	No
	Brighton Crest to Sky Harbour	59.1	59.3	0.2	No
	Sky Harbour to Table Mt.	59.0	59.2	0.2	No
	Table Mt. to Auberry	58.5	58.7	0.2	No
Parker Avenue	Friant to Project	48.7	50.9	2.2	No

Source: Brown-Buntin Associates, Inc.

**Table 3.10-7
Measures of Substantial Noise Increase for Transportation Sources**

Ambient Noise Level Without Project (DNL/CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dB	+5 dB or more
60-65 dB	+3 dB or more
>65 dB	+1.5 dB or more

Source: FICON, 1992, as applied by Brown-Buntin Associates, Inc.

According to the Noise Assessment prepared for the Project, significant off-site traffic noise impacts were identified at the following locations:

- Year 2030, Friant Road, Willow to Copper River, Project traffic causes a substantial (for noise sources that are not transportation related, which usually includes commercial or industrial activities and other stationary noise sources, it is common to assume that a 3-5 dB increase in noise levels represents a substantial increase in ambient noise levels) increase in noise levels;
- Year 2030, Willow Avenue, Friant to Copper. Project traffic causes noise levels to exceed 60 dB DNL; and
- Year 2030, Willow Avenue, Perrin to Shepherd. Project traffic causes noise levels to exceed 60 dB DNL.

The Project is consistent with Fresno County General Plan policies HS-G.1 and HS-G.5 in that the Project, if needed, will incorporate design elements (i.e., solid fencing/wall), necessary to minimize adverse noise impacts on surrounding land uses. The Project is consistent with policies HS-G.2 and HS-G.7 in that new roadways will be built to the normally acceptable noise levels in the Land Use Compatibility for Community Noise Environments table and mitigation measures will be implemented to reduce potential impacts to a less than significant level. The Project is consistent with Policy HS-G.3 in that noise mitigation measures will be implemented to ensure that the Project noise levels are “acceptable” according to Table 3.10-2 (Chart HS-1). Consistent with Policy HS-G.4, a Noise Assessment was prepared for this Project. Consistent with Policy HS-G.8, the County will evaluate future development projects in the existing Friant Community Plan Area for compatibility with Table 3.10-2 (Chart HS-1), and has evaluated the compatibility of the Friant Ranch Specific Plan with Chart HS-1.

The Draft Friant Community Plan includes Policy 6.4 which states, “protect residential and other noise-sensitive land from exposure to harmful or annoying noise levels by requiring that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.” The Friant Ranch Specific Plan includes Policy 5.116 which states, “avoid, to the maximum extent feasible, solid fences and walls, except where noise attenuation is required. Decorative walls may incorporate glass or acrylic to showcase scenic views and vistas.”

No aspect of the Project is expected to produce excessive groundborne vibration or groundborne noise levels. No pile driving or surface blasting is proposed.

The operation of the wastewater treatment plant will not cause any nuisance by way of noise to the public and surrounding environment because the Friant Ranch Specific Plan and infrastructure Master plan requires the aerated treatment process to take place within an enclosed building, which will keep noise levels within permissible limits.

Conclusion: Without mitigation, noise impacts associated with Project traffic will be potentially significant. Development of the Friant Ranch Specific Plan will result in a *significant* traffic noise impact existing residences along three of the 24 road segments analyzed.

Mitigation Measure #3.10.1a:

1. Prior to issuance of any grading permit for new public and private development proposals within the Friant Community Plan Area, the County shall review the proposal to determine conformance with the policies of the Fresno County General Plan and the Friant Community Plan.
2. Where the development of any future project within the Friant Community Plan Area (other than the Friant Ranch Specific Plan Area and Depot Parcel) may result in noise sensitive land uses being exposed to existing or projected future noise levels exceeding the levels specified by the policies of the General Plan and Community Plan, the County shall require that an acoustical analysis be submitted as part of the entitlement application that designates that adequate noise mitigation is included in the project design to comply with County standards.
3. Prior to issuance of a grading permit for proposed development within the Friant Community Plan Area (other than the Friant Ranch Specific Plan Area and Depot Parcel), site-specific acoustical analyses shall be conducted to determine setbacks and any other feasible mitigation measures (e.g. berms, site design, location of structures, noise walls/barriers) required to reduce traffic noise to levels that meet County design standards and comply with the Fresno County Noise Ordinance.

Effectiveness of Mitigation: Implementation of Mitigation Measure #3.10.1a will result in a less than significant impact to the remaining Friant Community Plan Area (outside of Friant Ranch Specific Plan and Depot Parcel).

The only effective means to mitigate the Specific Plan's sound impacts to existing residences along Friant Road and Willow Avenue would be to construct sound walls/barriers, install sound insulation within existing structures, or demolish/relocate existing structures along these roadways. Where walls/barriers are feasible they are usually the most practical and cost-effective way to reduce traffic noise impacts. However, sound walls/barriers would necessitate relocation or demolition of existing structures. Further, in order to construct a sound wall/barrier on private property, agreements with the landowners would be required and, in the event an agreement could not be reached with one landowner, the resulting gap would diminish the effectiveness of the wall. In addition, the sound wall/barriers would interfere with access to Friant Road or Willow Avenue in some cases. Installation of sound insulation within existing structures is not feasible because it would require remodeling of the existing structures along these roadways. Moreover, demolishing or relocating existing structures is not financially or practically feasible. Therefore, there are no feasible measures to mitigate off-site traffic noise impacts to existing homes along Friant Road and Willow Avenue associated with the Friant Ranch Specific Plan Area. This impact remains *significant and unavoidable*.

Impact #3.10.2 – Construction Noise
[Evaluation Criteria (d)]

The Friant Depot Parcel zone change and General Plan Amendment will facilitate construction of commercial uses on 6.75 acres. The Friant Community Plan Update contemplates construction of commercial and residential uses within the vacant parcels of the Community Plan Area and (other than the Specific Plan and Depot Parcel) to the same extent as contemplated under the 1983 Community Plan. Noise sensitive uses located adjacent to sites where new development takes place could be exposed to temporary, intermittent noise levels of 70 to 90 dBA that occur as a result of typical construction activities. Construction activities would be temporary in nature and typically occur during the daytime hours. Construction noise could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur, or if equipment is not properly muffled or maintained. These impacts are potentially significant.

Typical construction equipment would include tractors, forklifts, and miscellaneous equipment (e.g., pneumatic tools, generators and portable air compressors). Noise levels generated by this type of construction equipment (Federal Highway Administration, Construction Noise Handbook, 2007) at various distances from the noise source are shown in Table 3.10-8.

Table 3.10-8
Estimated Construction Noise Levels

Construction Equipment	Typical Noise Level (dBA) (distance from source)		
	50 feet	400 feet	1.0 mile
Pneumatic tools	85	67	45
Truck (e.g., dump, water)	84	66	48
Concrete mixer (truck)	85	67	45
Scraper	85	67	48
Bulldozer	85	67	48
Backhoe	80	62	40
Portable air compressor	80	59	40

Source: Federal Highway Administration *Construction Noise Handbook*, 2007

Noise levels generated from construction activities decrease with increasing distance from the noise source; generally, noise levels reduce by six decibels for every doubling of distance from the source.

Conclusion: Construction noise is not usually considered to be a significant impact if construction occurring near noise-sensitive land uses is limited to the daytime hours, extraordinary noise-producing activities (e.g., pile driving) are not anticipated, and construction equipment is adequately maintained and muffled. However, it is still a *potentially significant* impact unless mitigated.

Mitigation Measure #3.10.2a: Construction projects and any other noise generators shall be regulated by the standards identified in Chapter 8.40 of the Fresno County Ordinance Code.

Mitigation Measure #3.10.2b: Effective mufflers shall be fitted to gas- and diesel-powered equipment to reduce noise levels as much as practicable.

Mitigation Measure #3.10.2c: All construction activities shall be limited to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m., Saturday and Sunday.

Effectiveness of Mitigation: Implementation of the mitigation measures above will reduce the impacts to a *less than significant* level.

Impact #3.10.3 – Excessive Noise From a Public Airport or Private Airstrip [Evaluation Criteria (e) and (f)]

According to the Fresno County General Plan Background Report and aerial photographs, there are no public airports or private airstrips in the Project vicinity or within two miles of the Project Area. The Project will not expose people residing or working in the Project Area to excessive noise levels associated with a public airport or private airstrip.

Conclusion: *No impact* has been identified.

Mitigation Measures: No mitigation measures are required.

3.11 Population and Housing

INTRODUCTION

This section summarizes existing and forecasted population and housing characteristics in Fresno County and the Friant community. Estimates of the changes to population and housing levels that could result from the Project are identified in this section. Increases in population, employment, and housing are analyzed to determine consistency with the Fresno County General Plan (2000) and Fresno County Housing Element (2003), which are policy documents that guide land use development decisions for the Project Area. Data used in preparation of this section were obtained from various sources, including but not limited to the U.S. Census, the California Department of Finance and the Fresno County General Plan.

As explained in the 2000 Fresno County General Plan Update Final EIR, the California Department of Finance projects that the County's population is anticipated to increase from approximately 770,000 (1996) to approximately 1,115,000 by 2020. To develop population estimates, the Department of Finance evaluates natural population increases and migration patterns. The Department of Finance relies on the expertise of local agencies to assist in the development of local area migration assumptions. When local input is not available, the migration assumptions are made by the Department of Finance based on historical analysis of the County's migration patterns. The Fresno County Economic Development Commission (FCEDC) expects the rate of growth within the major urbanized areas within the County, particularly the City of Fresno and City of Clovis, to be greater than other areas within the County. The unincorporated areas of the County, such as the proposed Project area, are projected to grow at a slower rate of 1 to 2 percent per annum. Based upon such projections, a tentative timeline to reach build-out for the Project is 15 years once construction has started, which equates to

approximately 2030. Consistent with the FCEDC report, the growth rate within the Friant Community Plan area is expected to be no more than 1 to 2 percent per annum. The speed of growth within the Community Plan area will be governed by housing and commercial market conditions. Favorable market conditions will increase the growth rate while less than desirable market conditions will cause it to slow.

Changes in population and housing resulting from the Project are social and economic effects, not environmental effects. According to section 15382 of the CEQA Guidelines, an economic or social change is not by itself considered a significant effect on the environment. Though population and housing changes do not necessarily cause direct adverse physical environmental impacts, they can cause indirect effects such as increased traffic and air quality emissions and increases in ambient noise levels. The purpose of this section is to identify and evaluate population and housing changes caused by the Project. The potential environmental effects related to any physical changes caused by the population and housing changes resulting from the Project are evaluated in the applicable sections contained in Chapter Three of this Draft EIR, particularly Section 3.1 Aesthetics, Section 3.9 Land Use, Section 3.10 Noise, Section 3.12 Public Services and Recreation, Section 3.13 Traffic and Circulation, and Section 3.14 Utilities and Service Systems..

3.11.1 REGULATORY SETTING

Fresno County General Plan

Housing Element

Housing in Fresno County is primarily addressed through the 2003 Housing Element which is currently being updated in accordance with State law. The most applicable goals and policies of the current Housing Element are as follows:

Goal H-A To increase the supply of housing, with a priority on the development of affordable housing, to meet the needs of residents of Fresno County unincorporated communities.

Goal H-B To manage housing and community development in a manner that promotes the long-term value of each existing and new housing unit and the environment in which it is located.

Policy H-B.3 The County shall direct new housing development to communities where essential public services are provided and where adequate employment, commercial, community and education services are available.

Goal H-C To provide for a broad range of housing types and densities to meet the needs of all residents of the unincorporated area.

Policy H-C.1 The County shall encourage development of a full range of quality housing that allows residents of the unincorporated community's access to safe and affordable housing while preserving the character and integrity of existing neighborhoods.

Policy H-C.2 The County shall encourage higher housing densities, where permitted, including condominium, townhome and multi-family development.

Policy H-C.6 The County should review and update each unincorporated community plan as needed to ensure that adequate residential land is designated to accommodate population and growth projections of the General Plan.

Policy H-D.3 The County shall promote mixed-use development where housing is located adjacent to jobs, services, shopping, schools, and public transportation.

Goal H-E To provide an adequate supply of housing and supportive services for persons with special needs including elderly, homeless, disabled, female head of household, and large families.

Goal H-I To promote environmental conservation activities in residential neighborhoods.

Policy H-I.3 The County shall encourage mixed-use pedestrian and transit-oriented development.

Land Use Element

Population and housing in the Project vicinity is also directly affected by policy direction in the Land Use Element. The most applicable policies of the Land Use Element are as follows:

Policy LU-G.21 The County shall administer those unincorporated areas identified in the community plan as urban as follows:

- a. Maintain zoning consistent with the community plan.*
- b. A holding zone may be applied to undeveloped or underdeveloped properties.*
- c. Consider subdivision, rezoning, or discretionary permit proposals on planned non-industrial properties where the proposed use is consistent with the community plan. As conditions of approval, the County will require: (1) community sewer and water service; and (2) completion of all roadways providing access to the development -- as if they were part of the development-to the nearest fully developed street; and (3) safe collection and disposition of flood and storm waters in accordance with the plans and directives of the County of Fresno, Department of Public Works.*
- e. Consider rezoning and discretionary permit proposals in planned industrial areas consistent with the community plan.*

Policy LU-G.23 The County shall ensure that the expansion of unincorporated communities can be provided with necessary public services and such expansion is consistent with other General Plan policies.

A discussion of the Project's consistency with the policies above is found in Chapter 3.9 Land Use and Planning.

Friant-Millerton Regional Plan

Policy LU-H.8 The County shall prepare a regional plan for the Friant-Millerton area. The preliminary study area boundaries for the new regional plan depicted in Figure LU-5 are designed to encompass the area's major recreation facilities and open space resources, include the area's existing and potential residential growth areas, but exclude most productive agricultural land. In the near-to-mid-term, planning and development in the area should focus on expanding and enhancing the area's recreational activities and resources. In the long-term, the area may be suitable for urban development as the unincorporated county's largest remaining area without productive agricultural soils near the Fresno-Clovis Metropolitan Area and recreational and scenic resources.

The new regional plan shall at a minimum address the following key issues:

- a. Expansion and enhancement of recreation activities and facilities centered on Millerton Lake and the San Joaquin River.*
- b. Open space and natural resource protection.*
- c. Implementation of appropriate policies of the San Joaquin River Parkway Master Plan.*
- d. Groundwater and surface water availability.*
- e. Wastewater disposal limitations and options.*
- f. Development of affordable housing, particularly for workers at recreational and related tourist facilities in the area.*
- g. Suitability of the area for future long term urbanization and options for how this might occur (e.g., County specific plan, city annexation, or city incorporation).*
- h. Provision of an adequate circulation/transportation system, including mass transit.*

A discussion of the Project's consistency with the policies above is found in Chapter 3.9 Land Use and Planning.

3.11.2 PHYSICAL SETTING

Current Population

Friant is an unincorporated community and has been identified as a census-designated place (CDP). A CDP is a type of place or area identified by the United States Census Bureau for statistical purposes. CDPs are delineated for each decennial census as the statistical counterparts of incorporated places such as cities, towns and villages. Population and housing data is based on census data, and interim years are not available. According to the 2003 Housing Element Friant's population in 2000 was 519, total households were 226, and total housing units were 236. For reference, Fresno County's unincorporated population in 2000 was 167,515, total households were 51,695, and total housing units were 57,902.

According to the 2000 Census, Friant's average household size was 2.27 and the average family size was 2.70. Owner-occupied housing units in 2000 totaled 180 (79.6%) and renter-occupied housing units totaled 46 (20.4%). Fresno County's average household size in 2000 was 3.08 (DOF, E-8, 2000), owner-occupied housing units was 69.5%, and renter-occupied housing units was 30.5%. Unincorporated Fresno County had a larger average household size in 2000 than Friant and also fewer owner-occupied housing units. Further, approximately 11.3 percent of Fresno County's unincorporated area population was 65 years or older. Between 1990 and 2000, the increase in population was nearly 11% with an increase from 68,311 to 75,802 persons 65+ in Fresno County's unincorporated areas. Approximately 25% of Friant's existing population is age 65 or older.

The Project Area is in a state of transition. Within the immediate region, population growth is occurring with the influx of new development projects. Although the area is noted for its rural identity and extensive rangeland, new towns and large residential developments are changing the context of the land, spurring population growth that will ultimately influence Friant's economy and resources.

Population Projections

The California Department of Finance 2004 Population Projection Report estimates that the overall population within Fresno County will increase by 17% between 2010 and 2020. The population ages 65-74 within Fresno County will increase by 58% between 2010 and 2020, and the population ages 55-64 will increase by 27% during this period. The population ages 75+ is expected to increase by 15%.

3.11.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant impact on population and housing if it would do any of the following:

- a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).*
- b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.*
- c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.*

As noted above, according to CEQA, a significant impact on population and housing does nothing itself necessarily to result in significant adverse environmental impacts, but may cause physical changes that result in significant adverse environmental impacts.

3.11.4 IMPACT ANALYSIS

Impact #3.11.1 – Induce Substantial Population Growth [Evaluation Criteria (a)]

Project implementation will have a direct, growth inducing impact on the area's population and housing stock by facilitating the development of up to 2,996 new households within the Friant Ranch Specific Plan Area and development of vacant properties in the Existing Friant Community Plan Area. Friant Ranch will be developed in five phases over a 10-year period. Because the majority of housing units will be occupied by individuals age 55 and over, it is expected that the average household size will be less than Friant's average household size of 2.27. According to the 2001 American Housing Survey by the U.S. Census, the combined demographic for the 55-64 and 65-74 age categories average 1.9 persons per dwelling unit. Thus, the 2,776 age restricted units within the Friant Ranch Specific Plan Area are expected to average at 1.9 persons per dwelling unit.

The Project is consistent with Goal H-E of the County's Housing Element in that the Project will provide an adequate supply of housing and supportive services for persons with special needs such as persons age 55 years and older. The Project is consistent with policies H-C.1, H-C.2 and H-D.3 in that the Project will provide a full range of quality housing that allows residents access to safe and affordable housing while preserving the character and integrity of existing neighborhoods; will include higher housing densities; and promotes mixed-use development where housing is located adjacent to jobs, services and shopping. The Project is consistent with Policy H-C.6 in that the Friant Community Plan is being updated. The Project is consistent with Fresno County General Plan Land Use Element Policy LU-G.23 in that the necessary public services can be provided in the Project area. The Project will induce population growth in the area, both directly and indirectly, however; not at a rate considered substantial enough to result in a significant environmental impact.

Not including the Friant Ranch Specific Plan Area, the majority of land designated residential in the Community Plan Area boundary is built out. The few remaining vacant parcels will be built dependent upon market conditions and need. The U.S. Census shows that Friant's population in 2000 was 519, total households were 226, and total housing units were 236. Vacant housing

units in 2000 was 10 units. The development of those 10 units would result in an increase of approximately 23 persons to the community of Friant. There are approximately 18 acres of Low Density, five acres of Medium Density, and eight acres of Medium High Density designated land in the Friant Community Plan Area that is vacant and available for development. The total number of units (.80 net density to account for right of way) which could be built is approximately 17 Low Density units, 29 Medium Density units and 116 Medium High Density units. At 2.27 persons per household, the total number of additional persons in the Friant Community Plan Area could be 367.

Much of the commercial frontage property on Friant Road is currently either vacant or under utilized. These parcels will develop dependent upon market conditions and need. The majority of land west of Friant Road within the Community Plan Area is designated Agriculture and Open Space and not subject to development.

The redevelopment of properties in the 597 acre Friant Redevelopment Area within the Community Plan Area is subject to available funding sources. The Friant Redevelopment Implementation Plan for the years 2005 – 2009 contains as a primary program, “the design and construction of a sewage treatment and collection system for the commercial strip along Friant Road and for new and existing residential development within the Community of Friant.” These improvements have not yet been implemented due to lack of funding sources.

The Friant Ranch portion of the Project will bring new commercial uses into the area that will create new employment opportunities within the Project Area. The jobs created by the commercial areas could be filled by people already living in the area and future residents and would not substantially induce additional population growth. Buildout of the remaining Friant Community Plan Area would also result in new employment opportunities as a good amount of the properties fronting onto Friant Road are vacant, so the potential for new development is available. It is unknown what future uses would develop in Friant and the timing of those future uses, therefore, it is speculative as to the number of employees that would be generated and when.

Conclusion: Implementation of the Friant Ranch Specific Plan will have a direct, growth inducing impact on the area’s population and housing stock by facilitating the development of up to 2,996 new households within the Specific Plan Area and development of vacant properties in the Existing Friant Community Plan Area. The proposed project will considerably accelerate projected population growth within the Friant Community Plan Area and is considered a *significant impact*.

Mitigation Measures: No mitigation measures are available to reduce this impact to a less than significant level..

**Impact #3.11.2 – Housing and Population Displacement
[Evaluation Criteria (b) and (c)]**

Implementation of the Project, including development of vacant parcels in the Friant Community Plan Area and potential development/redevelopment of areas within the Friant Redevelopment

Area, would not displace substantial numbers of existing housing or people. In fact, a considerable number of existing structures within the Redevelopment Plan Area are currently underutilized. The Redevelopment Plan amendments will not result in displacement but rather seeks to extend the Redevelopment Plan twenty years in hopes that it will generate redevelopment funding to provide additional infrastructure to support the existing community. The majority of development under the Project will occur in the Friant Ranch Specific Plan Area and include active adult single family homes, multi-family and live/work homes, an active adult recreation center, undisturbed open space, parks and parkways, and a wastewater treatment system. The Friant Ranch Specific Plan development will not displace or replace any existing housing within the Friant Redevelopment Area.

Conclusion: Implementation of the proposed Project would result in *no impact* in terms of the displacement of substantial numbers of existing housing units or people.

Mitigation Measures: No mitigation measures are required.

3.12 Public Services and Recreation

INTRODUCTION

This section presents information on existing public services in the Project vicinity, including fire and police protection, schools, and parks and recreation, and describes the potential environmental effects of the Project related to the provision of these services.

3.12.1 REGULATORY SETTING

Fire Protection

Regulations and standards pertaining to fire protection are contained in the adopted portions of the Uniform Fire Code, the Uniform Building Code and standards set by the National Fire Protection Association (NFPA). Applicable planning goals and policies of the Fresno County General Plan relating to fire protection are identified below.

Fresno County General Plan

Goal PF-H To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

Policy PF-H.1 The County shall work cooperatively with local fire protection districts to ensure the provision of effective fire and emergency medical services to unincorporated areas within the county.

Policy PF-H.2 Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities are provided.

Policy PF-H.5 The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.8 The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

- a. 5 minutes in urban areas;*
- b. 15 minutes in suburban areas; and*
- c. 20 minutes in rural areas.*

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.12.4).

Law Enforcement

There are no specific federal or State regulations that relate to law enforcement protection for the Project. The goals and policies of the Fresno County General Plan relating to police protection are identified below.

Fresno County General Plan

Goal PF-G To protect life and property by deterring crime and ensuring the prompt and efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.

Policy PF-G.1 The County shall ensure the provision of effective law enforcement services to unincorporated areas in the county.

Policy PF-G.2 The County shall strive to maintain a staffing ratio of two (2) sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy Sheriff personnel and excludes all support positions and sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities and grant specific populations.)

Policy PF-G.3 The County shall identify and establish funds for acquisition of adequate sheriff facility sites in unincorporated locations of the county.

Policy PF-G.4 The County shall require development to pay its fair share of the costs for providing law enforcement facilities and equipment to maintain service standards.

Policy PF-G.5 The County shall provide police support to adequately maintain its service standards, within the County's budgetary constraints.

Policy PF-G.6 The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing Sheriff Department review of development proposals.

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.12.4).

Public Schools

There are no specific federal regulations pertaining to schools that relate to the proposed Project. State law pertaining to school facilities and mitigation, and the goals and policies of the Fresno County General Plan relating to school facilities, are discussed below.

SB 50

The Leroy F. Greene School Facilities Act of 1998 (SB 50) and the bond procedures under Proposition 1A of 1998 regulate school facilities financing and mitigation of land use approvals by setting fee caps, removing entitlement application denial authority from lead agencies, and setting the CEQA standard for full and complete mitigation for school facilities. Prior to enactment of the legislation, a city or county had the authority to deny or require full mitigation for projects that required an amendment to a General Plan and/or a zone change. SB 50 allows a city or county to deny or refuse to approve a development project that requires a legislative act on the basis of the inadequacy of school facilities where the developer refuses to pay fees provided for in the Government Code. However, County may not require a higher fee than provided for in the Government Code.

Fresno County General Plan

The following are applicable goals and policies of the Fresno County General Plan:

Goal PF-I To provide for the educational needs of Fresno County and provide libraries for the educational, recreational, and literary needs of Fresno County residents.

Policy PF-I.3 The County shall consider school district plans when designating existing and future school sites in community plans and specific plans to accommodate school district needs.

Policy PF-I.5 The County shall involve school districts in the early stages of residential land use planning, such as during the adoption or updating of specific, community, and regional plans, to provide a coordinated effort for the planning of school facilities.

Policy PF-I.7 The County shall include schools among those public facilities and services that are considered an essential part of the development service facilities that should be in place as development occurs and shall work with residential

developers and school districts to ensure that needed school facilities are available to serve new residential development.

Policy PF-I.8 The County and school districts should work closely to secure adequate funding for new school facilities. The County shall support the school districts efforts to obtain appropriate funding methods such as school impact fees.

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.12.4).

Clovis Unified School District Facility Master Plan

The Project site is in the Clovis Unified School District (CUSD). CUSD has an adopted facility master plan that describes the educational programs and evaluates the ability of the current and future facilities to address existing and future curriculum and instructional needs. Programs and policies provide a framework for CUSD in determining future facilities needs. The CUSD Facility Master Plan does not have any policies/programs specific to the Friant Community Plan Area (personal conversation, Kim Keswick, Administrative Assistant, August 6, 2008).

Parks and Recreation

State and local regulations and plans pertaining to recreation are described below. There are no federal regulations pertaining to locally-directed parks and recreation activities that relate to the Project.

Quimby Act

Passed in 1975, the Quimby Act (California Government Code Section 66477) authorizes local agencies to establish ordinances requiring new developments to pay in-lieu fees or dedicate lands for park and recreation facilities to serve proposed development. Fresno County General Plan Policy OS-H.3 requires the County to implement the Quimby Act provisions and enact ordinances to require the dedication of land and/or payment of fees, in accordance with local authority and State law (e.g., Quimby Act), to ensure funding for the acquisition and development of public recreation facilities. The General Plan Policy OS-H3 further requires that fees be set and adjusted by County ordinance, as necessary, to provide for a level of funding that meets the actual cost to provide for all the public parkland and park development needs generated by new development. The County has not adopted an ordinance so parks are determined on a project by project basis.

Fresno County General Plan

Applicable goals and policies of the Fresno County General Plan relating to parks and recreation are listed below:

Goal OS-H To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.

- Policy OS-H.2 The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas.*
- Policy OS-H.3 The County shall require the dedication of land and/or payment of fees, in accordance with local authority and State law (e.g., Quimby Act), to ensure funding for the acquisition and development of public recreation facilities. The fees are to be set and adjusted, as necessary, to provide for a level of funding that meets the actual cost to provide for all the public parkland and park development needs generated by new development.*
- Policy OS-H.4 The County shall consider the use of existing entities or the creation of assessment districts, County service areas, community facilities districts, or other types of districts to generate funds for the acquisition and development of parkland and/or historical properties as development occurs in the county.*
- Policy OS-H.6 The County shall encourage the development of parks near public facilities such as schools, community halls, libraries, museums, prehistoric sites, and open space areas and shall encourage joint-use agreements whenever possible.*
- Policy OS-H.8 The County shall encourage development of private recreation facilities to reduce demands on public agencies.*
- Policy OS-H.9 The County shall plan for the further development of the Friant-Millerton area as a recreation corridor. (See Policy LU-H.8, Administration)*
- Goal OS-I To develop a system of hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.*
- Policy OS-I.2 The County shall develop recreational trails in County recreation areas.*
- Policy OS-I.4 The County shall require that adequate rights-of-way or easements are provided for designated trails or bikeways as a condition of land development approvals.*
- Policy OS-I.8 The County shall use the following principles in the siting of recreational trails:*
- a. Recreational trail corridors should connect urban areas to regional recreational amenities, follow corridors of scenic or aesthetic interest, or provide loop connection to such routes or amenities.*
 - b. Recreational trails should be located where motor vehicle crossings can be eliminated or minimized.*

- c. *Recreational trails should provide for connectivity to other transportation modes such as bus stops, train stations and park-and-ride sites when feasible to enhance intermodal transportation opportunities.*
- d. *Recreational trails should provide for connectivity to the on-street walkway and bikeway network when feasible to enhance non-motorized transportation opportunities.*
- e. *Recreational trails shall whenever possible make maximum use of existing public land and rights-of-way.*

Policy OS-I.11 The County shall seek the provision of recreation trails in future foothill and mountain developments.

Policy OS-I.16 The County shall encourage public/private partnerships to implement and maintain trails.

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.12.4).

San Joaquin River Parkway Master Plan

The San Joaquin River Parkway Master Plan establishes standards for the development of low-impact recreational uses, education and protection of natural resources for the San Joaquin River and surrounding areas. The fundamental goals of the Master Plan are to:

- Provide for conservation, education and recreation, particularly a continuous trail, in a cooperative manner with affected landowners.
- Protect irreplaceable natural and cultural resources in a way that will also meet recreational and educational needs.

A discussion of the Project's consistency with the policies above is found in the Impact Analysis section (3.12.4).

3.12.2 PHYSICAL SETTING

Fire Protection

The California Department of Forestry and Fire Protection (CDF), provides fire protection services in unincorporated areas of Fresno County. The Friant station is located at the north end of the community of Friant, adjacent to Friant Road. The Project Area is located in a State Responsibility Area. A second new station is planned in the nearby Millerton New Town Specific Plan Area approximately 3 miles east of the Community of Friant at the intersection of Millerton and Winchell Cove Roads.

Law Enforcement

The Fresno County Sheriff's Department polices the County's unincorporated areas, which are divided among three service zones. Friant is located within Area II, and is served by field training officers, deputies, and detectives. Area II is headquartered in the City of Fresno, approximately 20 miles southeast of Friant. The Sheriff's Department utilizes community oriented policing in Area II, which entails community oriented governing and monthly meetings where residents address problems related to crime and the quality of life. A substation for Area II is planned for in the Millerton New Town Specific Plan Area approximately 3 miles east of the Community of Friant at the intersection of Millerton and Winchell Cove Roads.

Public Schools

Educational services for the Project area are provided by the CUSD. Students in Friant attend Liberty Elementary School (K-6), Kastner Intermediate School (7-8), and Clovis West High School (9-12). It should be noted that Clovis Unified School District has also recently purchased a site for an elementary school in Millerton New Town in the vicinity of the Friant Community. Table 3.12-1 shows student enrollment for Liberty Elementary, Kastner Intermediate and Clovis West High for school years 2001-02 and 2006-07. Student enrollment at each of the schools decreased between 2001-02 and 2006-07.

Table 3.12-1
School Enrollment & Percentage Change
Liberty, Kastner & Clovis West, 01-02 & 06-07

	2001-02	2008-09	%
	Enrollment	Enrollment	Change
Liberty Elementary	570	540	-5%
Kastner Intermediate	1,527	1,205	-21.1%
Clovis West High	2,877	2,546	-12%

Source: Education Data Partnership, www.ed-data.k12.ca.us

By way of comparison, Table 3.12-2 shows CUSD's total enrollment from 1996-97 to 2008-09. The District's student enrollment increased 18 percent (6,837 students) during that period. The two tables below indicate that while Liberty, Kastner and Clovis West's enrollment has been declining, CUSD's overall enrollment has been increasing.

Parks and Recreation

Fresno County has a variety of recreational opportunities that are not only scenic and functional, but also involve significant natural resources. The primary responsibility of the Fresno County Parks Division is to provide, develop, and maintain regional parks and landscaped areas. Regional recreational facilities maintained by the Division in the Project Area include the Lost Lake Recreation Area along the San Joaquin River just below Friant Dam.

**Table 3.12-2
School District Enrollment
1996-97 to 2006-07**

Academic Year	No. of Students
2008-09	37,464
2007-08	36,810
2006-07	37,101
2005-06	36,378
2004-05	35,344
2003-04	34,663
2002-03	34,031
2001-02	33,418
2000-01	32,717
1999-00	31,933
1998-99	31,487
1997-98	30,960
1996-97	30,627

Source: Education Data Partnership

According to the existing Friant Community Plan, a multi-purpose trail is designated along Friant Road by the Fresno County Recreation Trails Element. This trail extends from the Fresno-Clovis Metropolitan Area to the Friant-Kern Canal. The southerly portion of the trail (Lewis S. Eaton Trail) has been completed from the City of Fresno at Woodward Park to the intersection of Friant and Willow Roads.

According to the Fresno County General Plan Background Report, the Project site is in Recreation Zone 2. The majority of the park and recreational facilities under County jurisdiction provide services for Zone 2 users such as picnicking, boating and water sports, swimming, hiking, camping, and general sports.

3.12.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact on the public services if it would do any of the following:

Public Services

- a) *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 of other performance objectives for any of the following public services:*
 - i) *Fire protection*
 - ii) *Police protection*
 - iii) *Schools*
 - iv) *Parks*

Recreation

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, the Project may have a significant adverse impact on recreation if it would do any of the following:

- a) *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?*
- b) *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

3.12.4 IMPACT ANALYSIS

Impact #3.12.1 – Increased Demand for Fire Protection Services and Personnel [Evaluation Criteria (a) i)]

Development of the Project will increase the demand for fire protection services in Friant, which will result in the need for the CDF, which provides fire protection in Friant, to hire more personnel and purchase additional equipment.

The community of Friant is mostly built out; therefore, most of the growth associated with the proposed Project will come from Friant Ranch. However, the Friant Community Plan Area does have the following available vacant land: 18 acres of Low Density; five acres of Medium Density, eight acres of Medium High Density, 31 acres of Highway Commercial and 17 acres of Special Commercial. At build-out, Friant Ranch will include 2,996 total housing units and 250,000 square feet of retail, office, medical, social gathering, light rail, and mixed-use space.

The Draft Friant Community Plan Update includes the following goal and policies to ensure that adequate fire protection is maintained in the Project area.

Goal 6: Support law enforcement, emergency response, and fire protection that respond to the needs of Friant.

Policy 6.1: Ensure that new development does not create a burden on adequate levels of law enforcement services, emergency response services, and fire protection services.

Policy 6.2: The County shall require that adequate police and fire protection be provided to all existing Friant Community residents.

The Draft Friant Ranch Specific Plan states that the Plan will be reviewed to ensure that the development design or fair share costs will adequately fund any additional facility or personnel needed to maintain the fire emergency response time and ISO ratings established in the Fresno County General Plan. Mitigation measure 3.7.6a ensures that the Project will be consistent with General Plan Policy PF-H.1 and PF-H.2 by requiring formation of a CFD to fund additional fire protection personnel and equipment for CDF.

The Project is consistent with Fresno County General Plan Policy PF-H.5 in that the Project will be designed to maximize safety and minimize fire hazard risks by requiring all commercial facilities be equipped with fire sprinklers and by prohibiting wood burning fire places in residential homes. The proximity of the CDF station will ensure that the Friant Ranch Specific Plan complies with Fresno County General Plan Policy PF-H.8, which calls for an average first alarm response time to emergency calls of 15 minutes in suburban areas such as Friant. The County has determined that adequate fire protection facilities will be available to serve the Friant Ranch Specific Plan Area pursuant to Policy PF-H.2.

Consistent with Section 3.7 Hazards, all major subdivisions shall have a minimum of two (2) points of ingress and egress to allow for emergency access; and the County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards.

Conclusion: Adherence to the existing goal and policies of the Fresno County General Plan and the goals and policies proposed by the Community Plan Update and Specific Plan, and the formation of a CFD consistent with the Friant Ranch Specific Plan and the following mitigation measure, will ensure that additional fire protection services and personnel are provided and that new development will not proceed until sufficient fire protection services are ensured.

Mitigation Measure #3.12.1: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD will be established to provide the funding necessary to maintain adequate staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-H.2, PF-H.5 and PF-H.8. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.

Effectiveness of Mitigation: Implementation of Mitigation Measure #3.12.1 will result in a *less than significant* impact. The funding made available through Mitigation Measure #3.12.1 will ensure that the Project Area maintains acceptable fire protection services and response times for fire protection.

Impact #3.12.2 – Increased Demand for Law Enforcement Services
[Evaluation Criteria (a) ii)]

Development of the proposed Project will increase the demand for law enforcement services in Friant. This could require the Fresno County Sheriff's Department, which provides law enforcement protection in Friant, to hire more personnel and purchase additional equipment. Friant is located in the Sheriff's Department Patrol Area II, and is served by field training officers, deputies and detectives. Area II headquarters is located in Fresno, approximately 20 miles southeast of Friant.

The Existing Friant Community Plan Area is mostly built out, therefore, most of the growth associated with the proposed Project will come from Friant Ranch. However, the Friant Community Plan Area does have the following available vacant land: 18 acres of Low Density;

five acres of Medium Density, eight acres of Medium High Density, 31 acres of Highway Commercial and 17 acres of Special Commercial. At build-out, Friant Ranch will include 2,996 total housing units and 250,000 square feet of retail, office, medical, social gathering, light rail, and mixed-use space.

The goal and policies proposed in the Draft Friant Community Plan Update (described previously in Impact #3.12.1) also apply to law enforcement. The Friant Ranch Specific Plan development will require an expansion or rehabilitation of police facilities and personnel in order to achieve the County required staffing ratio of two sworn officers per 1,000 residents (Fresno County General Plan Policy PF-G.2) and to maintain a reasonable emergency response time.

Consistent with Section 3.7 Hazards, all major subdivisions shall have a minimum of two (2) points of ingress and egress to allow for emergency access.

Conclusion: Adherence to the goal and policies proposed in the Draft Community Plan Update will ensure that adequate law enforcement protection is provided to serve future residents of the Existing Friant Community Plan Area, not including Friant Ranch, because the area is mostly built-out with few remaining vacant parcels left to build on.

The Friant Ranch Specific Plan development would have a *potentially significant* impact on law enforcement. The following mitigation measure will ensure that the Project impact is less than significant.

Mitigation Measure #3.12.2: Prior to issuance of a building permit for construction within the Friant Ranch Specific Plan Area, a CFD will be established to provide the funding necessary to maintain adequate staffing and facilities to serve the Friant Ranch Specific Plan Area consistent with the standards set forth in the Fresno County General Plan policy PF-G.2 and PF-G.4. The CFD shall be structured to provide initial capital contribution through a per-unit fee and thereafter impose a special tax assessment within the CFD boundaries to fund ongoing operations and maintenance.

Effectiveness of Mitigation: Implementation of Mitigation Measure #3.12.2 will result in a *less than significant* impact. The funding made available through Mitigation Measure #3.12.2 will ensure that the Project Area maintains acceptable service ratios (2 sworn officers per 1,000 residents) and response times for law enforcement.

Impact #3.12.3 – Increased Demand on Public Schools [Evaluation Criteria (a) iii]

The number of students to be generated from a proposed project is determined by the number of proposed residential units multiplied by student generation rates of the local school district. Since most of the Friant community is built out and approximately 2,766 of the proposed 2,996 total units within the Friant Ranch Specific Plan are for active adults (age 55+), the proposed Project will not generate many new students. There are approximately 18 acres of Low Density, five acres of Medium Density, and eight acres of Medium High Density designated land in the Friant Community Plan Area that is vacant and available for development. The total number of

units (.80 net density to account for right of way) which could be built is approximately 17 Low Density units, 29 Medium Density units and 116 Medium High Density units. Using a student generation rate of 0.661 students/household, this could equate to 107 additional students in the Friant Community Plan Area.

Several Fresno County General Plan policies noted previously would ensure that adequate school facilities and funding are provided to serve projected student growth associated with new development. Consistent with policies PF-I.3, PF-I.5, and PF-I.7 the Friant Ranch Specific Plan Area does not include any school sites because it was determined that an age-restricted community will not generate enough students to require a school site in the Specific Plan Area.

The project is within the Clovis Unified School District (CUSD) and their current fees are \$0.47/sq. ft. for commercial/industrial buildings and \$3.26/sq. ft. for residential buildings. However, Government Code 65995.1 limits school fees assessed against age restricted 55+ developments to the maximum rate allowable for commercial/industrial buildings, which is currently \$0.47/sq.ft. pursuant to government Code section 65995(b) and (c). Development within the Project Area will be subject to CUSD school fees in accordance with Government Code 65995.1.

Conclusion: Because the majority of new housing units are for age 55 and over adults, the Project will not result in the generation of many students. Using a student generation rate of 0.661 students/household, the non-age qualifying multifamily homes (230) in Friant Ranch could result in 152 students at build-out and the remaining Friant Community Plan Area could result in 107 additional students if built-out. Additionally, adherence to the Fresno County General Plan policies, and the payment of CUSD school impact fees, will ensure that adequate school facilities and funding are available. The impact is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.12.4– Increased Demand on Parks and Recreation [Evaluation Criteria (a) iv), (b), (c)]

Implementation of the Project will result in an increase in population and subsequently an increased need for open space, parks and recreation facilities within the Project Area. If the passive and active recreational needs of existing and future residents are not met, then this could be a potentially significant impact.

The Project will include 942.2 total acres, of which 20.8 acres will be for two active adult recreation centers; 245.4 acres for undisturbed open space; and 30.0 acres devoted to revegetated open space slopes.

Policy OS-H.2 of the Fresno County General Plan states that “the County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas”. Since most of the community of Friant is built-out the majority of new development associated with the Project will come from Friant Ranch. The Friant Community Plan Area does have the following available vacant land: 18 acres of Low

Density; five acres of Medium Density, eight acres of Medium High Density, 31 acres of Highway Commercial and 17 acres of Special Commercial. Friant Ranch will include a maximum of 2,996 units. Using the 2000 Census average household size of approximately 2.3 for Friant and 1.9 for the age-restricted units (per the demographic averages identified in the 2001 American Housing survey by U.S. Census), build-out of the Friant Ranch Specific Plan Area would result in a population of approximately 5,700. The existing population of Friant is 519 (2000 U.S. Census), and after buildout under the proposed designations within the Friant Community Plan Update, the unincorporated community of Friant (including the Friant Ranch Specific Plan Area) would have approximately 6,700 residents. The unincorporated community of Friant has existing County-owned improved parkland at Lost Lake Park within the Project Area, which comprises 273 acres. Thus, the unincorporated community of Friant, even after full buildout under the Friant Community Plan Update and the Friant Ranch Specific Plan, will have ready access to Lost Lake Park, the adjacent Millerton Lake State Recreation Area and the nearby San Joaquin River Parkway in addition to park space provided by the proposed Project. This ratio far exceeds the County's goal of 5 to 8 acres per one thousand residents and the project will not significantly increase the demand on existing parks and recreation facilities.

Policy OS-H.3 of the Fresno County General Plan requires the dedication of land and/or payment of fees, in accordance with local authority and State law (e.g., Quimby Act), to ensure that the park and recreational needs generated by new development are satisfied. The Quimby Act allows the County to require up to 3 acres of parkland per 1,000 residents. The Friant Ranch Specific Plan meets this standard for parkland by requiring, through proposed policy 2.1, parks and parkways at a rate of 5 to 8 acres per 1,000 dwelling units within the Medium and Medium High Density residential areas (which, at full buildout, would amount to approximately 15 to 24 acres of parks and parkways). Further, proposed policy 2.2 requires 5 acres of parks, parkways, and town greens within the Village Core. The resulting 20-29 acres of parks will ensure that the anticipated 5,765 residents within the Specific Plan Area benefit from approximately 3.4 to 5 acres of parks per 1,000 residents. This ratio exceeds the requirements set forth in Fresno County Policy OS-H.3, and ensures that the Project will not significantly increase the demand on existing parks and recreation facilities.

Further, proposed policy 2.6 requires 5 acres per 1,000 dwelling units of landscaped slopes within the Medium High Density and Medium Density residential areas (which, at full buildout, would amount to approximately 15 acres of landscaped slopes). The Friant Ranch Specific Plan dedicates 20 to 29 acres to improved parkland, and an additional 15 acres to landscaped slopes. The Friant Ranch Specific Plan also dedicates 275 acres to permanent conservation area (undisturbed open space and revegetated slopes) and includes approximately 15 miles of nature trails to allow pedestrians to experience the natural beauty of the outdoor environment in Friant Ranch. Thus, the Friant Ranch Specific Plan will far surpass the requirements set forth in Fresno County General Plan Policy OS-H.3 and ensures consistency with the fundamental goals of the San Joaquin River Parkway Master Plan.

The Project is consistent with Policy OS-H.8, which encourages private recreation facilities to reduce demand on public agencies. The Friant Ranch Specific Plan includes two private active adult recreation centers totaling 20.8 acres.

The Project is consistent with Fresno County General Plan policies OS-H.9, OS-I.2, OS-I.4, OS-I.2, OS-I.8, OS-I.11, and OS-I.16 in that the Friant Ranch Specific Plan requires recreational trails for pedestrians and bicyclists and open space in the Friant-Millerton area; will provide adequate right-of-ways for designated trails or bikeways; and provide recreation trails in foothill developments.

Conclusion: The current County-owned improved parkland (Lost Lake Park) exceeds the County's per population ratio within the Friant Community (after full build out under the Friant Community Plan Update and Friant Ranch Specific Plan) than the County policy, and the Project-specific parkland dedication for the Friant Ranch Specific Plan exceeds the Quimby Act ratio of 3 acres to 1,000 residents. Therefore, the impact is *less than significant*.

3.13 Transportation/Traffic

INTRODUCTION

The Project would cause an increase in traffic that will affect circulation conditions on the local and regional roadway network. The Transportation Element of the Draft Friant Community Plan addresses established and planned roadways, bicycle and trail routes, alternative modes of transportation, pedestrian facilities, and the potential for light rail transit. The Transportation Element is consistent with the Fresno County General Plan. The Draft Friant Ranch Specific Plan focuses on creating a community circulation network that moves people efficiently and safely throughout Friant Ranch, whether by automobile, bicycle, foot, or by Neighborhood Electric Vehicle (NEV).

A Traffic Impact Study (TIS) – Proposed Friant Ranch Project (Peters Engineering Group, June 2009, reference Appendix D of this Draft EIR) was prepared to study the potential traffic impacts related to development in the Friant Ranch Specific Plan Area and the Friant Depot Parcel. The TIS does not address Project impacts related to the remaining portion of the Friant Community Plan Area, as future projects in the remaining portion of the Community Plan Area will be subject to site specific traffic analysis (as required by Fresno County guidelines). Additional discussions are included related to transit facilities, bicycle facilities, pedestrian facilities, and regional transportation concepts that are not yet planned and funded. This section summarizes key elements of the TIS as well as key Draft Friant Community Plan transportation and circulation policies that will promote long-term efficient circulation operations.

This section includes three parts: (1) The Regulatory Setting describes the applicable transportation policies (including County General Plan policies), standards and regulations that apply to the Project Area. (2) The Physical Setting describes the existing transportation system and relevant characteristics of the Project Area. (3) The third part analyzes the impacts and identifies specific proposed mitigation measures.

3.13.1 REGULATORY SETTING

State

The State has adopted Level-of-Service (LOS) “C” as the LOS threshold standard for traffic operations on State highways.

Fresno County

The Transportation and Circulation Element of the Fresno County General Plan guides the continued development and improvement of the circulation system to support existing and planned development. The Circulation Element addresses the circulation improvements needed to provide adequate capacity for future land uses. The Element establishes a hierarchy of transportation routes with typical development standards described for each roadway category. The County also includes additional standards, plans and programs that apply to the evaluation of transportation impacts of the Project. These standards cover the primary aspects of the transportation system (operations and design).

REGIONAL TRANSPORTATION MITIGATION FEE

The Regional Transportation Mitigation Fee (RTMF) is a component of the Measure "C" Extension that was approved by Fresno County voters in 2006. The RTMF is intended to ensure that future development contributes its fair share towards the costs of infrastructure to mitigate the cumulative indirect regional transportation impacts of new growth in a manner consistent with the provisions of the Mitigation Fee Act. The project will be subject to the RTMF as determined by Fresno County.

Fresno County General Plan

Fresno County General Plan Policies relevant to the Project are as follows:

Policy HS-B.4 The County shall require that foothill and mountain subdivisions of more than four (4) parcels provide for safe and ready access for fire and other emergency equipment, for routes of escape that will safely handle evacuations, and for roads and streets designed to be compatible with topography while meeting fire safety needs.

Policy HS-B.5 The County shall require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress.

Policy TR-A.1 The County shall plan and construct County-maintained streets and roads according to the County’s Roadway Design Standards. Roadway design standards for County-maintained roads shall be based on the American Association of State Highway and Transportation Officials (AASHTO) standards, and supplemented by California Department of Transportation (Caltrans) design standards and by County Public Works Department Standards. County standards include typical cross sections by roadway

classification, consistent with right-of-way widths summarized in Table TR-1.

The County may deviate from the adopted standards in circumstances where conditions warrant special treatment of the roadway. Typical circumstances where exceptions may be warranted may include:

- a. Extraordinary construction costs due to terrain, roadside development, or unusual right-of-way needs.*
- b. Environmental constraints that may otherwise entirely preclude road improvement.*

Policy TR-A.2

The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county.

Roadway improvements to increase capacity and maintain LOS standards should be planned and programmed based on consideration of the total overall needs of the roadway system, recognizing the priority of maintenance, rehabilitation, and operation of the existing road system. The County may, in programming capacity-increasing projects, allow exceptions to the level of service standards in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors:

- a. The right-of-way needs and the physical impacts on surrounding properties.*
- b. Construction and right-of-way acquisition costs.*
- c. The number of hours that the roadway would operate at conditions below the standard.*
- d. The ability of the required improvement to significantly reduce delay and improve traffic operations.*
- e. Environmental impacts upon which the County may base findings to allow an exceedance of the standards.*

In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the county.

- Policy TR-A.7* *The County shall assess fees on new development sufficient to cover the fair share portion of that development’s impacts on the local and regional transportation system.*
- Policy TR-A.12* *The County, where appropriate, shall coordinate the multi-modal use of streets and highways to ensure their maximum efficiency and shall consider the need for transit, bikeway, and recreational trail facilities when establishing the Ultimate Right-of-way Plan and Precise Plans of streets and highways.*
- Policy TR-B.2* *The County shall promote transit services in designated corridors where population and employment densities are sufficient or could be increased to support those transit services, particularly within the spheres of influence of the cities and along existing transit corridors in the rural area of the county.*
- Policy TR-D.1* *The County shall implement a system of recreational, commuter, and intercommunity bicycle routes in accordance with the Regional Bikeway Plan described in the Circulation Diagram and Standards section and depicted in Figure TR-2. The plan designates bikeways between cities and unincorporated communities, to and near major traffic generators such as recreational areas, parks of regional significance, and other major public facilities, and along recreational routes.*

A discussion of the Project’s consistency with the policies above is found in the Impact Analysis section (3.13.4).

Fresno County Regional Bikeways Plan

The Regional Bikeways Plan (prepared by the Council of Fresno County Governments) defines a bikeway system for Fresno County. The plan provides connectivity between cities and the unincorporated areas, between Fresno County and adjoining counties, and access to recreational areas, regional parks, and recreational bicycling routes. The Regional Bikeways Plan contains the Rural Bikeways Plan (Figure TR-2) which depicts the proposed roadway-related bikeway system for unincorporated Fresno County. The Rural Bikeways Plan is intended to guide bikeway planning and implementation in conjunction with new development or improvement of the roadways. Within the Project Area, Friant Road is designated as an “Existing Bikeway”.

Fresno County Truck Routes

Fresno County has not developed a system of truck routes for the unincorporated area.

3.13.2 PHYSICAL SETTING

Evaluation of the operating characteristics of the existing circulation system in the vicinity of the Project Area is the initial task in defining the transportation impacts of the Project. The following sections discuss existing roadway functions, traffic volumes, and traffic level of service (LOS), as well as transit services and bicycle facilities.

Existing Roadway Network

Portions of Friant Road within the Project Area are designated as expressways and arterials. Expressways are high-speed facilities with partial limited access, with both grade separations and at-grade intersections. Expressways carry high volumes of traffic from region to region. Arterials are major highways with at least partial control of access to improve traffic movement. Arterial roadways are generally divided by direction and have multiple through lanes with turn lanes. Arterials have limited access to adjacent land uses and provide a linkage between expressways, collectors, and local streets. The majority of streets within Friant are designated as local roads. Local Roads are designed exclusively for property access, typically with a single travel lane in each direction.

The Project location, study intersections, and study road segments are illustrated in Figure 3.13-1, Study Intersections and Road Segments.

Existing Transit Service

Fresno Area Express (FAX), Clovis Stage Line, and the Fresno County Rural Transit Agency provide bus service within the respective areas of Fresno County. Bus service is not currently provided to the Friant area.

Existing Bicycle and Pedestrian Facilities

Friant Road, Millerton Road, and Willow Avenue in the Project Area include Type II Bikeways (bike lanes) similar to those illustrated in Figure 1003.2A (No. 4, Typical Roadway in Outlying Areas, Parking Restricted) of the Caltrans Highway Design Manual dated January 4, 2007.

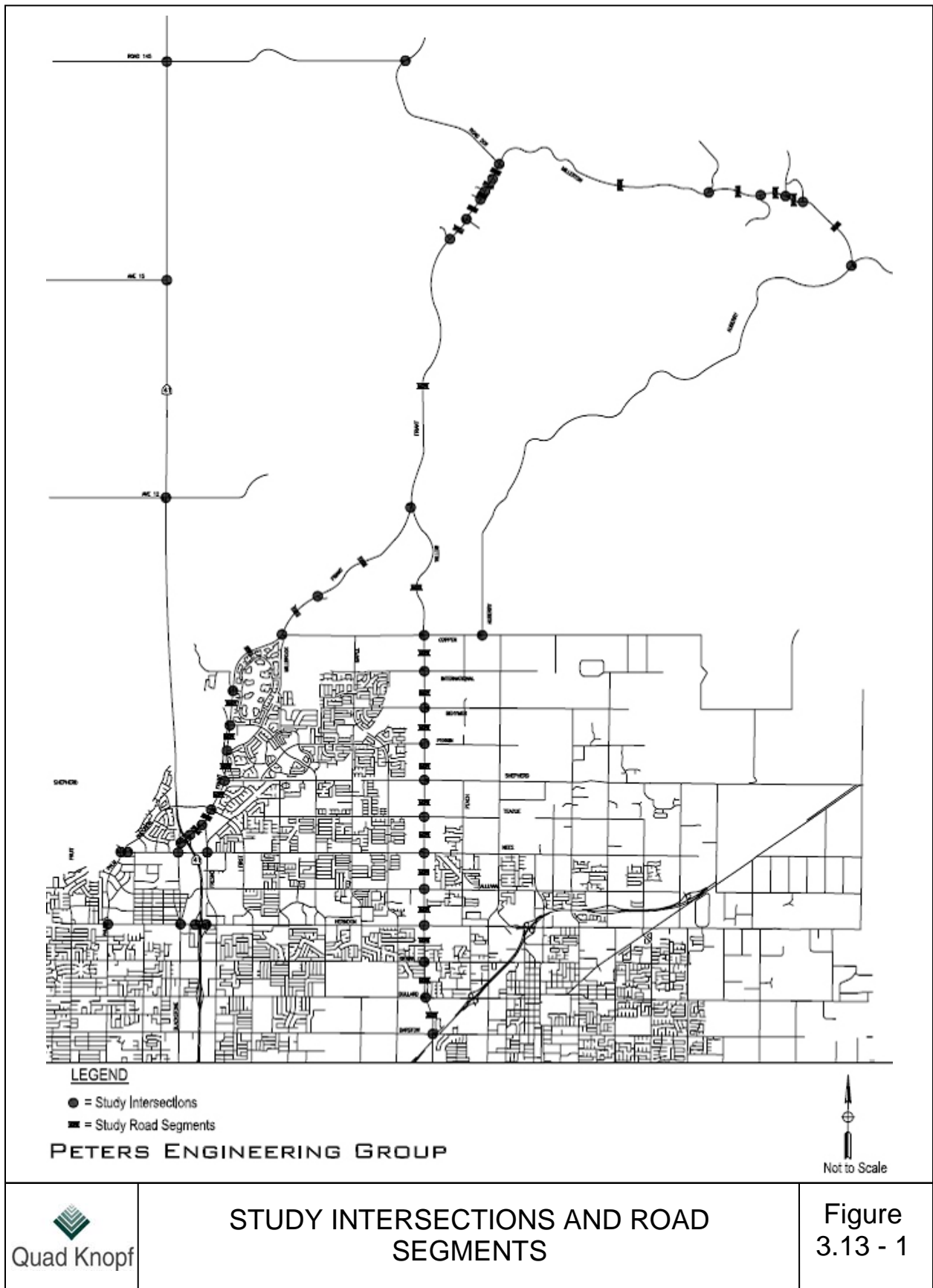
Friant Road, Millerton Road, and Willow Avenue are generally rural highways in the Project Area with no pedestrian facilities. Minimal pedestrian facilities are provided on Friant Road within the town of Friant, particularly crosswalks across Friant Road. However, the crosswalks generally connect to private parking lots without sidewalks.

Existing Traffic Volumes

Existing traffic volumes were determined by performing manual turning movement counts at each of the study intersections. The traffic count data sheets are attached in Appendix B of the TIS. Existing peak hour turning movement volumes at the study intersections are presented in Figure 5 of the TIS, Existing Peak Hour Traffic Volumes. Friant Road, Millerton Road, and Willow Avenue in the Project Area include Type II Bikeways (bike lanes) similar to those illustrated in Figure 1003.2A (No. 4, Typical Roadway in Outlying Areas, Parking Restricted) of the Caltrans Highway Design Manual dated January 4, 2007.

Existing-Conditions Intersection LOS and Signal Warrant Analysis

The results of the existing-conditions intersection LOS analyses and the peak-hour traffic signal warrants analyses are summarized in Table 3.13-1. Deficiencies are identified in bold type. The intersection analysis sheets are presented in Appendix C of the TIS. The peak hour warrant plots are presented in Appendix D of the TIS.



STUDY INTERSECTIONS AND ROAD SEGMENTS

Figure 3.13 - 1

**Table 3.13-1
Intersection Analysis Summary – Existing Conditions**

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		LOS	Delay (sec)	Peak Hour Warrant	LOS	Delay (sec)	Peak Hour Warrant
Road 145 / SR 41	Signal	B	14.7	n/r	B	18.7	n/r
Road 145 / Road 206	TWS	A	7.1	n/r	A	7.4	n/r
SR 41 / Avenue 15	OWS	E	42.6	2/2	F	81.7	2/2
SR 41 / Avenue 12	Signal	C	31.9	n/r	D	45.2	n/r
Friant Road / Road 206	TWS	B	14.7	n/r	C	17.4	n/r
Friant Road / Parker	OWS	B	10.6	n/r	B	11.8	n/r
Friant Road / Granite	OWS	B	10.0	n/r	B	10.9	n/r
Friant Road / Root	OWS	A	9.7	n/r	B	12.1	n/r
Friant Road / Lost Lake	OWS	B	11.1	n/r	B	13.2	n/r
Friant / Willow	TWS	B	13.8	n/r	C	16.1	n/r
Friant / Copper River Entrance	Signal	A	3.9	n/r	A	4.8	n/r
Friant / Copper	Signal	A	7.8	n/r	A	7.0	n/r
Friant / Lakeview Drive	Signal	A	8.5	n/r	A	7.3	n/r
Friant / Champlain	Signal	A	7.7	n/r	A	6.7	n/r
Friant / Fort Washington	Signal	B	13.7	n/r	B	12.3	n/r
Friant / Shepherd	Signal	C	30.1	n/r	D	36.2	n/r
Friant / Audubon Drive	Signal	B	19.7	n/r	E	56.2	n/r
Friant / Fresno	Signal	C	25.2	n/r	C	27.8	n/r
Friant / SR 41 NB Off-ramp	Signal	B	16.6	n/r	B	17.6	n/r
Friant / SR 41 SB Off-ramp	Signal	C	29.6	n/r	B	13.1	n/r
Blackstone / Nees	Signal	E	70.3	n/r	D	43.6	n/r
Herndon / Blackstone	Signal	C	21.1	n/r	C	27.0	n/r
Fresno Street / Nees	Signal	C	26.4	n/r	C	27.3	n/r
Millerton / Winchell Cove	OWS	A	9.0	n/r	B	12.9	n/r
Millerton / Brighton Crest	OWS	B	10.9	n/r	B	11.1	n/r
Millerton / Sky Harbour Road	OWS	B	11.0	n/r	B	12.9	n/r
Millerton / Table Mountain	OWS	A	9.7	n/r	A	9.9	n/r
Millerton Road / Auberry Road	OWS	B	12.2	n/r	B	12.4	n/r
Auberry Road / Copper Avenue	OWS	B	12.9	n/r	B	14.9	n/r
Audubon / Nees	OWS	E	47.2	2/2	E	39.1	2/2
Palm / Nees	Signal	B	16.1	n/r	C	23.2	n/r
Palm / Herndon	Signal	D	40.1	n/r	F	97.0	n/r
Willow / Copper	AWS	B	10.8	n/r	B	10.4	n/r
Willow / International	Signal	B	18.2	n/r	B	15.4	n/r
Willow / Behymer	Signal	B	18.5	n/r	B	18.6	n/r
Willow / Perrin	OWS	C	22.2	n/r	C	22.4	n/r
Willow / Shepherd	AWS	F	92.5	2/2	F	138.6	2/2
Willow / Teague	Signal	B	16.4	n/r	B	15.9	n/r
Willow / Nees	Signal	D	37.8	n/r	D	46.8	n/r
Willow / Alluvial	Signal	C	21.3	n/r	C	27.6	n/r
Willow / Herndon	Signal	C	32.0	n/r	D	38.9	n/r
Willow / Sierra	Signal	B	11.5	n/r	B	12.1	n/r
Willow / Bullard	Signal	D	35.9	n/r	D	41.1	n/r
Willow / Barstow	Signal	B	17.9	n/r	C	28.8	n/r
Herndon / SR 41 SB Off-ramp	Signal	A	6.3	n/r	A	5.1	n/r
Herndon / SR 41 NB Off-ramp	Signal	C	23.2	n/r	C	24.1	n/r

Existing-Conditions Queuing Analysis

The results of the existing-conditions queuing analyses are summarized in Table 3.13-2. Calculated 95th-percentile queues exceeding the storage capacity are identified in bold type.

**Table 3.13-2
Queuing Analysis Summary – Existing Conditions**

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Road 145 / SR 41	Storage Length	-	35	-	35	530	485	490	420
	A.M. Peak	62	33	27	18	25	70	43	228
	P.M. Peak	125	29	23	97	72	265	42	142
SR 41 / Avenue 12	Storage Length	-	-	-	90	635	150	200	180
	A.M. Peak	38	234	13	5	415	7	7	27
	P.M. Peak	129	36	39	5	682	12	14	27
Friant / Copper River Entrance	Storage Length	-	-	215	215	-	230	250	-
	A.M. Peak	-	-	6	6	-	13	9	-
	P.M. Peak	-	-	11	7	-	10	10	-
Friant / Copper	Storage Length	-	-	250	295	-	200	235	-
	A.M. Peak	-	-	42	8	-	22	8	-
	P.M. Peak	-	-	26	12	-	29	7	-
Friant / Lakeview Drive	Storage Length	-	-	235	-	250	200	250	50
	A.M. Peak	9	9	71	6	14	17	5	5
	P.M. Peak	12	12	50	0	11	26	10	59
Friant / Champlain	Storage Length	-	-	-	-	245	255	230	-
	A.M. Peak	-	-	31	14	3	23	25	-
	P.M. Peak	-	-	28	20	0	25	28	-
Friant / Fort Washington	Storage Length	-	-	125	125	230	200	280	100
	A.M. Peak	16	16	192	15	28	56	19	5
	P.M. Peak	19	19	132	16	29	67	14	3
Friant / Shepherd	Storage Length	-	-	-	225	200	390	245	-
	A.M. Peak	-	-	653	21	6	10	24	-
	P.M. Peak	-	-	228	21	0	1,094	25	-
Friant / Audubon Drive	Storage Length	195	220	245	80	240	195	235	190
	A.M. Peak	130	27	79	35	32	28	54	140
	P.M. Peak	525	134	125	241	98	220	54	113
Friant / Fresno	Storage Length	245	200	250	200	255	195	190	195
	A.M. Peak	160	63	115	14	95	36	10	38
	P.M. Peak	66	83	108	16	196	96	65	98
Friant / SR 41 NB Off-ramp	Storage Length	-	-	-	-	760	760	-	-
	A.M. Peak	-	219	-	-	143	315	-	-
	P.M. Peak	-	2	-	-	128	363	-	-
Friant / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	265	265
	A.M. Peak	-	-	-	-	-	-	639	704
	P.M. Peak	-	-	-	-	-	-	265	245
Blackstone / Nees	Storage Length	245	200	250	200	250	145	265	140
	A.M. Peak	305	39	100	96	52	30	163	1,218
	P.M. Peak	338	43	137	168	93	72	219	253
Herndon / Blackstone	Storage Length	250	200	260	105	265	175	245	180
	A.M. Peak	65	37	47	71	45	41	84	49
	P.M. Peak	78	122	81	96	108	33	159	192
Fresno Street / Nees	Storage Length	240	205	245	200	245	200	240	175
	A.M. Peak	42	32	120	40	108	51	84	42
	P.M. Peak	86	45	86	34	131	89	80	32

**Table 3.13-2
Queuing Analysis Summary – Existing Conditions (Continued)**

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Palm / Nees	Storage Length	95	95	-	205	260	355	140	-
	A.M. Peak	11	15	442	21	81	14	23	27
	P.M. Peak	93	18	448	7	143	46	96	51
Palm / Herndon	Storage Length	255	205	245	185	100	250	245	230
	A.M. Peak	449	48	151	292	91	67	103	418
	P.M. Peak	544	29	149	124	102	56	163	963
Willow / International	Storage Length	245	-	120	-	245	80	245	220
	A.M. Peak	21	23	22	134	53	6	36	19
	P.M. Peak	16	26	19	67	23	8	18	16
Willow / Behymer	Storage Length	245	-	90	-	255	-	255	-
	A.M. Peak	35	28	23	103	59	253	29	16
	P.M. Peak	29	28	35	113	77	184	36	17
Willow / Teague	Storage Length	245	135	245	-	250	45	175	50
	A.M. Peak	12	49	39	78	39	30	31	16
	P.M. Peak	20	43	24	71	87	44	29	16
Willow / Nees	Storage Length	285	-	165	235	300	70	225	225
	A.M. Peak	26	427	104	30	215	38	180	23
	P.M. Peak	40	609	129	32	502	83	279	45
Willow / Alluvial	Storage Length	90	50	205	50	300	50	255	235
	A.M. Peak	58	41	128	49	115	40	55	23
	P.M. Peak	114	62	138	50	313	92	71	21
Willow / Herndon	Storage Length	255	255	305	120	315	185	255	110
	A.M. Peak	89	62	41	55	229	20	77	74
	P.M. Peak	169	194	84	91	252	36	79	49
Willow / Sierra	Storage Length	95	-	150	95	255	75	260	75
	A.M. Peak	18	102	52	36	31	11	43	11
	P.M. Peak	23	69	48	35	34	17	115	10
Willow / Bullard	Storage Length	250	-	265	-	270	135	225	135
	A.M. Peak	81	282	90	435	282	23	383	41
	P.M. Peak	202	442	69	406	268	33	327	30
Willow / Barstow	Storage Length	155	-	190	50	245	75	235	140
	A.M. Peak	11	50	185	42	50	22	62	15
	P.M. Peak	60	253	188	32	59	62	262	17
Herndon / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	285	285
	A.M. Peak	-	-	-	8	-	-	201	83
	P.M. Peak	-	-	-	6	-	-	168	75
Herndon / SR 41 NB Off-ramp	Storage Length	-	-	-	-	-	205	-	-
	A.M. Peak	-	0	-	-	462	528	-	-
	P.M. Peak	-	8	-	-	436	473	-	-

EBL=East Bound Left; EBR=East Bound Right; WBL=West Bound Left; etc.

Existing Conditions Road Segment Analyses

The results of the existing-conditions road segment analyses are summarized in Table 3.13-3. Deficiencies are identified in bold type.

**Table 3.13-3
Road Segment Analysis Summary – Existing Conditions**

Road Segment	Lanes	A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS
Friant Road					
206 to Parker	2-U	399	C	560	C
Parker to Granite	2-U	343	C	558	C
Granite to Root	2-U	348	C	557	C
Root to Lost Lake	2-U	346	C	563	C
Lost Lake to Willow	4	487	A	660	A
Willow to Copper River	4	458	A	567	A
Copper River to Copper	4	503	C	613	C
Copper to Lakeview	4	802	C	917	C
Lakeview to Champlain	4	1,031	C	1,159	C
Champlain to Ft. Washington	4	1,276	C	1,285	C
Ft. Washington to Shepherd	3NB/2SB	2,501	C/D	2,553	C/D
Shepherd to Audubon	2 NB/3SB	4,247	F/D	4,742	F/F
Audubon to Fresno	6	3,693	D	4,234	D
Fresno to SR 41	6	4,344	D	4,412	D
Willow Avenue					
Friant to Silaxo	2-U	309	B	283	A
Silaxo to Copper	2-U	309	B	283	A
Copper to International	1NB/3SB	410	C/C	429	C/C
International to Behymer	1NB/2SB	847	C/C	727	C/C
Behymer to Perrin	2-U	784	C	689	C
Perrin to Shepherd	2-U	772	C	908	D
Shepherd to Teague	2-U	664	C	910	D
Teague to Nees	4	1,078	C	1,567	C
Nees to Alluvial	2NB/1SB	1,260	C/D	1,812	C/F
Alluvial to Herndon	4	1,547	C	2,140	D
Herndon to Sierra	4	1,819	C	2,345	D
Sierra to Bullard	4	1,720	C	2,128	D
Bullard to Barstow	4	1,402	C	1,870	C
Millerton Road					
206 to Winchell Cove	2-U	352	B	558	B
Winchell Cove to Brighton Crest	2-U	351	B	558	B
Brighton Crest to Sky Harbour	2-U	362	B	605	B
Sky Harbour to Table Mountain	2-U	363	B	578	B
Table Mountain to Auberry	2-U	299	A	320	B
Road 206					
Friant Road to Road 145	2-U	216	A	273	A

All roadways are divided unless otherwise indicated

U – Indicates undivided roadway

Existing Conditions Deficiencies

According to the TIS, the following intersections in the Project vicinity currently operate at substandard levels of service:

- SR 41 and Avenue 15;
- SR 41 and Avenue 12;
- Friant Road and Audubon Drive;
- Blackstone and Nees Avenues;
- Audubon Drive and Nees Avenue;

- Palm and Herndon Avenues; and
- Willow and Shepherd Avenues.

The following intersections currently exhibit calculated 95th-percentile queues that exceed storage capacity:

- SR 41 and Avenue 12: northbound left-turn;
- Friant Road and Ft. Washington Road: westbound left-turn;
- Friant Road and Audubon Drive: eastbound left-turn;
- Friant Road and the SR 41 southbound off ramp: southbound left-turn;
- Blackstone and Nees Avenues: eastbound left-turn;
- Palm and Herndon Avenues: eastbound left-turn ;
- Willow and Nees Avenues: northbound and southbound left-turns;
- Willow and Alluvial Avenues: eastbound and northbound left-turns;
- Willow and Bullard Avenues: northbound and southbound left-turns; and
- Willow and Barstow Avenues: southbound left-turn.

The following road segments currently operate at substandard levels of service:

- Friant Road between Shepherd Avenue and Audubon Drive; and
- Willow Avenue between Nees and Alluvial Avenues.

Transit service is deficient, and bus service is not provided to the Friant area.

Aviation and Rail

There is no air transportation service in the Friant area. The Fresno Yosemite International airport provides the nearest commercial freight and passenger service, as well as a full range of general aviation services. There are no railroad operations in the Friant vicinity. There is however, an existing railroad right-of-way that parallels the east side of Friant Road.

Gateways and Scenic Corridors

There are no designated gateways or scenic corridors identified in the Friant area. Friant Road from the City of Fresno limits to Lost Lake Road is listed as a Fresno County Designated Scenic Roadway per Policy OS-I.1. There are no State Highways in the Friant area. State Route 41 (SR 41) is located five miles southwest of Friant and SR 99 is 18 miles west of Friant. SR 99 provides for regional movement and inter-regional access through the Central Valley from Bakersfield to Sacramento.

Traffic Impact Study, Scenarios, Level of Service and Methodology

Traffic Impact Study Scenarios

The analyses in the TIS were performed in general conformance with the Caltrans Guide for the Preparation of Traffic Impact Studies dated December 2002. The TIS analyzes Existing, Existing Plus Project, Cumulative (2030) No Project, and Cumulative (2030) Plus Project Conditions. The TIS also includes an assessment of intermediate years, that analyze year 1, year 5, and year

10 project scenarios, which were utilized in the development of mitigation measures (reference Appendix D for complete text). However, for the purposes of the Draft EIR, peak hour analysis and mitigation of identified impacts is included for the following project scenarios:

- Existing Conditions;
- Existing Plus Project Conditions;
- Cumulative (2030) No Project Conditions; and
- Cumulative (2030) Plus Project Conditions.

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m.

Level of Service

The Transportation Research Board Highway Capacity Manual, 2000, (HCM) defines LOS as a qualitative measure describing operational characteristics within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. LOS characteristics for both unsignalized and signalized intersections are presented in Tables 3.13-4 and 3.13-5. LOS characteristics for road segments are presented in Table 3.13-6.

**Table 3.13-4
LOS Characteristics for Unsignalized Intersections**

Level of Service	Description	Average Vehicle Delay (seconds)
A	Little or no delay.	0-10
B	Short delays.	>10-15
C	Average delays.	>15-25
D	Long delays.	>25-35
E	Very long delays.	>35-50
F	Extremely long delays.	>50

Reference: *Highway Capacity Manual*, Transportation Research Board

**Table 3.13-5
LOS Characteristics for Signalized Intersections**

Level of Service	Description	Average Vehicle Delay (seconds)
A	Extremely favorable progression. Most vehicles arrive during green phase. Many vehicles do not stop.	≤10
B	Good progression.	>10-20
C	Fair progression. Significant number of vehicles stopped. Some queues do not clear.	>20-35
D	Noticeable congestion. Many vehicles stop. Individual cycle failures are noticeable. Queues often do not clear.	>35-55
E	Poor progression. Individual cycle failures are frequent. Queues frequently do not clear.	>55-80
F	Poor progression. Oversaturation. Many individual cycle failures and queues not cleared.	>80

Reference: *Highway Capacity Manual*, Transportation Research Board

**Table 3.13-6
LOS Characteristics for Roadways**

Level of Service	Description
A	Primarily free flow operations
B	Reasonably unimpeded operations, ability to maneuver only slightly restricted
C	Stable operations, ability to maneuver and select operating speed affected
D	Unstable flow, speeds and ability to maneuver restricted
E	Significant delays, flow quite unstable
F	Extremely slow speeds

Reference: 1998 *Highway Capacity Manual*, Transportation Research Board

The County of Fresno requires that a LOS C or better be maintained, except within the spheres of influence of the Cities of Fresno and Clovis, where a LOS D is acceptable. The City of Clovis requires that a LOS D or better be maintained. The City of Fresno requires that a LOS D or better be maintained, with the exception of constrained locations identified in the City of Fresno General Plan. The Caltrans *Guide for the Preparation of Traffic Impact Studies* dated December 2002 indicates that Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D. The target LOS for each study intersection is presented in Table 3.13-7 and the target LOS for each study road segment is presented in Table 3.13-8.

A traffic impact is recognized if the Project will decrease the LOS below the minimum LOS presented in Tables 3.13-7 and 3.13-8. A traffic impact is also recognized if the Project will exacerbate average delays at an intersection that is deficient under baseline conditions. In some cases, a very slight increase in average delay is not likely to be perceptible to motorists at intersections already operating at LOS E or F. In these cases the existing condition is not considered to be exacerbated and the impact is less than significant.

Based on criteria presented in the California Manual on Uniform Traffic Control Devices (CMUTCD), at unsignalized intersections, a traffic impact would be considered “adverse but not significant” if the LOS standard is exceeded but the projected traffic volume does not satisfy traffic signal warrants. Under these conditions, the only means to completely alleviate delays to stop-controlled vehicles may be to install a traffic signal. However, the unsatisfied signal warrants imply that the reduction in delay for the stop-controlled vehicles may not justify the new delays that would be incurred by the major street traffic (which at two-way stop-controlled intersections is not currently required to stop). Under these circumstances, installation of traffic signals would not be recommended and the substandard LOS for stop-controlled vehicles would be considered an “adverse but not significant” impact.

Intersection Queuing Criteria

A significant queuing impact is determined if the existing or planned storage capacity of a travel lane or turn lane at a signalized intersection is less than the calculated 95th-percentile queue length. For left-turn lanes, which typically include a bay taper in addition to the reported storage capacity, a significant impact will be found if the 95th-percentile queue length exceeds the storage capacity. A significant impact will not be found if a right-turn queue exceeds capacity since the adjacent through movement operates on the same traffic signal phase as the right turn and the right-turn movement can be shared with the through movement.

**Table 3.13-7
Minimum Acceptable Intersection LOS**

Location	Jurisdiction	Minimum LOS
Road 145 / SR 41	Caltrans	C
Road 145 / Road 206	County of Madera	D
SR 41 / Avenue 15	Caltrans	C
SR 41 / Avenue 12	Caltrans	C
Friant Road / Road 206	County of Fresno	C
Friant Road / Parker	County of Fresno	C
Friant Road / Granite	County of Fresno	C
Friant Road / Root	County of Fresno	C
Friant Road / Lost Lake	County of Fresno	C
Friant / Willow	County of Fresno	C
Friant / Copper River Entrance	City of Fresno	D
Friant / Copper	City of Fresno	D
Friant / Lakeview Drive	City of Fresno	D
Friant / Champlain	City of Fresno	D
Friant / Fort Washington	City of Fresno	D
Friant / Shepherd	City of Fresno	D (F)
Friant / Audubon Drive	City of Fresno	D (F)
Friant / Fresno	City of Fresno	D (F)
Friant / SR 41 NB Off-ramp	Caltrans	C
Friant / SR 41 SB Off-ramp	Caltrans	C
Blackstone / Nees	City of Fresno	D
Herndon / Blackstone	City of Fresno	D (F)
Fresno Street / Nees	City of Fresno	D (F)
Millerton / Winchell Cove	County of Fresno	C
Millerton / Brighton Crest	County of Fresno	C
Millerton / Sky Harbour Road	County of Fresno	C
Millerton / Table Mountain	County of Fresno	C
Millerton Road / Auberry Road	County of Fresno	C
Auberry / Copper	County of Fresno (City SOI)	D
Audubon / Nees	City of Fresno	D (F)
Palm / Nees	City of Fresno	D
Palm / Herndon	City of Fresno	D (F)
Willow / Copper	County of Fresno (City SOI)	D
Willow / International	City of Fresno/County of Fresno	D
Willow / Behymer	City of Fresno/County of Fresno	D
Willow / Perrin	City of Fresno/County of Fresno	D
Willow / Shepherd	City of Fresno/City of Clovis/County of Fresno	D
Willow / Teague	City of Fresno/City of Clovis	D
Willow / Nees	City of Fresno/City of Clovis/County of Fresno	D
Willow / Alluvial	City of Fresno/City of Clovis	D
Willow / Herndon	City of Fresno/City of Clovis	D (F)
Willow / Sierra	City of Fresno/City of Clovis	D (E)
Willow / Bullard	City of Fresno/City of Clovis	D (E)
Willow / Barstow	City of Fresno/City of Clovis	D (E)
Herndon / SR 41 SB Off-ramp	Caltrans	C
Herndon / SR 41 NB Off-ramp	Caltrans	C

Note: Parentheses are 2025 constrained conditions as identified in the City of Fresno Master EIR.

**Table 3.13-8
Minimum Acceptable Road Segment LOS**

Location	Jurisdiction	Minimum LOS
Friant Road		
206 to Parker	County of Fresno	C
Parker to Granite	County of Fresno	C
Granite to Root	County of Fresno	C
Root to Lost Lake	County of Fresno	C
Lost Lake to Willow	County of Fresno	C
Willow to Copper River	County of Fresno	C
Copper River to Copper	City of Fresno	D
Copper to Lakeview	City of Fresno	D
Lakeview to Champlain	City of Fresno	D
Champlain to Ft. Washington	City of Fresno	D
Ft. Washington to Shepherd	City of Fresno	D
Shepherd to Audubon	City of Fresno	D (F)
Audubon to Fresno	City of Fresno	D (F)
Fresno to SR 41	City of Fresno	D (F)
Willow Avenue		
Friant to Silaxo	County of Fresno	C
Silaxo to Copper	County of Fresno (City of Fresno SOI)	D
Copper to International	City of Fresno/County of Fresno	D
International to Behymer	City of Fresno/County of Fresno	D
Behymer to Perrin	City of Fresno/County of Fresno	D
Perrin to Shepherd	City of Fresno/County of Fresno	D
Shepherd to Teague	City of Fresno/City of Clovis/County of Fresno	D (E)
Teague to Nees	City of Fresno/City of Clovis	D (E)
Nees to Alluvial	City of Fresno/City of Clovis/County of Fresno	D (E)
Alluvial to Herndon	City of Fresno/City of Clovis	D (E)
Herndon to Sierra	City of Fresno/City of Clovis	D (E)
Sierra to Bullard	City of Fresno/City of Clovis	D (E)
Bullard to Barstow	City of Fresno/City of Clovis	D (E)
Millerton Road		
206 to Winchell Cove	County of Fresno	C
Winchell Cove to Brighton Crest	County of Fresno	C
Brighton Crest to Sky Harbour	County of Fresno	C
Sky Harbour to Table Mountain	County of Fresno	C
Table Mountain to Auberry	County of Fresno	C
Road 206		
Friant Road to Road 145	County of Fresno/County of Madera	C

Note: Parentheses are 2025 constrained conditions as identified in the City of Fresno Draft Master Environmental Impact Report (DMEIR).

Intersection Level of Service Methodology

The levels of service and 95th-percentile queues at the study intersections were determined using the computer program Synchro 6 (Build 614), which is based on the HCM procedures for calculating levels of service.

For signalized intersections and all-way-stop-controlled intersections, the overall intersection LOS and the average delay per vehicle are presented. For one-way and two-way stop-controlled intersections an overall intersection LOS is not defined in the HCM. Therefore, for one-way and two-way stop-controlled intersections the LOS and average delay per vehicle for the movement with the greatest delay is reported.

Peak-hour factors (PHF) for the existing-conditions and existing-plus-Project conditions analyses were determined based on the existing traffic volumes. The HCM suggests that a PHF of 0.92 in urban areas and 0.88 in rural areas may be used in the absence of field data. For purposes of the subsequent analysis scenarios that include pending projects and the cumulative year 2030 analyses performed for the TIS, in which field data is not available and traffic volumes are projected, a PHF of 0.92 is used.

Traffic Signal Warrants

At each unsignalized intersection the potential need for a traffic signal was evaluated. Traffic signal warrants are a series of standards that provide guidelines for determining if a traffic signal is appropriate. If one or more of the signal warrants are met, signalization of the intersection may be appropriate. However, a signal likely should not be installed if none or few of the warrants are met since the installation of signals may increase delays on the previously uncontrolled major street and may contribute to an increase in accidents.

The State of California Department of Transportation *California Manual on Uniform Traffic Control Devices for Streets and Highways* (CMUTCD) dated September 26, 2006 presents various warrant analyses to assist in evaluating the need for traffic signals at an intersection. Figure 4C-4, Warrant 3, Peak Hour (70% Factor) as presented in the CMUTCD was utilized to evaluate the possibility that traffic signals may be warranted at study intersections not currently signalized.

Road Segment Level of Service Methodology

Road segment analyses were based on the Florida Department of Transportation Generalized Q/LOS Tables. The road segment tables were developed based on procedures outlined in the HCM, and it is common practice in central California to utilize the Florida tables in the analysis of road segments. Table 4-4, Generalized Peak Hour Two-Way Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways) was utilized in the analysis for the study road segments within the sphere of influence of the City of Fresno and/or the City of Clovis. Table 4-6, Generalized Peak Hour Two-Way Volumes for Florida's Rural Undeveloped Areas and Cities or Developed Areas Less Than 5,000 Population was utilized in the analysis for the study road segments within the jurisdiction of the County of Fresno. The Florida tables are attached in Appendix A. Tables 3.13-9 through 3.13-11 present the specific volume thresholds used in the analyses. The values in Table 3.13-9 were applied to the urban areas within the sphere of influence of the City of Fresno and/or the City of Clovis. The values in Table 3.13-10 were applied to the rural road segments within the jurisdiction of the County of Fresno, with the exception that the road segments on Friant Road between Lost Lake Road and Road 209 (generally within the town of Friant) were analyzed using the values in Table 3.13-11 based on interrupted flow conditions. Millerton Road in the 2030 conditions is also analyzed

using the values in Table 3.13-11 based on interrupted flow conditions because it is known based on previous studies that additional traffic signals are expected to be constructed on Millerton Road.

**Table 3.13-9
Volume Thresholds for Roadway Levels of Service**

Lanes	Median	A	B	C	D	E	F
2	Undivided	-	-	≤870	871 – 1,390	1,391 – 1,480	>1,480
2	Divided with turn lanes	-	-	≤913	914 – 1,459	1,460 – 1,554	>1,554
4	Divided	-	-	≤2,030	2,031 - 2,950	2,951 - 3,120	>3,120
6	Divided	-	-	≤3,170	3,171 - 4,450	4,451 - 4,690	>4,690

Reference: Florida Department of Transportation Table 4-4, Generalized Peak Hour Two-Way Volumes for Florida’s Urbanized Areas (Non-State Roadways, Major City/County Roadways)

**Table 3.13-10
Volume Thresholds for Roadway Levels of Service - Rural (Uninterrupted)**

Lanes	Median	A	B	C	D	E	F
2	Undivided	≤300	301 – 840	841 – 1,480	1,481 – 2,030	2,031 – 2,560	>2,560
4	Divided	≤1,730	1,731 – 2,800	2,801 – 4,060	4,061 – 5,250	5,251 – 5,960	>5,960
6	Divided	≤2,600	2,601 – 4,200	4,201 – 6,080	6,081 – 7,870	7,871 – 8,940	>8,940

Reference: Florida Department of Transportation Table 4-6, Generalized Peak Hour Two-Way Volumes for Florida’s Rural Undeveloped Areas and Cities or Developed Areas Less Than 5,000 Population (Uninterrupted Flow Highways)

**Table 3.13-11
Volume Thresholds for Roadway Levels of Service - Rural (Interrupted)**

Lanes	Median	A	B	C	D	E	F
2	Undivided	-	≤210	211 – 1,070	1,071 – 1,350	1,351 – 1,450	>1,450
2	Divided with turn lanes	-	≤220	221 – 1,123	1,124 – 1,417	1,418 – 1,522	>1,522
4	Divided	-	≤520	521 – 2,470	2,471 – 2,850	2,850 – 3,020	>3,020
6	Divided	-	≤810	811 – 3,820	3,821 – 4,290	4,291 – 4,540	>4,540

Reference: Florida Department of Transportation Table 4-6, Generalized Peak Hour Two-Way Volumes for Florida’s Rural Undeveloped Areas and Cities or Developed Areas Less Than 5,000 Population (Interrupted Flow Arterials)

Table 3.13-12 summarizes the criteria applied to the road segment analyses.

**Table 3.13-12
Road Segment Analysis Criteria**

Location	Criteria	Applicable Volume Threshold Table
Friant Road		
206 to Parker	Rural (Interrupted)	3.13-11
Parker to Granite	Rural (Interrupted)	3.13-11
Granite to Root	Rural (Interrupted)	3.13-11
Root to Lost Lake	Rural (Interrupted)	3.13-11
Lost Lake to Willow	Rural (Uninterrupted)	3.13-10
Willow to Copper River	Rural (Uninterrupted)	3.13-10
Copper River to Copper	Urban	3.13-9
Copper to Lakeview	Urban	3.13-9
Lakeview to Champlain	Urban	3.13-9
Champlain to Ft. Washington	Urban	3.13-9
Ft. Washington to Shepherd	Urban	3.13-9
Shepherd to Audubon	Urban	3.13-9
Audubon to Fresno	Urban	3.13-9
Fresno to SR 41	Urban	3.13-9
Willow Avenue		
Friant to Silaxo	Rural (Uninterrupted)	3.13-10
Silaxo to Copper	Rural (Uninterrupted)	3.13-10
Copper to International	Urban	3.13-9
International to Behymer	Urban	3.13-9
Behymer to Perrin	Urban	3.13-9
Perrin to Shepherd	Urban	3.13-9
Shepherd to Teague	Urban	3.13-9
Teague to Nees	Urban	3.13-9
Nees to Alluvial	Urban	3.13-9
Alluvial to Herndon	Urban	3.13-9
Herndon to Sierra	Urban	3.13-9
Sierra to Bullard	Urban	3.13-9
Bullard to Barstow	Urban	3.13-9
Millerton Road		
206 to Winchell Cove	Rural (Uninterrupted)	3.13-10
	Rural (Interrupted) (Year 2030 only)	3.13-11
Winchell Cove to Brighton Crest	Rural (Uninterrupted)	3.13-10
	Rural (Interrupted) (Year 2030 only)	3.13-11
Brighton Crest to Sky Harbour	Rural (Uninterrupted)	3.13-10
	Rural (Interrupted) (Year 2030 only)	3.13-11
Sky Harbour to Table Mountain	Rural (Uninterrupted)	3.13-10
	Rural (Interrupted) (Year 2030 only)	3.13-11
Table Mountain to Auberry	Rural (Uninterrupted)	3.13-10
	Rural (Interrupted) (Year 2030 only)	3.13-11
Road 206		
Friant Road to Road 145	Rural (Uninterrupted)	3.13-10

3.13.3 IMPACT EVALUATION CRITERIA

According to Appendix G of the 2009 CEQA Guidelines, a project would normally have a significant effect on transportation/traffic if it will:

- a) *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).*
- b) *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.*
- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.*
- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).*
- e) *Result in inadequate emergency access.*
- f) *Result in inadequate parking capacity.*
- g) *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).*

3.13.4 IMPACT ANALYSIS

Impact #3.13 – Significant Increase in Traffic Levels and Exceedance of Traffic LOS Thresholds

[Evaluation Criteria (a) and (b)]

The TIS prepared for the Project considered impacts to 47 intersections in the A.M. and P.M. peak hours as shown in Table 3.13-1. The impact analysis is divided into Existing Plus Project Conditions and Cumulative (2030) Plus Project Conditions as required by CEQA.

Each scenario provides a description of mitigation measures, however, for ease of reference, a summary of mitigation measures is provided in Tables 3.13-22 and 3.13-23.

Existing-Plus-Project Conditions

The TIS prepared for the Specific Plan and Friant Depot Parcel development analyzed the Project-specific traffic impacts by assuming the Specific Plan and Friant Depot Parcel traffic was immediately added to the existing condition (“Existing-Plus-Project Conditions). It should be noted that the existing-plus-project conditions analyses, although required by CEQA to assess impacts unrelated to the anticipated cumulative condition, may be unrealistic with respect to the proposed Project since buildout will require approximately 10 years to complete. During that time background traffic volumes will also increase and the required mitigations may be constructed as capital improvement projects or by other developments.

Existing-Plus-Project Lane Configurations and Intersection Control

The lane configurations required by the Project are essentially the same as the baseline existing conditions with the exception of site access roads to be constructed by the Specific Plan applicant. (See Tables 3.13-1, 3.13-3, 3.13-13, 3.13-15.)

Existing-Plus-Project Traffic Volumes

The existing-plus-Project conditions peak-hour traffic volumes are determined by adding the existing traffic volumes and the Project traffic volumes. The existing-plus-Project conditions peak-hour traffic volumes are presented in Figure 24 (of the TIS), Existing-Plus-Project Peak Hour Traffic Volumes.

Existing-Plus-Project Intersection LOS and Signal Warrant Analysis

The results of the existing-plus-Project conditions intersection level of service analyses and the peak-hour traffic signal warrants analyses are summarized in Table 3.13-13. The intersection analysis sheets are presented in Appendix F of the TIS. The peak hour warrant plots are presented in Appendix G of the TIS. Project impacts are identified in bold type.

Existing-Plus-Project Conditions Queuing Analysis

The results of the existing-plus-Project conditions queuing analyses are summarized in Table 3.13-14. Project impacts are identified in bold type.

Existing-Plus-Project Road Segment Analyses

The results of the existing-plus-Project road segment analyses are summarized in Table 3.13-15. Project impacts are identified in bold type.

Year 2030 No-Project Conditions

Year 2030 No-Project Intersection LOS and Signal Warrant Analysis

The results of the year 2030 no-Project intersection level of service analyses and the peak-hour traffic signal warrants analyses are summarized in Table 3.13-16. Deficiencies are identified in bold type. The intersection analysis sheets are presented in Appendix C of the TIS. The peak hour warrant plots are presented in Appendix D of the TIS.

Year 2030 No-Project Conditions Queuing Analysis

The results of the year 2030 no-Project queuing analyses are summarized in Table 3.13-17. Calculated 95th-percentile queues exceeding the storage capacity are identified in bold type.

**Table 3.13-13
Intersection Analysis Summary – Existing-Plus-Project Conditions**

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		LOS	Delay (sec)	Peak Hour Warrant	LOS	Delay (sec)	Peak Hour Warrant
Road 145 / SR 41	Signal	B	17.0	n/r	C	21.6	n/r
Road 145 / Road 206	TWS	A	8.7	n/r	A	9.3	n/r
SR 41 / Avenue 15	OWS	E	48.4	2/2	F	96.4	2/2
SR 41 / Avenue 12	Signal	C	31.6	n/r	D	52.9	n/r
Friant Road / Road 206	TWS	E	38.7	1/1	F	331.2	2/2
Friant Road / Parker	OWS	B	12.5	n/r	B	14.0	n/r
Friant Road / Granite	OWS	B	12.3	n/r	C	15.4	n/r
Friant Road / Root	OWS	B	11.5	n/r	C	16.7	n/r
Friant Road / Lost Lake	OWS	F	295.7	2/2	F	*	2/2
Friant / Willow	TWS	F	101.6	2/2	F	200.5	2/2
Friant / Copper River Entrance	Signal	A	3.5	n/r	A	4.4	n/r
Friant / Copper	Signal	A	7.3	n/r	A	6.4	n/r
Friant / Lakeview Drive	Signal	A	8.2	n/r	A	6.9	n/r
Friant / Champlain	Signal	A	6.5	n/r	A	6.7	n/r
Friant / Fort Washington	Signal	B	15.2	n/r	B	15.0	n/r
Friant / Shepherd	Signal	D	36.8	n/r	E	63.9	n/r
Friant / Audubon Drive	Signal	C	21.8	n/r	E	74.3	n/r
Friant / Fresno	Signal	C	25.6	n/r	C	32.7	n/r
Friant / SR 41 NB Off-ramp	Signal	C	20.4	n/r	C	21.6	n/r
Friant / SR 41 SB Off-ramp	Signal	C	29.4	n/r	B	12.2	n/r
Blackstone / Nees	Signal	E	70.7	n/r	D	44.9	n/r
Herndon / Blackstone	Signal	C	21.2	n/r	C	26.7	n/r
Fresno Street / Nees	Signal	C	26.5	n/r	C	27.4	n/r
Millerton / Winchell Cove	OWS	A	9.2	n/r	B	11.6	n/r
Millerton / Brighton Crest	OWS	B	11.5	n/r	B	12.0	n/r
Millerton / Sky Harbour Road	OWS	B	11.2	n/r	B	13.7	n/r
Millerton / Table Mountain	OWS	A	9.9	n/r	B	10.1	n/r
Millerton Road / Auberry Road	OWS	B	12.8	n/r	B	13.1	n/r
Auberry Road / Copper Avenue	OWS	B	13.2	n/r	C	15.6	n/r
Audubon / Nees	OWS	F	58.2	2/2	E	48.8	2/2
Palm / Nees	Signal	B	16.0	n/r	C	24.1	n/r
Palm / Herndon	Signal	D	40.6	n/r	F	101.4	n/r
Willow / Copper	AWS	C	18.6	n/r	C	23.3	n/r
Willow / International	Signal	B	19.3	n/r	B	13.5	n/r
Willow / Behymer	Signal	C	21.7	n/r	B	19.6	n/r
Willow / Perrin	OWS	E	44.3	2/2	E	47.2	2/2
Willow / Shepherd	AWS	F	191.2	2/2	F	266.6	2/2
Willow / Teague	Signal	B	16.7	n/r	B	16.5	n/r
Willow / Nees	Signal	D	44.9	n/r	E	56.3	n/r
Willow / Alluvial	Signal	C	22.5	n/r	C	32.0	n/r
Willow / Herndon	Signal	C	33.0	n/r	D	41.6	n/r
Willow / Sierra	Signal	B	11.3	n/r	B	12.2	n/r
Willow / Bullard	Signal	D	37.6	n/r	D	45.8	n/r
Willow / Barstow	Signal	B	18.0	n/r	C	28.9	n/r
Herndon / SR 41 SB Off-ramp	Signal	A	6.4	n/r	A	5.2	n/r
Herndon / SR 41 NB Off-ramp	Signal	C	23.2	n/r	C	24.0	n/r
Friant / Site Access	OWS	F	68.7	2/2	F	457.0	2/2

**Table 3.13-14
Queuing Analysis Summary – Existing-Plus-Project Conditions**

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Road 145 / SR 41	Storage Length	-	35	-	35	530	485	490	420
	A.M. Peak	66	35	59	15	27	84	57	255
	P.M. Peak	135	34	63	63	77	317	62	160
SR 41 / Avenue 12	Storage Length	-	-	-	90	635	150	200	180
	A.M. Peak	45	225	13	5	419	7	7	30
	P.M. Peak	135	37	39	5	699	12	14	28
Friant / Copper River Entrance	Storage Length	-	-	215	215	-	230	250	-
	A.M. Peak	-	-	8	10	-	13	16	-
	P.M. Peak	-	-	14	12	-	10	18	-
Friant / Copper	Storage Length	-	-	250	295	-	200	235	-
	A.M. Peak	-	-	53	14	-	20	14	-
	P.M. Peak	-	-	34	19	-	27	12	-
Friant / Lakeview Drive	Storage Length	-	-	235	-	250	200	250	50
	A.M. Peak	10	10	86	7	16	16	8	6
	P.M. Peak	14	14	60	0	13	25	12	0
Friant / Champlain	Storage Length	-	-	-	-	245	255	230	-
	A.M. Peak	-	-	35	18	0	22	34	-
	P.M. Peak	-	-	31	25	0	24	39	-
Friant / Fort Washington	Storage Length	-	-	125	125	230	200	280	100
	A.M. Peak	15	15	200	18	29	56	25	5
	P.M. Peak	19	19	135	20	30	167	21	3
Friant / Shepherd	Storage Length	-	-	-	225	200	390	245	-
	A.M. Peak	-	-	793	48	0	32	62	-
	P.M. Peak	-	-	294	34	0	1,732	76	-
Friant / Audubon Drive	Storage Length	195	220	245	80	240	195	235	190
	A.M. Peak	167	29	89	39	37	31	62	174
	P.M. Peak	585	145	125	254	110	224	59	140
Friant / Fresno	Storage Length	245	200	250	200	255	195	190	195
	A.M. Peak	168	73	132	15	119	41	11	41
	P.M. Peak	67	87	117	16	210	105	66	105
Friant / SR 41 NB Off-ramp	Storage Length	-	-	-	-	760	760	-	-
	A.M. Peak	-	221	-	-	159	455	-	-
	P.M. Peak	-	1	-	-	126	495	-	-
Friant / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	265	265
	A.M. Peak	-	-	-	1	-	-	699	771
	P.M. Peak	-	-	-	339	-	-	264	245
Blackstone / Nees	Storage Length	245	200	250	200	250	145	265	140
	A.M. Peak	307	39	100	126	52	30	165	1,222
	P.M. Peak	340	43	137	173	93	72	223	256
Herndon / Blackstone	Storage Length	250	200	260	105	265	175	245	180
	A.M. Peak	67	38	47	72	45	41	84	49
	P.M. Peak	79	122	81	102	108	34	135	184
Fresno Street / Nees	Storage Length	240	205	245	200	245	200	240	175
	A.M. Peak	42	32	120	40	108	51	84	42
	P.M. Peak	87	44	86	34	131	90	80	32

Table 3.13-14 (Continued)
Queuing Analysis Summary – Existing-Plus-Project Conditions

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Palm / Nees	Storage Length	95	95	-	205	260	355	140	-
	A.M. Peak	11	15	467	21	81	15	23	27
	P.M. Peak	-	18	472	7	143	51	96	51
Palm / Herndon	Storage Length	255	205	245	185	100	250	245	230
	A.M. Peak	456	48	151	303	91	67	103	433
	P.M. Peak	565	30	149	124	102	56	163	991
Willow / International	Storage Length	245	-	120	-	245	80	245	220
	A.M. Peak	32	26	27	171	67	6	44	18
	P.M. Peak	26	30	23	87	29	8	23	17
Willow / Behymer	Storage Length	245	-	90	-	255	-	255	-
	A.M. Peak	38	28	23	103	59	436	29	16
	P.M. Peak	35	29	39	125	86	351	40	18
Willow / Teague	Storage Length	245	135	245	-	250	45	175	50
	A.M. Peak	15	52	42	86	42	36	34	18
	P.M. Peak	23	46	26	78	96	49	35	19
Willow / Nees	Storage Length	285	-	165	235	300	70	225	225
	A.M. Peak	34	495	122	33	230	56	145	28
	P.M. Peak	47	619	129	33	502	82	325	51
Willow / Alluvial	Storage Length	90	50	205	50	300	50	255	235
	A.M. Peak	66	41	130	52	117	45	80	25
	P.M. Peak	127	62	138	52	313	94	78	23
Willow / Herndon	Storage Length	255	255	305	120	315	185	255	110
	A.M. Peak	123	62	41	60	229	21	84	100
	P.M. Peak	188	195	84	103	252	37	86	67
Willow / Sierra	Storage Length	95	-	150	95	255	75	260	75
	A.M. Peak	18	102	52	36	31	11	43	12
	P.M. Peak	23	69	48	35	34	18	115	10
Willow / Bullard	Storage Length	250	-	265	-	270	135	225	135
	A.M. Peak	95	286	91	448	288	22	407	43
	P.M. Peak	235	442	69	412	268	34	342	34
Willow / Barstow	Storage Length	155	-	190	50	245	75	235	140
	A.M. Peak	12	50	188	43	51	22	64	15
	P.M. Peak	60	253	211	33	59	64	240	16
Herndon / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	285	285
	A.M. Peak	-	-	-	8	-	-	203	83
	P.M. Peak	-	-	-	6	-	-	172	74
Herndon / SR 41 NB Off-ramp	Storage Length	-	-	-	-	-	205	-	-
	A.M. Peak	-	0	-	-	462	528	-	-
	P.M. Peak	-	8	-	-	436	473	-	-

**Table 3.13-15
Road Segment Analysis Summary – Existing-Plus-Project Conditions**

Road Segment	Lanes	A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS
Friant Road					
206 to Parker	2-U	686	C	951	C
Parker to Granite	2-U	582	C	879	C
Granite to Root	2-U	581	C	873	C
Root to Lost Lake	2-U	993	C	1,378	E
Lost Lake to Willow	4	1,445	A	1,849	B
Willow to Copper River	4	1,060	A	1,300	A
Copper River to Copper	4	1,093	C	1,336	C
Copper to Lakeview	4	1,368	C	1,608	C
Lakeview to Champlain	4	1,595	C	1,848	C
Champlain to Ft. Washington	4	1,816	C	1,995	C
Ft. Washington to Shepherd	3NB/2SB	3,017	C/E	3,186	D/F
Shepherd to Audubon	2 NB/3SB	4,655	F/E	5,251	F/F
Audubon to Fresno	6	4,127	D	4,447	D
Fresno to SR 41	6	4,607	E	4,810	F
Willow Avenue					
Friant to Silaxo	2-U	657	B	718	B
Silaxo to Cooper	2-U	657	B	718	B
Cooper to International	1NB/3SB	746	C/C	849	C/C
International to Behymer	1NB/2SB	1,171	D/C	1,132	D/C
Behymer to Perrin	2-U	1,096	D	1,079	D
Perrin to Shepherd	2-U	1,072	D	1,283	D
Shepherd to Teague	2-U	928	D	1,242	D
Teague to Nees	4	1,330	C	1,884	C
Nees to Alluvial	2NB/1SB	1,482	C/F	2,093	D/F
Alluvial to Herndon	4	1,745	C	2,391	D
Herndon to Sierra	4	1,924	C	2,479	D
Sierra to Bullard	4	1,825	C	2,262	D
Bullard to Barstow	4	1,549	C	1,943	C
Millerton Road					
206 to Winchell Cove	2-U	485	B	715	B
Winchell Cove to Brighton Crest	2-U	415	B	642	B
Brighton Crest to Sky Harbour	2-U	414	B	670	B
Sky Harbour to Table Mountain	2-U	401	B	624	B
Table Mountain to Auberry	2-U	335	B	360	B
Road 206					
West of Friant Road	2-U	447	B	645	B

All roadways are divided unless otherwise indicated

U – Indicates undivided roadway

**Table 3.13-16
Intersection Analysis Summary – 2030 No-Project Conditions**

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		LOS	Delay (sec)	Peak Hour Warrant	LOS	Delay (sec)	Peak Hour Warrant
Road 145 / SR 41	Signal	F	267.7	n/r	F	632.0	n/r
Road 145 / Road 206	TWS	F	116.7	2/2	F	198.7	2/2
SR 41 / Avenue 15	Int	-	-	n/r	-	-	n/r
SR 41 / Avenue 12	Int	-	-	n/r	-	-	n/r
Friant Road / Road 206	TWS	F	*	2/2	F	*	2/2
Friant Road / Parker	OWS	E	47.2	Not met	E	49.8	Not met
Friant Road / Granite	OWS	D	27.3	Not met	D	25.7	Not met
Friant Road / Root	OWS	D	32.2	Not met	F	63.4	Not met
Friant Road / Lost Lake	OWS	C	23.2	Not met	F	50.9	Not met
Friant / Willow	TWS	F	477.4	2/2	F	*	2/2
Friant / Copper River Entrance	Signal	A	6.9	n/r	A	9.6	n/r
Friant / Copper	Signal	B	10.0	n/r	A	9.9	n/r
Friant / Lakeview Drive	Signal	A	9.6	n/r	A	7.9	n/r
Friant / Champlain	Signal	A	8.4	n/r	A	9.6	n/r
Friant / Fort Washington	Signal	C	25.5	n/r	C	24.5	n/r
Friant / Shepherd	Signal	C	22.9	n/r	F	104.7	n/r
Friant / Audubon Drive	Signal	C	29.8	n/r	F	154.7	n/r
Friant / Fresno	Signal	D	37.7	n/r	F	139.0	n/r
Friant / SR 41 NB Off-ramp	Signal	D	40.9	n/r	D	45.5	n/r
Friant / SR 41 SB Off-ramp	Signal	F	101.6	n/r	B	16.6	n/r
Blackstone / Nees	Signal	F	126.1	n/r	F	91.2	n/r
Herndon / Blackstone	Signal	C	32.2	n/r	E	59.6	n/r
Fresno Street / Nees	Signal	D	45.9	n/r	E	76.3	n/r
Millerton / Winchell Cove	OWS	F	353.2	2/2	F	*	2/2
Millerton / Brighton Crest	OWS	D	30.5	Not met	F	58.4	2/2
Millerton / Sky Harbour Road	OWS	E	36.2	2/1	F	543.3	2/2
Millerton / Table Mountain	OWS	C	20.8	2/1	F	400.9	2/2
Millerton Road / Auberry Road	OWS	F	561.4	2/2	F	*	2/2
Auberry Road / Copper Avenue	OWS	F	825.6	2/2	F	*	2/2
Audubon / Nees	Signal	C	24.9	n/r	B	17.8	n/r
Palm / Nees	Signal	B	17.3	n/r	C	26.0	n/r
Palm / Herndon	Signal	E	71.4	n/r	F	179.7	n/r
Willow / Copper	Signal	C	20.3	n/r	C	22.0	n/r
Willow / International	Signal	B	18.5	n/r	B	16.1	n/r
Willow / Behymer	Signal	B	16.5	n/r	B	17.3	n/r
Willow / Perrin	Signal	B	16.1	n/r	B	17.0	n/r
Willow / Shepherd	Signal	C	25.4	n/r	C	32.4	n/r
Willow / Teague	Signal	C	20.9	n/r	C	22.9	n/r
Willow / Nees	Signal	C	27.9	n/r	D	51.5	n/r
Willow / Alluvial	Signal	C	27.0	n/r	D	48.1	n/r
Willow / Herndon	Signal	E	63.1	n/r	F	97.7	n/r
Willow / Sierra	Signal	C	24.3	n/r	F	179.8	n/r
Willow / Bullard	Signal	D	43.2	n/r	F	82.9	n/r
Willow / Barstow	Signal	D	51.1	n/r	F	155.8	n/r
Herndon / SR 41 SB Off-ramp	Signal	A	9.2	n/r	A	7.1	n/r
Herndon / SR 41 NB Off-ramp	Signal	E	69.2	n/r	F	80.8	n/r

Table 3.13-17
Queuing Analysis Summary – 2030 No-Project Conditions

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Road 145 / SR 41	Storage Length	-	35	-	35	530	485	490	420
	A.M. Peak	192	199	1,671	587	96	921	517	902
	P.M. Peak	291	98	2,077	959	438	1,733	552	420
Friant / Copper River Entrance	Storage Length	-	-	215	215	-	230	250	-
	A.M. Peak	-	-	36	22	-	19	33	-
	P.M. Peak	-	-	31	32	-	15	74	-
Friant / Copper	Storage Length	-	-	250	295	-	200	235	-
	A.M. Peak	-	-	80	17	-	31	54	-
	P.M. Peak	-	-	66	35	-	36	43	-
Friant / Lakeview Drive	Storage Length	-	-	235	-	250	200	250	50
	A.M. Peak	16	16	113	10	18	19	10	6
	P.M. Peak	21	21	73	0	14	29	17	2
Friant / Champlain	Storage Length	-	-	-	-	245	255	230	-
	A.M. Peak	-	-	73	23	0	30	55	-
	P.M. Peak	-	-	70	34	0	30	66	-
Friant / Fort Washington	Storage Length	-	-	125	125	230	200	280	100
	A.M. Peak	18	18	269	38	36	58	107	5
	P.M. Peak	25	25	201	62	44	373	88	3
Friant / Shepherd	Storage Length	-	-	-	225	200	390	245	-
	A.M. Peak	-	-	443	25	0	80	42	-
	P.M. Peak	-	-	278	29	0	2,217	54	-
Friant / Audubon Drive	Storage Length	195	220	245	80	240	195	235	190
	A.M. Peak	237	36	132	44	56	50	79	307
	P.M. Peak	759	254	204	546	208	613	94	569
Friant / Fresno	Storage Length	245	200	250	200	255	195	190	195
	A.M. Peak	289	220	229	24	183	47	38	60
	P.M. Peak	87	176	260	39	520	483	205	284
Friant / SR 41 NB Off-ramp	Storage Length	-	-	-	-	760	760	-	-
	A.M. Peak	-	311	-	-	236	757	-	-
	P.M. Peak	-	0	-	-	180	641	-	-
Friant / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	265	265
	A.M. Peak	-	-	-	27	-	-	1,214	1,503
	P.M. Peak	-	-	-	381	-	-	380	494
Blackstone / Nees	Storage Length	245	200	250	200	250	145	265	140
	A.M. Peak	439	40	136	684	73	49	273	1,517
	P.M. Peak	523	86	321	746	188	402	453	610
Herndon / Blackstone	Storage Length	250	200	260	105	265	175	245	180
	A.M. Peak	138	69	127	261	80	50	171	77
	P.M. Peak	139	282	463	215	184	169	287	386
Fresno Street / Nees	Storage Length	240	205	245	200	245	200	240	175
	A.M. Peak	146	47	143	82	221	88	222	222
	P.M. Peak	498	101	181	129	298	222	231	272
Audubon / Nees	Storage Length	150	-	-	125	-	-	-	-
	A.M. Peak	122	-	-	57	-	-	-	683
	P.M. Peak	289	-	-	40	-	-	-	358

Table 3.13-17 (Continued)
Queuing Analysis Summary – 2030 No-Project Conditions

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Palm / Nees	Storage Length	95	95	-	205	260	355	140	-
	A.M. Peak	17	21	839	0	113	17	37	57
	P.M. Peak	6	25	574	1	220	103	170	96
Palm / Herndon	Storage Length	255	205	245	185	100	250	245	230
	A.M. Peak	539	70	266	386	167	114	129	689
	P.M. Peak	772	48	208	170	203	59	222	1,396
Willow / Copper	Storage Length	250	-	250	-	250	-	250	-
	A.M. Peak	49	50	89	34	53	36	79	42
	P.M. Peak	53	50	102	74	118	60	112	32
Willow / International	Storage Length	245	-	120	-	245	80	245	220
	A.M. Peak	47	57	22	25	99	13	41	37
	P.M. Peak	34	43	21	23	63	17	53	36
Willow / Behymer	Storage Length	245	-	90	-	255	-	255	-
	A.M. Peak	54	54	24	47	43	16	31	22
	P.M. Peak	43	36	32	53	76	23	51	23
Willow / Perrin	Storage Length	250	-	250	-	250	-	250	-
	A.M. Peak	63	51	41	25	50	27	36	46
	P.M. Peak	47	79	78	40	102	61	40	27
Willow / Shepherd	Storage Length	250	110	250	100	250	60	200	110
	A.M. Peak	179	53	22	49	119	20	128	164
	P.M. Peak	282	97	35	97	268	33	139	113
Willow / Teague	Storage Length	245	135	245	-	250	45	175	50
	A.M. Peak	25	117	115	35	62	45	42	26
	P.M. Peak	40	49	68	38	151	113	53	25
Willow / Nees	Storage Length	285	-	165	235	300	70	225	225
	A.M. Peak	78	89	69	46	151	61	92	42
	P.M. Peak	88	183	160	53	382	123	295	145
Willow / Alluvial	Storage Length	90	50	205	50	300	50	255	235
	A.M. Peak	45	119	110	57	140	54	49	36
	P.M. Peak	145	266	195	102	318	183	70	35
Willow / Herndon	Storage Length	255	255	305	120	315	185	255	110
	A.M. Peak	228	261	84	159	352	30	130	195
	P.M. Peak	383	309	133	258	407	100	258	204
Willow / Sierra	Storage Length	95	-	150	95	255	75	260	75
	A.M. Peak	37	-	133	75	179	31	105	27
	P.M. Peak	121	-	208	73	216	44	291	42
Willow / Bullard	Storage Length	250	-	265	-	270	135	225	135
	A.M. Peak	46	59	93	143	258	37	348	111
	P.M. Peak	160	545	174	736	196	159	358	81
Willow / Barstow	Storage Length	155	-	190	50	245	75	235	140
	A.M. Peak	50	-	374	128	567	61	153	137
	P.M. Peak	327	-	358	82	390	130	388	153
Herndon / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	285	285
	A.M. Peak	-	-	-	4	-	-	322	193
	P.M. Peak	-	-	-	0	-	-	282	177
Herndon / SR 41 NB Off-ramp	Storage Length	-	-	-	-	-	205	-	-
	A.M. Peak	-	0	-	-	894	972	-	-
	P.M. Peak	-	12	-	-	831	853	-	-

Year 2030 No-Project Road Segment Analyses

The results of the year 2030 no-Project road segment analyses are summarized in Table 3.13-18. Deficiencies are identified in bold type.

**Table 3.13-18
Road Segment Analysis Summary – 2030 No-Project Conditions**

Road Segment	Lanes	A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS
Friant Road					
206 to Parker	4	1,906	C	2,125	C
Parker to Granite	4	1,932	C	2,145	C
Granite to Root	4	1,921	C	2,138	C
Root to Lost Lake	4	1,913	C	2,118	C
Lost Lake to Willow	4	1,920	B	2,104	B
Willow to Copper River	4	1,281	A	1,424	A
Copper River to Copper	4	1,402	C	1,523	C
Copper to Lakeview	4	1,578	C	1,881	C
Lakeview to Champlain	4	2,158	D	2,472	D
Champlain to Ft. Washington	4	2,689	D	2,749	D
Ft. Washington to Shepherd	6	3,530	D	3,662	D
Shepherd to Audubon	6	7,878	F	6,858	F
Audubon to Fresno	6	5,022	F	6,155	F
Fresno to SR 41	6	5,919	F	6,266	F
Willow Avenue					
Friant to Silaxo	2-U	1,273	C	1,721	D
Silaxo to Copper	2-U	1,273	C	1,721	D
Copper to International	6	1,421	C	1,997	C
International to Behymer	6	1,636	C	2,046	C
Behymer to Perrin	6	2,023	C	2,328	C
Perrin to Shepherd	6	2,464	C	3,239	D
Shepherd to Teague	6	1,805	C	2,734	C
Teague to Nees	6	2,405	C	3,270	D
Nees to Alluvial	6	2,586	C	3,567	D
Alluvial to Herndon	6	3,019	C	4,875	F
Herndon to Sierra	6	3,448	D	4,928	F
Sierra to Bullard	6	3,304	D	5,014	F
Bullard to Barstow	6	2,963	C	4,957	F
Millerton Road					
206 to Winchell Cove	2-U	1,509	F	1,733	F
Winchell Cove to Brighton Crest	2-U	1,298	D	1,900	F
Brighton Crest to Sky Harbour	2-U	1,252	D	1,836	F
Sky Harbour to Table Mountain	2-U	1,239	D	1,762	F
Table Mountain to Auberry	2-U	1,238	D	1,780	F
Road 206					
Friant Road to Road 145	2-U	2,063	E	2,164	E

All roadways are divided unless otherwise indicated

U – Indicates undivided roadway

Year 2030 No-Project Conditions Deficiencies

The following intersections are expected to operate at substandard levels of service:

- SR 41 and Road 145;
- Road 145 and Road 206;
- SR 41 and Avenue 15;
- SR 41 and Avenue 12;
- Friant Road and North Fork Road (Road 206);
- Friant Road and Parker Avenue (peak hour traffic signal warrants not met);
- Friant Road and Granite Avenue (peak hour traffic signal warrants not met);
- Friant Road and Root Avenue (peak hour traffic signal warrants not met);
- Friant Road and Lost Lake Road (peak hour traffic signal warrants not met);
- Friant Road and Willow Avenue;
- Friant Road and SR 41 northbound off ramp;
- Friant Road and SR 41 southbound off ramp;
- Blackstone and Nees Avenues;
- Millerton Road and Winchell Cove Road;
- Millerton Road and Brighton Crest Drive;
- Millerton Road and Sky Harbour Road;
- Millerton Road and Table Mountain Road;
- Millerton Road and Auberry Road;
- Copper Avenue and Auberry Road;
- Willow and Sierra Avenues;
- Willow and Bullard Avenues;
- Willow and Barstow Avenues; and
- Herndon Avenue and SR 41 northbound off ramp.

The intersections listed below are expected to operate at levels of service below D, but these conditions are considered acceptable in the year 2030 because at least one adjacent road segment is identified as constrained in the City of Fresno General Plan DMEIR:

- Friant Road and Shepherd Avenue
- Friant Road and Audobon Drive
- Friant Road and Fresno Street
- Herndon and Blackstone Avenues
- Nees Avenue and Fresno Street
- Palm and Herndon Avenues
- Willow and Herndon Avenues

The following intersections exhibit calculated 95th-percentile queues that exceed storage capacity:

- SR 41 and Road 145: eastbound, westbound, and southbound left turns;
- Friant Road and Ft. Washington Road: westbound left turn;
- Friant Road and Audubon Drive: eastbound left turn;
- Friant Road and Fresno Street: eastbound and northbound left turns;
- Friant Road and the SR 41 southbound off ramp: southbound approach;

- Blackstone and Nees Avenues: eastbound, westbound, and southbound left turns;
- Blackstone and Herndon Avenues: eastbound and southbound left turns;
- Fresno Street and Nees Avenue: eastbound and northbound left turns;
- Audubon Drive and Nees Avenue: eastbound left-turn;
- Palm and Herndon Avenues: eastbound, westbound, and northbound left turns;
- Willow and Shepherd Avenues: eastbound left turn;
- Willow and Nees Avenues: northbound and southbound left turns;
- Willow and Alluvial Avenues: eastbound left turn;
- Willow and Herndon Avenues: eastbound and northbound left turns;
- Willow and Sierra Avenues: eastbound, westbound, and southbound left turns;
- Willow and Bullard Avenues: southbound left turn; and
- Willow and Barstow Avenues: all left turns.

The following road segments are expected to operate at substandard levels of service:

- Willow Avenue between Friant Road and Copper Avenue;
- Willow Avenue between Alluvial and Herndon Avenues;
- Willow Avenue between Herndon and Sierra Avenues;
- Willow Avenue between Sierra and Bullard Avenues;
- Willow Avenue between Bullard and Barstow Avenues;
- Millerton Road between North Fork Road and Winchell Cove Road;
- Millerton Road between Winchell Cove Road and Brighton Crest Drive;
- Millerton Road between Brighton Crest Drive and Sky Harbour Road;
- Millerton Road between Sky Harbour Road and Table Mountain Road;
- Millerton Road between Table Mountain and Auberry Roads; and
- Road 206 west of Friant Road.

Year 2030 With-Project Conditions

Year 2030 With-Project Lane Configurations and Intersection Control

The year 2030 with-Project conditions lane configurations and intersection control are presented in Figure 31 (of the TIS), 2030 With-Project Lane Configurations and Intersection Control. The lane configurations are essentially the same as the baseline conditions with the exception of site access roads to be constructed by the Project.

Year 2030 With-Project Traffic Volumes

The year 2030 with-Project conditions peak-hour traffic volumes are determined by adding the existing traffic volumes and the Project traffic volumes. The year 2030 with-Project conditions peak-hour traffic volumes are presented in Figure 32 (of the TIS), 2030 With-Project Peak Hour Traffic Volumes.

Year 2030 With-Project Intersection LOS and Signal Warrant Analysis

The results of the year 2030 with-Project conditions intersection level of service analyses and the peak-hour traffic signal warrants analyses are summarized in Table 3.13-19. The intersection analysis sheets are presented in Appendix F of the TIS. The peak hour warrant plots are presented in Appendix G of the TIS. Project impacts are identified in bold type.

**Table 3.13-19
Intersection Analysis Summary – 2030 With-Project Conditions**

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		LOS	Delay (sec)	Peak Hour Warrant	LOS	Delay (sec)	Peak Hour Warrant
Road 145 / SR 41	Signal	F	298.9	n/r	F	512.7	n/r
Road 145 / Road 206	TWS	F	403.6	2/2	F	603.8	2/2
SR 41 / Avenue 15	Int	-	-	n/r	-	-	n/r
SR 41 / Avenue 12	Int	-	-	n/r	-	-	n/r
Friant Road / Road 206	TWS	F	*	2/2	F	*	2/2
Friant Road / Parker	OWS	F	75.4	Not met	F	84.0	Not met
Friant Road / Granite	OWS	E	41.1	Not met	F	52.6	Not met
Friant Road / Root	OWS	F	51.3	Not met	F	140.9	Not met
Friant Road / Lost Lake	OWS	F	*	2/2	F	*	2/2
Friant / Willow	TWS	F	*	2/2	F	*	2/2
Friant / Copper River Entrance	Signal	A	7.2	n/r	A	8.8	n/r
Friant / Copper	Signal	B	10.4	n/r	B	10.4	n/r
Friant / Lakeview Drive	Signal	B	10.0	n/r	A	8.1	n/r
Friant / Champlain	Signal	A	9.1	n/r	B	11.1	n/r
Friant / Fort Washington	Signal	C	29.6	n/r	C	30.7	n/r
Friant / Shepherd	Signal	C	26.6	n/r	F	116.7	n/r
Friant / Audubon Drive	Signal	C	33.1	n/r	F	174.3	n/r
Friant / Fresno	Signal	D	41.2	n/r	F	153.4	n/r
Friant / SR 41 NB Off-ramp	Signal	D	49.3	n/r	D	54.9	n/r
Friant / SR 41 SB Off-ramp	Signal	F	102.2	n/r	C	21.4	n/r
Blackstone / Nees	Signal	F	126.8	n/r	F	93.5	n/r
Herndon / Blackstone	Signal	C	32.5	n/r	E	59.8	n/r
Fresno Street / Nees	Signal	D	46.0	n/r	E	76.7	n/r
Millerton / Winchell Cove	OWS	F	454.5	2/2	F	*	2/2
Millerton / Brighton Crest	OWS	E	35.8	Not met	F	87.0	2/2
Millerton / Sky Harbour Road	OWS	E	39.6	2/1	F	650.2	2/2
Millerton / Table Mountain	OWS	C	21.6	2/1	F	453.5	2/2
Millerton Road / Auberry Road	OWS	F	641.6	2/2	F	*	2/2
Auberry Road / Copper Avenue	OWS	F	862.5	2/2	F	*	2/2
Audubon / Nees	Signal	C	24.7	n/r	C	25.5	n/r
Palm / Nees	Signal	C	21.5	n/r	E	58.6	n/r
Palm / Herndon	Signal	E	72.8	n/r	F	183.2	n/r
Willow / Copper	Signal	C	21.4	n/r	C	24.2	n/r
Willow / International	Signal	B	18.9	n/r	B	16.3	n/r
Willow / Behymer	Signal	B	17.0	n/r	B	17.5	n/r
Willow / Perrin	Signal	B	15.6	n/r	B	17.8	n/r
Willow / Shepherd	Signal	C	26.6	n/r	C	34.0	n/r
Willow / Teague	Signal	C	21.8	n/r	C	23.7	n/r
Willow / Nees	Signal	C	29.4	n/r	E	55.2	n/r
Willow / Alluvial	Signal	C	27.7	n/r	D	52.2	n/r
Willow / Herndon	Signal	E	67.7	n/r	F	102.9	n/r
Willow / Sierra	Signal	C	25.6	n/r	F	191.4	n/r
Willow / Bullard	Signal	D	44.3	n/r	F	87.2	n/r
Willow / Barstow	Signal	D	52.2	n/r	F	161.4	n/r
Herndon / SR 41 SB Off-ramp	Signal	A	9.3	n/r	A	7.3	n/r
Herndon / SR 41 NB Off-ramp	Signal	E	69.2	n/r	F	80.7	n/r
Friant / Site Access	OWS	F	*	2/2	F	*	2/2

Year 2030 With-Project Conditions Queuing Analysis

The results of the year 2030 with-Project queuing analyses are summarized in Table 3.13-20. Project impacts are identified in bold type.

**Table 3.13-20
Queuing Analysis Summary – 2030 With-Project Conditions**

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Road 145 / SR 41	Storage Length	-	35	-	35	530	485	490	420
	A.M. Peak	151	205	1,663	716	96	977	561	964
	P.M. Peak	512	124	1,942	823	450	1,773	593	436
Friant / Copper River Entrance	Storage Length	-	-	215	215	-	230	250	-
	A.M. Peak	-	-	41	25	-	19	41	-
	P.M. Peak	-	-	37	37	-	14	95	-
Friant / Copper	Storage Length	-	-	250	295	-	200	235	-
	A.M. Peak	-	-	92	22	-	30	64	-
	P.M. Peak	-	-	67	37	-	36	47	-
Friant / Lakeview Drive	Storage Length	-	-	235		250	200	250	50
	A.M. Peak	16	16	113	10	18	19	11	6
	P.M. Peak	22	22	80	0	15	33	21	2
Friant / Champlain	Storage Length	-	-	-	-	245	255	230	-
	A.M. Peak	-	-	85	28	0	29	70	-
	P.M. Peak	-	-	79	40	0	37	86	-
Friant / Fort Washington	Storage Length	-	-	125	125	230	200	280	100
	A.M. Peak	20	20	313	56	40	82	135	5
	P.M. Peak	27	27	228	98	47	430	112	3
Friant / Shepherd	Storage Length	-	-	-	225	200	390	245	-
	A.M. Peak	-	-	455	33	0	140	64	-
	P.M. Peak	-	-	288	38	0	2,257	88	-
Friant / Audubon Drive	Storage Length	195	220	245	80	240	195	235	190
	A.M. Peak	260	36	132	46	56	51	82	342
	P.M. Peak	793	256	204	559	220	627	103	622
Friant / Fresno	Storage Length	245	200	250	200	255	195	190	195
	A.M. Peak	289	222	244	25	183	48	38	60
	P.M. Peak	87	180	267	40	520	495	205	285
Friant / SR 41 NB Off-ramp	Storage Length	-	-	-	-	760	760	-	-
	A.M. Peak	-	173	-	-	256	867	-	-
	P.M. Peak	-	0	-	-	219	821	-	-
Friant / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	265	265
	A.M. Peak	-	-	-	6	-	-	1,308	1,624
	P.M. Peak	-	-	-	550	-	-	458	550
Blackstone / Nees	Storage Length	245	200	250	200	250	145	265	140
	A.M. Peak	440	40	136	697	73	49	275	1,522
	P.M. Peak	526	86	321	754	188	412	457	613
Herndon / Blackstone	Storage Length	250	200	260	105	265	175	245	180
	A.M. Peak	140	69	128	265	80	50	172	77
	P.M. Peak	140	282	463	215	184	169	287	390
Fresno Street / Nees	Storage Length	240	205	245	200	245	200	240	175
	A.M. Peak	146	47	143	82	221	88	222	222
	P.M. Peak	498	101	181	129	298	222	231	272
Audubon / Nees	Storage Length	150	-	-	125	-	-	-	-
	A.M. Peak	118	-	-	53	-	-	-	734
	P.M. Peak	356	-	-	61	-	-	-	113

Table 3.13-20 (Continued)
Queuing Analysis Summary – 2030 With-Project Conditions

Signalized Intersection		EBL	EBR	WBL	WBR	NBL	NBR	SBL	SBR
Palm / Nees	Storage Length	95	95	-	205	260	355	140	-
	A.M. Peak	16	20	836	0	103	18	34	53
	P.M. Peak	7	26	709	1	140	127	189	121
Palm / Herndon	Storage Length	255	205	245	185	100	250	245	230
	A.M. Peak	570	84	275	450	186	104	136	699
	P.M. Peak	781	47	231	174	203	60	222	1,400
Willow / Copper	Storage Length	250	-	250	-	250	-	250	-
	A.M. Peak	55	53	98	37	58	35	88	47
	P.M. Peak	59	51	114	101	137	108	129	39
Willow / International	Storage Length	245	-	120	-	245	80	245	220
	A.M. Peak	52	59	23	26	106	13	44	37
	P.M. Peak	37	44	22	24	67	18	56	36
Willow / Behymer	Storage Length	245	-	90	-	255	-	255	-
	A.M. Peak	59	56	25	48	45	16	34	26
	P.M. Peak	48	37	34	54	80	25	53	25
Willow / Perrin	Storage Length	250	-	250	-	250	-	250	-
	A.M. Peak	67	51	42	24	51	27	36	51
	P.M. Peak	50	86	79	40	111	68	40	32
Willow / Shepherd	Storage Length	250	110	250	100	250	60	200	110
	A.M. Peak	188	53	22	50	119	20	132	173
	P.M. Peak	276	94	35	134	264	34	165	154
Willow / Teague	Storage Length	245	135	245	-	250	45	175	50
	A.M. Peak	28	120	115	35	65	49	43	29
	P.M. Peak	41	49	68	39	175	123	54	26
Willow / Nees	Storage Length	285	-	165	235	300	70	225	225
	A.M. Peak	82	89	69	47	151	62	92	43
	P.M. Peak	96	188	160	55	346	125	299	164
Willow / Alluvial	Storage Length	90	50	205	50	300	50	255	235
	A.M. Peak	48	122	110	58	152	60	59	36
	P.M. Peak	148	298	219	122	342	196	80	37
Willow / Herndon	Storage Length	255	255	305	120	315	185	255	110
	A.M. Peak	267	281	90	185	385	31	147	242
	P.M. Peak	412	298	133	277	407	101	283	242
Willow / Sierra	Storage Length	95	-	150	95	255	75	260	75
	A.M. Peak	37	-	133	78	179	30	124	27
	P.M. Peak	121	-	208	73	216	44	291	42
Willow / Bullard	Storage Length	250	-	265	-	270	135	225	135
	A.M. Peak	52	59	93	157	258	38	357	119
	P.M. Peak	178	545	174	762	196	160	367	89
Willow / Barstow	Storage Length	155	-	190	50	245	75	235	140
	A.M. Peak	50	295	374	128	567	62	156	139
	P.M. Peak	327	-	358	82	390	130	390	155
Herndon / SR 41 SB Off-ramp	Storage Length	-	-	-	-	-	-	285	285
	A.M. Peak	-	-	-	4	-	-	330	197
	P.M. Peak	-	-	-	0	-	-	284	176
Herndon / SR 41 NB Off-ramp	Storage Length	-	-	-	-	-	205	-	-
	A.M. Peak	-	0	-	-	894	972	-	-
	P.M. Peak	-	13	-	-	831	853	-	-

Year 2030 With-Project Road Segment Analyses

The results of the year 2030 with-Project road segment analyses are summarized in Table 3.13-21. Project impacts are identified in bold type.

**Table 3.13-21
Road Segment Analysis Summary – 2030 With-Project Conditions**

Road Segment	Lanes	A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS
Friant Road					
206 to Parker	4	2,275	C	2,599	D
Parker to Granite	4	2,260	C	2,566	D
Granite to Root	4	2,242	C	2,553	D
Root to Lost Lake	4	2,461	C	2,758	D
Lost Lake to Willow	4	2,715	B	3,058	C
Willow to Copper River	4	1,718	C	1,964	C
Copper River to Copper	4	1,827	C	2,049	D
Copper to Lakeview	4	1,981	C	2,317	D
Lakeview to Champlain	4	2,561	D	2,925	D
Champlain to Ft. Washington	4	3,069	E	3,221	F
Ft. Washington to Shepherd	6	3,887	D	4,108	D
Shepherd to Audubon	6	6,137	F	7,227	F
Audubon to Fresno	6	5,224	F	6,443	F
Fresno to SR 41	6	6,112	F	6,510	F
Willow Avenue					
Friant to Silaxo	2-U	1,504	D	2,122	E
Silaxo to Copper	2-U	1,504	D	2,122	E
Copper to International	6	1,730	C	2,383	C
International to Behymer	6	2,133	C	2,420	C
Behymer to Perrin	6	2,310	C	2,686	C
Perrin to Shepherd	6	2,740	C	3,584	D
Shepherd to Teague	6	2,048	C	3,040	C
Teague to Nees	6	2,636	C	3,562	D
Nees to Alluvial	6	2,790	C	3,825	D
Alluvial to Herndon	6	3,490	D	5,106	F
Herndon to Sierra	6	3,544	D	5,051	F
Sierra to Bullard	6	3,399	D	5,147	F
Bullard to Barstow	6	3,018	C	5,025	F
Millerton Road					
206 to Winchell Cove	2-U	1,570	F	1,839	F
Winchell Cove to Brighton Crest	2-U	1,356	E	1,975	F
Brighton Crest to Sky Harbour	2-U	1,301	D	1,894	F
Sky Harbour to Table Mountain	2-U	1,275	D	1,803	F
Table Mountain to Auberry	2-U	1,271	D	1,816	F
Road 206					
West of Friant Road	2-U	2,371	E	2,611	F

All roadways are divided unless otherwise indicated

U – Indicates undivided roadway

Policy Consistency

Consistent with Fresno County General Plan Policies, the Project includes the following proposed Friant Community Plan policies related to transportation and circulation:

- Goal 1 Provide for a unified and coordinated street and highway system.*
- Policy 1.1 Plan for a street and highway system that moves people and goods in an orderly, safe and efficient manner.*
- Policy 1.2 Encourage the development of the County's system of streets and highways in a manner that is cost effective.*
- Policy 1.3 Promote safe and convenient access to commercial development along Friant Road without undue conflicts to through traffic.*
- Policy 1.4 Promote a street and highway system that can accommodate alternative modes of travel.*
- Policy 1.5 Promote safe and convenient access within the residential portions of the community including use of lighting and crosswalks.*
- Policy 1.6 Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.*
- Goal 2 Provide multi-modal transportation linkages to Fresno, within the region and town.*
- Policy 2.1 Support efforts to establish multiple forms of transit within the Community of Friant, including utilizing the existing rail right-of-way for trails for bicycles and pedestrians, Neighborhood Electric Vehicle access and a potential future light rail route.*
- Policy 2.2 Promote the establishment of a town-wide pedestrian walkway and trail network that promotes the safe movement of people throughout the Community of Friant.*
- Policy 2.3 Encourage the development of multi-use trails throughout the Friant Community Plan Area for bicyclists and pedestrians.*
- Goal 3 Provide enhancement and linkages to the San Joaquin River and Lost Lake Recreation Area.*
- Policy 3.1 Encourage the provision of pedestrian and bicycle linkages to Lost Lake Recreation Area and along the San Joaquin River.*
- Policy 3.2 Support efforts to implement the San Joaquin River Parkway Master Plan.*

Friant Ranch Specific Plan Transportation Element

While the Friant Ranch Specific Plan does not include goals and policies specifically relating to traffic and circulation, it does include a Circulation Plan; street types and classifications; the accommodation of NEVs by providing special eight-foot travel lanes on primary roadways; and pedestrian circulation through a multitude of trails. A multi-modal transportation easement up to 20 feet in width is planned within an unused railroad easement that will include a multi-purpose trail and also reserve space for potential future transit stops.

Summary of Impacts and Mitigation Measures

The traffic impact study identified necessary improvements to ensure acceptable levels of service under the Existing-plus-Project and the Year 2030 plus Project scenarios. Tables 3.13-22 and 3.13-23 present a summary of the mitigations determined for each analysis scenario at the study intersections and road segments. The tables also present fair share percentages where applicable.

Funding for Transportation Projects

The County of Fresno has not established a fee program for transportation improvement projects. Historically, when a transportation need is identified by a traffic impact study for a specific development project, the County has collected a fair share of the cost of the required cumulative mitigation measure from the development project and other subsequent projects.

Where a fair share mitigation fee is identified in the mitigation measures set forth in this DEIR, the Board of Supervisors, pursuant to Ordinance Code Section 17.88, shall approve, by resolution or as part of the development agreement, a fair share fee for the Project applicant based on then-current calculations of the pro-rata share and costs for these improvements, with an inflation adjuster based on the Engineering News Record (ENR) 20 Cities Construction Cost Index. The Project applicant shall pay the fair share fee for each unit prior to issuance of a building permit for such unit.

The traffic impact study prepared for this EIR used the best information currently available to estimate the Project's traffic volume as a percentage of the future cumulative traffic volume at the intersections and roadways, as shown in Tables 3.13-22 and 3.13-23. If the identified improvements are provided for in any alternative funding program, or if any other intensive land use projects are subsequently approved that will measurably affect the intersection operation, it is possible that the Project's fair share percentage would differ from the estimated percentage of the cumulative traffic volume shown in Tables 3.13-22 and 3.13-23. The Project applicant may request recalculation of the estimated percentages and improvement costs in conjunction with the review of a tentative tract map or site plan review application, and shall be responsible for funding all costs associated with recalculating said percentages and improvement costs, including preparation of any necessary updated traffic analysis.

For non-County roadway projects, the County shall release the fair share funds paid by the applicant to the appropriate jurisdiction in full or in part, as appropriate, upon receipt of construction invoices for the improvements identified in the Mitigation Measures.

**Table 3.13-22
Summary of Intersection Mitigations**

Intersection	Existing Plus Project	2030 With Project	Mitigation Recommended	Fair Share Percent
Road 145 / SR 41		2030-1 interchange	3.13-3a Fair share	3.2
Road 145 / Road 206		2030-2 signals and lanes	3.13-4a Fair share of 2030 improvements	7.2
SR 41 / Avenue 15	E-1 Signals	2030-3 interchange	3.13-3c Fair share of 2030 improvements	0.8
SR 41 / Avenue 12	E-2 2nd NBLT		3.13-3b Fair share of 2030 improvements	0.5
Friant Road / Road 206 (North Fork Road)	E-3 signals and lanes	2030-4 signals and lanes	3.13-5a Fair share of 2030 improvements	17.2
Friant Road / Parker Avenue		2030-5	3.13-5p Warrants not met, adverse but not significant	
Friant Road / Granite Avenue		2030-6	3.13-5q Warrants not met, adverse but not significant	
Friant Road / Root Avenue		2030-7	3.13-5r Warrants not met, adverse but not significant	
Friant Road / Site Access 1	E-12 signals and lanes	2030-23 signals and lanes	3.13-1 Construct signals and lanes	100.0
Friant Road / Lost Lake Road (Site Access 2)	E-4 signals and lanes	2030-8 signals and lanes	3.13-2 / 3.13-5b Construct signals and lanes	100.0
Friant Road / Willow Avenue	E-5 signals	2030-9 signals and lanes	3.13-5c Fair share of 2030 improvements	29.6
Friant Road / Entrance to Copper River				
Friant Road / Copper Avenue				
Friant Road / Lakeview Drive				
Friant Road / Champlain Avenue				
Friant Road / Fort Washington				
Friant Road / Shepherd Avenue	E-6 2nd NBRT		3.13-6a Fair share of 2030 improvements	6.3
Friant Road / Audubon Drive	E-7		3.13-6b Significant and Unavoidable	
Friant Road / Fresno Street			3.13-6c Significant and Unavoidable	
Friant Road / SR 41 NB Off-ramp		2030-10 lane additions*	3.13-3d Fair share of 2030 improvements	*
Friant Road / SR 41 SB Off-ramp		2030-11 lane additions*	3.13-3e Fair share of 2030 improvements	*
Blackstone Avenue / Nees Avenue				
Herndon Avenue / Blackstone Avenue				
Fresno Street / Nees Avenue				
Millerton Road / Winchell Cove Road		2030-12 signals and lanes	3.13-5d Fair share of 2030 improvements	3.3
Millerton Road / Brighton Crest Drive		2030-13 signals and lanes	3.13-5e Fair share of 2030 improvements	3.7
Millerton Road / Sky Harbour Road		2030-14 signals and lanes	3.13-5f Fair share of 2030 improvements	2.9
Millerton Road / Table Mountain Road		2030-15 signals and lanes	3.13-5g Fair share of 2030 improvements	2.1
Millerton Road / Auberry Road		2030-16 signals and lanes	3.13-5h Fair share of 2030 improvements	1.8
Auberry Road / Copper Avenue		2030-17 signals and lanes	3.13-5i Fair share of 2030 improvements	0.7
Audubon Drive / Nees Avenue	E-8 signals		3.13-6d Fair share of 2030 improvements	2.0
Palm Avenue / Nees Avenue				
Palm Avenue / Herndon Avenue				
Willow Avenue / Copper Avenue			3.13-5j Fair share of signals	10.6
Willow Avenue / International Avenue				
Willow Avenue / Behymer Avenue				
Willow Avenue / Perrin Avenue	E-9 signals			
Willow Avenue / Shepherd Avenue	E-10 signals			
Willow Avenue / Teague Avenue				
Willow Avenue / Nees Avenue	E-11 add lanes	2030-18	3.13-7a Significant and Unavoidable	
Willow Avenue / Alluvial Avenue				

**Table 3.13-22
Summary of Intersection Mitigations (Continued)**

Intersection	Existing Plus Project	2030 With Project	Mitigation Recommended	Fair Share Percent
Willow Avenue / Herndon Avenue		2030-19	3.13-7b Significant and Unavoidable	
Willow Avenue / Sierra Avenue		2030-20	3.13-7c Significant and Unavoidable	
Willow Avenue / Bullard Avenue		2030-21	3.13-7d Fair Share & Significant & Unavoidable	1.5
Willow Avenue / Barstow Avenue		2030-22	3.13-7e Fair Share of 2030 improvements	1.0
Herndon Avenue / SR 41 SB Off-ramp				
Herndon Avenue / SR 41 NB Off-ramp				

- Funded in Measure C Teir 1 - To be constructed by others
- Project to construct
- Significant and unavoidable-improvements not feasible
- Adverse but not significant because signals not warranted
- Project fair share required
- Measure C Teir 2 requires fair share
- City of Fresno Constructing

*Caltrans has established per-trip fees for certain improvements. Those not included would require a fair share.
 41 Southbound on ramp from eastbound Friant: add ramp lane and aux lane, \$1,200 per trip
 Widen Friant Avenue under 41 with 4 additional lanes: \$900 per trip
 41 Northbound on ramp from eastbound Friant: add ramp lane and aux lane, \$757 per trip
 41 Southbound on ramp from westbound Friant: add ramp lane and aux lane, \$1,200 per trip
 41 Northbound on ramp from westbound Friant: add ramp lane and aux lane, \$1,300 per trip
 41 Southbound off ramp to Friant, add ramp lane and aux lane, \$834 per trip

These fees may be replaced by the Regional Transportation Mitigation Fee

**Table 3.13-23
Summary of Road Segment Mitigations**

Road Segment	Existing Plus Project	2030 With Project	Mitigation Recommended	Fair Share Percent
Friant Road				
206 to Parker		2030-24 More than 4 lanes	3.13-5k Significant and unavoidable	
Parker to Granite		2030-24 More than 4 lanes	3.13-5k Significant and unavoidable	
Granite to Root		2030-24 More than 4 lanes	3.13-5k Significant and unavoidable	
Root to Lost Lake	E-13 widen to four lanes	2030-24 More than 4 lanes	3.13-5k Significant and unavoidable	
Lost Lake to Willow				
Willow to Copper River				
Copper River to Copper				
Copper to Lakeview				
Lakeview to Champlain				
Champlain to Ft. Washington		2030-25 widen to 6 lanes	3.13-6e Fair share of 5th and 6th lanes	14.7
Ft. Washington to Shepherd	E-14 widen SB to 3 lanes			
Shepherd to Audubon	E-14 more than 6 lanes	2030-26 more than 6 lanes	3.13-6f Significant and unavoidable	
Audubon to Fresno		2030-26 more than 6 lanes	3.13-6f Significant and unavoidable	
Fresno to SR 41	E-14 more than 6 lanes	2030-26 more than 6 lanes	3.13-6f Significant and unavoidable	
Willow Avenue				
Friant to Silaxo		2030-27 Widen to 4 lanes	3.13-5l Fair share of widening	18.9
Silaxo to Copper		2030-28 Widen to 4 lanes	3.13-5m Fair share of widening	18.9
Copper to International				
International to Behymer				
Behymer to Perrin				
Perrin to Shepherd				
Shepherd to Teague				
Teague to Nees				
Nees to Alluvial	E-15 widen to 6 lanes			
Alluvial to Herndon		2030-29 more than 6 lanes	3.13-7f Significant and unavoidable	
Herndon to Sierra		2030-29 more than 6 lanes	3.13-7f Significant and unavoidable	
Sierra to Bullard		2030-29 more than 6 lanes	3.13-7f Significant and unavoidable	
Bullard to Barstow		2030-29 more than 6 lanes	3.13-7f Significant and unavoidable	
Millerton Road				
206 to Winchell Cove		2030-30 widen to 4 lanes	3.13-5n Fair share of widening	4.8
Winchell Cove to Brighton Crest		2030-30 widen to 4 lanes	3.13-5n Fair share of widening	4.0
Brighton Crest to Sky Harbour		2030-30 widen to 4 lanes	3.13-5n Fair share of widening	3.2
Sky Harbour to Table Mountain		2030-30 widen to 4 lanes	3.13-5n Fair share of widening	2.4
Table Mountain to Auberry		2030-30 widen to 4 lanes	3.13-5n Fair share of widening	2.0
Road 206				
West of Friant Road		2030-31 widen to 4 lanes	3.13-4b / 3.13-5o Fair share of widening	17.1
	Funded in Measure C Teir 1 - To be constructed by others		Project fair share required	
	Significant and unavoidable-improvements not feasible		Measure C Teir 2 requires fair share	

Other funding sources have been established for transportation improvement projects within the study area. The 2006 Measure C Extension Plan includes a half-cent sales tax throughout Fresno County for a 20-year extension period to fund freeway extensions, improve roads, and enhance public safety. Funding for the Regional Transportation Program Extension Projects comes from three sources:

- 50 percent from Measure C;
- 20 percent from the State Transportation Improvement Program (STIP); and
- 30 percent from the Regional Transportation Mitigation Fee Program (RTMF).

The following are projects included in the Measure C Extension within the Project study area:

- Tier 1 Urban Project: Widening of Willow Avenue to a six-lane divided road with retrofit of existing bike lanes between Barstow Avenue and Copper Avenue (expected to be complete between Shepherd and Herndon Avenues by approximately 2011 with signals at Shepherd Avenue; expected to be complete between Copper and Shepherd Avenues by approximately 2014 with signals at Perrin Avenue; sections south of Herndon Avenue not assumed to be complete until 2030). City of Fresno staff indicated that the intersection of Willow and Sierra Avenues will not be widened;
- Tier 1 Urban Project: Complete the widening of Herndon Avenue to a six-lane divided road with retrofit of existing bike lanes between SR 99 and DeWolf Avenue (expected to be complete by 2012);
- Tier 1 Rural Project: Widen Friant Road to a four-lane road between Copper Avenue and Millerton Road (already complete south of Lost Lake; expected to be complete to Road 206 by approximately 2010);
- Tier 2 Urban Project: Widen Friant Road to a six-lane divided road between Shepherd Avenue and Copper Avenue (not funded, no scheduled construction);
- Tier 2 Rural Project: Widen Millerton Road to a four-lane road between Friant Road and Sky Harbour Road (not funded, no scheduled construction).

The proposed RTMF Program is summarized in a report entitled Fresno Regional Transportation Mitigation Fee Final Report dated August 2008 by PB Americas, Inc. The RTMF Program has not yet been adopted by local jurisdictions but is expected to be adopted by the County of Fresno based on information provided by County staff.

The City of Fresno has established a Traffic Signal Mitigation Impact Fee (TSMI) that funds known traffic signal improvements. The improvements are typically assumed to be constructed by the year 2025. Projects within the City of Fresno mitigate their fair share of cumulative impacts requiring traffic signals by paying into the fee program. The following projects are included in the TSMI fee:

- Friant Road / Willow Avenue (50 percent of traffic signals with dual lefts);
- Friant Road / Entrance to Copper River (traffic signals already constructed);

- Friant Road / Copper Avenue (traffic signals already constructed);
- Friant Road / Shepherd Avenue (triple westbound left-turn lanes);
- Audubon Drive / Nees Avenue (traffic signals);
- Palm Avenue / Nees Avenue (traffic signals with dual lefts already constructed);
- Willow Avenue / Copper Avenue (50 percent of traffic signals with dual lefts);
- Willow Avenue / International Avenue (50 percent of traffic signals with dual lefts, already constructed);
- Willow Avenue / Behymer Avenue (50 percent of traffic signals with dual lefts, already constructed);
- Willow Avenue / Perrin Avenue (50 percent of traffic signals with dual lefts);
- Willow Avenue / Shepherd Avenue (50 percent of traffic signals with dual lefts, current capital improvement project out to bid);
- Willow Avenue / Nees Avenue (remaining traffic signal improvements);
- Willow Avenue / Alluvial Avenue (50 percent of traffic signals with dual lefts, signals already constructed);
- Willow Avenue / Herndon Avenue (additional lanes);
- Willow Avenue / Bullard Avenue (50 percent of dual left-turn lanes); and
- Herndon Avenue / State Route 41 Northbound Off-ramp (additional off-ramp lane).

Caltrans typically collects a per-trip fee for the interchange of SR 41 and Friant Road which allows a project to mitigate its fair share of impacts to the interchange. The following is a summary of the per-trip fees typically collected:

- SR 41 southbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip;
- Widen Friant Road under SR 41 with four additional lanes, \$900 per trip;
- SR 41 northbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$757 per trip;
- SR 41 southbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip;
- SR 41 northbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,300 per trip; and
- SR 41 southbound off ramp to Friant Road: additional ramp lane and auxiliary lane, \$834 per trip.

Proposed development projects in the City of Clovis typically mitigate their fair share of cumulative impacts by paying City development fees. City of Clovis development fees would apply to signalization and/or road improvements within the City of Clovis sphere of influence at, and between, the following intersections:

- Willow Avenue / Copper Avenue;
- Willow Avenue / International Avenue;
- Willow Avenue / Behymer Avenue;
- Willow Avenue / Perrin Avenue;
- Willow Avenue / Shepherd Avenue;
- Willow Avenue / Teague Avenue;
- Willow Avenue / Nees Avenue;

- Willow Avenue / Alluvial Avenue;
- Willow Avenue / Herndon Avenue;
- Willow Avenue / Sierra Avenue;
- Willow Avenue / Bullard Avenue; and
- Willow Avenue / Barstow Avenue.

The County of Madera has established a Road Impact Fee that allows development projects in the County of Madera to mitigate their fair share of cumulative impacts. The current fee provides funds for improvements identified within the Project study area along SR 41 and at the intersection of Road 145 and Road 206. The County is currently in the process of updating the fee. The improvements required to mitigate cumulative impacts are not considered to be fully funded under the existing fee. The County of Madera has authorized Table Mountain Rancheria to add a 2.2-mile section of Road 206 east of Road 145 and a 3.3-mile section of Road 145 east of SR 41 to the BIA Indian Reservation Road inventory system.

Impacts and Recommended Mitigation for Deficient Roadway Segments and Intersections Attributable Solely to the Project

Impact #3.13-1 (TR-20): The Project will cause the level of service to fall below the minimum acceptable level of service at the intersection of Friant Road and the Site Access north of Lost Lake Road. This is a ***significant impact***.

Mitigation Measure #3.13-1 (TR-20): The Project shall construct traffic signals at the intersection of Friant Road and the Site Access intersection north of Lost Lake Road prior to construction of the 201st residential unit and prior to the construction of any commercial/office aspects of the Project if an engineering study indicates that the signals are warranted at that time. The applicant shall utilize the services of a traffic engineer to determine if traffic signals are warranted based on CMUTCD traffic signal warrants. If traffic signals are not warranted, then traffic signals shall not be installed and an engineering study shall be performed at the discretion of the Director prior to each subsequent interval of 200 dwelling units and prior to each phase of commercial construction. The Project shall install traffic signals at the intersection when they are warranted at the discretion of the Director.

This signalization will also provide an opportunity to satisfy the Friant Community Plan Policy 1.6 which states, “*Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.*”

Effectiveness of Mitigation: With implementation of this mitigation the intersection will operate at LOS B and the impact will be reduced to ***less than significant***.

Impact #3.13-2 (TR-6): The Project will cause the level of service to fall below the minimum acceptable level of service at the intersection of Friant Road and Lost Lake Road. This is a ***significant impact***.

Mitigation Measure #3.13-2 (TR-6): The Project shall construct traffic signals at the intersection of Friant Road and Lost Lake Road prior to construction of the 201st residential unit and prior to the construction of any commercial/office aspects of the Project.

Effectiveness of Mitigation: With implementation of this mitigation the intersection will operate at LOS B and the impact will be reduced to *less than significant*.

Impacts and Recommended Mitigation for Project's Contribution to Existing or Expected Deficiencies in Intersections and Roadway Segments

As noted in the discussion of existing conditions and Year 2030 no Project conditions above, regional growth in the Project vicinity has created, and is anticipated to create, deficiencies in the regional roadway network. Where deemed significant, the Project's contribution to these deficiencies are noted below. To the extent a deficient roadway or intersection is not discussed below, but is identified as deficient under the existing conditions or year 2030 no Project conditions, the Project's contribution to the deficiency, if any, is deemed less than significant and not cumulatively considerable.

Impact #3.13-3: The Project will contribute to the following deficiencies to Caltrans intersections:

Impact #3.13-3a (TR-1): The Project will exacerbate anticipated delays and a cumulative LOS that will fall below the minimum acceptable LOS in the 2030 condition without the Project at the intersection of SR 41 and Road 145 under the 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-3b (TR-2): The Project will exacerbate existing delays and an existing LOS already below the minimum acceptable LOS at the intersection of SR 41 and Avenue 12, and is expected to exacerbate a cumulative LOS that will fall below the acceptable LOS in the anticipated 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Impact #3.13-3c (TR-3): The Project will exacerbate an existing LOS already below the minimum acceptable LOS at the intersection of SR 41 and Avenue 15, and is expected to exacerbate a cumulative LOS that will fall below the acceptable LOS in the anticipated 2030 cumulative condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Impact #3.13-3d (TR-11): The Project will exacerbate a cumulative LOS anticipated to fall below the minimum acceptable LOS in the 2030 cumulative condition without the Project at the intersection of Friant Road and the SR 41 northbound off ramp. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-3e (TR-12): The Project will exacerbate delays under existing conditions, and will exacerbate anticipated delays and unacceptable LOS in the cumulative 2030 No Project condition at the intersection of Friant Road and SR 41 southbound off ramp. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. The Project will have an individually and cumulatively significant impact on this intersection. This is a *significant impact*

Mitigation Measure #3.13-3: Prior to issuance of a building permit, the applicant shall contribute to its pro rata share of the cost of future off-traffic improvements to Caltrans intersections through payment of a per trip fee to Caltrans. If Caltrans has not established a per trip fee prior to issuance of a building permit, the applicant shall contribute a fair share fee to the County for the identified improvements based on the then-current estimated traffic volume attributable to the Project. The traffic improvements and current Caltrans fees or estimated percentage of the 2030 cumulative traffic volume are as follows:

Mitigation Measure #3.13-3a (TR-1): The intersection of SR 41 and Road 145 should be converted to an interchange by the year 2030. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 3.2%.

Mitigation Measure #3.13-3b (TR-2): The intersection of SR 41 and Avenue 12 should be converted to an interchange by the year 2030. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 0.5%.

Mitigation Measure #3.13-3c (TR-3): The intersection of SR 41 and Avenue 15 should be converted to an interchange by the year 2030. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. Caltrans has not established a set fee for this intersection at this time. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19) is 0.8 %. Caltrans has not established a set fee for this intersection at this time.

Mitigation Measure #3.13-3d (TR-11): The intersection of Friant Road and the State Route 41 northbound offramp is expected to operate at LOS C with the addition of a fifth westbound

through lane. It is contemplated that a future Measure C Regional Transportation Mitigation Fee program may include mitigation for this intersection. Caltrans typically collects per-trip fees for this interchange as follows:

- Widen Friant Road under SR 41 with four additional lanes, \$900 per trip;
- SR 41 northbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$757 per trip; and
- SR 41 northbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,300 per trip.

Mitigation Measure #3.13-3e (TR-12): The intersection of Friant Road and the State Route 41 southbound offramp is expected to operate at LOS C with the addition of a second southbound left-turn lane and a second southbound right-turn lane. It is contemplated that a future Measure C Regional Transportation Mitigation Fee program may include mitigation for this intersection. Caltrans typically collects per-trip fees for this interchange as follows:

- Widen Friant Road under SR 41 with four additional lanes, \$900 per trip;
- SR 41 southbound on ramp from westbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip;
- SR 41 southbound on ramp from eastbound Friant Road: additional ramp lane and auxiliary lane, \$1,200 per trip; and
- SR 41 southbound off ramp to Friant Road: additional ramp lane and auxiliary lane, \$834 per trip.

If a per trip fee has not been established by Caltrans or through the Measure C Regional Transportation Mitigation Fee program for an intersection(s) identified above prior to issuance of a building permit, the Board of Supervisors, pursuant to Ordinance Code Section 17.88, shall approve, by resolution or as part of the development agreement, a fair share fee for the Project applicant based on then-current calculations of the pro-rata share and costs for these improvements, with an inflation adjuster based on the Engineering News Record (ENR) 20 Cities Construction Cost Index. The Project applicant would pay the fair share fee to the County for each unit prior to issuance of a building permit for such unit. Upon receipt of notice of an established fair share program or construction invoices for the identified improvements, the County would release the fair share funds to Caltrans.

The traffic impact study prepared for this EIR used the best information currently available to estimate the Caltrans fees or the Project's traffic volume as a percentage of the future cumulative traffic volume at the intersections and roadways, as shown in Tables 3.13-19 and 3.13-20. If the identified improvements are provided for in any alternative funding program or if any other intensive land use projects are subsequently approved that will measurably affect the intersection operation, it is possible that the Project's fair share percentage or Caltrans fee would differ from the estimated percentages and per trip fees discussed above. The Project applicant may request recalculation of the estimated percentages and improvement costs in conjunction with the review of a tentative tract map or site plan review application, and shall be responsible for funding all costs associated with recalculating said percentages and improvement costs, including preparation of any necessary updated traffic analysis.

Effectiveness of Mitigation: This mitigation measure provides funding for improvements that will mitigate the impacts to Caltrans intersections. Upon completion of the identified improvements, the impact would be reduced to *less than significant* by attaining acceptable levels of service (LOS C) on the Caltrans intersections.

The improvements described within this mitigation measure are outside the jurisdiction of Fresno County and within the responsibility of Caltrans. During the environmental review for this Project, the County solicited the assistance of Caltrans in formulating the mitigation measures for impacts to the Caltrans intersections.

The County will require payment of any established Caltrans per trip fees and, where per trip fees are not established for a particular intersection, collect the applicant's fair share fee for the improvements, and provide the funds to Caltrans upon receipt of construction invoices for the identified improvements. However, since Caltrans is responsible for the timing and nature of improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact, if at all, despite the County's best efforts. Though the applicant will pay its fair share or Caltrans per trip fees for the improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact. If a proposed improvement is not fully funded and constructed before completion of the Project, significant impacts to the intersection or roadway, in the form of delays and unacceptable levels of service, could occur until Caltrans completes the improvements. Therefore, the impact will be *significant and unavoidable*.

Impact #3.13-4: The Project will contribute to the following deficiencies to Madera County intersections and roadways:

Impact #3.13-4a (TR-4): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS in the anticipated 2030 No Project condition at the intersection of Road 145 and Road 206. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-4b (TR-34): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS in the anticipated 2030 No Project condition on the Madera County segment of Road 206 west of Friant Road. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Mitigation Measure #3.13-4: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements necessary to accommodate the 2030 cumulative condition through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:

Mitigation Measure #3.13.4a (TR-4): The intersection of Road 145 and Road 206 will require signalization with two northbound left-turn lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 7.2 %.

Mitigation Measure #3.13.4b (TR-34): The Madera County segment of Road 206 west of Friant Road should be widened to four lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 17.1%.

The Board of Supervisors, pursuant to Ordinance Code Section 17.88, shall approve, by resolution or as part of the development agreement, a fair share fee for the Project applicant based on then-current calculations of the pro-rata share and costs for these improvements, with an inflation adjuster based on the Engineering News Record (ENR) 20 Cities Construction Cost Index. The Project applicant shall pay the fair share fee for each unit prior to issuance of a building permit for such unit.

The traffic impact study prepared for this EIR used the best information currently available to estimate the Project's traffic volume as a percentage of the future cumulative traffic volume at the intersections and roadways, as shown in Tables 3.13-19 and 3.13-20. If the identified improvements are provided for in any alternative funding program, or if any other intensive land use projects are subsequently approved that will measurably affect the intersection operation, it is possible that the Project's fair share percentage would differ from the estimated percentage of the cumulative traffic volume shown in Tables 3.13-19 and 3.13-20. The Project applicant may request recalculation of the estimated percentages and improvement costs in conjunction with the review of a tentative tract map or site plan review application, and shall be responsible for funding all costs associated with recalculating said percentages and improvement costs, including preparation of any necessary updated traffic analysis.

The County shall release the fair share funds paid by the applicant to Madera County in full or in part, as appropriate, upon receipt of construction invoices for the improvements to these roadways.

Effectiveness of Mitigation: This mitigation measure provides funding for improvements that will mitigate the impacts to roadways and intersections within Madera County. Upon completion of the identified improvements, the impact would be reduced to less than significant by attaining acceptable levels of service for the roadways and intersections within Madera County.

The improvements described within this mitigation measure are outside the jurisdiction of Fresno County and within the responsibility of Madera County. During the environmental review for this Project, the County solicited the assistance and interest of Madera County in formulating the mitigation measure for impacts to the roadways within Madera County. This mitigation measure provides for continued interaction with Madera County. The County will collect the applicant's fair share fee for the improvements, and provide the funds to Madera County upon receipt of construction invoices for the identified improvements. However, since Madera County is responsible for the timing and nature of improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact, if at all, despite the County's best efforts. If a proposed improvement

is not fully funded and constructed prior to completion of the Project, there may be significant impacts to the intersection or roadway, in the form of unacceptable levels of service, until such time as the identified improvements are in place. Therefore, the impact is significant and unavoidable.

Impact #3.13-5: The Project will contribute to the following deficiencies to Fresno County* intersections and roadways:

Impact #3.13-5a (TR-5): The Project will contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Friant Road and North Fork Road (Road 206) under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Impact #3.13-5b (TR-6): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Friant Road and Lost Lake Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. However, mitigation measure 3.13-1a requires the applicant to construct the requisite improvement. Construction of the intersection will achieve a LOS B with the cumulative condition plus Project and thus reduce the Project's contribution to less than cumulatively considerable. *This is a less than significant impact*.

Impact #3.13-5c (TR-7): The Project will contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Friant Road and Willow Avenue under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Impact #3.13-5d (TR-13): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Millerton Road and Winchell Cove Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5e (TR-14): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Millerton Road and Brighton Crest Drive under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5f (TR-15): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Millerton Road and Sky Harbour Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5g (TR-16): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Millerton Road and Table Mountain Road under

the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5h (TR-17): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Millerton Road and Auberry Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5i (TR-18): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Copper Avenue and Auberry Road under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*. (County of Fresno jurisdiction, City of Fresno Sphere of Influence)

Impact #3.13-5j (TR-21): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS at the intersection of Willow and Copper Avenues under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*. (County of Fresno jurisdiction, City of Fresno Sphere of Influence)

Impact #3.13-5k (TR-27): The Project will contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition at the following County of Fresno segments of Friant Road:

- Between North Fork Road (Road 206) and Parker Avenue;
- Between Parker and Granite Avenues;
- Between Granite and Root Avenues; and
- Between Root Avenue and Lost Lake Road.

The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Impact #3.13-5l (TR-30): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition on Willow Avenue between Friant Road and Silaxo Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5m (TR-31): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition on Willow Avenue between Silaxo Avenue and Copper Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5n (TR-33): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition on Millerton Road at the following locations:

- Between North Fork Road (Road 206) and Winchell Cove Road;
- Between Winchell Cove Road and Brighton Crest Drive;
- Between Brighton Crest Drive and Sky Harbour Road;
- Between Sky Harbour Road and Table Mountain Road;
- Between Table Mountain Road and Auberry Road.

The Project’s contribution to the anticipated cumulative condition is cumulatively considerable. These are *significant impacts*.

Impact #3.13-5o (TR-34): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable LOS in the anticipated 2030 No Project condition on the Fresno County segment of Road 206 west of Friant Road. The Project’s contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5p (TR-35): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the intersection of Friant Road and Parker Avenue. The Project’s contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5q (TR-36): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the intersection of Friant Road and Granite Avenue. The Project’s contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-5r (TR-37): The Project will exacerbate a cumulative LOS that will fall below the minimum acceptable level of service in the anticipated 2030 no Project condition at the intersection of Friant Road and Root Avenue. This is a *significant impact*.

*Fresno County roadways and intersections that also fall within the jurisdictions of City of Fresno and City of Clovis are addressed in Impact # 3.13-6 and 3.13-7.

Mitigation Measure #3.13-5: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:

Mitigation Measure #3.13-5a (TR-5): The intersection of Friant Road and North Fork Road (Road 206) should be signalized to achieve an acceptable level of service (LOS C). The ultimate lane configurations required are as follows:

- Northbound: two left-turn lanes and two through lanes with a shared right turn
- Southbound: one left-turn lane, two through lanes, and one right-turn lane
- Eastbound: two left-turn lanes, one through lane, and two right-turn lanes
- Westbound: one left-turn lane and one shared through/right-turn lane

The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 17.2%. This signalization will also provide an opportunity to satisfy the Friant Community Plan Policy 1.6 which states, “*Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.*”

Mitigation Measure #3.13-5b (TR-6): No additional mitigation required. See Mitigation Measure 3.13-1.

Mitigation Measure #3.13-5c (TR-7): Signalization of the intersection of Friant Road and Willow Avenue to achieve an acceptable level of service (LOS B). The ultimate lane configurations required are as follows:

Northbound: one left-turn lane (protected), two through lanes, and one right-turn lane
Southbound: two left-turn lanes (protected), two through lanes with a shared right turn
Eastbound: one shared lane (permissive)
Westbound: one shared left-turn/through lane (permissive) and one right-turn lane

The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 29.6%.

Mitigation Measure #3.13-5d (TR-13): Signalization of Millerton Road and Winchell Cove Road and widening of Millerton Road to four lanes is needed to achieve appropriate levels of service to accommodate the 2030 cumulative condition plus the Project. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 3.3%. The Measure C Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road. However, the Tier 2 projects are not yet funded.

Mitigation Measure #3.13-5e (TR-14): The intersection of Millerton Road and Brighton Crest Drive should be signalized and Millerton Road should be widened to four lanes to accommodate the 2030 cumulative condition plus Project. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 3.7%. The Measure C

Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road. However, the Tier 2 projects are not yet funded.

Mitigation Measure #3.13-5f (TR-15): The intersection of Millerton Road and Sky Harbour Road should be signalized and Millerton Road should be widened to four lanes to provide an acceptable level of service (LOS A) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 2.9%. The Measure C Tier 2 Rural project plans to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road. However, the Tier 2 projects are not yet funded.

Mitigation Measure #3.13-5g (TR-16): The intersection of Millerton Road and Table Mountain Road should be signalized and Millerton Road should be widened to four lanes. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 2.1%.

Mitigation Measure #3.13-5h (TR-17): The intersection of Millerton Road and Auberry Road should be signalized. The intersection will likely require either two northbound left turn lanes on Millerton Road or an extended single left-turn lane to accommodate queues up to approximately 600 feet in length in the ultimate condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 1.8%.

Mitigation Measure #3.13-5i (TR-18): The intersection of Copper Avenue and Auberry Road should be signalized to provide an acceptable level of service (LOS B) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 0.7%. The ultimate lane configurations required are as follows:

Southbound: one left-turn lane and one right-turn lane
Eastbound: two left-turn lanes and two through lanes
Westbound: two through lanes with a shared right turn.

Mitigation Measure #3.13-5j (TR-21): The intersection of Willow and Copper Avenues should be signalized to provide an acceptable level of service (LOS D) under the 2030 condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 10.6%. The additional lanes on Willow Avenue are included in the Measure C Tier 1 Urban project to widen Willow Avenue to six lanes between Copper Avenue and Barstow Avenue.

Mitigation Measure #3.13-5k (TR-27): None feasible. Friant Road between North Fork Road (Road 206) and Lost Lake Road requires six lanes to achieve an acceptable LOS (LOS C or better). Widening this segment of Friant Road to six lanes is not feasible due to the physical constraints of the adjacent land uses and the Fresno County General Plan policy that prohibits six lane rural roadways. Although the Measure C Tier 1 Rural project widening Friant Road to four lanes between Copper Avenue and Millerton will partially mitigate this impact, the impact will remain *significant and unavoidable*.

Mitigation Measure #3.13-5l (TR-30): Willow Avenue should be widened to four lanes between Friant Road and Silaxo Avenue to provide an acceptable level of service (LOS B) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 18.9%.

Mitigation Measure #3.13-5m (TR-31): Willow Avenue should be widened to four lanes between Silaxo Avenue and Copper Avenue to provide an acceptable level of service (LOS B or better) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 18.9%.

Mitigation Measure #3.13-5n (TR-33): Millerton Road should be widened to four lanes to provide LOS C or better. The Measure C Tier 2 Rural project to widen Millerton Road to four lanes between North Fork Road (Road 206) and Sky Harbour Road would mitigate a portion of the impact. However, the Tier 2 projects are not yet funded. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) for the segment from Sky Harbour to Table Mountain is 2.4%. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) for the segment from Table Mountain to Auberry is 2.0%.

Mitigation Measure #3.13-5o (TR-34): Road 206 west of Friant Road for the Fresno County segment should be widened to four lanes to provide an acceptable level of service (LOS C or better) under the 2030 cumulative condition. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 17.1%.

Mitigation Measure #3.13-5p (TR-35): None feasible. Peak-hour traffic signal warrants for Parker Avenue are not expected to be satisfied at the intersection. The County may consider constructing a median to prevent left turns from Parker Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants on Parker Avenue are not satisfied and it is desirable to maintain access at the intersection, there are no feasible mitigations and the impact will remain *adverse but not significant*.

Mitigation Measure #3.13-5q (TR-36): None feasible. Peak-hour traffic signal warrants are not expected to be satisfied at the intersection on Granite Avenue. The County may consider constructing a median to prevent left turns from Granite Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants are not satisfied on Granite Avenue and it is desirable to maintain access at the intersection, there are no feasible mitigations and the impact will remain *adverse but not significant*.

Mitigation Measure #3.13-5r (TR-37): None feasible. Peak-hour traffic signal warrants on Root Avenue are not expected to be satisfied at the intersection. The County may consider constructing a median to prevent left turns from Root Avenue; however, current plans are to construct a full-access intersection. Since traffic signal warrants on Root Avenue are not satisfied and it is desirable to maintain access at the intersection, there are no feasible mitigations and the impact will remain *adverse but not significant*.

The County Board of Supervisors, pursuant to Ordinance Code Section 17.88, shall approve, by resolution or as part of the development agreement, a fair share fee for the Project applicant based on then-current calculations of the pro-rata share and costs for these improvements, with an inflation adjuster based on the Engineering News Record (ENR) 20 Cities Construction Cost Index. The Project applicant shall pay the fair share fee for each unit prior to issuance of a building permit for such unit.

The traffic impact study prepared for this EIR used the best information currently available to estimate the Project's traffic volume as a percentage of the future cumulative traffic volume at the intersections and roadways, as shown in Tables 3.13-19 and 3.13-20. If the identified improvements are provided for in any alternative funding program, or if any other intensive land use projects are subsequently approved that will measurably affect the intersection operation, it is possible that the Project's fair share percentage would differ from the estimated percentage of the cumulative traffic volume shown in Tables 3.13-19 and 3.13-20. The Project applicant may request recalculation of the estimated percentages and improvement costs in conjunction with the review of a tentative tract map or site plan review application, and shall be responsible for funding all costs associated with recalculating said percentages and improvement costs, including preparation of any necessary updated traffic analysis.

Effectiveness of Mitigation: Individually and cumulatively significant impacts to the segment of Friant Road between Road 206 and Lost Lake Road, and cumulatively significant impacts to the intersections of Friant Road and Parker Avenue, Friant and Granite Avenue, and Friant and Root Avenue will remain *significant and unavoidable* because no feasible mitigation is available to mitigate the Project's contribution to deficiencies on these intersections and roadway.

For all other intersections and roadways within Fresno County, this mitigation measure provides funding for improvements that will mitigate the impacts. Upon completion of the identified improvements, the impact would be reduced to *less than significant* by attaining acceptable levels of service on the roadways and intersections within Fresno County. Though the applicant will pay its fair share fee for the improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact. If a proposed improvement is not fully funded and constructed before completion of the Project, significant impacts to the intersection or roadway, in the form of delays and unacceptable levels of service, could occur until the County completes the improvements. Therefore, the impact will be *significant and unavoidable*.

Impact #3.13-6: The Project will contribute to the following deficiencies to City of Fresno* roadways and intersections:

Impact #3.13-6a (TR-8): The Project will contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition at the intersection of Friant Road and Shepherd Avenue. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Impact #3.13-6b (TR-9): The Project will exacerbate existing delays and an existing LOS already below the minimum acceptable LOS at the intersection of Friant Road and Audobon Drive, and is expected to exacerbate anticipated delays and a cumulative LOS that will fall below the acceptable LOS even without the Project under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Impact #3.13-6c (TR-10): The Project will exacerbate delays and a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition at the intersection of Friant Road and Fresno Street. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-6d (TR-19): The Project will exacerbate an existing LOS already below the minimum acceptable LOS at the intersection of Audobon Drive and Nees Avenue, and is expected to exacerbate delays and a cumulative LOS that will fall below the acceptable LOS even without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Impact #3.13-6e (TR-28): The Project will contribute to an unacceptable LOS on the City of Fresno segment of Friant Road between Champlain Avenue and Ft. Washington Road under the 2030 cumulative condition (2030 with Project). The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-6f (TR-29): The Project will contribute to an existing and cumulative LOS already below the minimum acceptable LOS on the following City of Fresno segments of Friant Road:

- Between Shepherd Avenue and Audubon Drive.
- Between Audubon Drive and Fresno Street; and
- Between Fresno Street and SR 41.

These are *significant impacts*.

*City of Fresno roadways and intersections that share jurisdiction with City of Clovis are addressed in Impact # 3.13-7 below.

Mitigation Measure #3.13-6: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:

Mitigation Measure #3.13-6a (TR-8): The intersection of Friant Road and Shepherd Avenue should be provided with a second northbound right-turn lane in addition to the funded third westbound left-turn lane and third southbound through lane to achieve an acceptable level of

service (LOS C). The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for the identified improvement, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct an improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 6.3%.

Mitigation Measure #3.13-6b (TR-9): None feasible. The intersection of Friant Road and Audubon Drive is constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is *significant and unavoidable*.

Mitigation Measure #3.13-6c (TR-10): None feasible. The intersection of Friant Road and Fresno Street is constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is *significant and unavoidable*.

Mitigation Measure #3.13-6d (TR-19): The intersection of Nees Avenue and Audubon Drive should be signalized with two eastbound left-turn lanes to provide an acceptable level of service (LOS D) under the existing and the 2030 cumulative condition. The results of the existing-plus-Project conditions analyses and the 2030 no-Project conditions analyses indicate that the Project alone does not create the need for improvements at this intersection, but the need is created primarily by regional growth. It is unreasonable to expect the Project applicant to construct this major improvement necessitated by the regional growth condition and to which the Project contributes a proportionately small traffic volume. The Project can mitigate its fair share of the impact by paying a fair share of the cost of construction. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) is 2.0%. The intersection is funded by the City of Fresno Traffic Signal Mitigation Impact Fee.

Mitigation Measure #3.13-6e (TR-28): Friant Road between Champlain Avenue and Ft. Washington Road will require six lanes to provide an acceptable level of service (LOS D or better) under the 2030 cumulative condition. The City of Fresno has planned for this improvement in its capital improvement program and its current citywide traffic fee program. The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-23) is 14.7%.

Mitigation Measure #3.13-6f (TR-29): None feasible. The City of Fresno General Plan identifies the need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue to accommodate the anticipated cumulative conditions due to regional growth and accepts LOS F with six lanes since additional widening is not feasible due to physical constraints associated

with the adjacent land uses. This condition, as already contemplated and accepted in the City of Fresno General Plan, is *significant and unavoidable*.

Effectiveness of Mitigation: The impacts to the intersections of Friant Road and Audobon Drive, Friant Road and Fresno Street, and the road segments of Friant Road from Shepherd to Audobon, Audobon to Fresno, and Fresno to State Route 41 are *significant and unavoidable*. These intersections and roadways will operate at unacceptable levels of service as a result of the Project and regional growth.

For all other identified intersections and road segments within the City of Fresno, this mitigation measure provides funding for improvements that will mitigate the impacts. Upon completion of the identified improvements, the impacts would be reduced to *less than significant* by attaining acceptable levels of service for the roadways and intersections within the City of Fresno. The improvements described within this mitigation measure are outside the jurisdiction of Fresno County and within the responsibility of the City of Fresno. During the environmental review for this Project, the County solicited the assistance and interest of the City of Fresno in formulating the mitigation measure for impacts to the roadways within the City of Fresno. This mitigation measure provides for continued interaction with the City of Fresno. The County will collect the applicant's fair share fee for the improvements, and provide the funds to the City of Fresno upon receipt of construction invoices for the identified improvements. However, since the City of Fresno is responsible for the timing and nature of improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact, if at all, despite the County's best efforts. If a proposed improvement is not fully funded and constructed prior to completion of the Project, there may be significant impacts to the intersection or roadway, in the form of delays and unacceptable levels of service, until such time as the identified improvements are in place. Therefore, the impact will be *significant* and unavoidable.

Impact #3.13-7: The Project will contribute to the following deficiencies to intersections and roadways within the shared jurisdiction of City of Clovis and City of Fresno:

Impact #3.13-7a (TR-22): The Project will exacerbate existing and anticipated future delays and will contribute to a cumulative level of service below the minimum acceptable level of service at the intersection of Willow Avenue and Nees Avenue in the 2030 plus project condition. The Project's contribution to the anticipated 2030 cumulative condition is cumulatively considerable. This is a *significant impact*. (County of Fresno, City of Fresno, City of Clovis jurisdiction)

Impact #3.13-7b (TR-23): The Project will exacerbate anticipated delays and contribute to a cumulative level of service that will fall below the minimum acceptable level of service at the intersection of Willow Avenue and Herndon Avenue in the 2030 plus project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-7c (TR-24): The Project will exacerbate anticipated delays and a cumulative level of service that will fall below the minimum acceptable level of service at the intersection of

Willow Avenue and Sierra Avenue in the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Impact #3.13-7d (TR-25): The Project will exacerbate existing delays, and will exacerbate anticipated delays and a cumulative level of service below the minimum acceptable level of service at the intersection of Willow Avenue and Bullard Avenue under the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Impact #3.13-7e (TR-26): The Project will exacerbate existing delays at the intersection of Willow Avenue and Barstow Avenue. The Project will also exacerbate anticipated delays and a cumulative level of service that will fall below the minimum acceptable level of service at the intersection of Willow Avenue and Barstow Avenue in the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Impact #3.13-7f (TR-32): The Project will exacerbate a cumulative LOS that falls below the minimum acceptable level of service under the 2030 condition without the Project on Willow Avenue at the following locations:

- Between Alluvial and Herndon Avenues;
- Between Herndon and Sierra Avenues;
- Between Sierra and Bullard Avenues; and
- Between Bullard and Barstow Avenues.

The Project's contribution to the anticipated cumulative condition is cumulatively considerable. These are *significant impacts*.

Mitigation Measure #3.13-7: Prior to issuance of a building permit, the applicant shall contribute its pro rata share of the cost of future off-site traffic improvements through payment of a fair share fee to Fresno County. The traffic improvements and, where an improvement is identified, the estimate percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Tables 3.13-19 and 3.13-20) are as follows:

Mitigation Measure #3.13-7a (TR-22): None feasible. The intersection of Willow Avenue and Nees Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. This impact is *significant and unavoidable*.

Mitigation Measure #3.13-7b (TR-23): None feasible. The intersection of Willow Avenue and Herndon Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Herndon Avenue and accepts LOS F with six lanes since additional widening is not feasible. This impact is *significant and unavoidable*.

Mitigation Measure #3.13-7c (TR-24): None feasible. The intersection of Willow Avenue and Sierra Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. Therefore, this impact is *significant and unavoidable*.

Mitigation Measure #3.13-7d (TR-25): None feasible. The intersection of Willow Avenue and Bullard Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. Therefore, this impact is *significant and unavoidable*.

Mitigation Measure #3.13-7e (TR-26): The intersection of Willow Avenue and Barstow Avenue should be widened to the following lane configurations to provide an acceptable level of service (LOS D) in the 2030 cumulative condition.

- Northbound: two left-turn lanes, three through lanes, one right-turn lane
- Southbound: two left-turn lanes, three through lanes, one right-turn lane
- Eastbound: one left-turn lane, two through lanes, and two right-turn lanes
- Westbound: one left-turn lane and two through lanes with a shared right turn.

The estimated percentage of the 2030 cumulative traffic volume attributable to the Project (as shown in Table 3.13-22) is 1.0%.

Mitigation Measure #3.13-7f (TR-32): None feasible. The City of Fresno General Plan identifies the ultimate need for six lanes on Willow Avenue between Alluvial and Barstow Avenues and accepts LOS E. The City of Clovis requires LOS D. A width of six lanes is typically considered the maximum width for roadways in Fresno even when additional lanes are warranted (for example, Herndon Avenue and Friant Avenue are limited to six lanes even where the ultimate mitigation requires more lanes). The proposed Project does not create the need for additional lanes. The Project's share of this cumulative impact is considered to be *significant and unavoidable*.

Effectiveness of Mitigation: The impacts to the intersections of Willow Avenue and Nees Avenue, Willow Avenue and Herndon Avenue, Willow Avenue and Sierra Avenue, and Willow Avenue and Bullard Avenue are *significant and unavoidable*. The impacts to the road segments of Willow Avenue between Alluvial and Barstow are *significant and unavoidable*. These intersections and roadways will operate at unacceptable levels of service.

For all other identified intersections and road segments within the shared jurisdiction of City of Clovis and City of Fresno, this mitigation measure provides funding for improvements that will mitigate the impacts. Upon completion of the identified improvements, the impact would be reduced to *less than significant* by attaining acceptable levels of service for the roadways and intersections within the City of Clovis and City of Fresno. With the exception of the intersection of Willow Avenue and Nees Avenue (over which the County shares jurisdiction with City of Clovis and City of Fresno), the improvements described within this mitigation measure are outside the jurisdiction of Fresno County and within the responsibility of the City of Fresno and City of Clovis. During the environmental review for this Project, the County solicited the

assistance and interest of the City of Fresno and City of Clovis in formulating the mitigation measure for impacts to the roadways within the City of Fresno and City of Clovis. This mitigation measure provides for continued interaction with the City of Fresno and City of Clovis. The County will collect the applicant's fair share fee for the improvements, and provide the funds to the City of Fresno and/or City of Clovis upon receipt of construction invoices for the identified improvements. However, since the City of Fresno and the City of Clovis are responsible for the timing and nature of improvements, the County cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the Project's contribution to the impact, if at all, despite the County's best efforts. If a proposed improvement is not fully funded and constructed prior to completion of the Project, there may be significant impacts to the intersection or roadway, in the form of unacceptable levels of service, until such time as the identified improvements are in place. Therefore, the impacts are *significant and unavoidable*.

Impact #3.13-8: Change Air Traffic Patterns
[Evaluation Criteria (c)]

The Community of Friant is not located within the traffic pattern of a public airport. The Project will therefore not affect airport traffic levels or result in substantial safety risks to a public airport facility.

Conclusion: There is *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.13-9: Increase Hazards Due to a Design Feature
[Evaluation Criteria (d)]

The Project is consistent with Fresno County General Policy TR-A.1 in that future Friant Community Plan Area streets and roads will be designed in accordance with the County's Roadway Design Standards. The Friant Ranch Specific Plan Area includes unique street cross sections designed to create a community circulation network that moves people efficiently and safely throughout Friant Ranch, whether by automobile, bicycle, foot, or by Neighborhood Electric Vehicle.

Consistent with Policies TR-A.7 and TR-B.2, the Project has been designed to provide for a multi-modal circulation system and potential future transit stops. Along the western portion of the Friant Ranch Specific Plan Area, parallel to the east side of Friant Road, a multi-modal transportation easement up to 20 feet in width is planned within an unused railroad easement that will include a multi-purpose trail for bicycles/pedestrians, and also reserve space for potential future transit stops. The Draft Friant Community Plan identifies two potential transit stops in the Community of Friant. One of the potential stops would be located adjacent to the planned Village Center, while the other would be located at the northern area of the Community of Friant, at North Fork Road. This easement will benefit Friant Ranch because it will allow easy connectivity between the Friant Ranch Specific Plan Area and the Community of Friant. The transit stops will also be utilized for shuttle buses or alternative modes of transportation.

The Draft Friant Community Plan contains policies to ensure that new transportation facilities are designed to minimize or avoid hazards. These policies include:

- Policy 1.1 Plan for a street and highway system that moves people and goods in an orderly, safe and efficient manner.*
- Policy 1.3 Promote safe and convenient access to commercial development along Friant Road without undue conflicts to through traffic.*
- Policy 1.5 Promote safe and convenient access within the residential portions of the community including use of lighting and crosswalks.*
- Policy 1.6 Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.*
- Policy 2.2 Promote the establishment of a town-wide pedestrian walkway and trail network that promotes the safe movement of people throughout the Community of Friant.*

Conclusion: Compliance with the policies of the Fresno County General Plan, the County's Roadway Design Standards, the policies proposed in the Draft Friant Community Plan, and adherence to the Transportation Element of the Friant Ranch Specific Plan are sufficient to ensure that the impact is *less than significant*.

Mitigation Measures: No mitigation measures are required.

Impact #3.13-10: Result in Inadequate Emergency Access
[Evaluation Criteria (e)]

The Project will not result in inadequate emergency access. The Project is consistent with Fresno County General Plan policies HS-B.4 and HS-B.5 as there are no limitations to the access of emergency vehicles to any portion of the existing Friant Community Plan Area. The improvement standards adopted by Fresno County provide adequate street width and requirements for secondary access to ensure that future development in the Friant area makes adequate provision for emergency vehicle access. Consistent with policies HS-B.4 and HS-B.5, the Friant Ranch Specific Plan Area has been designed to provide for two access points from Friant Road and a third entry at the Village Center.

Conclusion: There is *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.13-11: Result in Inadequate Parking Capacity
[Evaluation Criteria (f)]

Future development in the existing Friant Community Plan Area will be subject to the parking requirements of the Fresno County Zoning Ordinance. Such standards are sufficient to ensure that adequate on-site and off-site parking is available. The Friant Ranch Specific Plan Area will also be subject to the requirements of the Fresno County Zoning Ordinance where the Specific Plan is silent on the issue. Policy 5.47 of the Friant Ranch Specific Plan, however, states, “design and locate off-street parking to minimize conflicts with pedestrians and to minimize the physical and visual impact to the traditional streetscape appearance. Where practical, adjoining uses should share parking to minimize the number of parking lots, driveways and surface hardscape area.”

Conclusion: Compliance with the Fresno County Zoning Ordinance will ensure that new development provides adequate parking in the existing Friant Community Plan Area and Friant Ranch Specific Plan Area. Compliance with Policy 5.47 of the Specific Plan will help ensure that adequate parking is available in the Friant Ranch Specific Plan Area. There is *no impact*.

Mitigation Measures: No mitigation measures are required.

Impact #3.13-12: Conflict with Adopted Policies Supporting Alternative Transportation
[Evaluation Criteria (g)]

The Project will not conflict with adopted policies supporting alternative transportation. The Draft Friant Community Plan and Friant Ranch Specific Plan include Transportation Elements with plans to provide for potential future transit stations, the use of Neighborhood Electric Vehicles, and an integrated system of pedestrian and bicycle trails. Development in the Friant Community Plan Area and Friant Ranch Specific Plan Area will comply with the policies of the Fresno County General Plan with regard to alternative transportation.

The Project is consistent with Fresno County General Plan policies TR-A.12, TR-B.2 and TR-D.1 in that the Draft Friant Community Plan and Friant Ranch Specific Plan include plans for multi-modal transportation such as pedestrian and bicycle trails throughout the Project Area, the use of Neighborhood Electric Vehicles, and potential future transit stops.

The Draft Friant Community Plan includes the following policies to facilitate and encourage pedestrian, bicycle and public transportation:

Policy 1.4 Promote a street and highway system that can accommodate alternative modes of travel.

Policy 1.5 Promote safe and convenient access within the residential portions of the community including use of lighting and crosswalks.

Policy 1.6 Identify key locations for safe pedestrian access across Friant Road and install crosswalks, signage, lighting, traffic signals, and/or pedestrian signals, as warranted.

Policy 2.1 Support efforts to establish multiple forms of transit within the Community of Friant, including utilizing the existing rail right-of-way for trails for bicycles and pedestrians, Neighborhood Electric Vehicle access and a potential future light rail route.

Policy 2.2 Promote the establishment of a town-wide pedestrian walkway and trail network that promotes the safe movement of people throughout the Community of Friant.

Policy 2.3 Encourage the development of multi-use trails throughout the Friant Community Plan Area for bicyclists and pedestrians.

Policy 3.1 Encourage the provision of pedestrian and bicycle linkages to Lost Lake Recreation Area and along the San Joaquin River.

Conclusion: The Project will not conflict with adopted policies, plans, or programs supporting alternative transportation. Rather, the Draft Friant Community Plan and Friant Ranch Specific Plan have been designed to encourage a variety of alternative transportation modes within the Project Area, are consistent with Fresno County General Plan policies supporting alternative transportation and include policies supporting bicycle and pedestrian circulation, transit, and the use of Neighborhood Electric Vehicles. **No impact** has been identified.

Mitigation Measures: No mitigation measures are required.

3.14 Utilities and Service Systems

INTRODUCTION

This section describes the existing water, wastewater treatment, effluent disposal, storm drainage, and solid waste service in the Project Area and discusses potential environmental impacts from the Project.

Environmental Impacts associated with development of infrastructure, such as the wastewater treatment plant and water conveyance and storage system proposed in conjunction with the Friant Ranch Specific Plan, have been addressed, where appropriate, throughout the Draft EIR. More specifically, Section 3.1 Aesthetics (Impact 3.1.3), Section 3.3 Air Quality (Impacts 3.3.1 and 3.3.3), Section 3.4 Biological Impacts (All Impacts), Section 3.6 Geology, Soils and Mineral Resources (Impact 3.6.4), Section 3.7 Hazards and Hazardous Materials (Impact 3.7.2), Section 3.8 Hydrology and Water Quality (Impacts 3.8.1, 3.8.2 and 3.8.3), address impacts and provide mitigation, when appropriate, that could result from public utility and service system infrastructure development

3.14.1 REGULATORY SETTING

Water Service

Federal and State Regulations

The following is a description of the federal and State regulations that affect water services in the Project area.

SB 610/221

In 2001, the California legislature enacted SB 610 and SB 221 to ensure coordination between land use planners and water agencies. SB 610 requires the CEQA lead agency considering a project of 500 residential units or greater (or its equivalent) to obtain a water supply assessment from a water purveyor with the ability to serve the project. The water supply assessment must consider the availability of water to serve the project in addition to the existing and likely future obligations of the water purveyor in single dry, multiple dry, and normal water years. SB 610 requires the lead agency to consider the water supply assessment and circulate it with its CEQA document for the project.

SB 221, on the other hand, requires local agencies to obtain a water supply verification from a water purveyor capable of serving the project prior to issuing a tentative map for 500 or more residential units (or its equivalent). The water supply verification must ensure that sufficient water supplies are available to serve the project in single dry, multiple dry, and normal water years.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) authorizes the United States Environmental Protection Agency to set national standards for drinking water to protect against both naturally-occurring and human-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require particular methods for treating water to remove contaminants for all water providers in the United States, except for private wells serving fewer than 25 people. In California, the State Department of Public Health conducts most enforcement activities.

Local Policies

The most applicable goals and policies of the Fresno County General Plan Public Facilities and Services Element, with regard to water service, are listed below.

Goal PF-C *To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.*

Policy PF-C.3 *To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.*

Policy PF-C.8 *The County shall require preparation of water master plans for areas undergoing urban growth.*

Policy PF-C.10 The County shall require any community water system in new residential subdivisions to be owned and operated by a public entity.

Policy PF-C.12 The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.

Policy PF-C.17 The County shall, prior to consideration of any discretionary project related to land use, undertake a water supply evaluation. The evaluation shall include the following:

- a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made “firm” by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.*
- b. A determination of the impact that use of the proposed water supply will have on other water users in Fresno County. If use of surface water is proposed, its use must not have a significant negative impact on agriculture or other water users within Fresno County. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.*
- c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.*

Policy PF-C.25 The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

Policy PF-C.26 The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.

Wastewater

Federal and State Regulations

The following is a description of the federal and State regulations that affect wastewater services in the Project area.

Wastewater discharges are governed by both federal and state requirements. The primary laws regulating water quality are the Clean Water Act (CWA) and the California Water Code. Under the CWA, the EPA, or a delegated State agency regulates the discharge of pollutants into waterways through the issuance of National Pollutant Discharge Elimination System (NPDES) permits. NPDES permits set limits on the amount of pollutants that can be discharged into the surface waters of the United States.

Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. The Act specifies 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.

CWA Section 402 regulates point source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board (SWRCB) oversees the NPDES program, which is administered by the Regional Water Quality Control Boards (RWQCBs). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. The Project proposes to collect and treat wastewater from the new development at a new wastewater treatment facility that will be constructed near the project boundaries. Individual permits are categorized as minor or major permits. Discharges from treatment systems treating domestic waste with a design flow greater than 1.0 MGD or with a pre treatment program are classified as major discharges. Industrial and commercial discharges are classified based on several factors including flow, waste characteristics and water quality and health impacts.

Under Section 401 of the CWA every applicant for a federal permit or license (such as a section 404 permit from the U.S. Army Corps of Engineers) for any activity which may result in a discharge to a water body must obtain a Water Quality Certification from the Regional Water Quality Control Board (RWQCB) that the proposed activity will comply with applicable water quality standards.

California Water Code

The Porter-Cologne Water Quality Control Act (Porter-Cologne) provides for the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Designated

beneficial uses, together with the corresponding water quality objectives, also constitute water quality standards under the CWA. Therefore, the beneficial uses and water quality objectives form the regulatory references for meeting State and Federal requirements for water quality control. Water quality standards are primarily implemented through the NPDES permitting system and the issuance of waste discharge requirements (WDRs) to regulate waste discharges so that water quality objectives are met.

Basin plans and the water quality standards contained therein have been adopted for the Sacramento and San Joaquin River Basins and for the Tulare Lake Basin. The Sacramento-San Joaquin Basin Plan establishes the water quality standards that are applicable to the proposed surface water discharge to the San Joaquin River. The Tulare Lake Basin Plan establishes water quality standards for the groundwater's underlying the Project area and the proposed irrigation site for reclaimed wastewater. For the proposed discharge to the San Joaquin River, the RWQCB is required to issue an NPDES permit ensures the discharge will not cause or contribute to a violation of applicable water quality standards. (40 C.F.R § 122.44(d)(1)(i).) Likewise, the RWQCB is required to adopt water reclamation and/or waste discharge requirements for the use of reclaimed water to protect groundwater in a manner that is consistent with applicable water quality standards. (Water Code §§ 13263, 13523.)

Federal and State Antidegradation Policies

As discussed above, the CWA requires states to adopt, with U.S. EPA approval, water quality standards applicable to all its intrastate waters (33.U.S.C. §1313.). The CWA also requires state water quality standards to include an antidegradation policy to protect beneficial uses and prevent further degradation of high quality waters. (33 U.S.C. §1313(d)(4)(B); 40 CFR §131.12.) In California, the State's antidegradation policy is embodied in Resolution 68-16 ("Resolution 68-16"). The federal antidegradation policy is contained in federal regulations and applies to the proposed surface water discharge of treated effluent to the San Joaquin River (40 CFR §131.12.). The State's antidegradation policy in Resolution 68-16 applies to both the proposed surface water discharge of treated effluent as well as the irrigation of reclaimed water and potential impacts to groundwater. The RWQCB is required to ensure that the proposed new discharge to the San Joaquin River as well as the irrigation of reclaimed water is consistent with the federal and state antidegradation policies, as applicable, when it issues an NPDES permit for the surface water discharge and waste discharge requirements for the use of recycled water.

Water Reclamation Requirements

The California Water Code contains statutory requirements that govern the use of recycled water. (See Water Code §§13500 et seq.) More specifically, any person proposing to produce and/or use recycled water is required by law to provide the appropriate RWQCB a report containing information regarding the proposed production and/or use of recycled water unless the supplier or the distributor of the recycled water has obtained a master reclamation permit ("MRP"). In turn, the RWQCB is required to consult with the California Department of Public Health (DPH), and after any necessary hearing, prescribe water reclamation requirements. The DPH has published regulations that govern the quality of recycled water and the purposes for which it may be used (22 C.C.R. §§ 60301 et seq.). All recycled water uses are subject to water reclamation requirements issued by the RWQCB and are required to comply with recycled water use criteria established by DPH.

40 CFR Biosolids Regulations

See Section 3.8.1 (Hydrology and Water Quality – Regulatory Setting)

San Joaquin River Beneficial Uses & Objectives

The designated beneficial uses for the portion of the San Joaquin River adjacent to the Project Area (reach No. 69, hydrologic unit 545 extending from Friant Dam to Mendota Pool) are identified in the Sacramento-San Joaquin Basin Plan at Table II-1 and identified in this report below in Table 3.14-1.

**Table 3.14-1
Beneficial Uses, San Joaquin River, from Friant Dam to Mendota Pool**

Municipal and domestic supply
Agriculture, irrigation
Agriculture, livestock watering
Industrial, process
Recreation, contact
Recreation, canoeing and rafting
Recreation, other non contact
Freshwater habitat, warm
Freshwater habitat, cold
Migration, warm
Migration, cold
Spawning, warm
Spawning, cold (potential)
Wildlife habitat

The Sacramento-San Joaquin Basin Plan (Basin Plan) contains numerous narrative and numeric water quality objectives that apply to this portion of the San Joaquin River. In addition to the water quality objectives contained in the Basin Plan, the U.S. EPA has adopted water quality criteria for priority toxic pollutants that also apply to surface waters in California (See 40 CFR §131.38 (“California Toxics Rule” or CTR) and 40 CFR §131.36 (“National Toxics Rule”). Considering the designated uses, over 150 water quality criteria/objectives apply to the San Joaquin River. Water quality objectives/criteria for certain constituents that may appear in the effluent and/or may be of interest to the RWQCB are identified below in Table 3.14-2. California Title 22 Maximum Contaminant Levels (MCLs) apply to all waters designated for municipal and domestic supply (including the San Joaquin River at Friant and the groundwater), and these are shown in Table 3.14-3.

**Table 3.14-2
Most Stringent Water Quality Objectives/Criteria for the San Joaquin River –
Constituents of Concern**

Parameter	Water Quality Objective/Criteria	Source
Ammonia (as N)	Acute Criteria (based on pH): 13.7 mg/L – 31.7 mg/L ^[1] Chronic Criteria (based on temperature and pH): 4.4 mg/L – 6.6 mg/L ^[1]	U.S. EPA Ambient Water Quality Criteria
Bacteria (as Fecal Coliform)	200 MPN/100mL (geometric mean of >4 samples in 30 days), No more than 10% above 400 MPN/100mL	Basin Plan
Chemicals		
General	Not present in concentrations that affect beneficial uses	Basin Plan
Inorganics	Shall not Exceed MCLs in Cal Title 22: Table 64431-A	Basin Plan
Fluoride	Shall not Exceed MCLs in Cal Title 22: Table 64433.2-A	Basin Plan
Organics	Shall not Exceed MCLs in Cal Title 22: Table 64444-A and Table 64533-A	Basin Plan
Secondary MCLs (for Consumer Acceptance)	Shall not Exceed MCLs in Cal Title 22: Table 64449-A	Basin Plan
Secondary MCLs-Ranges	Shall not Exceed MCLs in Cal Title 22: Table 64449-B	Basin Plan
Copper	1.32 ug/L ^[2]	California Toxics Rule
Dissolved Oxygen	7.0 mg/L at any time	Basin Plan
pH	Between 6.5 and 8.5, and shall not be changed by more than 0.5 units	Basin Plan
Salinity, Electrical Conductivity	150 micromhos/ cm, (90 th percentile)	Basin Plan
Zinc	17.2 ug/L ^[2]	California Toxics Rule

[1] Objective ranges were calculated from pH and temperature data collected by the Department of Fish & Game Water Quality Monitoring at the San Joaquin Fish Hatchery Receiving Water station from 1/06 and 3/07 (12 data points).

[2] Criteria calculated with ambient hardness of 10.1 mg/L as CaCO₃.

**Table 3.14-3
California Title 22 Maximum Contaminant Levels**

Constituent	Units	Title 22 MCLs
Table 64431-A: Inorganic Primary MCLs		
Antimony	µg/L	6
Arsenic	µg/L	10
Asbestos	MFL	7
Barium	mg/L	1
Beryllium	µg/L	4
Cadmium	µg/L	5
Chromium	µg/L	50
Cyanide	µg/L	150
Fluoride	mg/L	2
Mercury	µg/L	2
Nickel	µg/L	100
Nitrate (NO3-N)	mg/L	45
Nitrate + Nitrite (sum as N)	mg/L	10
Nitrite (NO2-N)	mg/L	1
Selenium	µg/L	50
Thallium	µg/L	2
Table 64444-A: Organic Primary MCLs		
Benzene	µg/L	1
Carbon Tetrachloride	µg/L	0.5
1,2-Dichlorobenzene	µg/L	600
1,4-Dichlorobenzene	µg/L	5
1,1-Dichloroethane	µg/L	5
1,2-Dichloroethane	µg/L	0.5
1,1-Dichloroethylene	µg/L	6
cis-1,2-Dichloroethylene	µg/L	6
1,2-Trans-Dichloroethylene	µg/L	10
Dichloromethane	µg/L	5
1,2-Dichloropropane	µg/L	5
1,3-Dichloropropylene	µg/L	0.5
Ethylbenzene	µg/L	300
Methyl-tert-butyl ether	µg/L	13
Chlorobenzene	µg/L	70
Styrene	µg/L	100
1,1,2,2-Tetrachloroethane	µg/L	1
Tetrachloroethylene	µg/L	5
Toluene	µg/L	150
1,2,4-Trichlorobenzene	µg/L	5
1,1,1-Trichloroethane	µg/L	200
1,1,2-Trichloroethane	µg/L	5
Trichloroethylene	µg/L	5
Trichlorofluoromethane	µg/L	150
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	1200
Vinyl Chloride	µg/L	0.5
Xylenes	µg/L	1750

**Table 3.14-3
California Title 22 Maximum Contaminant Levels (Continued)**

Constituent	Units	Title 22 MCLs
Additional Organics		
Alachlor	µg/L	2
Atrazine	µg/L	1
Bentazon	µg/L	18
Benzo(a)Pyrene	µg/L	0.2
Carbofuran	µg/L	18
Chlordane	µg/L	0.1
2,4-D	µg/L	70
Dalapon	µg/L	200
Dibromochloropropane (DBCP)	µg/L	0.2
Di(2-ethylhexyl)adipate	µg/L	400
Bis(2-Ethylhexyl)Phthalate	µg/L	4
Dinoseb	µg/L	7
Diquat	µg/L	100
Endothall	µg/L	100
Endrin	µg/L	2
Ethylene dibromide	µg/L	0.05
Glyphosate	µg/L	700
Heptachlor	µg/L	0.01
Heptachlor Epoxide	µg/L	0.01
Hexachlorobenzene	µg/L	1
Hexachlorocyclopentadiene	µg/L	50
gamma-BHC	µg/L	0.2
Methoxychlor	µg/L	30
Molinate	µg/L	20
Oxamyl	µg/L	50
Pentachlorophenol	µg/L	1
Picloram	µg/L	500
Polychlorinated biphenyls	µg/L	2
Simazine	µg/L	4
Thiobencarb	µg/L	70
Toxaphene	µg/L	3
2,3,7,8 TCDD or Dioxin	pg/L	30
2,4,5-TP (Silvex)	µg/L	50
Table 64533-A: Disinfection Byproducts Primary MCL		
Total trihalomethanes	µg/L	80
Table 64449-A: Secondary MCLs		
Aluminum	µg/L	200
Color	Units	15
Copper	µg/L	1000
Corrosivity		Non-corrosive
MBAS	µg/L	500
Iron	µg/L	300
Manganese	µg/L	50
Methyl-tert-butyl ether (MTBE)	µg/L	5

**Table 3.14-3
California Title 22 Maximum Contaminant Levels (Continued)**

Constituent	Units	Title 22 MCLs
Odor—Threshold	Units	3
Silver	µg/L	100
Thiobencarb	µg/L	1
Turbidity	NTU	5
Zinc	µg/L	5000

Table 64449-B: Secondary MCLs Ranges

Constituent	Units	Recommended	Upper	Short Term
TDS	mg/L	500	1000	1500
EC	µmhos/cm	900	1600	2200
Chloride	mg/L	250	500	600
Sulfate	mg/L	250	500	600

Table 64433.2-A: Fluoride

Annual Average of maximum daily air temperature		Units	Optimal Fluoride Level	Control Range	
Fahrenheit	Celsius			Low	High
50.0 to 53.7	10.0 to 12.0	mg/L	1.2	1.1	1.7
53.8 to 58.3	12.1 to 14.6	mg/L	1.1	1	1.6
58.4 to 63.8	14.7 to 17.7	mg/L	1	0.9	1.5
63.9 to 70.6	17.8 to 21.4	mg/L	0.9	0.8	1.4
70.7 to 79.2	21.5 to 26.2	mg/L	0.8	0.7	1.3
79.3 to 90.5	26.3 to 32.5	mg/L	0.7	0.6	1.2

Groundwater Beneficial Uses & Objectives

Ground Water beneficial uses designated for the portion (DAU 234) of the Kings River sub basin in which the Project Area lies are contained in the Tulare Lake Basin Plan, and are identified below in Table 3.14-4.

**Table 3.14-4
Beneficial Uses, Groundwater, Detailed Analysis Unit 234**

Municipal
Agricultural
Industrial

Groundwater quality objectives to protect the designated beneficial uses are also contained in the Tulare Lake Basin Plan and are identified below in Table 3.14-5.

**Table 3.14-5
Groundwater Quality Objectives**

Parameter	Criteria/Objective
Bacteria (as Total Coliform)	2.2 MPN/100mL (7 day average)
Chemicals:	
General	Not present in concentrations that affect beneficial uses
Inorganics	Shall not Exceed MCLs in Cal Title 22: Table 64431-A (see Table 3.8-3)
Fluoride	Shall not Exceed MCLs in Cal Title 22: Table 64431-B (see Table 3.8-3)
Organics	Shall not Exceed MCLs in Cal Title 22: Table 64444-A (see Table 3.8-3)
Secondary MCLs (for Consumer Acceptance)	Shall not Exceed MCLs in Cal Title 22: Table 64449-A (see Table 3.8-3)
Secondary MCLs- Ranges	Shall not Exceed MCLs in Cal Title 22: Table 64449-B (see Table 3.8-3)
Lead	15 ug/L (Basin Plan)
Pesticides	6444-A- Organics Chemicals
Radioactivity	Table 64443, Table 3.8-4
Salinity	Annual increase less than 4 umhos/ cm
Tastes/ odors	Shall not contain concentrations that create nuisance or adversely affect beneficial uses
Toxicity	Maintain free of toxic substances

California Code of Regulations, Title 22

The California Department of Public Health (DPH) has established statewide reclamation criteria for the use of recycled wastewater in Chapter 3, Division 4, Title 22, CCR, Sections 60301 et seq. DPH regulations also require an engineering report that specifies the design of the recycled water system and indicates that the recycled water will comply with all applicable requirements. The engineering report must be submitted to DPH for review and approval before recycled water is produced and used accordingly. (22 C.C.R. § 60323.)

Local Policies

The most applicable goals and policies of the Fresno County General Plan Public Facilities and Services Element, with regard to wastewater service, are listed below.

Goal PF-D To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.2 The County shall require that any new community sewer and wastewater treatment facilities serving residential subdivisions be owned and maintained by a County Service Area or other public entity approved by the County.

Policy PF-D.5 The County shall promote efficient water use and reduced wastewater system demand by:

- a. *Requiring water-conserving design and equipment in new construction;*
- b. *Encouraging retrofitting with water-conserving devices; and*
- c. *Designing wastewater systems to minimize inflow and infiltration, to the extent economically feasible.*

Policy PF-D.7 The County shall require preparation of sewer master plans for wastewater treatment facilities for areas experiencing urban growth.

Stormwater

Federal and State Regulations

There are specific State and federal regulations pertaining to flood control and drainage related to stormwater. Goals and policies of the *Fresno County General Plan* are also discussed below.

National Pollution Discharge Elimination System (NPDES)

Section 402(p) of the CWA establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES permit program. Section 402(p) requires that stormwater associated with municipal and industrial activities that discharge either directly to surface waters or indirectly through separate municipal storm sewers be regulated by a NPDES permit. In 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated regulations for permitting storm water discharges from industrial sites (including construction sites that disturb five acres or more) and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. These regulations, known as the Phase I regulations, require operators of medium and large MS4s to obtain individual storm water permits. On December 8, 1999, U.S. EPA promulgated regulations, known as Phase II, requiring permits for storm water discharges from “regulated Small MS4s” and from construction sites disturbing between one and five acres of land. In California, regulated Small MS4s are subject to a General NPDES permit adopted by the SWRCB (Water Quality Order No. 2003-0005-DWQ (General Permit for Small MS4s)). An entity subject the General Permit includes a Small MS4 automatically designated by U.S. EPA pursuant to 40 CFR section 122.32(a)(1) because it is located within an urbanized area defined by the Bureau of the Census; or, because it has been so designated by the SWRCB or RWQCB after consideration of a number of factors including high population density, high growth or growth potential, interconnection to permitted MS4, discharges to sensitive water bodies and significant contribution of pollutants to waters of the U.S. The community of Friant does not meet the definition of medium or large MS4 and is not a “regulated Small MS4.”

The SWRCB has adopted a statewide General Permit for all storm water discharges associated with construction activities. The General Permit for Construction Activities applies to all dischargers where construction activity disturbs one acre or more. Construction affecting more than one acre within the Project Area will require compliance with the SWRCB’s General Permit for Construction Activities.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Under Section 404, any person or public agency proposing to locate a structure, excavate, or discharge dredged or fill material into waters of the U.S. or to transport dredged material for the purpose of dumping it into ocean waters must obtain a permit for the proposed activity from the U.S. Army Corps of Engineers (Corps).

Under Section 401 of the CWA every applicant for a federal permit or license (such as a section 404 permit from the U.S. Army Corps of Engineers) for any activity which may result in a discharge to a water body must obtain a Water Quality Certification from the Regional Water Quality Control Board (RWQCB) that the proposed activity will comply with applicable water quality standards.

Federal and State Guidance Principles

EPA Low Impact Development Design Principles

EPA Low Impact Development (LID) Design strategies are expected to be integrated into stormwater design and conveyance systems in conjunction with NPDES permit applications. LID emphasizes conservation and use of on-site natural features to protect water quality. This approach implements engineered small-scale hydrologic controls to replicate the pre-development hydrologic regime of watersheds through infiltrating, filtering, storing, evaporating, and detaining runoff close to its source.

California Stormwater Best Management Practice Construction Handbook

The California Stormwater Best Management Practice Construction Handbook, prepared by the California Stormwater Quality Association and last updated in September of 2004, provides general guidance for selecting and implementing Best Management Practices (BMPs) that will eliminate or reduce the discharge of pollutants from construction sites to waters of the state and developing and implementing stormwater pollution prevention plans (SWPPPs) that document the selection and implementation of BMPs for a particular construction project.

Fresno County General Plan

The following are applicable goals and policies from the *Fresno County General Plan Public Facilities and Services Element*:

Goal PF-E *To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.*

Policy PF-E.5 *The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels,*

and/or restrict natural channels in such a way as to increase potential flooding damage.

- Policy PF-E.6 The County shall require that drainage facilities be installed concurrently with and as a condition of development activity to ensure the protection of the new improvements as well as existing development that might exist within the watershed.*
- Policy PF-E.7 The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.*
- Policy PF-E.8 The County shall encourage the local agencies responsible for flood control or storm drainage to precisely locate drainage facilities well in advance of anticipated construction, thereby facilitating timely installation and encouraging multiple construction projects to be combined, reducing the incidence of disruption of existing facilities.*
- Policy PF-E.9 The County shall require new development to provide protection from the 100-year flood as a minimum.*
- Policy PF-E.11 The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.*
- Policy PF-E.13 The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.*
- Policy PF-E.19 In areas where urbanization or drainage conditions preclude the acquisition and use of retention-recharge basins, the County shall encourage the local agencies responsible for flood control or storm water drainage to discharge storm or drainage water into major canals and other natural water courses subject to the following conditions:*
- a. The volume of discharge is within the limits of the capacity of the canal or natural water course to carry the water.*
 - b. The discharge complies with the requirements of applicable state and federal regulations (e.g., National Pollution Discharge Elimination System).*
 - c. The agency responsible for ownership, operation, or maintenance of the canal or natural water course approves of the discharge.*
- Policy PF-E.20 The County shall require new development of facilities near rivers, creeks reservoirs, or substantial aquifer recharge areas to mitigate any potential*

impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

Policy PF-E.21 The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Solid Waste

Federal and State Regulations

There are no specific federal regulations pertaining to solid waste that relate to the Project. Relevant goals and policies of the *Fresno County General Plan*, local landfill permitting requirements, and State regulations relating to solid waste are discussed below.

AB 939

Regulation affecting solid waste disposal in California is embodied in California State Assembly Bill (AB) 939, which was designed to increase landfill life by diverting solid waste from landfills and conserving other resources through increasing recycling programs and incentives. AB 939 requires that Counties prepare Integrated Waste Management Plans to implement landfill diversion goals, and requires that Cities and Counties prepare and adopt Source Reduction and Recycling Elements (SRRE).

The Fresno County Local Enforcement Agency (LEA) issues Solid Waste Facility Permits (SWFPs). The permits specify the terms and conditions for operating a solid waste facility in Fresno County. All permits are subject to review every five years unless a facility has undergone a significant change that would require a revision of the permit to reflect the current state of operations. SWFP's are currently required for solid waste landfills, Material Recovery Facilities (MRF) / Transfer Stations, Composting Facilities and Transformation Facilities.

Landfills and MRFs are required to secure a Solid Waste Facilities Permit from the Fresno County Local Enforcement Agency and obtain a report of Waste Discharge Requirements from the California Regional Water Quality Control Board (RWQCB) (California Integrated Waste Management Board, Website, December 2007).

Fresno County General Plan

The following are applicable goal and policies from the Fresno County General Plan:

Goal PF-F To ensure the safe and efficient disposal or recycling of solid waste generated in the county in an effort to protect the public health and safety.

Policy PF-F.1 The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.

Policy PF-F.4 The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

Policy PF-F.7. The County has designated the American Avenue Landfill as the regional landfill to serve the incorporated and unincorporated areas of the county. The publicly-operated Coalinga and Clovis landfills may continue to operate provided the sites are operated economically and in compliance with all environmental laws and regulations. Existing publicly-operated landfills may be expanded.

3.14.2 PHYSICAL SETTING

Water

The Friant Ranch Specific Plan Area is located at the base of Friant Dam and Millerton Lake, which supplies water for farmland via the Kern-Friant Canal and Madera Canal as well as domestic water to more urbanized areas. The Friant Ranch Specific Plan Area is also close to several natural water resources that local wildlife depend on including the San Joaquin River.

The San Joaquin River, which is the second longest river in California at 330 miles, forms the western boundary of the Friant Community and is the boundary between Fresno and Madera Counties. The river originates high in the western slopes of the Sierra Nevada and drains most of the area from the southern border of Yosemite south to Kings Canyon National Park.

Friant Dam and Millerton Lake are located immediately outside of the Friant Community Plan boundary, but their presence plays a pivotal role in Friant and Fresno County. Friant Dam, a 319-foot concrete gravity dam, was constructed in 1942 by the U.S. Bureau of Reclamation (USBR). USBR owns and operates the dam. Millerton Lake, which was created as a result of damming the San Joaquin River, has a capacity of approximately 520,500 acre-feet (af) and is approximately 15 miles long. The primary use for Millerton Lake is delivering irrigation water through the Madera and Friant-Kern Canals to a million acres of agricultural land in Fresno, Kern, Madera, and Tulare Counties. Secondarily, the lake is used to serve water for municipal and industrial uses as well as for flood control and recreation purposes.

USBR's Friant-Kern Canal forms the eastern boundary of the Friant Community Plan area boundary and transports water south from Millerton Lake to a point four miles west of Bakersfield, providing water to 28 water contractors along the way.

The San Joaquin River at the location of the Project is of excellent water quality. The river at this location reflects drainage and snowmelt from the Sierra Nevada Mountains and contains low levels of suspended solids and dissolved minerals. River temperatures are uniformly low throughout the year as a result of discharges of cold water from Millerton Lake. The river channel has a moderate gradient providing sufficient flow velocities to maintain rapid mixing and high dissolved oxygen levels. The Project area is located upstream of the lower elevation floor of the Central Valley, and thus is upstream of potential contaminant influences from agricultural drainage and urban stormwater runoff.

The source of domestic water for the Project is surface water from Millerton Lake. Water in the lake is of high quality and is low in turbidity and chemical content. Existing water treatment plants operated by WWD 18 (Friant Community) and the CSA No. 34 (Brighton Crest Development) have found it feasible to treat the Millerton Lake water to drinking water standards with standard technologies without unusual expense.

Although the Lower Tule River Irrigation District (LTRID) boundaries are located approximately 60 miles south of the Friant Community Plan Project Area, a brief description of the area within the LTRID boundaries is provided because of the proposed transfer of 2,000AF of CVP Friant Division Class 1 water from Lower Tule River Irrigation District (LTRID) to WWD18 to serve the proposed Project. The LTRID is comprised of approximately 103,086 acres extending approximately 10 miles west and eight miles east of the State Highway 99 corridor beginning at a point approximately four miles south of the City of Tulare and extending to a point approximately three miles north of the Community of Pixley. With exception of the small unincorporated communities of Poplar, Woodville and Tipton the entire LTRID consists of flat farmland (approximately 85,00 irrigated acres) traversed by over 150 miles of canals and rivers.

Wastewater

Nearly all of the buildings in the Friant Community are currently serviced by individual septic systems. The Millerton Lake Village Mobile Home Park is the only portion of the Friant Community that is currently served by a small sewer system package treatment plant. A new wastewater treatment plant is needed to provide adequate service levels and accommodate new development within the existing Friant Community.

Stormwater

Much of the highland area east of the Friant Ranch Specific Plan Area, east of the Friant-Kern Canal, drains naturally through the Project Area. Two existing drainage areas east of the canal cross under the canal in culverts and enter the Project Area at the Friant Ranch Specific Plan site. The largest of the drainage areas skirts the most southeasterly edge of Friant Ranch Specific Plan Area along the west side of the canal and continues on to the adjoining property to the south. The other drainage area enters the central portions of the Friant Ranch Specific Plan site, passes through natural swales and exits along the property's western edge as the drainage continues to flow toward and eventually into the San Joaquin River. Stormwater in the remaining Friant Community Plan Area including the Lost Lake Recreation Area is conveyed via storm drain outlets and culverts which ultimately drain into the San Joaquin River.

Off-site drainage from the east of the Friant-Kern Canal flows on-site through two culverts. One existing concrete box culvert is 3' x 3', while the other is 2.5' x 2.5' in size. Other drainage is cut off by the Friant-Kern Canal and empties into the canal via 18 inch corrugated metal pipe.

Within the proposed Friant Ranch Specific Plan boundaries, several ephemeral streams that have been classified as wetland channels and/or vernal swales convey most of the runoff from east-west to Friant Road. A portion of the Friant Ranch Specific Plan site drains to the south where it either crosses Friant Road by culvert or flows into Little Dry Creek. Near the proposed main

entrance to the Friant Ranch Specific Plan Area is an existing 24-inch culvert that flows underneath Friant Road towards Lost Lake Recreation Area. At the northwest edge of the Friant Ranch Specific Plan Area, the storm runoff enters a large concrete box culvert that crosses underneath Friant Road and drains to the San Joaquin River. On-site drainages also include vernal pools.

Solid Waste

The existing Friant Community's solid waste is transferred to the County owned and operated American Avenue Landfill. The 440-acre waste management facility is located approximately 40 miles southwest of Friant near the City of Kerman. The facility consists of an unlined waste management unit covering 30 acres (Phase I) and a 160-acre composite-lined waste management unit (Phase II). There is a proposal to expand the waste management facility by constructing Phase III (250 acres) upon completion of Phase II. This expansion is necessary to provide service to Fresno County's expanding population base.

The County has a franchise agreement with Ponderosa Solid Waste providing an exclusive right for solid waste disposal services in the unincorporated area of Fresno County near Friant. Ponderosa Solid Waste provides once-per-week curbside collection service to all homes and a range of commercial pick-up services to businesses. . To enhance Fresno County's waste diversion performance under the mandates of AB 939, solid waste customers are provided with the individual containers required to conduct source-separated recycling.

Electric Power and Natural Gas/Propane

Electricity for the Project will be provided by PG&E by extension of existing lines located throughout the Friant Community Plan area while natural gas will be provided from extension of existing lines from Friant Road and completion of an approximately 2.5 mile gap from Willow to the entrance to Lost Lake Park. The Friant Community is currently served by propane distributors, although PG&E recently constructed a natural gas transmission line north of Willow Avenue on Friant Road, extending to the entrance of Lost Lake Park. This pipeline is currently unused and is not connected to the PG&E gas distribution system. Currently, gas service to the Friant Ranch Specific Plan Area is not available.

Telephone, Internet and Cable TV

Telephone, Internet and cable television infrastructure is provided to the Project Area by Ponderosa Communications.

3.14.3 IMPACT EVALUATION CRITERIA

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, a project will normally have significant adverse impacts associated with utilities if it would do any of the following:

- a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.*

- b) *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.*
- c) *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.*
- d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements.*
- e) *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.*
- f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.*
- g) *Comply with federal, state, and local statutes and regulations related to solid waste.*
- h) *Increase the demand for electricity and natural gas.*

3.14.4 IMPACT ANALYSIS

Impact #3.14.1 –Water Supply [Evaluation Criteria (d)]

The water sources available to serve the Project Area (the WWD 18 Western service area) include an existing contract with the United States Bureau of Reclamation (USBR) for 150 AF of Class 1 Water and a proposed transfer of 2,000AF of CVP Friant Division Class 1 water from Lower Tule River Irrigation District (LTRID) to WWD18.

Waterworks District No. 18, the water purveyor for the Community Plan Area, has prepared a Water Supply Assessment (WSA) pursuant to Water Code 10610, et. seq., for the Friant Ranch Specific Plan and has concluded that sufficient water supplies are available to serve the proposed development, in addition to existing and expected future uses within the WWD 18 Service Area (encompassing all of the existing Friant Community Plan Area) over a 20-year planning horizon in normal, dry, and multiple-dry water years. The WSA includes tabulations of the expected water demand for the Project, and details the sources of water supply available to WWD 18. The WSA is attached to this DEIR as Appendix B.

Friant Ranch Specific Plan Water Demand

Expected water demand for the Friant Ranch Specific Plan will be a composite of the specific water demands for the various types of land uses proposed. These demands are summarized in Table 3.14-6 (residential use) and Table 3.14-7 (non-residential use).

**Table 3.14-6
Projected Friant Ranch Specific Plan Average Daily Demand (ADD) for Water
By Residence Type and Lot Size
By Land Use at Build-Out –Residential**

Friant Ranch Land Use	No. of Units	ADD (gpd/ac)	Acres	Demand (gpd)	Demand (AF/Day)	Demand (AF/yr)
SFD-1 Single-Family (6,000–7,200 SF)	293	1,875	60.7	113,812	0.349	127
SFD-2 Single-Family (3,500- 5,000 SF)	1,295	1,875	214.4	402,000	1.23	449
SFD-3 Single-Family Cluster & Alley-load (8.0- 12.0 du/ac)	1,095	3,035	135.0	409,725	1.26	460
MFD Apartments, Condos, Triplexes (12.0-18.0 du/ac)	83	3,035	5.3	16,085	0.049	18
MFD Non-Age Qualified Apartments (12.0- 18.0 du/ac)	180	3,035	13.5	40,972	0.126	46
Village Center (Live/Work)	50	200 (gpd/unit)	-	10,000	0.031	11
Total	2,996		428.9	992,594	3.04	1,111

**Table 3.14-7
Projected Friant Ranch Specific Plan Average Daily Demand (ADD) for Water
By Land Use at Build-Out – Non-Residential**

Land Use	ADD (Gpd/ac)	Acres	Total Demand (gpd)	Total Demand (AF/Day)	Total Demand (AF/yr)
Neighborhood Shopping Center	1,965	23.8	46,767	0.14	52
Active-Adult Community Center (CC)	1,965	16.7	32,815	0.10	37
Park (P)	2,500	25.0	62,900	0.19	70
Manufactured Slopes	1,965	92.0	180,780	0.55	201
Total		157.5	322,862	0.98	360

Table 3.14-6 presents a summary of water usage for residential development within the area, based upon the following methodology. With 2,996 units proposed in the Friant Ranch Specific Plan area, it is possible to calculate average densities, which have been correlated with land use designations in Clovis that allow for the use of selected specific water use factors which are presented in Table 3.14-6. As a measure of conservatism, these factors have not been adjusted for the much-lower expected average occupancy of each unit in an age-restricted 55+ active adult community such as Friant Ranch. Approximately 2/3 of domestic water is for external use (i.e., landscaping).

Overall water use patterns for proposed non-residential land uses within the Friant Ranch Specific Plan Area are expected to be similar to those of other Valley communities which have implemented water metering together with tiered rates. The City of Clovis was used for comparison due to its similarity and proximity to Friant Ranch, and the abundance of data available from that system (reference Table 3.14-7).

Total annual consumptive water demand for all land uses within the Friant Ranch Specific Plan Area, combining totals from Tables 3.14-6 and 3.14-7, will be 1,471 AF. According to the WSA, an additional 335 AF will be required to meet the needs of the area within the Friant Community Plan area outside the boundaries of the Friant Ranch Specific Plan for a total of 1806 AF.

The Friant Ranch Specific Plan will incorporate a number of water-conserving features and policies. Municipal water for the Project (residential and commercial) will be metered, with a tiered rate system in place to discourage excessive consumption.

The Friant Ranch Specific Plan design emphasizes water conservation and reclamation. Water-conserving plumbing fixtures and conjunctive reuse of reclaimed water are principles central to the Specific Plan design standards.

The Friant Ranch Specific Plan design provides for the use of reclaimed water (i.e., treated, filtered, disinfected effluent) for irrigation of privately- and publicly-maintained open spaces (e.g., trails, road medians, landscape easements) wherever practical and economically feasible. To the extent authorized by any appropriate agreement and/or permits of the County and after processing through the Regional Water Quality Control Board and all other applicable regulatory processes, reclaimed water will be used to irrigate onsite landscaping and offsite open space or agricultural areas such as the Beck Property, a previously disturbed portion of Lost Lake Recreation Area, and/or other similarly situated lands in the immediate vicinity. This effluent may also be stored within an abandoned mining pit on the Beck Property. If implemented, this reclamation would be carried out in phases, as reclaimed effluent volume increases and the Project builds out.

Efficient irrigation systems will be employed in maintained landscaped areas of the Friant Ranch Specific Plan Area. These are defined as one or any combination of the following:

- Drip Irrigation;
- Soil Moisture Sensors; and
- Automatic Irrigation Systems.

Mulch will be employed to maintain soil moisture and reduce water-using weed growth, and native and drought resistant vegetation will be incorporated in Specific Plan landscape designs.

Storm drainage will be collected in Rain Gardens at each home site within the Friant Ranch Specific Plan, which will reduce the amount of water required for on-site irrigation. Additional detail is provided in the Storm Drainage section, below.

Friant Community Plan Area Water Demand

According to the Fresno County Economic Development Commission (FCEDC), regional growth within the County is expected to be 2 to 3 percent on an annual average basis for the next 20 years. However, FCEDC expects the rate of growth within the major urbanized areas within the County, particularly the City of Fresno and City of Clovis, to be greater than other areas within the County. The unincorporated areas of the County are projected to grow at a slower rate of 1 to 2 percent per annum. Based upon such projections, a tentative timeline to reach build-out for the Project is 15 years once construction has started, which equates to approximately 2030. Consistent with the FCEDC report, the growth rate within the WWD 18 service area will also be no more than 1 to 2 percent per annum. The speed of growth within the WWD service area will be governed by housing and commercial market conditions. Favorable market conditions will increase the growth rate while less than desirable market conditions will cause it to slow.

The Water Supply Assessment analyzed the complete build-out of the WWD Western Service Area (Friant Community Plan Area) in accordance with the current land use designations for the Friant community. Notably, however, based on the above growth projections, it is unlikely that the entire Community Plan area will be built out within the 20-year projection required for this water supply assessment.

According to the WSA, the Specific Plan's estimated average-annual demand is 1,471 acre-feet. Including the average-annual demand for existing and planned uses within the boundaries of the existing Friant Community, brings the cumulative demand for the Specific Plan and the Friant Community (i.e., the entire Project Area) to a projected 1,806 AF annually.

Water Supply

As noted previously, an agreement in principle has been signed between the Specific Plan applicant and Lower Tule River Irrigation District, subject to approval by the US Bureau of Reclamation, securing a water supply of up to 2,000 AF per year, to be supplied to the Project. After certification of this EIR assessing environmental impacts associated with the transfer, LTRID will rely on this EIR in considering the approval of the Water Supply Agreement that formalizes the terms of the agreement in principle and commits LTRID to providing water supply. In the unlikely event that the current water supply plan is abandoned, the community will process an alternative arrangement to obtain a sufficient water supply from the Central Valley Project Friant Kern Canal or an equivalent surface water source. The water supply is to be delivered through facilities planned and constructed by the Project, and owned and managed by WWD No. 18. Upon receipt of all necessary approvals (after appropriate environmental review) the long term transfer will provide Friant Ranch with a sufficient water supply to meet its needs. Municipal water for the Project will be treated at the existing WWD No. 18 plant site. WWD 18 will expand the plant appropriately (in phases) to provide adequate water to the Project Area.

The total demand of 1806 AF/year for the Project Area will be met with the water supplies listed below during normal, single dry, and multiple dry water years:

- Long-term water availability for the Project is derived from the Water Supply Agreement with LTRID, for 2,000 AF of Class 1 supply, with a normal year yield of 2,000 AF and a dry

year yield of 1,540 AF. Pre-1914 water from LTRID will be used during critical dry periods of the hydrologic cycle to offset the shortfall, 460 AF (the difference between the 2000 AF contractual entitlement and the 1540 AF expected yield), in CVP Class 1 supply. The pre-1914 water from LTRID will not be delivered to the Project, but instead will be pumped into the Friant-Kern Canal and used to meet a portion of LTRID's South Valley commitments which would normally be met with CVP Class 1 supplies, thereby freeing up additional Class 1 water to be delivered to the Project;

- Approximately 400 acre-feet of reclaimed wastewater supplies will be recycled and utilized in a normal hydrologic year for non-potable uses on the Project site; and
- WWD 18 long-term contract for 150 AF of Class CVP Friant Division supply, with a dry year yield of 37 AF.

Unlike many areas within California planned for long term growth and development, the advantageous location of the Friant Community Plan area, inclusive of the proposed Friant Ranch Specific Plan, adjacent to a major reservoir (Millerton Lake) ensures the reasonable likelihood of long term availability of adequate water supply to meet the areas water demand at Buildout well beyond a 20 year time frame. The likelihood of long term availability of adequate water supply is further enhanced by the agreement that has been signed between the Specific Plan applicant and Lower Tule River Irrigation District, subject to approval by the US Bureau of Reclamation, securing a water supply of up to 2,000 AF per year.

Although long term uncertainties are always a factor when considering the adequacy of domestic use water supplies over time, the degree to which such uncertainties, such as contract terminations or modifications and reduction in snow melt due to global climate change (see Section 3.15 for discussion of potential effect of global climate change on long term water supply), etc. are considered minimal for the waters provided by the CVP in that WWD 18 and the LTRID have each entered into CVP Friant Division long-term water supply contracts with the USBR. Each of these separate renewal contracts negotiated by these districts in January 2001 expires on February 28, 2026, with possible 25-year renewals.

These identified water supplies, current and agreed upon in principle, satisfy the projected 20-year demands of the Project together with WWD 18's existing and planned future uses during normal, critical dry and multiple-dry years. To secure the identified supplies, WWD 18 will need to accomplish the following steps:

1. Participate in the County CEQA process for the Friant Community Plan Update and Friant Ranch Specific Plan, and adopt CEQA findings for related WWD 18 actions including a Water Supply Agreement, water service agreement for the Project, approval of water supply infrastructure agreements, and inclusion of the Project Site into WWD 18.
2. Participate in the USBR and LAFCO approval processes for annexation of the Project boundaries into WWD 18.

3. Obtain USBR and LTRID approvals for a Water Supply Agreement and authorize execution of the Water Supply Agreement.
4. Approve inclusion of Project site into the WWD 18 service area (as a separate zone of benefit) and authorize the Water Service Agreement for Project.
5. Obtain Regional Water Quality Control Board and Department of Public Health approvals for reuse of treated wastewater for irrigation onsite.

The WSA prepared for the Project explains potential uncertainties related to the water supply and WWD 18's plan for addressing such uncertainties. Summarily, the following uncertainties relate to the identified Project water supply:

- The agreement in principle between LTRID and WWD 18, which is subject to CEQA review and USBR approval, could result in a potential critical dry year shortfall of 460 AF out of the 2,000 acre-feet of CVP Class 1 supply to be provided to WWD 18 by LTRID under the Water Supply Agreement. See Appendix D of the WSA [memorandum from Lower Tule River Irrigation District discussing portions of shortage of Class 1 supplies among LTRID Class 1 commitments]. (The contracted water supply, even with this 460 AF shortfall, will still be in excess of the critical dry year demand for the Project.) To address this uncertainty, WWD 18 has negotiated with LTRID to include provisions within the Water Supply Agreement that ensure LTRID will make use of other water it has available to it, including its Pre-1914 water from the Tule River, only during critical dry years of the hydrologic cycle, to offset any shortfall of CVP Class 1 supply. No Tule River water will be delivered to the Project. Instead, LTRID will pump Tule River water into the Friant Kern Canal for delivery to LTRID's South Valley customers in lieu of CVP Class 1 supplies they would normally receive. (The Tule River water is normally delivered to growers within the LTRID service area, but would be replaced in critical dry years by pumped groundwater to which LTRID has rights and access.) According to LTRID's review of historic hydrologic data for the Tule River, implementing such a procedure will assure that the identified 460 AF of Tule River water will be available during these critical dry years;
- An Eastern District Court ruling in 2006 against the CVP Friant Division threatened to result in a judicial remedy that could curtail allocations under the USBR's contracts for CVP water from Millerton Reservoir. In 2007, the parties to the litigation settled on a restoration plan for the San Joaquin River in lieu of a judicial remedy. The San Joaquin River Settlement Agreement, while significantly changing the allocation of water supplies between agricultural users and fisheries by reducing overall average deliveries to ag users by approximately 19 percent, will not significantly affect the Water Supply Agreement proposed between WWD 18 and LTRID. In normal years, adequate flows are available to meet all Class 1 demands as now recorded in addition to agreed-upon fish flows, so LTRID would experience no reduction in its available Class 1 supplies and would have no increased difficulty in meeting its obligations to WWD 18. The river restoration hydrograph in critically dry and multiple dry years does not propose to change current conditions. Rather, the restoration plan envisions that salmon would be trapped and trucked from the spawning beds to the Delta for release when the river is low. Thus, the percentage of LTRID's Class 1

supplies (under the LTRID Contract with USBR) allocated to LTRID in critically dry and multiple dry years are not expected to change significantly from allocations in prior critically dry years. The Settlement Agreement itself is not without uncertainty as it hinges on funding to carry out the restoration efforts;

- Another Eastern District Court-imposed remedy limiting the pumping operations related to the CVP export facilities in the Delta will cause water shortages for USBR contractors that receive CVP Northern California water supplies through the Delta. Though WWD 18 does not receive exported water supplies through the Delta, there is a remote chance that “Exchange Contractors” that agreed to trade pre-Friant Dam San Joaquin River water rights for CVP Delta originated supplies will exercise their “call” on CVP Friant Division water if they are unable to receive CVP exported water supply per the existing Exchange Agreement. WWD 18 recognizes this potential uncertainty, but based on the priority given to Exchange Contractors and current projections for pumping restraints through the Delta, concludes that the potential “call” does not threaten to reduce the CVP Friant Division water supplies for the Friant Community and the Project at this time. (Further, in the unlikely event that any Exchange Contractor(s) attempted to make such a “call”, the threatened consequences to the 1 million acre Friant Division of the CVP would inspire immediate collective actions to meet emergency water needs of the Friant Division contractors);
- The LTRID and WWD 18 contracts with the USBR for CVP Friant Division Class 1 water supplies (see Appendices B and C of the WSA) are set to expire in 2026. However, the contracts provide for a 25-year renewal so long as certain conditions are met. The USBR will consider the contractors’ written request for a renewal, subject to Endangered Species Act, 16 U.S.C. § 1536 et seq (ESA) and National Environmental Policy Act, 42 U.S.C. § 4321 et seq (NEPA) compliance; and
- The Project water supply includes use of reclaimed water for outdoor landscaping uses. This reclaimed water is not included in the summary of surface water available to the project, but is counted as a separate source. Use of reclaimed water is subject to environmental review and approval by the Central Valley Regional Water Quality Control Board.

Conclusion: As noted above, the Project will have an adequate water supply available during normal, single dry, and multiple dry water years and will not result in a significant impact to the provision of an adequate water supply for a 20 year period and beyond for the life of the project. The impact is presumed to be less than significant, however; the following mitigation measure will ensure that the potential impact is less than significant.

Mitigation Measure #3.14.1: Prior to recordation of any final subdivision map within the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, a water transfer agreement to serve the proposed development shall be approved by the USBR, WWD 18 and/or the LTRID as appropriate.

Effectiveness of Mitigation: Implementation of the above mitigation measure will result in a *less than significant* impact.

Impact #3.14.2 –Water Facilities [Evaluation Criteria (b)]

Water Treatment and Delivery

Water supplied to the Project Area will be surface water from Millerton Lake, treated at the WWD 18 Water Treatment Plant (WTP) located near the base of Friant Dam. The Friant Ranch Specific Plan development will participate in the expansion of existing WWD 18 facilities, in a staged fashion, as demand dictates. In addition to expansion of the treatment plant, the Friant Ranch Specific Plan development will also participate with WWD 18 to construct the pipeline, connections, tanks and pumps required to deliver sufficient capacity from Friant Dam to the treatment plant, and on to the Specific Plan development.

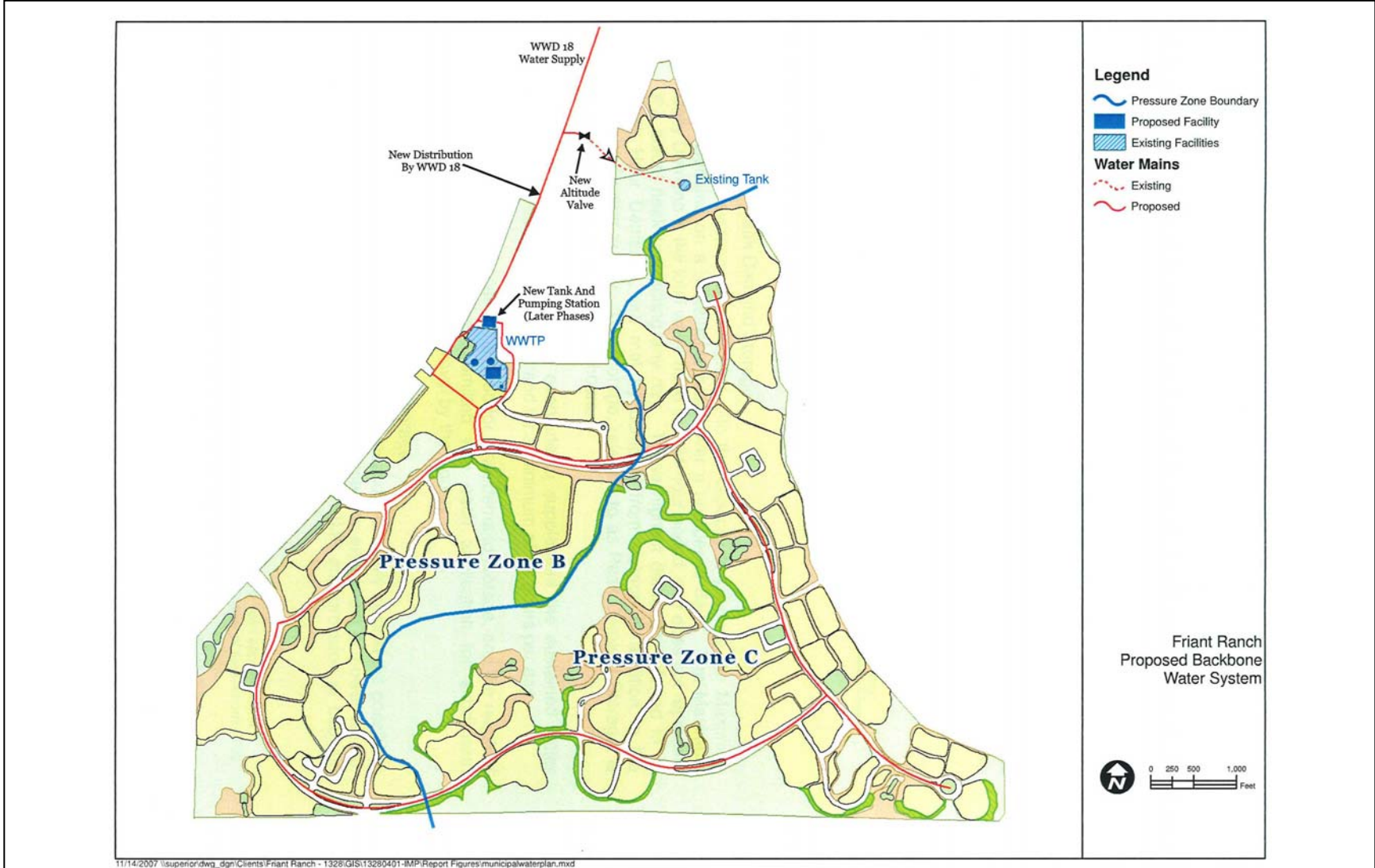
In order to deliver sufficient supply of water to the WTP for the Project Area, WWD 18 will utilize an existing 24-inch diameter pipeline owned by the Bureau of Reclamation, which, in the past, was used to deliver water to the Fish Hatchery located at the base of Friant Dam. This pipeline is currently unused, having been replaced by a larger line at the time the OCID power plant was constructed. Adaptation of this line for WWD No. 18's use will include the installation of a slip-liner within the 24-inch pipe, as well as installation of all necessary valves.

This supply line will be connected to the WWD 18 WTP. Figure 3.14-1 shows a conceptual plan of facilities needed to supply water from the WWD 18 water treatment plant to the Friant Ranch Specific Plan development. The water supply pipeline to the development will be constructed along the abandoned railway ROW extending along the west side of the development. Water supply pipelines will be developed as demand develops within the balance of the Friant Community Plan are located outside the boundaries of the Friant Ranch Specific Plan.

Buildout of the Friant Community Plan, inclusive of the Friant Ranch Specific Plan, will require construction of needed on and offsite infrastructure to provide water supply for domestic and fire protection needs. The potential impacts associated with construction of this infrastructure are analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6

Water Distribution System

The WWD 18 water supply system for the Project Area will be divided into three pressure zones, A, B and C. This division will allow all users to receive water at acceptable pressures in the distribution system. Pressure Zone A is the existing lower pressure zone within the existing Community of Friant, to the west of Friant Road. None of the Friant Ranch Specific Plan development will fall within this pressure zone. Pressure Zone B will include users of higher elevation within the existing Community of Friant, and the lower portions of the Friant Ranch Specific Plan Area, generally nearest Friant Road. Pressure Zone C will include the higher elevations within the Friant Ranch Specific Plan development, and is not used in the current WWD 18 service area.



	<p>PROPOSED FRIANT RANCH BACKBONE WATER SYSTEM</p>	<p>Figure 3.14-1</p>
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Water service to Pressure Zone A and B, generally near Friant Road, will be supplied by pumping directly from the WWD 18 treatment facilities. The majority of the initial phase of the Friant Ranch development will be in Pressure Zone B, and will therefore be served from the new pipeline and a new storage tank at the existing WTP.

Water service for Pressure Zone C will be provided by variable speed pumps at a booster pumping station located near a new storage tank site in the northwest of Friant Ranch, near the WWTP. The new storage tank and the initial booster pumps serving Pressure Zone C will be constructed during Phase 1 of the development.

Buildout of the Friant Community Plan, inclusive of the Friant Ranch Specific Plan, will require construction of needed on and offsite infrastructure to provide water supply for domestic and fire protection needs including booster pumps and a storage tank (or tanks). The potential impacts associated with construction of this infrastructure are analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Water Treatment Facilities

Potable water for the development will be treated and delivered by WWD No. 18 facilities, expanded as necessary for the added capacity required for the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan. Treatment of surface water will conform to the applicable DPH and EPA regulations. Design details will be fully developed through discussions with DPH and EPA. At present, it is envisioned that facilities will include coagulation, flocculation, settling, micro-filtration and disinfection, all in accordance with the Surface Water Treatment rule.

The WWD No. 18 water treatment facility, located below the Friant Dam north of the historic town of Friant and the northern boundary of the Friant Ranch Specific Plan site, will be expanded at its' current location commensurate with treatment capacity need generated by buildout of the Community Plan area, inclusive of the Friant Ranch Specific Plan. Impacts associated with construction of the plant expansion have been analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Phasing of Water System Improvements

Construction of water system facilities will be phased to meet the demands of the development as it comes on line. Each phase of the development or individual project within the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan must provide assurance of water supply and redundancy adequate to meet the standards set forth in the Community Plan and Specific Plan, and provide facilities that are either expandable or are sized to provide for future phases of development.

Water Storage

The water storage requirement includes three components: fire flow; peak demand; and contingency back-up. Water storage requirements will increase as development envisioned by the Project progresses, with the general principles being that additional water supply redundancy

reduces the requirement for back-up storage, and more-intensive land use increases the fire storage requirement.

Precise storage and fire flow quantities will be set based upon the requirements of the California Fire Code in effect at the time development occurs within the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan. The California Fire Code is found at Title 24, Part 9 of the California Code of Regulations where it is amended from time to time.

Fire Flow Storage

As required by the California Fire Code, fire flow storage will be sufficient to provide 120 minutes of operation at the highest-required fire flow within the Friant Community Plan area (inclusive of the Friant Ranch Specific Plan) while concurrently meeting the Maximum Day Demand of the Project as developed at the time. This means that so long as development within the Friant Ranch Specific Plan area remains residential-only, fire flow will be based upon 1,000 gpm. At such time as a commercial or industrial component is added, required fire flow will increase and so will required fire storage. Table 3.14-8 summarizes minimum fire flows required for each land use type. Required fire flow and storage volumes have been factored into the Water Supply Assessment prepared for the Friant Ranch Specific Plan and the Friant Community Plan at large.

**Table 3.14-8
Minimum Required Fire Flow by Land Use⁴**

Area Plan Land Use	Required Fire Flow (GPM)
Single Family / Duplex	1,000, 1,500 ⁵
Neighborhood Shopping / 3 Story Stacked Flats	2,500

Peak Demand Storage

Many water systems, including the one proposed for WWD No. 18 to serve the Friant Community Plan area, are designed with the capacity to produce the Maximum Daily Demand on a sustainable basis over a number of days. In the San Joaquin Valley, water systems must be prepared to deliver consecutive Maximum Day demands throughout the months of July and August at minimum. The Maximum Daily Demand is the total water used in a 24-hour period, and does not represent the actual peak use during any day. Those highest demands, referred to as Peak Hour Demands, are met by pumping from storage in addition to the sustained water supply. This storage, referred to as Peak Demand Storage, is refilled daily during low-demand hours.

Peak Demand Storage will be adequate to supplement the sustained water supply and meet Peak Hour Demand for the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, a minimum of six hours per day. Impacts associated with construction of water system storage facilities have been analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

⁴ These fire flows are minimums. Greater flows may be required at the time of project approval if the characteristics of a particular project so warrant, as determined by the requirements of the California Fire Code in effect at the time of phase approval.

⁵ Applies to Residential zone if developed at 12 units/acre or greater, and to all attached housing developments.

As required by the Friant Ranch Specific Plan IMP, calculations demonstrating the need for peak demand storage, and the required capacity thereof, shall be submitted with each application for subdivision improvement drawings, for approval by the County.

Contingency Back-Up Storage

Contingency back-up storage provides a measure of safety against the possibility that water treatment capacity might be reduced by equipment or power failure. Redundancy of facilities in accordance with the Friant Ranch Specific Plan IMP and provision of back-up power supplies limits WWD 18's exposure to shortage due to such failures, but Back-Up Storage is still a prudent requirement.

The Friant Ranch Specific Plan IMP requires that storage equivalent to 20 percent of Average Day Demand for the cumulatively-approved units be provided for this contingency. The 20 percent storage equivalent will be accommodated by the above ground water tank (tanks) provided for in the Friant Ranch Specific Plan IMP. Impacts associated with construction of water system storage facilities have been analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Total Storage Requirement

The IMP requires that the greater of fire flow storage and peak hour storage be added to contingency storage requirements to reach the total storage requirement, and that all storage volumes shall be net usable volume of the tanks or reservoirs proposed. It should also be noted that conversations are ongoing with WWD staff about the need for added storage, both to supply peak hour and fire protection needs for the outlying community, and to provide added disinfectant contact time for all consumers served by the District. At present, the combined volume of storage needed for all these purposes has not been defined; it can be expected to require a tank with a nominal volume of, perhaps, one million gallons.

Also shown on Figure 3.14-1 is the location of a new second storage tank. Sizing of this tank follows the discussion above; note that the tank shown will be sized to provide service for the Specific Plan Area only. Prudent utility planning may indicate that WWD 18 requires a larger tank be provided to accommodate future needs for added storage in other parts of the Project Area. Storage volumes in excess of what is needed to serve the Friant Ranch Specific Plan would be processed by WWD 18's other zones of benefit and may require supplemental environmental review as specific information about the need for and location of such storage is not known at this time.

The second storage tank would be located adjacent to the proposed WWTP. This will allow WWD 18 better ability to operate and maintain the facilities than if they were at separate locations. Impacts associated with construction of all water system storage facilities have been analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

To develop the supplies identified above, WWD 18 will need to accomplish the following steps:

1. Obtain USBR license for use of existing water supply pipeline from Friant Dam.
2. Obtain Regional Water Quality Control Board and Department of Public Health approvals for wastewater reuse and water treatment facilities.
3. Participate in the Fresno County approval process for the various phases of the Project, requiring construction of all necessary water infrastructure (in accordance with the Project's infrastructure Master Plan) as phases are proposed.
4. Construct (or inspect developer's construction of) the required infrastructure improvements, and verify that infrastructure is ready to be placed in service prior to occupancy of homes in the corresponding Project phases.) Upon completion of any developer-constructed facilities, take ownership and assume operating responsibility in accordance with the water service agreement).

Conclusion: As noted above, the Project will have an adequate system of water conveyance and storage and will not result in a significant impact to existing water conveyance and storage facilities. With incorporation of mitigation measures included in Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6 of this Draft EIR to off-set impacts resulting from construction of infrastructure systems associated with buildout of the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, impacts resulting from construction and operation of water treatment, conveyance, and storage facilities is considered to be *less than significant*

Mitigation Measures: No mitigation measures are required.

Impact #3.14.3 – Inadequate Wastewater Treatment Capacity and Facilities [Evaluation Criteria (a), (b) and (e)]

Implementation of the Project will result in growth requiring additional wastewater treatment capacity. The Project includes a new wastewater treatment plant to accommodate new development within the Friant Community Plan area, including the Friant Ranch Specific Plan. Currently, the lack of a wastewater treatment plant (WWTP) hinders economic development within the Friant Community Plan area, including the Friant Redevelopment Project Area. Development, as proposed by the Friant Ranch Specific Plan absent a WWTP designed to adequately treat effluent generated by the Project, would be a potentially significant impact.

The Friant Ranch Specific Plan contemplates a population of approximately 5,765 at Project build-out, and a specific wastewater production of 80 gallons per capita/day.

This calculation is based upon 1.9 persons per unit for 2,816 active-senior units⁶ and 2.27 persons per unit for the 180 non-age qualified units. This equates to a total residential flow of 461,200 gallons per day. In addition, the Project provides treatment capacity and connections for the Millerton Lake Village Mobile Home Park (which is currently connected to the existing plant) at the same capacity as currently provided in the existing plant. The Project will provide

⁶ According to the 2001 American Housing Survey by the U.S. Census, the combined demographic for the 55-64 and 65-74 age categories average 1.9 persons per dwelling unit. Thus, the 2,816 age restricted units within the Friant Ranch Specific Plan Area are expected to average at 1.9 persons per dwelling unit.

capacity, but not connections, to accommodate the future and existing uses within the adjacent community of Friant, which has a projected peak flow at full buildout of 165,000 gallons per day. Including estimated commercial and industrial flows; total wastewater production, at full capacity, is expected to be between 700,000 and 800,000 gallons per day (gpd), at buildout of the entire Project Area, or as much as 900 AF per year.

The WWTP site is large enough to accommodate facilities to treat approximately 0.80 MGD. Project wastewater will be collected and treated at a new wastewater treatment facility to be constructed at a vacant flat site between the Community of Friant and the proposed Friant Ranch Specific Plan at the westerly edge of the Specific Plan area (see Figure 3.14-2). Impacts associated with construction of the plant have been analyzed elsewhere in this Draft EIR (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Collection Facilities

Collection facilities include gravity sewer mains of 8-inches in diameter, plus pumping stations and force mains. Note from Figure 3.14-2 that five lift stations, labeled A through E, will be required at buildout to serve the Friant Ranch Specific Plan development. Design standards for the sewer collection system and associated pumping stations are set forth in the IMP, and meet or exceed County design standards. The collection facilities set forth in the Friant Ranch IMP only accommodate connections within the Friant Ranch Specific Plan community.

Note from Figure 3.14-2 that the force mains serving pumping stations B, C, and E cross the interior of the Project, sometimes including environmentally sensitive areas. Since the force mains are relatively short, those force mains crossing environmentally-sensitive areas will be constructed using directional drilling equipment, resulting in no surface disruption of sensitive habitats and communities. Construction materials will be non-corrosive to assure the longest possible service life without impact upon sensitive species. Impacts associated with construction of the force mains have been analyzed in Chapter 3.4 of this Draft EIR.

Wastewater from the adjacent Millerton Mobile Home Park now collects at the site of the existing WWTP operated by the County. When new treatment facilities are constructed, the flow from the mobile home park will be diverted to the new WWTP immediately adjacent to the existing site. This diversion may require addition of a pumping station at the present site to transfer the existing flows. Should a pumping station be required, impacts associated with construction of such have been analyzed elsewhere in this Draft EIR in conjunction with buildout of the Friant Community Plan and Friant Ranch Specific Plan (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Also note in Figure 3.14-2 that wastewater from the northernmost portion of the development is to be routed through Pumping Station No. E and a force main toward the south, and then will flow by gravity sewers to the treatment plant. If an agreement can be reached with the homeowners of the Millerton Lake Village MHP system, wastewater from the northern area might be routed through existing sewers in the MHP, thereby eliminating the need for Pumping Station No. E and a corresponding force main.

Regardless of which scenario is implemented, impacts associated with construction of required facilities have been analyzed elsewhere in this Draft EIR in conjunction with buildout analysis of the Friant Community Plan and Friant Ranch Specific Plan (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6).

Future Connection of the Friant Community

Capacity has been provided in the wastewater treatment plant and disposal pipeline to accommodate future provision of service to the developing area within the Project Area. The final phase of the WWTP will include sufficient treatment capacity for full build within the Project Area. As collector systems are funded and constructed through separate processes, property owners within the Friant Community Plan Area will be permitted to connect to the new wastewater treatment plant. Such a collector system for the existing Community (other than Friant Ranch Specific Plan and the Mobile Home Park) would direct flows to the existing railroad right-of-way east of Friant Road and then south to the headworks of the Friant Ranch WWTP. It is probable that one or more pumping stations and one or more pipe crossings of Friant Road would be needed to convey the flow to the new treatment facility. None of these facilities are proposed for construction by Friant Ranch. At this time, the nature and extent of such collections remain unknown and supplemental analysis may be necessary when these are proposed.

Treatment Processes

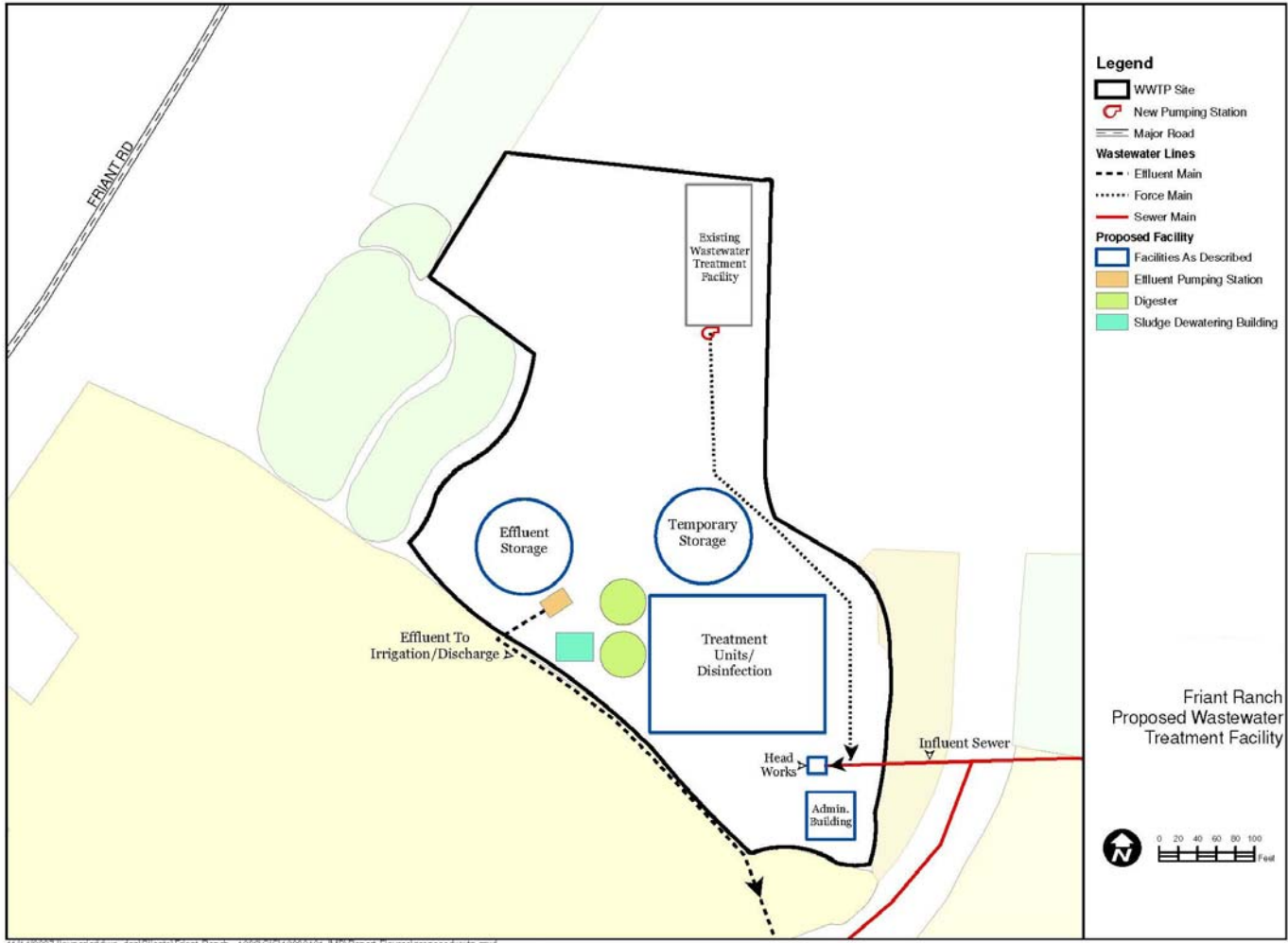
Wastewater will be treated using biological and physical processes to achieve tertiary-quality effluent, meeting State Water Quality Standards (Title 22) for unrestricted use. A Report of Waste Discharge shall be filed with the Regional Water Quality Control Board. The WWTP will be subject to the Waste Discharge Requirements promulgated by the Board subsequent to those applications. An Engineering Report shall be submitted to the Department of Public Health to describe the design of the proposed reclamation system, proposed sites for the use of recycled water and ability to comply with applicable recycled water use standards.

In accordance with requirements set forth in the Friant Ranch Infrastructure Master Plan, the plant shall incorporate an aerated biological process known as a Membrane Bio-reactor (MBR) design, satisfactory to the Regional Water Quality Control Board and other jurisdictional agencies. That process will be fully enclosed within a building, facilitating odor control and reducing the aesthetic impacts of the treatment facility upon the surrounding developed area. Disinfection of filtered effluent will be by ultra-violet light. No chlorination of effluent is proposed.

The treatment plant (or WWTP, need to be consistent) will be provided with several features to assure full compliance with the requirements of Title 22 for effluent reclamation. Although not all-inclusive, the features required for compliance are provided to assure consistent, reliable delivery of water at the expected quality. Plant features to provide this assurance will include, but not be limited to, the following:

- Standby power generation facilities sufficient to operate necessary process units;
- Redundant machinery and/or components, as needed to allow uninterrupted operation during loss of any device;
- Automated control, monitoring, and alarm systems. These shall be of open architecture so the operating staff is not bound to a single vendor for maintenance;
- Process ability to remove nitrogen to levels less than 10 mg/l, (measured as Nitrogen). This is the allowable nitrate level for potable water;
- Compliance with requirements for monitoring of turbidity, effluent BOD, and other constituents as specified in the Waste Discharge requirements;
- Storage facilities for “off-spec” water, sufficient to contain one day’s production; water not meeting the necessary quality would be stored and re-treated as capacity is available;
- Staff training, particularly in the application of reclaimed water in public spaces; and
- Friant Ranch will implement a CC&R condition banning use of residential water softeners. This provision will limit the quantity of electroconductivity (EC) added to the wastewater as it is used within the community, and will enhance WWD 18’s ability to meet the EC discharge limits expected to be imposed by the Regional Water Quality Control Board.

The intent of the Project is to provide a facility adequate to treat wastewater to the level that is necessary to comply with all applicable water quality standards for the discharge of treated effluent to the San Joaquin River, and is treated to a level necessary for unrestricted reuse, reliably and in full compliance with applicable rules and regulations. A tentative site layout for the treatment facilities is shown in Figure 3.14-3. Note that the layout includes tanks to contain effluent for diurnal storage for irrigation, and also a second tank for storage of “off-spec” water. This second tank would be used to assure that all water used for irrigation fully complies with Title 22 Requirements. It is possible that the first tank could be located on the Lost Lake Park property near the disposal area, and that the second tank could be replaced by converting the existing WWTP storage ponds to the same purpose, with correspondingly less visual impact to the community. These decisions are deferred to final Project design. Potential impacts associated with installation of effluent tanks within the WWTP options are analyzed in other sections of this Draft EIR in conjunction with discussion of Buildout of the Friant Community Plan, inclusive of the Friant Ranch Specific Plan (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.8).



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 <p>Quad Knopf</p>	<h3>FRIANT RANCH PROPOSED WASTEWATER TREATMENT FACILITY</h3>	<p>Figure 3.14-3</p>
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Treatment Plant Phasing

Wastewater treatment facilities will be constructed in multiple phases, as the Friant Ranch community is built out. While the final decision on the capacity of each phase will be made as development proceeds, the Phase A facilities will be designed and constructed to handle 0.30 million gallons per day (MGD). At the design rate of 80 gallons per capita per day (gpcd) and assuming 1.9 persons per household, 0.30 MGD will support about 1,900 equivalent dwelling units (EDUs).

A second phase of approximately 0.25 MGD capacity will be constructed as demand warrants; the resulting capacity of 0.55 MGD will be sufficient to serve the entire Friant Ranch community, including an allowance for commercial flows at the low end of industry standard projection ranges for the expected land uses and acreages.

The WWTP site shown on Figure 3.14-3 is large enough to accommodate facilities to treat approximately 0.80 MGD. This capacity would be sufficient for all of the Friant Ranch development, plus full development of the lots within the Friant Community Plan area, should the citizens of the community choose to undertake collection and treatment of wastewater. This final expansion of 0.25 MGD will be constructed at such time as Friant Ranch commercial flows so dictate, or together with the last phase of the Project.

Environmentally-Beneficial Project Features

- The design plans for the WWTP will incorporate appropriate and cost-effective odor and noise reduction measures, to the satisfaction of Fresno County;
- The WWTP will be located at the northwesterly corner of the Specific Plan area, separated from residential development by both roads and open spaces, to minimize both the aesthetic impacts of the treatment facility and the potential for odor impacts within the Project; and
- The design of the WWTP will minimize production of odor by enclosing most odor sources and providing careful control of the process to maximize treatment efficiencies and minimize the chances of odor or process upset. Detailed designs will be brought forward for review by County and RWQCB staff subsequent to Project entitlement.

Effluent Disposal and Reclamation

During summer months, the Project proposes to use all effluent for a combination of irrigation of landscape features within the Friant Ranch Specific Plan development and turf at Lost Lake Park or other suitable disposal area in the immediate vicinity.

Water balance calculations have been prepared, demonstrating a balance between effluent production and available reclamation areas, allowing application of all effluent in a manner that does not exceed the agronomic demand of the receiving lands. The calculations take into account the effects of a wet (100-year recurrence interval) rainfall year.

All lands used for effluent reclamation must be permitted by the Regional Water Quality Control Board and the Department of Public Health prior to commencement of reclamation activities. These permits will be applied for concurrently with the filing of the Report of Waste Discharge.

While effluent is generated year-round, it cannot be applied beneficially to land on that same basis. Effluent generated during winter months must either be stored for subsequent irrigation, or disposed in another fashion. All areas within the development containing sufficient acreage for wintertime effluent storage host a number of environmentally sensitive species. Due to the extent of these sensitive habitats, it is doubtful that storage ponds could be provided within the development. Therefore, an alternative disposal method must be provided for the winter months when plants and grasses are dormant.

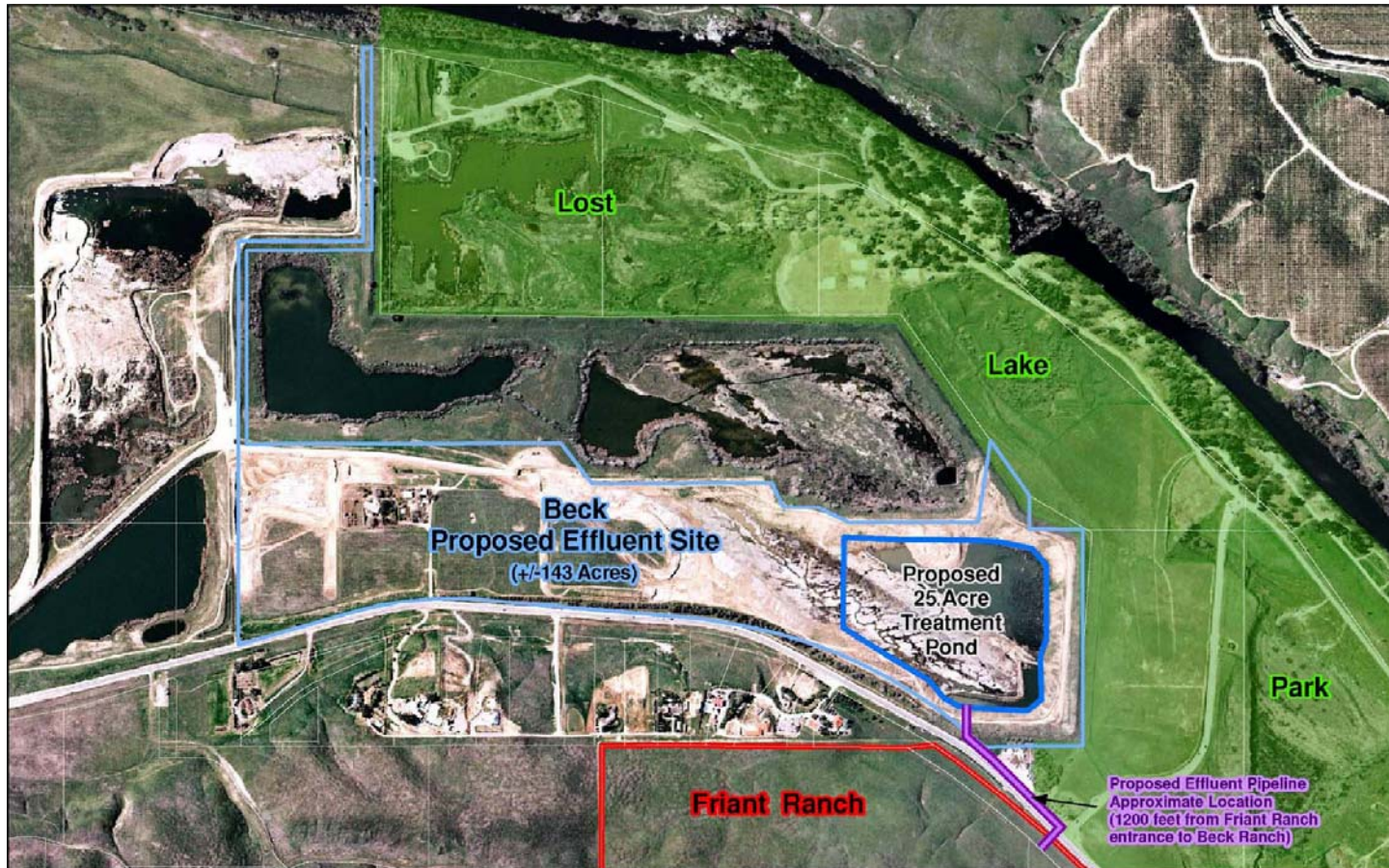
During winter months, subject to requisite approvals, disposal of tertiary treated effluent will occur through discharge of tertiary treated effluent to the San Joaquin River during high river flow periods. River discharge will be limited to the months of October through April. An NPDES permit will be required for this discharge, and will be applied for concurrently with the filing of the Report of Waste Discharge. If the requisite approvals are not provided to WWD 18 for this proposed discharge, WWD 18 will consider alternative disposal options, such as storage or percolation at locations in the immediate vicinity (see Figure 3.14-4 for Beck Property effluent storage option).

Potential impacts associated with various effluent disposal options are analyzed in other sections of this Draft EIR in conjunction with discussion of Buildout of the Friant Community Plan, inclusive of the Friant Ranch Specific Plan (e.g., Chapters 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.8).

Conclusion: Implementation of Fresno County General Plan policies noted previously (Regulatory Setting Section) and infrastructure improvements noted in the Friant Ranch Infrastructure Master Plan, hereby incorporated by reference and included as Appendix N, will ensure that the potential impacts in excess of the wastewater requirements of the Regional Water Quality Control Board (criteria a) will be *less than significant*. The Project has the potential to create a *potentially significant impact*, without mitigation, on existing wastewater treatment capacity (criteria b and c) and will require construction of a new wastewater treatment plant, the impacts of which are *potentially significant* without mitigation.

Mitigation Measure #3.14.3a: All new development in the Friant Community Plan area, inclusive of the Friant Ranch Specific Plan, shall comply with Fresno County General Plan policy PF-D.2, which requires that any new community sewer and wastewater treatment facilities serving residential subdivisions be owned and maintained by a County Service Area or other public entity approved by the County, such as Waterworks District No. 18.

Mitigation Measure #3.14.3b: Adequately sized on-site collection facilities, including lift stations, shall be installed for each subdivision in the Project area concurrent with road construction for individual subdivisions. A “backbone” conveyance system sufficient to serve each subdivision shall be installed prior to issuance of building permits for that subdivision.



	Legend Beck Property Parcels Project Boundary Lost Lake Park		Live Oak Associates, Inc. Friant Ranch Preferred Effluent Disposal Alternative: Beck Property					
	<table border="1"> <tr> <td>Date</td> <td>Project #</td> <td>Figure #</td> </tr> <tr> <td>2/02/09</td> <td>572-06</td> <td>4</td> </tr> </table>		Date	Project #	Figure #	2/02/09	572-06	4
Date	Project #	Figure #						
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Aerial Imagery: AirPhotoUSA, 2007
 Figure Prepared By Provost and Pritchard



FRIANT RANCH PROPOSED PROPOSED EFFLUENT SITE

Figure 3.14-4

Mitigation Measure #3.14.3c: Wastewater collection, treatment and disposal of the Friant Ranch Specific Plan Area shall adhere to Section VI of the Friant Ranch Infrastructure Master Plan. The applicant and/or WWD 18 must demonstrate adherence to Section VI of the Friant Ranch Infrastructure Master Plan prior to issuance of an occupancy permit for development within the Friant Ranch Specific Plan Area.

Mitigation Measure #3.14.3d: Commitments from the wastewater treatment provider to receive anticipated flows from the Friant Ranch Specific Plan Area and Millerton Lake Village Mobile Home Park at the WWTP shall be secured by Fresno County prior to County approval of improvement plans for wastewater collection and transmission infrastructure.

Mitigation Measure #3.14.3e: Prior to issuance of building permits for each increment of new development within the Project Area, the County shall confirm that all necessary permits (e.g., NPDES) are in place for the WWTP to discharge additional treated effluent in the amounts associated with new development. This shall include a determination that development timing will not impede other development for which entitlements have been issued.

Mitigation Measure #3.14.3f: Prior to approval of improvement plants and wastewater collection and infrastructure, the applicant must demonstrate to the County that on- and off-site sewer pipelines will have watertight joints and be in accordance with design standards adopted by Fresno County in order to minimize the potential for accidental discharge.

Mitigation Measure #3.14.3g: The design plans for the WWTP shall incorporate appropriate and cost-effective odor and noise reduction measures, to the satisfaction of the Fresno County Planning and Public Works Departments prior to issuance of the conditional use permit for the WWTP.

Effectiveness of Mitigation: Implementation of the above mitigation measures will result in a *less than significant* impact.

Impact #3.14.4 – Stormwater Drainage Capacity and Facilities **[Evaluation Criteria (c)]**

The Friant Community Plan, inclusive of the Friant Ranch Specific Plan, will be designed using Low Impact Development principles which are set forth in detail in the Friant Ranch Infrastructure Master Plan and also discussed in the Hydrology and Water Quality section of this Draft EIR

Detention and Retention Basins

The basin geometry for each watershed differs depending on many factors, including the contributing drainage area and the design flow volume. Retention basins are designed to maintain the predevelopment runoff volume by storing the peak storm runoff above a base flow; retention basins in this case have also been sized to provide the storage volume necessary to give the detention time required for water quality control.

Detention basin storage is designed to maintain the predevelopment peak runoff rate while capturing all runoff above that amount.

Conceptual basin locations are depicted in Figure 3.14-5, Drainage Plan. These locations have been selected to work with the existing ground topography and the overall master-planned drainage concept. Exact basin locations shall be determined by the developer, after precise site layouts are determined. The basins shall be permitted to shift, as long as the function provided for in the Storm Drain Master Plan is maintained, or appropriate modifications are made to the Storm Drain Master Plan.

As discussed in Section 3.8 (Hydrology and Water Quality), Friant Ranch will also utilize LID strategies. LID is an innovative stormwater management approach with a basic principle taken from nature: manage rainfall at the source using uniformly distributed, decentralized micro-scale controls.

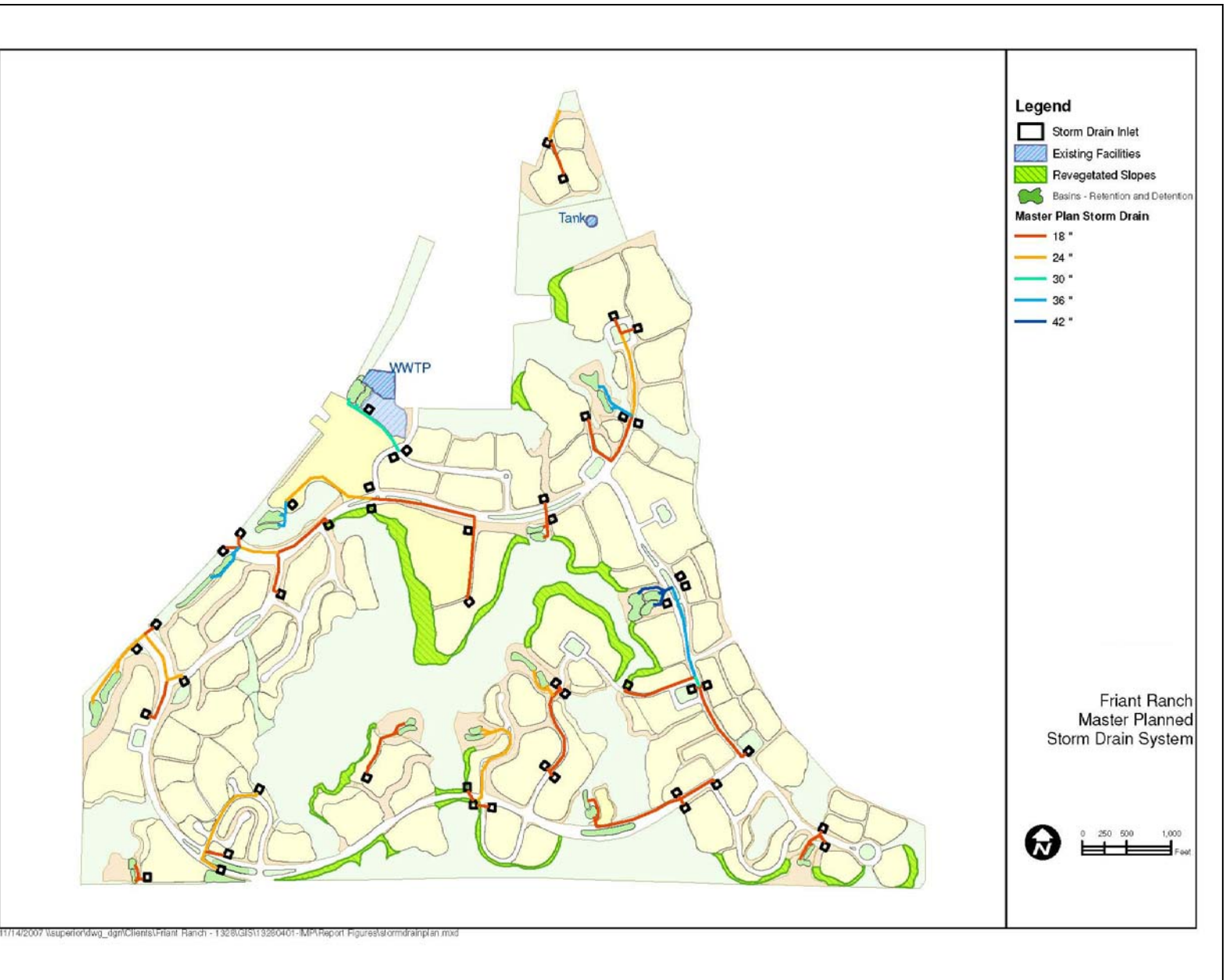
A new combination conventional/bio-filtration drainage system will be constructed and implemented as part of Friant Ranch project. Rain will run from inlets into natural swales on the property that will collect in small sedimentation basins (rain gardens) lined with plants and other materials to filter the water. This new system framework incorporates conventional curb/ gutter street design with bio-filtration swales and drop inlets into a string of community filtration/sedimentation basins. This system will be supplemented by a surface collection system, including inlets and a below ground storm sewer conveyance system. Culverts may be required to route runoff from the development away from the existing seasonal drainage swales that are to be protected. The Friant Ranch drainage system will be maintained and operated by a management entity acceptable to Fresno County.

Friant Ranch will also include the following Low Impact Development design strategies for stormwater management: encourage conservation measures; promote impact minimization techniques such as reduction of impervious surfaces; provide for strategic runoff timing by slowing flow using the landscape; use an array of integrated management practices to reduce and cleanse runoff; and advocate pollution prevention measures to reduce the introduction of pollutants to the environment.

The Friant Ranch Specific Plan includes the following policies with regards to stormwater management:

Policy 4.9 Require that necessary infrastructure (e.g., roads, sewer, water, drainage, telephone, cable television, etc.) be installed and in place prior to occupancy of dwelling units in Friant Ranch.

Policy 5.52 Use native and non-invasive plant materials to transition into undisturbed open space areas. Landscaping shall blend in with the existing wetlands and natural drainages.



DRAINAGE PLAN

Figure 3.14 - 5

- Policy 5.54 Incorporate, where warranted, landscaping bio-swales integral to the Low Impact drainage system to provide cleaning and filtration of drainage water before it is discharged from the project.*
- Policy 5.71 Provide bio-filtration areas and swales in landscaped parking islands and edges of parking lots, where feasible, to capture low-flow runoff in the parking areas and reduce toxin runoff into open space and natural drainages.*
- Policy 5.74 Encourage the use of pervious concrete pavement, where appropriate, to reduce or eliminate runoff from paved areas.*
- Policy 5.104 Plan natural drainage areas, where feasible, particularly avoiding environmental features such wetlands, vernal pools and steep slopes, as indicated on the Friant Ranch Land Use Plan.*
- Policy 5.108 Incorporate vegetative groundcover that absorbs rainwater and reduces runoff into the landscape design. Permeable surfaces should be used wherever possible to reduce paving.*

Conclusion: Policies and guidelines of the proposed Community Plan Update, Friant Ranch Specific Plan and Friant Ranch Infrastructure Master Plan will ensure the potential impact is at a *less than significant* level.

Mitigation Measures: No mitigation measures are required.

Impact #3.14.5 – Landfill Capacity
[Evaluation Criteria (f)]

The Project would have a significant impact related to solid waste disposal if it would not be served by a landfill with sufficient permitted capacity to accommodate the build out of the Project's solid waste disposal needs.

The American Avenue Landfill is owned by Fresno County and would receive most of the Project site's solid waste. American Avenue Landfill began operation in 1992 for public and commercial solid waste haulers. It is estimated that the landfill will be able to continue operation until 2031 when it will be full and will have to be closed (City of Fresno website, December, 2007). Subsequent to closure of the American Avenue Landfill, the Friant Community Plan area will most likely be served by a new landfill that will be developed in accordance with all applicable laws and regulations in effect at the time.

The 440-acre waste management facility consists of an unlined waste management unit covering 30 acres (Phase I) and a 160-acre composite-lined waste management unit (Phase II). There is a proposal to expand the waste management facility by constructing Phase III (250 acres) upon completion of Phase II.

Biosolids Disposal

Disposal of biosolids generated by the WWTP in Friant Ranch will be in accordance with regulations contained in EPA 40 CFR 503,

Solids will be disposed to permitted landfills.

Conclusion: Compliance with regulations contained in EPA 40 CFR 503 reduces this impact to a *less than significant* level.

Mitigation Measures: No additional mitigation measures are required.

Impact #3.14.6 – Compliance with Federal, State, and Local Solid Waste Regulations [Evaluation Criteria (f)]

The Project would have a significant impact related to solid waste disposal if it would not comply with federal, State and local statutes and regulations related to solid waste and recycling. The existing landfill is regulated by the Fresno County Environmental Health Department in compliance with Federal, State, and Local regulations. The American Avenue Landfill has sufficient permitted capacity to accommodate the buildout of the Project and is operated in compliance with federal, state and local solid waste regulations.

Conclusion: The project proponent(s)/developer(s) will comply with federal, State and local statutes and regulations related to solid waste and recycling. The impact is considered *less than significant*.

Mitigation Measures: No mitigation measures are required. Though not required to mitigate an identified significant impact, the following mitigations are recommended to further reduce impact on the land fill.

Mitigation Measure #3.14.6a: Contractors shall be required to provide on-site separation of construction debris to assure a minimum 50% diversion of this material from the landfill.

Mitigation Measure #3.14.6b: A source-separated green waste program shall be implemented within the project area, subject to review and approval by the Fresno County Department of Public Works and Planning, Resources Division.

Effectiveness of Mitigation: Implementation of the above mitigation measures will ensure a *less than significant* impact.

Impact #3.14.7 – Development of the Community Plan area will increase the demand for electricity and natural gas and will result in the need to construct new infrastructure to serve the Community Plan area
[Evaluation Criteria (h)]

Extensions of existing electrical and natural gas facilities by PG&E are necessary to provide adequate electrical and natural gas service to support the demands of the Friant Ranch Specific Plan and subsequent development in the Community Plan Area. Although provision of propane service to individual residences may be a viable alternative to meeting energy needs within the Specific Plan area, PG&E indicates that it has or can develop the necessary capacity to serve the Community Plan area with both electricity and natural gas. When new energy infrastructure is needed to serve the Community Plan area, there will be short-term construction impacts. To minimize impacts, development of on-site and off-site electrical infrastructure needs to occur concurrently with Community Plan area development.

In order to provide natural gas service to the Community Plan area, new gas distribution feeder mains, regulator stations, and distribution and transmission lines will be needed.

Energy supply is surpassed by energy demand during peak usage times in California. Increased energy efficiency and conservation could reduce the need for additional power plants or other energy facilities that could cause undesirable environmental effects, as well as reducing costs for future homeowners and businesses. Energy efficiency measures may be used in the design of subdivisions and the location and design of commercial and residential properties. Title 24 of the California Code of Regulations addresses required energy efficiency measures for construction. These construction practices can reduce costs to homeowners and businesses over the long-term. The Community Plan and Friant Ranch Specific Plan specifies that all residential units will be built to Title 24 standards. The Specific Plan also encourages integration of solar orientation and design of buildings.

Since PG&E reports that they have the ability to supply the necessary energy to the Community Plan area, this impact is considered less than significant. However, impacts related to timing of installation of utilities are potentially significant.

Conclusion: There are many sources of electrical energy, and it is likely that various sources would be used in the Community Plan area at buildout. According to PG&E's 2004 Generation Portfolio, the company obtains energy from hydroelectric, nuclear, natural gas and fossil facilities. It is beyond the scope of this Draft EIR to speculate regarding impacts of using any particular source of energy; however, for informational purposes, common potential environmental impacts from various energy sources are listed below:

- Hydroelectric: Alteration of aquatic ecosystems and hydrologic processes, soil erosion, disruption of natural fish movement;
- Nuclear: Significant water use, discharge of warmed and polluted water into natural water bodies, generation of radioactive waste, soil contamination;

- Coal: Emission of nitrogen oxides, carbon dioxide, sulfur dioxide, mercury and methane into the air; significant water use; discharge of warmed and polluted water into natural water bodies; generation of solid waste; soil contamination; alteration of wildlife habitat during surface mining; and
- Natural Gas: Emission of methane, nitrogen oxides, and carbon dioxide; alteration of habitat during extraction.

Mitigation Measure #3.14.7a: The Specific Plan applicants and subsequent developers within the Community Plan area shall work closely with PG&E to ensure that development of electrical and natural gas infrastructure with the capacity to service the entire Community Plan area is located and provided concurrently with roadway construction and in accordance with PUC regulations. The applicant(s) shall grant all necessary easements for installation of electrical and natural gas facilities, including utility easements along existing and future on-site arterial roads for the development of area-wide utility corridors. Coordination with PG&E shall occur, and any required agreements shall be established prior to recordation of the first final subdivision map.

Mitigation Measure #3.14.7b: Implement Mitigation Measure 3.3.2 as set forth in Section 3.3 of this Draft EIR.

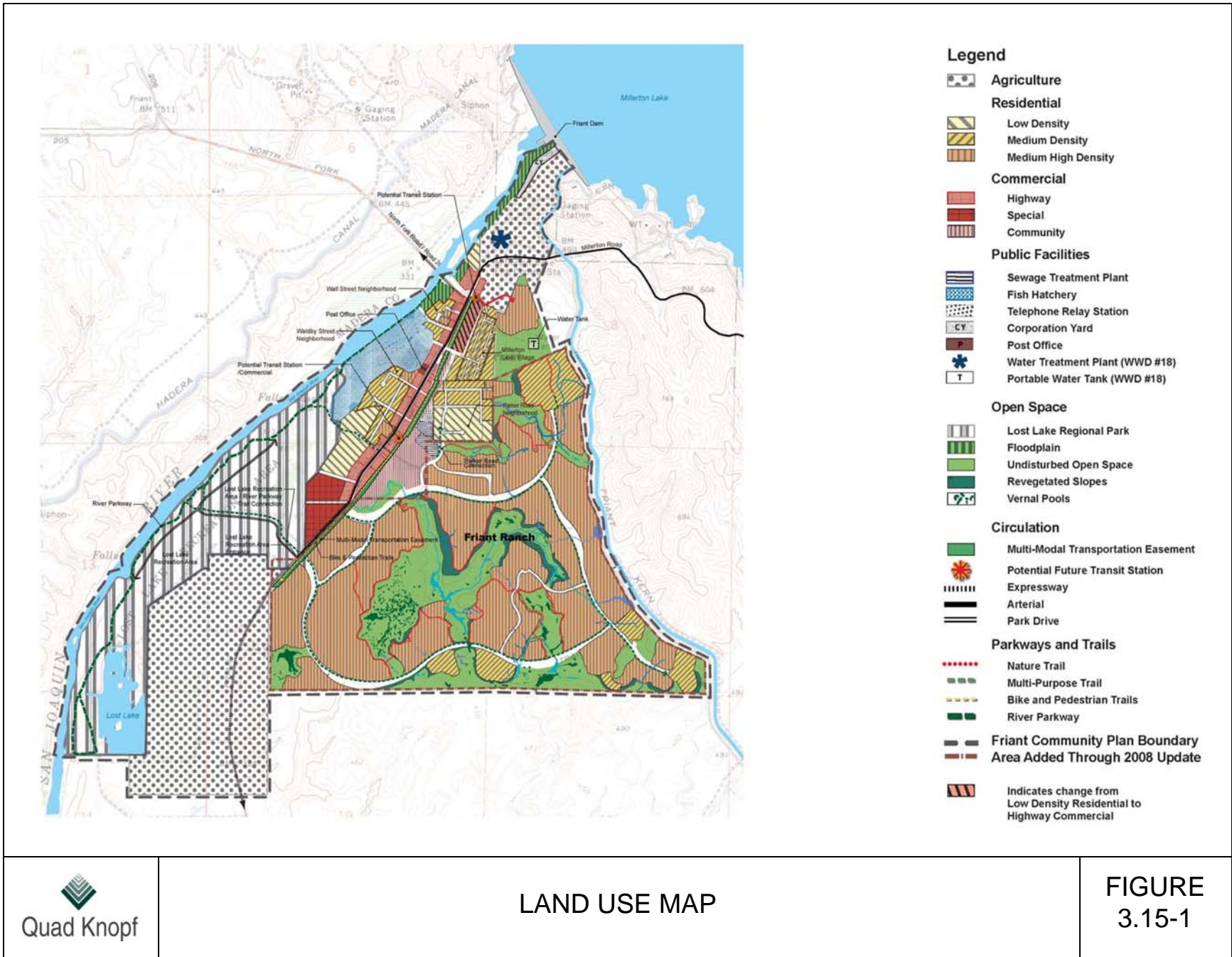
Effectiveness of Mitigation: Implementation of the above mitigation measures will reduce energy-related impacts to a *less than significant* level.

3.15 Greenhouse Gas Emissions and Global Climate Change

INTRODUCTION

In California, observational trends from the last half century show warmer winter and spring temperatures, decreased spring snow levels in lower- and mid-elevation mountains, up to one month earlier snow pack melting, and flowers blooming one- to two-weeks earlier than under historical conditions (Cayan et al. 2006b). Research suggests that human activities, such as the burning of fossil fuels and clearing of forests, contribute additional carbon dioxide (CO₂) and other heat trapping gas emissions into the atmosphere. Future global climate change could have widespread consequences that would affect many of California's important resources, including its water supply.

This section considers the impacts of all land within the Friant Community Plan boundary, including the proposed Friant Ranch Specific Plan, on greenhouse gas emissions and global climate change, as well as climate change impacts to water supply. The Project land uses that are included in this study that will result in significant levels of vehicle trips at full build-out are as follows (Figure 3.15-1):



LAND USE MAP

FIGURE 3.15-1

Community Plan Area outside Friant Ranch Specific Plan area:

- Highway Commercial: 33.07 acres;
- Lost Lake Regional Park: 263.97 acres;
- Low Density Residential: 44.33 acres;
- Medium Density Residential: 50.92 acres;
- Medium High Density Residential: 10.09 acres; and
- Special Commercial: 17.1 acres

Friant Ranch Specific Plan: Total of 565 acres

- 2,683 Senior adult housing-detached units;
- 83 Senior adult housing- attached units;
- 230 low rise apartment units;
- 10,000 SF of high-turnover sit down restaurant;
- 5,000 SF of fast food restaurant with drive through;
- 10,000 SF medical-dental office;
- 100,000 SF of general office space; and
- 125,000 SF of shopping center area.

The Depot Parcel:

- Highway Commercial: 6.75 acres

3.15.1 REGULATORY SETTING

This section describes recent state regulations that specifically address greenhouse gas emissions and global climate change. At the time of writing, there are no regulations setting ambient air quality emissions standards for greenhouse gases.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493, which required that the California Air Resources Board (ARB) develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases y passenger vehicles and light-duty truck and other vehicles determined by the ARB vehicles whose primary use is noncommercial personal transportation in the state.”

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra’s snowpack, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary will also submit biannual reports to the governor and state legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created a Climate Action Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, The California Climate Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG (greenhouse gas) emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Senate Bill 1368

SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Senate Bill 97

SB 97 (Chapter 185, Statutes 2007) was signed by Governor Schwarzenegger on August 24, 2007. The legislation provides partial guidance on how greenhouse gases should be addressed in

certain CEQA documents. SB 97 requires the Governors Office of Planning and Research (OPR) to prepare CEQA guidelines for the mitigation of GHG emissions, including but not limited to, effects associated with transportation or energy consumption. OPR must prepare these guidelines and transmit them to the Resources Agency by July 1, 2009. The Resources Agency must then certify and adopt the guidelines by January 1, 2010. OPR and the Resources Agency are required to periodically review the guidelines to incorporate new information or criteria adopted by ARB pursuant to the Global Warming Solutions Act, scheduled for 2012.

In June 2008, OPR released a technical advisory on CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review as interim recommendations while the official OPR CEQA Guidelines were under development. In January 2009, OPR released its draft CEQA Guideline amendments and additions, which include suggested thresholds of significance and mitigation measures to address global climate change.

3.15.2 PHYSICAL SETTING

Existing Greenhouse Gases and Links to Global Climate Change

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for enhancing the greenhouse effect (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Energy Commission 2006a). A byproduct of fossil fuel combustion is CO₂. Methane, a highly potent GHG, results from offgassing associated with agricultural practices and landfills. Processes that absorb and accumulate CO₂, often called CO₂ "sinks," include uptake by vegetation and dissolution into the ocean.

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is the 12th to 16th largest emitter of CO₂ in the world and produced 492 million gross metric tons of carbon dioxide equivalents in 2004 (California Energy Commission 2006a). Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potentials to retain infrared radiation in the atmosphere and

contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, CH₄ is a much more potent GHG than CO₂. As described in the General Reporting Protocol of the California Climate Action Registry (2006), one ton of CH₄ has the same contribution to the greenhouse effect as approximately 21 tons of CO₂. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7% of total GHG emissions in the state (California Energy Commission 2006a). This category was followed by the electric power sector (including both in-state and out-of-state sources) at 22.2% and the industrial sector at 20.5% (California Energy Commission 2006a).

Feedback Mechanisms and Uncertainty

Many complex mechanisms interact within Earth's energy budget to establish the global average temperature. For example, a change in ocean temperature would be expected to lead to changes in the circulation of ocean currents, which, in turn would further alter ocean temperatures. There is uncertainty about how some factors could affect global climate change because they have the potential to both enhance and neutralize future climate warming. Examples of these conditions are also described below.

Direct and Indirect Effects of Aerosols

Aerosols, including particulate matter, reflect sunlight back to space. As particulate matter attainment designations are met, and fewer emissions of particulate matter occur, the cooling effect of anthropogenic aerosols would be reduced, and the greenhouse effect would be further enhanced. Similarly, aerosols act as cloud condensation nuclei, aiding in cloud formation and increasing cloud lifetime. Clouds can efficiently reflect solar radiation back to space (see discussion of the cloud effect below). As particulate matter emissions are reduced, the indirect positive effect of aerosols on clouds would be reduced, potentially further amplifying the greenhouse effect.

The Cloud Effect

As global temperature rises, the ability of the air to hold moisture increases, facilitating cloud formation. If an increase in cloud cover occurs at low or middle altitudes, resulting in clouds with greater liquid water content such as stratus or cumulus clouds, more radiation would be reflected back to space, resulting in a negative feedback mechanism, wherein the side effect of more cloud cover resulting from global warming acts to balance further warming. If clouds form at higher altitudes in the form of cirrus clouds, however, these clouds actually allow more solar radiation to pass through than they reflect, and ultimately they act as a GHG themselves. This results in a positive feedback mechanism in which the side effect of global warming acts to enhance the warming process. This feedback mechanism, known as the "cloud effect" contributes to uncertainties associated with projecting future global climate conditions.

Other Feedback Mechanisms

As global temperature continues to rise, CH₄ gas currently trapped in permafrost, would be released into the atmosphere when areas of permafrost thaw. Thawing of permafrost attributable to global warming would be expected to accelerate and enhance global warming trends. Additionally, as the surface area of polar and sea ice continues to diminish, the Earth's albedo, or reflectivity, is also anticipated to decrease. More incoming solar radiation will likely be absorbed by the Earth rather than being reflected back to space, further enhancing the greenhouse effect. The scientific community is still studying these and other positive and negative feedback mechanisms to better understand their potential effects on global climate change.

3.15.3 IMPACT EVALUATION CRITERIA

No air district in California, including the San Joaquin Valley Air Pollution Control District, has identified a significance threshold for GHG emissions or a methodology for analyzing air quality impacts related to greenhouse gas emissions. The State has identified 1990 emission levels as a goal through adoption of AB 32. To meet this goal, California would need to generate lower levels of GHG emissions than current levels. However, no standards have yet been adopted quantifying 1990 emission targets. It is recognized that for most projects there is no simple metric available to determine if a single project would help or hinder meeting the AB 32 emission goals. In addition, at this time AB 32 only applies to stationary source emissions. Consumption of fossil fuels in the transportation sector accounted for over 40% of the total GHG emissions in California in 2004. Current standards for reducing vehicle emissions considered under AB 1493 call for "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles," and do not provide a quantified target for GHG emissions reductions for vehicles.

Emitting CO₂ into the atmosphere is not itself an adverse environmental effect. It is the increased concentration of CO₂ in the atmosphere resulting in global climate change and the associated consequences of climate change that results in adverse environmental effects (e.g., sea level rise, loss of snowpack, severe weather events). Although it is possible to generally estimate a project's incremental contribution of CO₂ into the atmosphere, it is typically not possible to determine whether or how an individual project's relatively small incremental contribution might translate into physical effects on the environment. Given the complex interactions between various global and regional-scale physical, chemical, atmospheric, terrestrial, and aquatic systems that result in the physical expressions of global climate change, it is impossible to discern whether the presence or absence of CO₂ emitted by the project would result in any altered conditions.

Given the challenges associated with determining a project-specific significance criteria for GHG emissions when the issue must be viewed on a global scale, a quantitative significance criteria is not proposed for the Project. For this analysis, a project's incremental contribution to global climate change would be considered significant if due to the size or nature of the project it would generate a substantial increase in GHG emissions relative to existing conditions.

Pending CEQA Guidelines amendments, being drafted by the Governors Office of Planning and Research, have identified the following draft significance criteria pertaining to the impact of Global Warming:

- a. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance.*
- b. *Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.*

Under the proposed Guidelines criteria greenhouse gas emissions should be addressed if either of the above applies.

Estimated Emissions of Greenhouse Gases from the Project

GHG emissions associated with the Project were estimated using CO₂ emissions as a proxy for all GHG emissions. This is consistent with the current reporting protocol of the California Climate Action Registry (CCAR). Calculations of GHG emissions typically focus on CO₂ because it is the most commonly produced GHG in terms of both number of sources and volume generated, and because it is among the easiest GHGs to measure; however, it is important to note that other GHGs have a higher global warming potential than CO₂. For example, as stated previously, 1 lb of methane has an equivalent global warming potential of 21 lb of CO₂ (California Climate Action Registry 2006). Nonetheless, emissions of other GHGs from the Project (and from almost all GHG emissions sources) would be low relative to emissions of CO₂ and would not contribute significantly to the overall generation of GHGs from the project.

Although the CCAR provides a methodology for calculating GHG emissions, the process is designed to be applied to a single or limited number of entities or operations where detailed information on emissions sources is available (e.g., usage of electricity and natural gas, numbers and types of vehicles and equipment in a fleet, type and usage of heating and cooling systems, emissions from manufacturing processes). Information at this level of detail is not available for the Project area. For example, the ultimate GHG emissions from the approximately 39.82 acres of Highway Commercial in the Community Plan could vary substantially depending on the type and amount of office and commercial uses that are developed, the density of employees in each facility, the hours of operation for each facility, and other factors. Similarly, GHG emissions from the proposed residences could vary substantially based on numerous factors, such as the sizes of homes, the type and extent of energy efficiency measures that might be incorporated into each home's design, the type and size of appliances installed in the home, and whether solar energy facilities are included on any of the residences. Given the lack of detailed design and operational information available at this time for facilities in the Project area, the CCAR emissions inventory methodology is not appropriate for estimating GHG emissions from the project.

The URBEMIS modeling program was utilized in creating the CO₂ emission calculations. The program estimates CO₂ emissions from project-generated vehicle trips. Estimates are based on the proposed detailed land use information from the Friant Ranch Specific Plan and an estimate

of possible uses for the areas outside the Friant Ranch Specific Plan and within the Community Plan boundary, including the Depot Parcel, based on the Friant Community Plan. Figure 3.15-1 represents the areas that are described above. Because there are no current developments being planned for the area outside the Friant Ranch Specific Plan, and only an assumption of land use types was used within the quantitative analysis, the CO₂ emissions should be recalculated at time of proposed development within the existing Community Plan Area. Build-out of the entire Project area, including both existing and planned/proposed future uses, would result in approximately 81,436 vehicle trips per day. The Project at full buildout would generate an average of 585,214 vehicle miles traveled (VMT) per day, or approximately 213 million VMT annually. The Project will emit approximately 127,392 tons of CO₂ per year from the project-generated vehicle trips and area source emissions.

The analysis for GHG emissions utilized URBEMIS calculations which included trip-rates from the traffic study. This provides a more conservative approach since portions of the Community Plan currently have no development plans.

This should be considered a very general estimate providing an indication of the order of magnitude of CO₂ emissions from the Project. As discussed above, numerous factors that can substantially affect the project's CO₂ emissions (structural designs, type of building occupants, hours of operation) will not be known until buildout is complete.

Although the estimate of 260,408 tons of CO₂ emitted annually from the Project is very general, and is considered high, it is sufficient to support an evaluation of the project's contribution towards GHG emissions.

It should also be noted that the emissions calculations described above do not take into account reductions in GHG emissions resulting from implementation of AB 32. Stationary emissions sources on the project site resulting from energy usage and stationary sources that serve the project site's energy needs (e.g., power plants) will be subject to emissions reductions requirements of AB 32.. The extent of these reductions has not yet been quantified by ARB. At the time of project buildout, overall CO₂ emissions attributable to the Project could be substantially less than current emissions assumptions might indicate. Similarly, if GHG emissions reductions for vehicles are enacted, through either the requirements of AB 1493 or AB 32 or a federal regulation, CO₂ emissions from the Project would be further reduced. If regulations proposed to comply with AB 1493 survive current legal challenges, by project buildout CO₂ emissions from vehicles associated with the project could be 20% to 30% less than under current conditions. If AB 1493 is repealed, it is unclear what vehicle emissions limits might be adopted as part of AB 32.

3.15.4 IMPACT ANALYSIS

As described above in the "Environmental Setting" discussion, the cumulative increase in GHG concentrations in the atmosphere has resulted in and will continue to result in increases in global average temperature and associated shifts in climatic and environmental conditions. Multiple adverse environmental effects are attributable to global climate change, such as sea level rise, increased incidence and intensity of severe weather events (e.g., heavy rainfall, droughts), and

extirpation or extinction of plant and wildlife species. Given the significant adverse environmental effects linked to global climate change induced by GHGs, the emission of GHGs is considered a significant cumulative impact. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006a); therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and individuals on Earth. The challenge in assessing the significance of an individual project's contribution to global GHG emissions and associated global climate change impacts is to determine whether a project's GHG emissions—which, it can be argued, are at a micro scale relative to global emissions—result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Global climate change is projected to affect water resources in California. For example, an increase in the global average temperature is projected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), and is a major source of supply for the state. Although current forecasts vary (see, e.g., DWR 2006), this phenomenon could lead to significant challenges in securing an adequate water supply for a growing population and California's agricultural industry. An increase in precipitation falling as rain rather than snow could also lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events. This scenario would place more pressure on California's levee/flood control system.

Global climate change is expected to influence many interconnected phenomena, which will in turn affect the rate of climate change itself. Faced with this overwhelmingly complex system, scientists who model climate change must make decisions about how to simplify the phenomenon, such as assuming a fixed rate of temperature change or a certain level of aerosol production or a particular theory of cloud formation. These assumptions make the models applicable to particular aspects of the changing ecosystem, given a good guess about how the future will be. Rather than try to be predictive, the models represent possible scenarios that come with a set of presuppositions. Even when results are quantified, such quantifications are meaningless unless viewed in the light of those presuppositions. For these reasons, a range of models must be examined when trying to assess the potential effects of climate change and the resulting analysis is most appropriately qualitative (See Intergovernmental Panel on Climate Change (IPCC) 2001). This section, therefore, provides a qualitative analysis of the impacts of global climate change as they affect water resources in California and in the project area.

In 2003, global emissions of carbon (i.e., only the carbon atoms within CO₂ molecules) solely from fossil fuel burning totaled an estimated 7,303 million metric tons (Marlands et al. 2006). This translates to approximately 29,400 million tons of CO₂. This is only a portion of global CO₂ emissions because it addresses only fossil fuel burning and does not address other CO₂ sources such as burning of vegetation. Total estimated CO₂ emissions from all sources associated with the Project would be less than 0.0009% of this partial global total. CO₂ emissions in California

totaled approximately 391 million tons in 2004 (California Energy Commission 2006a). Total CO₂ emissions from the Project, as estimated above, would be 0.07% of this statewide total.

Impact #3.14.1 – Development of the Project could potentially result in a cumulatively considerable incremental contribution to the significant cumulative impact of global climate change

The project will have a cumulative impact of global climate change due to the increase of population and vehicles in the area. CO₂ emissions created from the Project through the VMT's as mentioned in the section above will contribute to GHG's local, regionally, and globally.

The Project's Mitigating Factors

Broadly speaking, climate change mitigation and adaptation strategies fall into three categories: (1) transportation sector strategies; (2) electricity sector strategies, including renewable energy and energy efficiency; and (3) all other adaptation strategies, such as carbon sequestration, participation in emissions trading markets and research and public education (California Energy Commission, 2003). The Friant Community Plan Update, including the proposed Friant Ranch Specific Plan project, (the Project) incorporates guidelines, strategies and mitigation measures that minimize the human and spatial environmental footprint in the project area, including transportation and electricity impacts. Implementation of these measures will help reduce potential GHG emissions resulting from the development of the Project.

The state's primary source of GHG emissions is the consumption of fossil energy (California Energy Commission 2003). The proposed Community Plan has several components included in the project's goals and policies that would reduce consumption of fossil energy within the Project area, and thereby reduce potential GHG emissions. These components are consistent with "smart growth" principles developed and promoted by local and regional communities worldwide.

"Smart Growth" Factors

The proposed Project has several components that will promote smart growth development scenarios, which will help to reduce the possible amounts of GHG's. Many of these are mentioned in the Goals and Policies section below. The Specific Plan will make use of alternative modes of transportation that produce less greenhouse gas emissions than vehicular travel, or none at all. Also, the proposed development is designed to encourage people to walk, ride bicycles, take public transportation, and make use of Neighborhood Electric Vehicles (NEV's). The project area's overall design and land use plan creates a compact development pattern that offers a wide variety of density typologies. In addition, the project will include a Village Center that will create numerous jobs with resulting shorter trips between work and living units, and a balance of housing and jobs.

Traffic Factors

Implementation of the Specific Plan's transportation and circulation goals, policies, and mitigation measures will also help reduce potential GHG emissions by providing multi-modal

transportation opportunities. . Alternative modes of transportation such as pedestrian trails and pathways, public transit routes, and use of neighborhood electric vehicles will reduce the overall fuel consumption and GHG emissions. These transportation mitigation measures will improve in vehicle efficiency and reduce overall GHG emissions that would have been present if the project did not provide these mitigation measures. The Community Plan's proposed goals and policies that support these mitigation measures are mentioned below (Goals and Policies Proposed which contribute to minimize GHG emissions).

Energy Factors

In addition to targeting GHG emissions through the transportation sector, the proposed Project contains several goals and policies that will reduce energy consumption and in return reduce GHG emissions. Policies include encouraging the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality, and a variety of sustainable building practices. Where feasible, developers will facilitate the use of green building standards and Leadership in Energy and Environmental Design (LEED) in both private and public projects, promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and integration of building materials and methods that are safer for the environment.

Goals and Policies Proposed which contribute to minimize GHG emissions:

Friant Ranch Specific Plan

Goals: *Provide new housing in a manner that protects open space and view corridors promotes efficient delivery of infrastructure and services and expands recreational facilities.*

Provide diverse housing types and designs that accommodate varying lifestyles and income levels of Active Adults (55+).

Conceive a roadway network that accommodates both traditional and alternative modes of transportation, but not limited to, nature and multi-purpose trail systems, bicycle lanes and pathways and travel lanes for Neighborhood Electric Vehicles (NEV's).

Dedicate over one third of the Friant Ranch specific Plan Area as open space in the form of parks, parkways, landscaped slopes, undisturbed open space and revegetated open space slopes.

Provide a comprehensive on-site trail system accessible to the public.

Provide opportunities for parks, parkways and landscape slopes within residential, commercial and public areas.

Policies: *Require that residential development within the Medium Density Residential and Medium High Density Residential areas include neighborhood parks and parkways, at a rate of 5 to 8 acres per 1,000 dwelling units.*

Require that development within the Village Core (Community Commercial) include 5 acres parks, parkways, and town greens.

Require a minimum of 245 acres to be preserved as undisturbed permanent open space within the Specific Plan area.

Provide a variety of housing types that may include, but not be limited to, single-family detached homes, cluster homes, courtyard homes, alley-loaded homes, townhomes and apartments.

Friant Community Plan

Land Use Element Goals and Policies:

Goals: *Expand opportunities for maintaining and improving health and wellness.*

Protect and preserve open spaces.

Maximize the distribution of open space and public spaces in community areas.

To preserve productive prime agricultural land within the Friant Community Plan Area.

Policies: *Promote walkability within Friant Community Plan Area for access to regional recreation areas through coordination and marketing of the Lost Lake Recreation Area and Millerton Lake.*

Create pedestrian linkages across Friant Road that will allow uninterrupted pedestrian trail connections between Lost Lake Recreation Area/San Joaquin River Parkway and new development east of Friant Road.

For projects, requiring Site Plan Review, encourage development that is pedestrian-friendly with a village-like character.

Condition new development projects, as appropriate, to provide streetscaping, sidewalks, and adequate lighting with a rustic/rural character in order to create more pedestrian-friendly areas that connect established residential neighborhoods to commercial areas along Friant Road.

Require that new development provide pedestrian linkages to existing neighborhoods, where feasible, to facilitate pedestrian movement between neighborhoods.

Encourage the development of a trail system that provides linkages between Lost Lake Recreation Area and the commercial and residential areas within the Friant Community Plan Area.

Allow for the development of a wide variety of housing types in Friant including large-lot single family, moderate-lot single family, small-lot single family, apartments, townhomes and condominiums.

Through future Specific Plans and zoning ordinances, facilitate moderate increases in density for multi-family units within Medium High Density Residential areas.

As new development projects are approved along Friant Road, require the projects to provide landscaping and street trees along the project frontage.

Encourage the establishment of open space corridors along drainageways, slopes, in valleys and in other constrained areas, whenever possible.

Require new development to create parks and parkways within residential neighborhoods, public, and commercial areas.

Transportation Element Goals and Policies:

Goals: *Provide multi-modal transportation linkages to Fresno, within the region and town.*

Policies: *Promote a street and highway system that can accommodate alternative modes of travel.*

Support efforts to establish multiple forms of transit within the Community of Friant, including utilizing the existing rail right-of-way for trails for bicycles and pedestrians, Neighborhood Electric Vehicle access and a potential future light rail route.

Promote the establishment of a town-wide pedestrian walkway and trail network that promotes the safe movement of people throughout the Community of Friant.

Encourage the development of multi-use trails throughout the Friant Community Plan Area for bicyclists and pedestrians.

Environmental Resources Management Element Goals and Policies:

Goals: *Incorporate green building and other sustainable building practices into development projects.*

Policies: *Implement land use patterns and policies that incorporate smart growth practices, including placement of higher densities near transit centers, providing alternative modes of transportation, and encouraging and accommodating pedestrian-friendly environments.*

Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Facilitate the use of green building standards and Leadership in Energy and Environmental Design (LEED) in both private and public projects, where feasible.

Promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and encourage energy-efficient design elements, as appropriate.

Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction, and operation of the built environment, where feasible.

Encourage the use of domestic and commercial solar energy in the Friant Community Plan Area in an effort to conserve fossil fuels and improve air quality.

Conclusion: Even with implementation of the above described measures, the Project will likely result in a substantial amount of GHG emissions. Because it cannot be determined to a reasonable degree of certainty that the Project will not result in a cumulatively considerable incremental contribution to the significant cumulative impact of global climate change, the impacts of the proposed project on global climate change are considered ***potentially significant***.

To reduce greenhouse gas emissions and thus reduce air quality impacts, the following measures shall be implemented for the Project:

Mitigation Measure #3.15.1a: The applicant shall select and locate trees carefully to protect buildings from energy consuming environmental conditions, and to shade paved areas. Trees selected to shade paved areas should be species that will shade 25% of the paved area within 20 years.

Mitigation Measure #3.15.1b: The applicant shall develop a tree planting informational packet to help project area residents understand their options for planting trees that can absorb carbon dioxide.

Mitigation Measure #3.15.1c: Prioritized parking within commercial and retail areas shall be given to electric vehicles, hybrid vehicles, and alternative fuel vehicles.

Mitigation Measure #3.15.1d: The County shall utilize the following guidelines during review of future project-specific submittals for non-residential development within the Specific Plan area and the Community Plan boundary:

- Equip HVAC units with a PremAir or similar catalyst system, if reasonably available and economically feasible at the time building permits are issued. Catalyst systems are considered feasible if the additional cost is less than 10% of the base HVAC unit cost; and
- Install two 110/208 volt power outlets for every two loading docks.

Mitigation Measure #3.15.1e: Develop walking trails throughout the Friant Ranch Specific Plan Area in accordance with the plan.

Mitigation Measure #3.15.1f: Implement the following measure as determined appropriate by the County in consultation with the SJVAPCD:

- Establish paving guidelines that encourage businesses, if feasible, to pave all privately-owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to Portland cement concrete. The use of a paving substance with reflective attributes similar to Portland Cement concrete is considered feasible under this measure if the additional cost is less than 10% of the cost of applying a standard asphalt product.

Mitigation Measure #3.15.1g: The following measures shall be used singularly or in combination to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of the 2008 State of California Title 24:

- Prior to issuance of an occupancy permit, the applicant shall demonstrate the use of air conditioning systems that are more efficient than Title 24 requirements;
- In marketing materials associated with any project within the Friant Community Plan Area, the applicant shall encourage the use of high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, and furnaces;
- Encourage photovoltaic rooftop energy systems in community buildings and larger commercial buildings;
- Prior to issuance of an occupancy permit, the applicant shall establish tree-planting guidelines that require residents to plant trees to shade buildings primarily on the west and south sides of the buildings. Use of deciduous trees (to allow solar gain during the winter) and direct shading of air conditioning systems shall be included in the guidelines; and
- As required by the Friant Specific Plan, prohibit any wood-burning fireplaces, woodstoves, or similar wood-burning devices. This prohibition shall be included in any CC&Rs that are established.

Mitigation Measure #3.15.1h: The following measures shall be used to demonstrate sustainable building practices and lessen the impact on Greenhouse Gases.:

- Provide parks and open space throughout the residential developments as required by the Friant Ranch Specific Plan;
- Prior to issuance of an occupancy permit, all non-residential projects within the Community Plan Area shall demonstrate that bicycle racks will be provided;
- Prior to issuance of an occupancy permit, all apartment complexes or condominiums without garages within the Community Plan Area shall demonstrate that at least two Class I bicycle storage spaces per unit will be provided;
- As required by the Friant Community Plan Update and Friant Ranch Specific Plan, residential neighborhoods shall be interconnected, with easy access to commercial and recreational land uses;
- Prior to issuance of an occupancy permit within the Friant Ranch Specific Plan area, the applicant shall create informational materials informing occupants of:
 - The alternative travel amenities provided, including ridesharing and public transit availability schedules;
 - The Community Plan's pedestrian, bicycle, and equestrian paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas; and
 - The SJVAPCD programs to reduce county-wide emissions.
- Any new park areas within the Community Plan Area shall include:
 - Bicycle racks at all appropriate locations; and
 - A community notice board and information kiosk with information about community events, ride sharing, and commute alternatives.
- Provide a community notice board and information kiosk with information about community events, ride-sharing, and commute alternatives.

Effectiveness of Mitigation: Implementation of the above mitigation measure would substantially reduce greenhouse gas emissions within the Project area, *but not to a level that is less than significant*:

Impact #3.15.2 - Climate Change could potentially result in an impact on Project water resources

From a statewide perspective, global climate change could affect California's environmental resources through potential, though uncertain, changes related to future air temperatures and precipitation and their resulting impacts on water temperatures, reservoir operations, stream runoff, and sea levels (Kiparsky and Gleick 2003). These changes in hydrological systems could

threaten California's economy, public health, and environment (California Energy Commission 2003). The types of potential climate effects that could occur on California's water resources include:

Water Supply. Several recent studies have shown that existing water supply systems are sensitive to climate change (Wood, 1997). Potential impacts of climate change on water supply and availability could directly and indirectly affect a wide range of institutional, economic, and societal factors (Gleick 1997). Much uncertainty remains, however, with respect to the overall impact of global climate change on future water supplies. For example, models that predict drier conditions (i.e., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows (Brekke, 2004). Both projections are equally probable based on which model is chosen for the analyses (Ibid.). Much uncertainty also exists with respect to how climate change will affect future demand for water supply (DWR 2006). Still, changes in water supply are expected to occur and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky and Gleick 2003; see also Cayan et al. 2006a).

Surface Water Quality. Global climate change could affect surface water quality as well. Water quality is affected by several variables, including the physical characteristics of the watershed, water temperature, and runoff rate and timing. A combination of a reduction in precipitation, the shift in volume and timing of runoff flows, and the increased temperature in lakes and rivers could affect a number of natural processes that eliminate pollutants in water bodies. For example, the overall decrease in stream flows could potentially concentrate pollutants and prevent the flushing of contaminants from point sources. Still, considerable work remains to determine the potential effect of global climate change to water quality.

Groundwater. Little work has been done on the effects of climate change on specific groundwater basins, groundwater quality or groundwater recharge characteristics (Kiparsky and Gleick 2003). Changes in rainfall and changes in the timing of the groundwater recharge season would result in changes in recharge. Warmer temperatures could increase the period where water on the ground by reducing soil freeze. Conversely, warmer temperatures could lead to higher evaporation or shorter rainfall seasons, which could mean that soil deficits would persist for longer time periods, shortening recharge seasons. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge. This additional winter runoff, however, would be occurring at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity. Reductions in spring runoff and higher evapotranspiration, on the other hand, could reduce the amount of water available for recharge. However, the extent to which climate will change and the impact of that change on groundwater are both unknown. A reduced snowpack, coupled with increased rainfall, could require a change in the operating procedures for California's existing dams and conveyance facilities (Kiparsky and Gleick 2003). As discussed in Section 3.14 Utilities and Service Systems, the Project will not rely on groundwater or groundwater recharge. Water supplied to the Project Area will be surface water from Millerton Lake, treated at the WWD 18 Water Treatment Plant located near the base of Friant Dam.

Fisheries and Aquatic Resources. In California, the timing and amounts of water released from reservoirs and diverted from streams are constrained by their effects on various native fish, especially those that are listed under the federal and state endangered species acts as threatened or endangered. Several potential hydrological changes associated with global climate change could influence the ecology of aquatic life in California and have several negative effects on cold-water fish (Department of Water Resources [hereafter “DWR”] 2006). For example, if climate change raises air temperature by just a few degrees Celsius, this change could be enough to raise the water temperatures above the tolerance of salmon and trout in many streams, favoring instead non-native fishes such as sunfish and carp (DWR 2006). Unsuitable summer temperatures would be particularly problematic for many of the threatened and endangered fish that spend summers in cold-water streams, either as adults, juveniles, or both (DWR 2006). In short, climate change could significantly affect threatened and endangered fish in California. It could also cause non-threatened and non-endangered fish to reach the point where they become designated as such (DWR 2006).

Flood Control. It is difficult to assess implications of climate change for flood frequency, in large part because of the absence of detailed regional precipitation information from climate models and because human settlement patterns and water-management choices can substantially influence overall flood risk (Kiparsky and Gleick 2003). Still, increased amounts of winter runoff could be accompanied by increases in flood event severity and warrant additional dedication of wet season storage space for flood control as opposed to supply conservation. This need to manage water storage facilities to handle increased runoff could in turn lead to more frequent water shortages during high water demand periods (Brekke 2004). It is recognized that these impacts would result in increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply (DWR 2006).

Sudden Climate Change. Most global climate models project that anthropogenic climate change will be a continuous and fairly gradual process through the end of this century (DWR 2006). California is expected to be able to adapt to the water supply challenges posed by climate change, even at some of the warmer and dryer projections for change. Sudden and unexpected changes in climate, however, could leave water managers unprepared and could, in extreme situations, have significant implications for California and its water supplies. For example, there is speculation that some of the recent droughts that occurred in California and the western United States could have been due, at least in part, to oscillating oceanic conditions resulting from climatic changes. The exact causes of these events are, however, unknown, and evidence suggests such events have occurred during at least the past 2,000 years (DWR 2006).

The following topics summarize current literature related to the impact of global climate change on water resources in California’s Central Valley.

Climate Warming and Water Management Adaptation for California. Tanaka et al. (2006) explored the ability of California’s water supply system to adapt to long-term climatic and demographic changes using the California Value Integrated Network (CALVIN), a statewide economic-engineering optimization model of water supply management. The results show agricultural water users in the Central Valley are the most sensitive to climate change,

particularly under the driest and warmest scenario (i.e. PCM 2100), predicting a 37% reduction of Valley agricultural water deliveries and a rise in Valley water scarcity costs by \$1.7 billion. Though the results of the study are only preliminary, they suggest that California's water supply system appears "physically capable of adapting to significant changes in climate and population, albeit at a significant cost." Such adaptation would entail changes in California's groundwater storage capacity, water transfers, and adoption of new technology.

Potential Implications of PCM Climate Change Scenarios for Sacramento-San Joaquin River Basin Hydrology and Water Resources. VanRheenen et al. (2004) studied the potential effects of climate change on the hydrology and water resources of the Sacramento-San Joaquin River Basin using five PCM scenarios. The study concludes that most mitigation alternatives examined satisfied only 87 to 96% of environmental targets in the Sacramento system, and less than 80% in the San Joaquin system. Therefore, system infrastructure modifications and improvements could be necessary to accommodate the volumetric and temporal shifts in flows predicted to occur with future climates in the Sacramento-San Joaquin River basins.

Estimated Impacts of Climate Warming on California Water Availability Under Twelve Future Climate Scenarios. Zhu et al (in press) studied climate warming impacts on water availability derived from modeled climate and warming streamflow estimates for six index California basins and distributed statewide temperature shift and precipitations changes for 12 climate scenarios. The index basins provide broad information for spatial estimates of the overall response of California's water supply and the potential range of impacts. The results identify a statewide trend of increased winter and spring runoff and decreased summer runoff. Approximate changes in water availability are estimated for each scenario, though without operations modeling. Even most scenarios with increased precipitation result in a decrease in available water. This result is due to the inability of current storage systems to catch increased winter streamflow to offset reduced summer runoff.

Trends in Snowfall versus Rainfall in the Western United States. To better understand the nature of the observed changes in snowpack and streamflow timing in the west, Knowles et al. (2006) addressed historical changes in the relative contributions of rainfall and snowfall. The study documents a regional trend toward smaller ratios of winter-total snowfall water to winter-total precipitation during the period of 1949-2004. The trends toward decreased winter-total snowfall are a response to warming across the region, with the most significant decreases occurring where winter wet-day minimum temperatures were on average warmer than -5 degrees Celsius over the study period. The authors suggest that, if warming trends continue, the snowfall fraction of precipitation is likely to continue to decline, which combined with earlier melting of the remaining accumulations of snowpack, will diminish the West's natural freshwater storage capacity. This trend could, in turn, exacerbate tensions between flood control and storage priorities that many western reservoir managers face.

Climate Warming and Water Supply Management in California. Medellin et al. (2006) use the CALVIN model under a high emissions "worst case" scenario, called a dry-warming scenario. The study found that climate change would reduce water deliveries 17% in 2050. The reduction in deliveries was not equally distributed, however, between urban and agricultural areas. Agricultural areas would see their water deliveries drop by 24% while urban areas would

only see a reduction of 1%. There was also a geographic difference: urban scarcity was almost absent outside of southern California.

Climate Scenarios for California. Cayan et al. (2006b) considered two GHG emissions scenarios, a medium-high and a low. The study found that California will experience a warming trend from 2000 to 2100, with temperatures rising between 1.7 and 5.8° C, depending on the model and the scenario chosen. This increase in temperature could potentially impact snowpack levels as the state experiences less snow and more rain. The results also indicate that snowpack in the Sierra Nevada could be reduced 32 to 79%, depending on the model and scenario chosen. The study does not consider the ability of California's water supply system to adapt to these potential changes.

Our Changing Climate - Assessing the Risks to California, California Climate Change Center 2006 Biennial Report. In 2003, the California Energy Commission's Public Interest Energy Research (PIER) program established the California Climate Change Center (CCCC) to conduct climate change research relevant to the state. Executive Order S-3-05 called for the CalEPA to prepare biennial science reports on the potential impact of continued climate change on certain sectors of California's economy. CalEPA entrusted PIER and its CCCC to lead this effort. The climate change analysis contained in its first biennial science report is the product of a multi-institution collaboration among the California Air Resources Board, DWR, CEC, CalEPA and the Union of Concerned Scientists.

With respect to the most severe consequences of global climate change on California's water supplies, the study concludes that major changes in water management and allocation systems could be required in order to adapt to the change. As less winter precipitation falls as snow, and more as rain, water managers would have to balance the need to construct reservoirs for water supply with the need to maintain reservoir storage for winter flood control. The assessment suggests that additional storage could be developed, but with environmental and economic costs.

Climate Warming and California's Water Future. Lund et al. (2003) examined the effects of a range of climate warming estimates on the long-term performance and management of California's water system. The study estimates changes in California's water availability, including effects of forecasted changes in 2100 urban and agricultural water demands using a modified version of the CALVIN model. The main conclusions are summarized as follows:

- Methodologically, it is useful and realistic to include a wide range of hydrologic effects, changes in population and water demands, and changes in system operations in climate change studies;
- A broad range of climate warming scenarios show significant increase in wet season flows and significant decreases in spring snowmelt. The magnitude of climate change effects on water supplies is comparable to water demand increases from population growth in twenty-first century; and
- California's water system would be able to adapt to the severe population growth and climate change modeled. This adaptation would be costly, but it would not threaten the fundamental

prosperity of the state, although it could have major impacts on the agricultural sector. The water management costs represent only a small proportion of California's current economy.

Under the driest climate warming scenarios, Central Valley agricultural users could be quite vulnerable to climate change. Wetter hydrology could increase water availability for these users. The agricultural community would not be compensated for much of its loss under the dry scenario. The balance of climate change effects on agricultural yield and water use is unclear. While higher temperatures could increase evapotranspiration, longer growing seasons and higher carbon dioxide concentrations could increase crop yield.

Population growth is expected to be more problematic than climate change in Southern California. Population growth, conveyance limits on imports, and high economic value of water in Southern California, could lead to high implementation of wastewater reuse and substantial use of seawater desalination along the coast.

Under some wet warming climate scenarios, flooding problems could be substantial. In certain cases, major expansions of downstream floodways and alterations in floodplain land use could become desirable.

California's water system could economically adapt to all the climate warming scenarios examined in the study. New technologies for water supply, treatment, and water use efficiency, implementation of water transfers and conjunctive use, coordinated operation of reservoirs, improved flow forecasting, and the cooperation of local regional, state and federal government can help California adapt to population growth and global climate change. Even if these strategies are implemented, however, the costs of water management are expected to be high and there is likely to be less "slack" in the system compared to current operations and expectations.

As described by the literature survey above, overall, climate change is expected to have a greater effect in Southern California. In the Sacramento Valley/Sierra Nevada area, climate change will have a greater effect on agricultural users than urban users. For example, for 2020 conditions, where optimization is allowed (i.e., using the CALVIN model), scarcity is essentially zero in the Sacramento Valley for both urban and agricultural users, and generally zero for urban users in the San Joaquin and Tulare Basins. Rather, most water scarcity will be felt by agricultural users in Southern California, though Southern California urban users, especially Coachella urban users, will also experience some scarcity. By the year 2050, urban water scarcity will remain almost entirely absent north of the Tehachapi Mountains, although agricultural water scarcity could increase in the Sacramento Valley to about 2% (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003 for further discussion of global climate change impacts on agricultural uses).

Based on the conclusions of current literature regarding California's ability to adapt to global climate change, it is reasonably expected that, over time, the State's water system will be modified to be able to handle the projected climate changes, even under dry and/or warm climate scenarios (DRW 2006). Although coping with climate change effects on California's water supply could come at a considerable cost, based on a thorough investigation of the issue, it is reasonably expected that statewide implementation of some, if not several, of the wide variety of

adaptation measures available to the state, will likely enable California's water system to reliably meet future water demands. For example, traditional water supply reservoir operations may be used, in conjunction with other adaptive actions, to offset the impacts of global warming on water supply (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003). Other adaptive measures include better urban and agricultural water use efficiency practices, conjunctive use of surface and ground waters, desalination, and water markets and portfolios (Medellin et al. 2006; see also Lund et al. 2003, Tanaka et al. 2006). More costly statewide adaptation measures could include construction of new reservoirs and enhancements to the state's levee system (California Energy Commission 2003). As described by Medellin et al. 2006, with adaptation to the climate, the water deliveries to urban centers are expected to decrease by only 1%, with Southern California shouldering the brunt of this decrease.

Although California could potentially experience an increased number of single-dry and multiple-dry years as a result of global climate change, based on current knowledge, it is reasonably expected that such increase would not significantly affect the reliability of the Project's water supply, which is based in the ability of Lower Tule River Irrigation District to perform on its contractual commitment to deliver 2,000 Af of water annually to County Waterworks District No. 18 (due to the proposed Project's location in Northern California and the reasonable expectation that California's water system can be modified to handle projected climate changes as explained above).

Based on current knowledge, global climate change is also not expected to significantly impact the groundwater supply for the Project area. As discussed in Section Five of the Water Supply Assessment (WSA), the Project will not rely on groundwater resources. WWD #18 does not utilize groundwater supplies to serve existing users within the Friant Community (contained within the Project area), which is known as the "Western Service Area." However, WWD #18 plans to use separate infrastructure to serve groundwater supplies to Mira Bella (which is outside the Friant Community and the Project area, and referred to as WWD 18's "Eastern Service Area"). Additionally, nine individual residences within the Friant community rely on private groundwater wells. The Project will not change the amount of groundwater used in the Project vicinity and thus will have no effect on depletion of groundwater resources. The impacts of global climate change on groundwater in the Project Area are, therefore, reasonably considered less than significant.

The Project's Mitigating Factors

Existing Fresno County General Plan Goals and Policies that relate to Water Resource Management

Through project design and the water supply assurance agreement, the proposed Project complies with several of Fresno County's General Plan goals and policies related to water supply reliability. (See Section 3.14 Utilities and Service Systems for discussion on water supply impacts.) These are listed as follows:

Goal PF-C To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

General Plan Consistency due to LTRID/WWD#18 water transfer agreement and compliance with state and federal regulations governing provision of potable water supply.

Policy PF-C.3 To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

General Plan Consistency due to project design and LTRID/WWD#18 water transfer agreement ensuring that groundwater will not be the source of the proposed Project public water supply.

Policy PF-C.7 The County shall recommend to all cities and urban areas within the county that they adopt the most cost-effective urban best management practices (BMPs) published and updated by the California Urban Water Agencies, California Department of Water Resources, or other appropriate agencies as a means of meeting some of the future water supply needs.

General Plan Consistency due to Project design and mitigation measures to ensure use of BMP's.

Policy PF-C.12 The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.

General Plan Consistency due to LTRID/WWD#18 water transfer agreement and compliance with state and federal regulations governing provision of potable water supply.

Policy PF-C.13 In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

General Plan Consistency due to LTRID/WWD#18 water transfer agreement ensuring that groundwater will not be the source of the proposed Project public water supply.

Policy PF-C.18 In the case of lands entitled to surface water, the County shall approve only land use-related projects that provide for or participate in effective utilization of the surface water entitlement such as:

- a. Constructing facilities for the treatment and delivery of surface water to lands in question.*
- b. Developing facilities for groundwater recharge of the surface water entitlement.*
- c. Participating in the activities of a public agency charged with the responsibility for recharge of available water supplies for the beneficial use of the subject lands.*

General Plan Consistency due to LTRID/WWD#18 water transfer agreement and construction of water treatment facility and percolation of waste water treatment facility treated effluent into the groundwater in conformance with state and federal regulations governing provision of potable water supply.

Policy PF-C.25 The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

General Plan Consistency due to project design and mitigation requiring conservation of water and the use of reclaimed water for irrigation where appropriate within the proposed Project area.

Policy PF-C.26 The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.

General Plan Consistency due to project design and mitigation requiring the use of reclaimed water for irrigation where appropriate within the proposed Project area.

Policy PF-C.27 The County shall adopt, and recommend to all cities that they also adopt, the most cost-effective urban best water conservation management practices circulated and updated by the California Urban Water Agencies, California Department of Water Resources, or other appropriate agencies.

General Plan Consistency due to project design and mitigation requiring conservation of water and the use of reclaimed for irrigation water where appropriate within the proposed Project area.

Policy PF-C.28 The County shall encourage agricultural water conservation where economically, environmentally, and technically feasible.

General Plan Consistency due to project design and mitigation requiring conservation of water and the use of reclaimed water for irrigation where appropriate within the proposed Project area.

Conclusion: Because considerable uncertainty remains with respect to the overall impact of global climate change on future water supply in California, it is unknown to what degree global climate change will impact future Fresno County water supply and availability, as well as water supply and availability for the Project Area. However, based on consideration of the recent regional and local climate change studies described in the literature review above, it is reasonably expected that the impacts of global climate change on water supply would be *less than significant*.

Mitigation Measures: No mitigation measures required.

CHAPTER FOUR
EVALUATION OF ALTERNATIVES

CHAPTER FOUR – EVALUATION OF ALTERNATIVES

4.1 Introduction

CEQA requires that alternatives to the proposed project be discussed in the EIR. The analysis of this section is consistent with *CEQA Guidelines* Section 15126.6.

As noted in CEQA Section 15126.6(a), “...because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.”

“The range of potential alternatives to the proposed project,” state the *CEQA Guidelines* Section 15126.6(c), “shall include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Additional information explaining the choice of alternatives may be included in the administrative record.”

CEQA Guidelines Section 15126.6(f) observes that the range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. 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 determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making.

4.2 Project Objectives

The range of alternatives selected is guided primarily by the need both to reduce or eliminate project impacts, and to achieve project objectives. The objectives of the Project were used to identify certain alternatives. As described in Chapter Two of this Draft EIR, the Project objectives are as follows:

FRIANT COMMUNITY PLAN UPDATE

- To update the 1983 Friant Community Plan, as required by law, to implement the goals and policies articulated in the 2000 Fresno County General Plan Update.
- To guide development within the Friant Community Plan Area through a set of guiding principles embodying the community’s values, as developed through community meetings and consultation with various County departments.

- To expand the boundaries of the Friant Community Plan Area to include developable acreage immediately adjacent to the existing Friant Community.

FRIANT REDEVELOPMENT PLAN

- To extend the duration of the Friant Redevelopment Plan by twenty (20) years in order to maximize potential redevelopment funds generated by new commercial and residential uses for needed infrastructure improvements within the Friant Community Plan Area.
- To eliminate the commercial development standards set forth in the 1992 Friant Redevelopment Plan.

FRIANT RANCH SPECIFIC PLAN

- To create an environmentally-sensitive master planned community adjacent to the existing community of Friant where public facilities and infrastructure are available or can be provided.
- To provide on-site open space preservation in the form of undisturbed open space, parks and recreation areas, and landscaped slopes.
- To provide diverse housing types that accommodate varying lifestyles and income levels including: active adult single family residential units, active adult multi-family residential units, non-age restricted multi-family dwelling units, and mixed-use residential units.
- To develop an economically feasible Active Adult (55+) Lifestyle community adjacent to an existing unincorporated community aimed at providing diverse housing types that accommodate varying lifestyles and income levels that will blend with the existing natural resources.
- To provide a comprehensive onsite trail system accessible to the public that showcases the open space preserve and provides linkage to the existing community of Friant and Lost Lake Park.
- To contribute to the community of Friant's infrastructure by constructing a new tertiary wastewater treatment plant with the treatment capacity to serve the Friant Ranch Specific Plan development, Millerton Village Mobile Home Park, and full build-out of the Friant Community Plan Area, allowing for the future connection of a collector system, as constructed by others, for areas outside of the Friant Ranch Specific Plan Area and Millerton Village Mobile Home Park.
- To develop a Village Center with a mix of retail, office, residential, medical, and social gathering opportunities that responds to the needs and services of the Friant area.
- To develop a wide range of recreational amenities including a Community lodge and fitness center as well as a series of smaller neighborhood-serving parks and pocket parks throughout the Friant Ranch Specific Plan Area.

- To develop a roadway network that accommodates both traditional and alternative modes of transportation, such as Neighborhood Electric Vehicles (NEV's).

4.3 Alternatives Selection

The range of alternatives were chosen primarily based on avoidance of certain impacts to biological resources within the Specific Plan Area, but also with consideration of other impact areas such as traffic and circulation, air quality and climate change, and cultural resources, utilities and service systems, etc. With respect to biological resources, the primary concern was avoidance of wetland areas and maximization of on-site open space for preservation of California tiger salamander habitat. Due to the location of these sensitive areas on the Project site, the alternatives comprise different configurations of the Specific Plan development at reduced levels in order to avoid these sensitive biological resources. Further, the alternative development configurations contain lower unit counts to reduce Specific Plan impacts related to traffic, air quality, and climate change. Additionally, cultural resource locations on the Specific Plan site were taken into consideration when devising these alternatives.

While a similar reduction in impacts between the alternatives occur as a result of reduced unit counts, the configuration and location of the alternatives were designed to avoid certain impacts to sensitive biological resource areas. Each of the three alternatives meet most of the Project Objectives. These alternatives differ from one another in that they each provide for a unique configuration of development and Project infrastructure. Each configuration provides for a varying level of preservation of biotic habitats occurring on the site, and the native flora and fauna occurring in them (refer to Appendix O – Biological Alternatives Analysis).

4.4 Alternatives Considered and Eliminated from Further Analysis

One alternative considered and eliminated from further analysis is the off-site alternative (i.e., development of the proposed Friant Ranch Specific Plan Area on another site that would have fewer impacts on the environment).

As presented in Section 15126.6(f)(2)(A) of the CEQA Guidelines, the key question and first step in the analysis of alternative project locations is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location, and only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR (Section 15126.6(f)(2)(B)).

Any alternative location for the Project would need to feasibly attain most of the Project objectives. The Project objectives are listed above in Section 4.2, but generally include the integration of Project infrastructure (i.e., sewer, water, etc.), health and wellness amenities, recreational facilities (i.e., public trail system), and other services with those already provided or planned for the Friant Community Plan Area. A key project objective is the revitalization of Friant through the development of a lifestyle community for ages 55+ immediately adjacent to it, and the creation of a commercial Village Core within the Friant Redevelopment Plan Area.

Furthermore, an important component of the Project is its location near the recreational facilities of the San Joaquin River Parkway and the Millerton State Recreation Area.

With these project objectives in mind, it becomes readily apparent that the Project could not reasonably or feasibly be located in areas outside of the Friant-Millerton area. Only one area in Fresno County could feasibly meet the Project Objectives, and that area is in and immediately adjacent to the community of Friant itself.

Lands other than those owned by the applicant in the Friant-Millerton area do not meet key Project objectives, their general proximity to the community of Friant notwithstanding. Large blocks of land in Fresno and neighboring Madera Counties, including Wellington Ranch (also known as the Blasingame Property), Millerton New Town Specific Plan Area, Mira Bella, North Fork Village, and River Ranch, are suitable for meeting some of the Project Objectives, but not the key objectives described above. For example, none of these lands are immediately proximate to the town of Friant and therefore, none lend themselves to the integration of infrastructure and recreational amenities envisioned by the applicant, and none serve to revitalize the community of Friant.

Significantly, development of the project on any suitable alternative site in or around the County would be unlikely to avoid or substantially lessen the Project's significant impacts, as most of those impacts would occur no matter where the development is located (e.g., air quality and traffic impacts, which would occur from the nature of the development) while others are likely to occur no matter because the only available lands large enough to accommodate this type of project, like the Friant Ranch site, are zoned agricultural and would have similar effects from loss of agricultural land and biological impacts

Further, these alternative locations do not include lands within the Friant Redevelopment Plan area that would allow for generation of revenue to enhance the community of Friant. Perhaps more important to this analysis, the Applicant does not own these lands, nor are they for sale. Even if these lands were available, these locations would also require expensive mitigation to avoid or offset impacts to biological resources. The added expense of purchasing additional lands (rather than using lands already owned by the Applicant) in addition to the likely mitigation expenses required to offset the impacts would make these alternative locations infeasible.

The Applicant does not own other lands in the Friant area that could feasibly meet the Project objectives. There are no other locations within or immediately adjacent to the Friant Community that are sufficient in size to support a master-planned active adult community. For these reasons, Alternative Project locations would not feasibly attain most of the Project objectives.

4.5 Alternatives Analyzed

The following sections present a description of the alternatives considered and an analysis of the alternatives in the context of the *CEQA Guidelines*. This EIR includes an evaluation of the following alternatives: No Project (which is required by CEQA to be addressed), North Development Configuration, East Development Configuration, and Northeast Development Configuration. These alternatives are summarized in the next section and compared with the

Project. This chapter includes an analysis of the comparative environmental superiority of the various alternatives, as required by CEQA. The threshold criteria used in Chapter Three (Appendix G of the *CEQA Guidelines*) is also used in this section to judge the significance of, and compare the impact conclusions related to each criteria for the project versus each alternative. This chapter concludes with an analysis of an alternate location of the proposed wastewater treatment plant (Alternative WWTP). The Alternative WWTP is being analyzed as a stand-alone alternative, as it is a feasible option for the project as proposed, and the project alternatives listed above.

4.5.1 NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e) requires every EIR to include a “No Project Alternative.” “The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” In general, this alternative should discuss “existing conditions...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.”

The manner in which a No Project Alternative shall be composed depends on the nature of the project at issue. “When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the ‘no project’ alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan” (CEQA Guidelines, Section 15126.6(e)(3)(A)).

In contrast, “[i]f the project is other than a land use or regulatory plan, for example a development project on identifiable property, the ‘no project’ alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed. In certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment” (Section 15126.6(e)(3)(B)).

The Project does not fit neatly into either of these two categories as this is a programmatic and project-specific level EIR, which fits into both categories. Absent the Project, “current plans,” defined as the *Fresno County General Plan*, *Friant Community Plan*, *Friant Redevelopment Plan* would continue to be the primary regulatory documents guiding future development within the Friant Community Plan Area. The Friant Ranch Specific Plan Area would have limited development potential for future urban uses and would remain primarily grazing land. However, as shown in Table 4-1 below, there is the potential for development of urban uses under existing zoning.

**Table 4-1
Friant Ranch Specific Plan Zoning and General Plan Designations**

APN	Notes	Acreage	Zoning ¹	Zoning Name ²	Land Use Designation ³	Permitted Development
300-021-51		68.00	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-040-02S		120.00	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-040-23		58.61	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-040-24		234.21	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-050-01	west portion	359.01	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-160-08		47.00	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-180-16		2.20	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-200-06		0.02	R-1	Single Family Residential District (6,000 sq ft)	Residential – Medium Density	40% max lot coverage/1 DU
300-021-53		20.11	TP-C	Trailer Park Residential – Conditional	Residential – Medium Density	50% max lot coverage/1 DU per 2,400 sf
300-190-02		7.33	TP	Trailer Park Residential District	Residential – Medium Density	50% max lot coverage/1 DU per 2,400 sf
300-200-05		0.11	TP	Trailer Park Residential District	Residential – Medium Density	50% max lot coverage/1 DU per 2,400 sf
300-200-19		8.13	TP	Trailer Park Residential District	Residential – Medium Density	50% max lot coverage/1 DU per 2,400 sf
300-110-37		0.75	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-110-39		0.37	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-110-54		0.17	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-110-55		0.17	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-110-56		0.17	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-010-03S	south portion	2.30	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-010-05S		0.80	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-010-11S		4.71	AE-20	Exclusive Agricultural District	Agriculture	1 DU/20 acres
300-010-12S		7.40	C-6	General Commercial District	Commercial – Highway	1 DU/2,400 sf
300-010-12S			AL-20	Limited Agricultural District	Commercial – Highway	1 DU/20 acres
300-160-47T	east portion	0.61	-	County (exempt)	Agriculture	N/A

Source: Live Oak and Associates, 2008.

1) Zoning verification per email to County and follow-up with “Fry” at 422-5271.

2) From Chapter 2 Sections 810-850.B.7 of County of Fresno Ordinance – Division VI: Zoning Division.

3) From 12-20-83 Friant Community Plan Update in conformance with the Fresno County General Plan.

This No Project Alternative considers two potential scenarios that could occur without the Project: (1) development of additional structures under current zoning and general plan designations for the Friant Community Plan Area and the Friant Ranch Specific Plan Area; and (2) maintenance of the status quo use of the lands within the Friant Ranch Specific Plan Area.

A considerable amount of properties within the existing Community Plan Area fronting onto Friant Road are vacant, so there is potential for new development under the current zoning and general plan designations (No Project Alternative – Buildout Under Existing Zoning and General Plan Designations). However, development potential in the Friant Community Plan Area is constrained by current limited existing water supply and lack of wastewater treatment facility. There are approximately 18 acres of Low Density, five acres of Medium Density, and eight acres of Medium High Density designated land in the existing Friant Community Plan Area that are vacant and available for development under the current zoning and general plan designations. The total number of units (.80 net density to account for right of way) which could be built is approximately 17 Low Density units, 29 Medium Density units and 116 Medium High Density units. At 2.27 persons per household, the total number of additional persons in the existing Friant Community Plan Area could be 367 with the No Project Alternative – Buildout Under Existing Zoning and General Plan Designations.

There is, however, no certainty that the “No Project Alternative” would result in construction within the Project Area even though some development would be allowed under existing zoning and general plan designations. If the property owner were to maintain the status quo use of grazing cattle on the Specific Plan site, land use impacts would not change appreciably from those impacts that already occur from the grazing of cattle on the Specific Plan site. Similarly, if lands within the existing Community Plan Area were left in their present condition the amount of disturbed area would remain constant and no significant impacts would result. None of the impacts associated with construction and operational activities would occur under the No Project Alternative. No additional vehicle trips would be generated over present conditions, nor would noise, climate change/greenhouse gas emissions, and air quality impacts occur with this alternative. In addition, the No Project Alternative – Maintenance of Status Quo would have no impact with regard to visual resources, land use, public services and recreation, energy, utilities, hazardous materials, biological resources or cultural resources. Accordingly, the No Project Alternative – Maintenance of Status Quo within the Project area in any significant impacts to the environment. As such, the following analysis discusses in more detail the potential impacts of the No Project Alternative – Buildout Under Existing Zoning and General Plan Designations.

Under current zoning as depicted in Table 4-1, the Specific Plan property owner may build one single-family dwelling for every 40 acres of the Specific Plan site. Thus, the property owner could build up to 23 residential units on the 942-acre Project Site. Other improvements which may feasibly be constructed on the site are septic systems, outbuildings, utility lines, wells and water storage facilities, access roads, and cross-fencing. Typically, rural residential development of this type results in direct disturbance to the project site from grading, trenching, building construction, etc. to one or more acres of land per residential unit. Thus, up to 60 acres of previously undisturbed land could be permanently altered from residential construction under current zoning. Indirect effects on the existing landscape could result from accelerated drainage from developed lands to undeveloped lands, more intensive grazing from domestic livestock

(i.e., horses, cattle, sheep, goats, etc.), and the incidental effects of pets on existing wildlife resources.

Though the environmental impacts resulting from the No Project Alternative - Development Under Existing Zoning and General Plan Designations would be considerably less than the impacts resulting from the proposed Project, buildout under existing zoning and general plan could potentially result in significant impacts to biological and cultural resources on the Specific Plan site.

Aesthetics

Section 3.1 of this Draft EIR identifies the potentially significant impacts of the Project on aesthetic resources. As identified in Section 3.1, the Project would have a less than significant impact with implementation of mitigation measures on the introduction of new sources of light and glare and increased lighting on the night sky and degradation of the existing visual character and quality of the Project Area and its surroundings. The No Project Alternative would have less of an impact than the Project because there would be far less land developed and fewer residential units built than the Project. The impacts of this alternative on aesthetic resources in the Project Area would be less than those associated with the Project because this alternative would concentrate development in the existing Friant Community Plan Area and limited areas of the Friant Ranch Specific Plan as opposed to the entire 942 acre boundary as with the Project. The impacts to aesthetics with this alternative would be less than significant.

Agricultural Resources

Section 3.2 of this Draft EIR identifies the potentially significant impacts of the Project on agricultural resources. As identified in Section 3.2, the Project would have a significant impact because the Project would result in the rezoning of agricultural land to urban uses. There are, however, no lands under Williamson Act contract within the Friant Community Plan Area or Friant Ranch Specific Plan Area, nor would the Project affect any Prime Farmland. The only significant impact to agricultural resources identified for the Project is inconsistency with existing agricultural zoning.

The amount of land zoned for agriculture within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, is approximately 1,328 acres. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 900 acres. The Project would result in the conversion of approximately 900 acres of land zoned AE-20 and AL-20 within the Friant Ranch Specific Plan Area to non-agricultural designations. However, the proposed land uses will be inconsistent with the existing agricultural zoning on approximately 600 acres of the existing agricultural zoned lands. There is no land within the Project Area that is currently under Williamson Act or Farmland Security Zone contract. The impacts of this alternative on agricultural resources in the Project Area would be less than those associated with the Project because this alternative would concentrate development only to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. The impacts to agricultural resources with this alternative would be less than significant.

Air Quality and Global Climate Change

Section 3.3 of this Draft EIR identifies and, to the extent possible, quantifies air quality and global climate change impacts of the Project related to construction and future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Operations include both mobile and stationary source air pollutants. All of the impacts are considered significant and unavoidable.

Air quality and global climate change impacts associated with this alternative would be less than those with the Project because development would occur only within the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. The impacts to air quality with this alternative would be less than significant. Cumulative impacts related to regional air quality and global climate change, identified as a significant impact, would still occur due to urban development in the Project Area and the surrounding area, and to the existing ambient air quality.

Biological Resources

Section 3.4 of this Draft EIR identifies the potentially significant impacts of the Project on biological resources. As identified in Section 3.4, the Project would have a less than significant impact with implementation of mitigation measures #3.4-1a through 3.4-13. The No Project Alternative would have less of an impact than the Project because future development would be limited to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. The impacts to biological resources with this alternative would be less than significant. However, under this alternative, the permanent preservation of approximately 250 acres within the Specific Plan Area of grassland and seasonal wetland habitat used by various wildlife species for nesting, foraging and aestivation, the permanent off-site preservation of over 1,000 acres of habitat for sensitive species, including permanent vernal pool and wetland preservation resulting from the proposed biological mitigation measures, would not occur. It is possible that continued use or non-use of the Friant Ranch Specific Plan property and proposed off-site conservation acreage consistent with existing agricultural zoning, including potential grazing activity or the discontinuance of grazing activity, could have a more substantial adverse long-term impact on sensitive biological resources than development of the Project with its proposed conservation measures and biological mitigation and monitoring plan and endowment.

Cultural Resources

Section 3.5 of this Draft EIR identifies the potentially significant impacts of the Project on cultural resources. As identified in Section 3.5, the Project would have a significant impact to cultural resources because the Project would impact site CA-FRE-2653 which is located within the Friant Ranch Specific Plan Area development footprint. The No Project Alternative would have no impact to site 2653 as this area would not be developed. It is unknown whether significant cultural resources exist on land designated for development within the Friant Community Plan area. Because the Friant area is known to have been populated by native peoples, it is possible that significant impacts to cultural resources could occur under the No Project Alternative.

Geology, Soils and Mineral Resources

Section 3.6 of this Draft EIR identifies the potentially significant impacts of the Project on geology, soils and mineral resources. As identified in Section 3.6, the Project would have a less than significant impact. The No Project Alternative would have less of an impact than the Project because new development would be limited to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area.

Hazards and Hazardous Materials

Section 3.7 of this Draft EIR identifies the potentially significant impacts of the Project on hazards and hazardous materials. As identified in Section 3.7, the Project would have a less than significant impact with implementation of mitigation measures #3.7.6a and #3.7.6b on emergency preparedness. The No Project Alternative would have less of an impact than the Project because new development would be limited to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area.

Hydrology and Water Quality

Section 3.8 of this Draft EIR identifies the potentially significant impacts of the Project on hydrology and water quality. As identified in Section 3.8, the Project would have a less than significant impact with implementation of mitigation measure #3.8.3a on the alteration of the existing drainage pattern and stormwater drainage capacity. The No Project Alternative would have less of an impact on the existing drainage pattern and stormwater drainage capacity as the Project because this alternative would limit development to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. Under the No Project Alternative, the proposed tertiary wastewater treatment facility would not be constructed; wastewater treatment within the Friant Community Plan area would continue to be limited to individual septic systems (of which there are presently 170), while treatment for the approximately 100 units within the Millerton Lake Mobile Home Park would continue to be secondary treatment with land disposal to unlined disposal ponds, operated by CSA 44. The benefits to groundwater from higher quality wastewater treatment and surface water disposal that would occur for future development within the Friant Community Plan area, and for existing uses that choose to connect to the new tertiary facility, would not be realized.

Land Use and Planning

Section 3.9 of this Draft EIR identifies the potentially significant impacts of the Project on land use and planning. As identified in Section 3.9, the Project would have a less than significant impact. The No Project Alternative would have less of an impact than the Project because there would be no potential conflicts between the Project and applicable land use plans, policies and regulations.

Noise

Section 3.10 of this Draft EIR identifies the potentially significant impacts of the Project with regard to noise. As identified in Section 3.10, the Project would have a less than significant impact with implementation of mitigation measure #3.10.1a on the exposure to excessive noise levels or vibration. The Project would have a less than significant impact with implementation of mitigation measures #3.10.2a through #3.10.2c on construction noise. The No Project Alternative would have less of an impact on excessive noise levels or vibration, and construction noise because this alternative would limit development to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area.

Population and Housing

Section 3.11 of this Draft EIR identifies the potentially significant impacts of the Project on population and housing. As identified in Section 3.11, the Project would have a significant impact that cannot be mitigated. The No Project Alternative would have less of an impact than the Project because new development would be limited to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area.

Public Services

Section 3.12 of this Draft EIR identifies the potentially significant impacts of the Project on the increased demand for law enforcement services. As identified in Section 3.12, the Project would have a less than significant impact with implementation of mitigation measure #3.12.2a on the increased demand for law enforcement services. The No Project Alternative would have less of an impact on the increased demand for law enforcement services than the Project because this alternative would include fewer residential units than the Project, which would equate to less officers being needed to patrol the Project Area.

Traffic and Circulation

Section 3.13 of this Draft EIR identifies and quantifies traffic impacts of the Project related to future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Tables 3.13-16 through 3.13-18 identify Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-19 and 3.13-20, several intersections and roadway segments remain significantly impacted.

Traffic impacts associated with this alternative would be less than those with the Project because development would only occur within the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. The No Project Alternative would have less of an impact on traffic related resources than the Project because this alternative would include fewer residential units than the Project, which would equate to less traffic being generated.

Utilities and Service Systems

Section 3.14 of this Draft EIR identifies the potentially significant impacts of the Project on utilities and service systems such as water, sewer, storm drainage and solid waste disposal. As identified in Section 3.14, the Project would have a less than significant impact with implementation of mitigation measure #3.14.1 on the water supply for the Project. The Project would have a less than significant impact with implementation of mitigation measures #3.14.3a through #3.14.3i on wastewater treatment capacity. The Project would have a less than significant impact with implementation of mitigation measures #3.14.6a and #3.14.6b on compliance with Federal, State and local solid waste regulations. The Project would have a less than significant impact with implementation of mitigation measures #3.14.7a and 3.14.7b on the increased demand for electricity and natural gas within the Friant Community Plan Area.

The No Project Alternative could potentially result in some development within the Project Area, however, at levels far less than those proposed by the Project. As such, the No Project Alternative would have less of an impact on electricity and natural gas because this alternative would limit development to the existing Friant Community Plan Area, with limited development potential in the Friant Ranch Specific Plan Area. The No Project Alternative has the potential to result in some impacts to wastewater treatment capacity, compliance with solid waste regulations, and water supply as the current conditions, without Project improvements, do not sufficiently meet the utility and service needs of the potential development allowed under the existing zoning and general plan designations within the Project Area.

Summary and Determination

The No Project Alternative is environmentally superior to the Project in many respects, including fewer impacts to air quality and global climate change resulting from increased human impacts on current land use (e.g., residential and commercial development, and associated traffic/transportation impacts). However this alternative would not meet any of the Project objectives. Additionally, although development of the Project would have a number of significant effects, most of which can be mitigated to a less-than-significant level, the Project offers a number of environmental benefits that would not be realized under the No Project Alternative, including permanent preservation of open space and sensitive biological resources, improved water supply and a higher quality wastewater treatment and disposal option for the Friant Community Plan Area.

4.5.2 ALTERNATIVE NO. 1: NORTH DEVELOPMENT CONFIGURATION

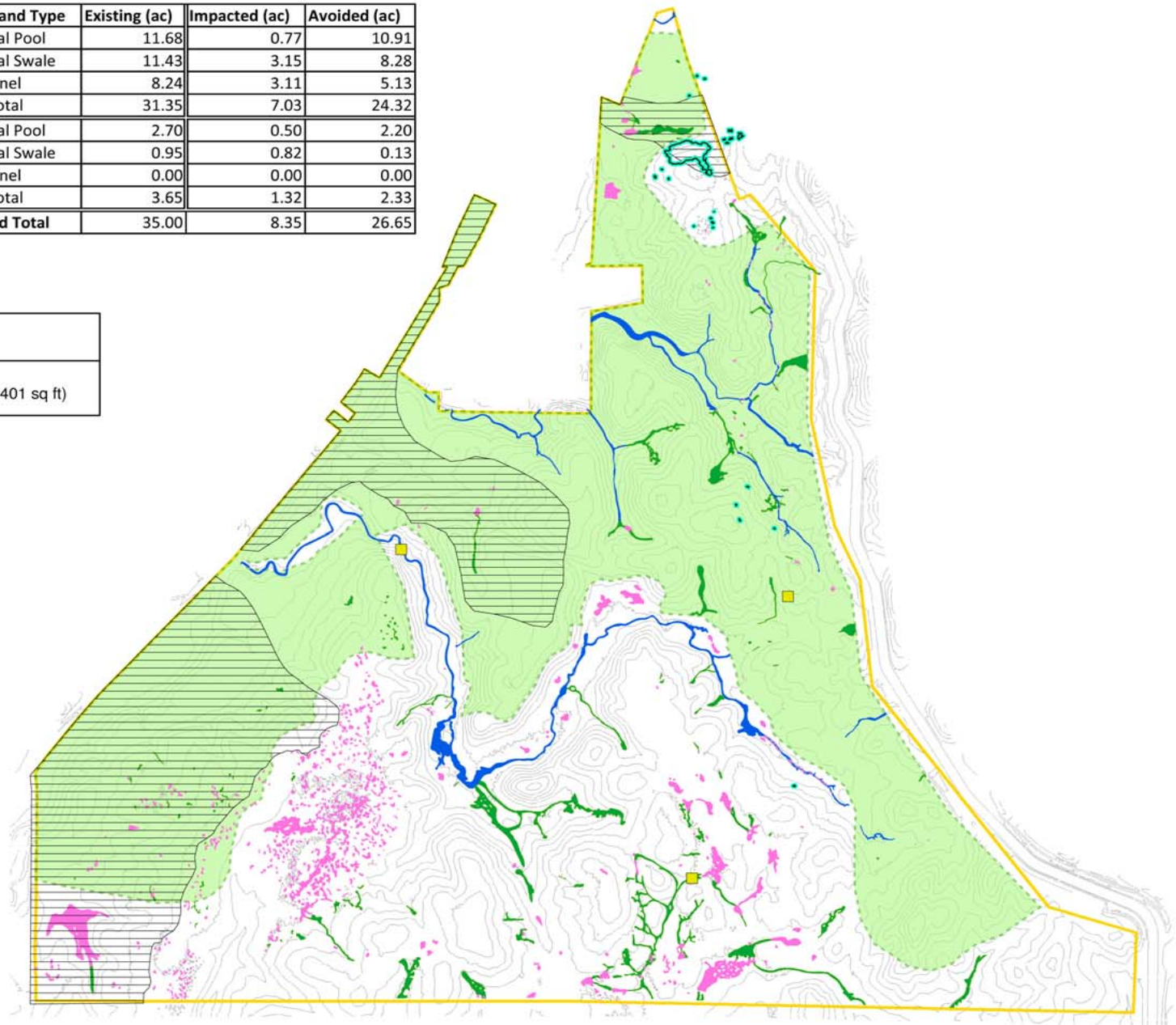
The North Development Configuration Alternative was chosen because it would reduce impacts to biological resources, and require less road construction and infrastructure than the Project. The Friant Community Plan Area and Friant Redevelopment Plan Area would remain in their current state with Alternative 1, however; for Friant Ranch, this alternative would concentrate development on approximately 496 acres (including approximately 2,200 residential units and 250,000 square feet of commercial) located in the western, northern, and eastern areas of the Project Area (reference Figure 4-1 which shows the location relative to sensitive biological and cultural resources). Table 4-2 shows the Alternative 1 development potential. Development

Wetland Summary Table

	Wetland Type	Existing (ac)	Impacted (ac)	Avoided (ac)
Jurisdictional	Vernal Pool	11.68	0.77	10.91
	Vernal Swale	11.43	3.15	8.28
	Channel	8.24	3.11	5.13
	Subtotal	31.35	7.03	24.32
Non-Jurisdictional (Isolated Waters)	Vernal Pool	2.70	0.50	2.20
	Vernal Swale	0.95	0.82	0.13
	Channel	0.00	0.00	0.00
	Subtotal	3.65	1.32	2.33
Grand Total		35.00	8.35	26.65

Hartweg's golden sunburst

Isolated Plants
• Preserved (3) • Impacted (1)
Plant Populations (Clusters)
• Preserved (63,456 sq ft) • Impacted (401 sq ft)



Legend

- 10 Foot Contours
- Hartwegs Golden Sunburst
- Cultural Resources
- Project Boundary
- Isolated Waters

Development Boundary

- Alternative 1 - 496 acres

Wetlands

- Vernal Pool
- Vernal Swale
- Wetland Channel

Open Space

- Total (446 ac)

Alternative 1

266 W. Cromwell Ave.
Fresno, CA 93711-6162
(559) 449-2700

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ALTERNATIVE 1
NORTH DEVELOPMENT CONFIGURATION

Figure
4 - 1

would not border the large undeveloped parcel to the south of Friant Ranch along the common property boundary. With this North Alternative, most development would be contiguous with Friant Road, existing developed areas of the Friant Community, and the Friant-Kern Canal almost to Friant Ranch’s southern boundary. Approximately 446 acres of dedicated onsite open space would be maintained under conservation easement. Most of this open space would be contiguous with a large undeveloped parcel to the south of Friant Ranch that consists of land similar to that occurring in the onsite open space. A smaller area of open space would be maintained in the vicinity of the community of Friant’s water tank at the northern end of Friant Ranch.

**Table 4-2
Alternative 1 – Land Use Table**

Land Use Designation	Specific Land Use Description	Acres	Density Range (du/ac)	Total Dwelling Units	Maximum Total Square Feet
Commercial					
Community Commercial	Village Center (Mixed Use) ¹	32.6	--	50 ¹	250,000
Residential					
Medium Density Res	Single-Family One (SFD-1) ³	80.8	2.0-5.0	240	--
Med High Density Res	Single-Family Two (SFD-2) ³	122.3	5.0-8.0	511	--
Med High Density Res	Single-Family Three (SFD-3) ³	140.6	8.0-12.0	1,053	--
Med High Density Res	Multi-Family (MFD) ³	13.3	12.0-18.0	166	--
	Active Adult Total	357	--	1,970	--
Med High Density Res	Non-Age Qualified Multi-Family (MFD) ³	14.3	12.0-18.0	180	--
Med High Density Res	Active Adult Recreation Center ³	16.1	--	--	42,000
Public Facilities					
Public Facilities	Waste Water Treatment Plant ³	4	--	--	--
Open Space					
Open Space	Undisturbed Open Space	446	--	--	--
Me/Med-High Density	Revegetated Slopes ³	24.5	--	--	--
Transportation & Circulation					
N/A	Roads	47.7	--	--	--
	Total	942.2	--	2,200	292,000

- 1) Fifty dwelling units are permitted within the Village Center, as either freestanding multi-family housing or vertical mixed-use development with commercial/office on the first floor and residential units on the upper floors.
- 2) Residential and commercial acreages include lands to be used for accessory, parks, parkways and landscaped slopes.

The following impacts of the Project are compared to the potential impacts of Alternative 1.

Aesthetics

Section 3.1 of this Draft EIR identifies the potentially significant impacts of the Project on aesthetic resources. As identified in Section 3.1, the Project would have a less than significant impact with implementation of mitigation measures on the introduction of new sources of light and glare and increased lighting on the night sky and degradation of the existing visual character and quality of the Project Area and its surroundings. Alternative 1 would have less of an impact than the Project because there would be less land developed and fewer residential units built than the Project. Mitigation Measures #3.1.3a through #3.1.3f and #3.1.4a and #3.1.4b would also be

applicable and implemented with Alternative 1. The impacts of this alternative on aesthetic resources in the Project Area would be less than those associated with the Project because Alternative 1 would concentrate development on 496 acres of Friant Ranch as opposed to the entire 667 acre boundary as with the Project. The impacts to aesthetics with this alternative would be less than significant.

Agricultural Resources

Section 3.2 of this Draft EIR identifies the potentially significant impacts of the Project on agricultural resources. As identified in Section 3.2, the Project would have a significant impact because the Project would result in the rezoning of agricultural land to urban uses. There are, however, no lands under Williamson Act contract within the Friant Community Plan Area or Friant Ranch Specific Plan Area.

The amount of land zoned for agriculture within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, is approximately 1,328 acres. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 900 acres. The Project would result in the conversion of approximately 900 acres of land zoned AE-20 and AL-20 within the Friant Ranch Specific Plan Area to non-agricultural designations. However, since the preserved open space will be managed through cattle grazing, the proposed land uses will be inconsistent with the existing agricultural zoning on approximately 600 acres of the existing agricultural zoned lands. There is no land within the Project Area that is currently under Williamson Act or Farmland Security Zone contract. The impacts of this alternative on agricultural resources in the Project Area would be less than those associated with the Project because Alternative 1 would only concentrate development on 496 acres (approximately 456 acres of which are currently zoned for agriculture) within the Friant Ranch Specific Plan Area, as opposed to the approximately 600 acres of agriculturally zoned lands affected by the Project. The use of 456 acres of agriculturally zoned land for urban use is still a significant and unavoidable impact of Alternative 1. As with the Project, there would be no impact to Prime Farmland, Unique Farmland, of Statewide Importance because no such lands fall within the affected portion of the Project Area.

Air Quality and Greenhouse Gases/Global Climate Change

Section 3.3 of this Draft EIR identifies and, to the extent possible, quantifies air quality and global climate change impacts of the Project related to construction and future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Operations include both mobile and stationary source air pollutants. All of the impacts are considered significant and unavoidable.

Air quality and greenhouse gases/global climate change impacts associated with this alternative would be less than those with the Project because the number of residential units would be reduced from 2,996 to 2,200. The impacts to air quality and greenhouse gases/global climate change with this alternative would still be significant and unavoidable; however, the impact with this alternative would be less than with the Project. The mitigation measures in Section 3.3 Air Quality and 3.15 Greenhouse Gases/Global Climate Change would still be applicable with this alternative.

Biological Resources

Section 3.4 of this Draft EIR identifies the potentially significant impacts of the Project on biological resources. As identified in Section 3.4, the Project would have a less than significant impact with implementation of mitigation measures #3.4-1a through 3.4-13. Alternative 1 would have less of an impact than the Project because this alternative would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres with the Project, and there would be less residential units built with this alternative (reference Figure 4-1 for location relative to biological resources). Mitigation measures 3.4-1a through 3.4-13 would be applicable and implemented with Alternative 1 and would result in a less than significant impact. Approximately 446 acres of dedicated onsite open space would be maintained under conservation easement. Most of this open space would be contiguous with a large undeveloped parcel to the south of the Project site that consists of biotic habitats similar to those occurring in the onsite open space. A smaller area of open space would be maintained in the vicinity of the community of Friant's water tank at the northern end of the Project Site.

With the Alternative 1 development configuration, the preservation of grassland and seasonal wetland habitat (excluding vernal pools) used by various wildlife species for nesting, foraging, and aestivation would increase from the approximately 250 acres under the Proposed Project to 446 acres, an increase of approximately 77%. Furthermore, most designated open space would be contiguous with lands supporting a mosaic of grasslands and seasonal wetlands to the south. Thus, the viability of preserved open space for many vernal pool and grassland species would be greater for Alternative 1 than would be the case for the Proposed Project. The habitat loss associated with Alternative 1 would nonetheless be considerable, and, without mitigation, would remain a significant adverse impact, including 496 acres of disturbed upland habitat for California tiger salamander and western spadefoot toads, 401 square feet of impacted Hartweg's Golden Sunburst, 8.35 acres of wetland/drainage impact (including 1.27 acres of vernal pools, which are vernal pool fairy shrimp and California tiger salamander breeding habitat, 3.96 acres of vernal swales and 3.11 acres of wetland channels). Alternative 1 may potentially impact nesting raptors, common and special status nesting birds, American badgers and burrowing owls. The mitigation measures prescribed in section 3.4 for the Project should apply in the same manner to this alternative to reduce these impacts to less than significant. All of the biological impacts would be related to the consistency with local policies, water transfer and conveyance, and Depot Parcel and Community Plan Area-related impacts would be approximately equal to those identified for the Project. The biological impacts related to wastewater disposal would be somewhat less than those identified for the Project because of the reduced number of residential units and anticipated reduction in wastewater. All of the mitigation measures described in section 3.4 apply to this alternative and, in some instances, the alternative land plan as designed will provide more benefit to species and habitat than what is required by the mitigation. The impact, however, would be far less under Alternative 1 than that of the Proposed Project (without mitigation). With mitigation the potential impacts are less than significant.

Cultural Resources

Section 3.5 of this Draft EIR identifies the potentially significant impacts of the Project on cultural resources. As identified in Section 3.5, the Project would have a significant impact to

cultural resources because the Project would impact site CA-FRE-2653 which is located within the Friant Ranch Specific Plan Area development footprint. Mitigation measures are proposed (#3.5.1a through 3.5.1g) to reduce the impact to site 2653 to a less than significant impact. Mitigation measure 3.5.1a does allow for the boundary of site 2653 to be marked by a qualified archaeologist and included within an undisturbed park, which would avoid impact.

The impact to site 2653 would be the same with this alternative as with the Project because site 2653 would also be within the development footprint of Alternative 1 (Reference Figure 4-1 for locations relative to cultural resources). Alternative 1 would include the same mitigation measures to reduce potential impacts to a less than significant level.

Geology, Soils and Mineral Resources

Section 3.6 of this Draft EIR identifies the potentially significant impacts of the Project on geology, soils and mineral resources. As identified in Section 3.6, the Project would have a less than significant impact. The impacts of Alternative 1 on geology, soils and mineral resources in the Project Area would be less than those associated with the Project because Alternative 1 would concentrate development on 496 acres of Friant Ranch as opposed to the entire 667 acre boundary as with the Project. Similar to the Project, impacts under this alternative would be less than significant.

Hazards and Hazardous Materials

Section 3.7 of this Draft EIR identifies the potentially significant impacts of the Project related to hazards and hazardous materials. As identified in Section 3.7, the Project would have a less than significant impact with implementation of mitigation measures #3.7.6a and #3.7.6b on emergency preparedness. Alternative 1 would have less of an impact than the Project because there would be less land developed, and fewer residential units built than the Project. Mitigation Measures #3.7.6a and #3.7.6b would also be applicable and implemented with Alternative 1. The impacts of this alternative on emergency preparedness in the Project Area would be less than those associated with the Project because Alternative 1 would only concentrate development on 496 acres of Friant Ranch as opposed to 667 acres with the Project. Alternative 1 would still be consistent with the applicable Fresno County General Plan policies and not interfere with an adopted emergency response or evacuation plan. Similar to the Project, impacts under this alternative would be less than significant with mitigation.

Hydrology and Water Quality

Section 3.8 of this Draft EIR identifies the potentially significant impacts of the Project on hydrology and water quality. As identified in Section 3.8, the Project would have a less than significant impact with implementation of mitigation measure #3.8.3a on the alteration of the existing drainage pattern and stormwater drainage capacity. Alternative 1 would have less of an impact on the existing drainage pattern, stormwater drainage capacity, and San Joaquin River discharge impacts, as compared to the Project because Alternative 1 would concentrate development on 496 acres, as opposed to 667 acres, and would result in less wastewater and stormwater due to the reduced unit count and disturbed drainage areas. The unit count reduction would reduce the anticipated amount of wastewater resulting from the Project and, as such,

reduce the amount of treated effluent disposed to land or the river. The LID IMP's in Mitigation Measure #3.8.3a would still be applicable and implemented with Alternative 1 and this alternative would result in a less than significant impact.

Land Use and Planning

Section 3.9 of this Draft EIR identifies the potentially significant impacts of the Project on land use and planning. As identified in Section 3.9, the Project would have a less than significant impact. Alternative 1 would have a similar impact to the Project because Alternative 1 would require amendments to the Fresno County General Plan and Zoning Division in order to accommodate the intended uses within the Friant Ranch Specific Plan Area. Similar to the Project, impacts under this alternative would be less than significant.

Noise

Section 3.10 of this Draft EIR identifies the potentially significant impacts of the Project with regard to noise. As identified in Section 3.10, the Project would have a less than significant impact with implementation of mitigation measure #3.10.1a on the exposure to excessive noise levels or vibration. The Project would have a less than significant impact from construction noise with implementation of mitigation measures #3.10.2a through #3.10.2c. Alternative 1 would have less of an impact from excessive noise levels or vibration, and construction noise because this alternative would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres with the Project, and there would be fewer residential units built under this alternative. Mitigation Measures #3.10.1a and #3.10.2a through #3.10.2c would still be applicable and implemented with this alternative and this alternative would result in a less than significant impact on exposure to excessive noise levels or vibration, and construction noise.

Population and Housing

Section 3.11 of this Draft EIR identifies the potentially significant impacts of the Project on population and housing. As identified in Section 3.11, the Project would have a significant impact that cannot be mitigated. Alternative 1 would have a similar impact to the Project because it will have a direct, growth inducing impact on the area's population and housing stock by facilitating the development of up to 2,200 new households within the Specific Plan Area and development of vacant properties in the Existing Friant Community Plan Area. Similar to the Project, impacts under this alternative would be significant.

Public Services

Section 3.12 of this Draft EIR identifies the potentially significant impacts of the Project from the increased demand for law enforcement services. As identified in Section 3.12, the Project would have a less than significant impact from increased demand for law enforcement services with implementation of mitigation measure #3.12.2a. Alternative 1 would have less of an impact from increased demand for law enforcement services than the Project because this alternative would include fewer residential units than the Project, which would equate to fewer officers being needed to patrol the Project Area. Mitigation Measure #3.12.2a would still be applicable

and implemented with this alternative and this alternative would result in a less than significant impact on the increased demand for law enforcement services.

Traffic and Circulation

Section 3.13 of this Draft EIR identifies and quantifies traffic impacts of the Project related to future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Tables 3.13-16 through 3.13-18 identify Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-19 and 3.13-20, several intersections and roadway segments remain significantly impacted.

Traffic impacts associated with this alternative would be less than those with the Project because the number of residential units would be reduced from 2,996 to 2,200, and therefore fewer trips would be generated. The mitigation measures set forth in Section 3.13 of this Draft EIR are applicable to this alternative, although estimated percentages calculated for mitigating cumulative impacts would be reduced based on the reduced unit counts associated with this alternative relative to the proposed unit count for the Project. The impacts to traffic related resources with this alternative would still be significant and unavoidable; however, the impact with this alternative would be less than with the Project.

Utilities and Service Systems

Section 3.14 of this Draft EIR identifies the potentially significant impacts of the Project on utilities and service systems such as water, sewer, storm drainage and solid waste disposal. As identified in Section 3.14, the Project would have a less than significant impact with implementation of mitigation measure #3.14.1 on the water supply for the Project. The Project would have a less than significant impact with implementation of mitigation measures #3.14.3a through #3.14.3i on wastewater treatment capacity. The Project would have a less than significant impact with implementation of mitigation measures #3.14.6a and #3.14.6b on compliance with Federal, State and local solid waste regulations. The Project would have a less than significant impact with implementation of mitigation measures #3.14.7a and 3.14.7b on the increased demand for electricity and natural gas within the Friant Community Plan Area. Alternative 1 would have less of an impact on wastewater treatment capacity, compliance with solid waste regulations and electricity and natural gas because this alternative would include fewer residential units than the Project; thereby resulting in less wastewater capacity needed, less solid waste going to the landfill and less electricity and natural gas being used. The mitigation measures noted above would still be applicable and implemented with this alternative, and this alternative would result in a less than significant impact.

Summary and Determination

The North Development Configuration Alternative is environmentally superior to the Project in all respects with the exception of cultural resources which is unchanged. This alternative would meet most of the Project objectives.

4.5.3 ALTERNATIVE NO. 2: EAST DEVELOPMENT CONFIGURATION

The East Development Configuration Alternative was chosen because it would reduce impacts to biological resources, require less road construction and infrastructure than the Project and result in more area left as open space. The Friant Community Plan Area and Friant Redevelopment Plan Area would remain in their current state with Alternative 2, however; for Friant Ranch Alternative 2 would concentrate development on approximately 493 acres (including approximately 2,100 residential units and 250,000 square feet of commercial) located in the northern and eastern areas of Friant Ranch (reference Figure 4-2 which shows the location relevant to sensitive biological and cultural resources). Table 4-3 shows the Alternative 2 development potential. Development would border the large undeveloped parcel to the south of Friant Ranch along approximately 1,700 feet of the common property boundary extending westward from the Friant-Kern Canal. With this Alternative, development would be contiguous with a portion of Friant Road, existing developed areas of the Friant Community, and the Friant-Kern Canal from the site's northern extremity to its southern boundary. Approximately 449 acres of dedicated onsite open space would be maintained under conservation easement. Most of this open space would be contiguous with a large undeveloped parcel to the south of Friant Ranch that consists of land similar to that occurring in the onsite open space. A smaller area of open space would be maintained in the vicinity of the community of Friant's water tank at the northern end of Friant Ranch.

Aesthetics

Section 3.1 of this Draft EIR identifies the potentially significant impacts of the Project on aesthetic resources. As identified in Section 3.1, the Project would have a less than significant impact with implementation of mitigation measures on the introduction of new sources of light and glare and increased lighting on the night sky and degradation of the existing visual character and quality of the Project Area and its surroundings. Alternative 2 would have less of an impact than the Project because there would be less land developed, and fewer residential units built than the Project. Mitigation Measures #3.1.3a through #3.1.3f and #3.1.4a and #3.1.4b would also be applicable and implemented with Alternative 2. The impacts of this alternative on aesthetic resources in the Project Area would be less than those associated with the Project because Alternative 2 would concentrate development on 493 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area with the Project. The impacts to aesthetics with this alternative would be less than significant.

Agricultural Resources

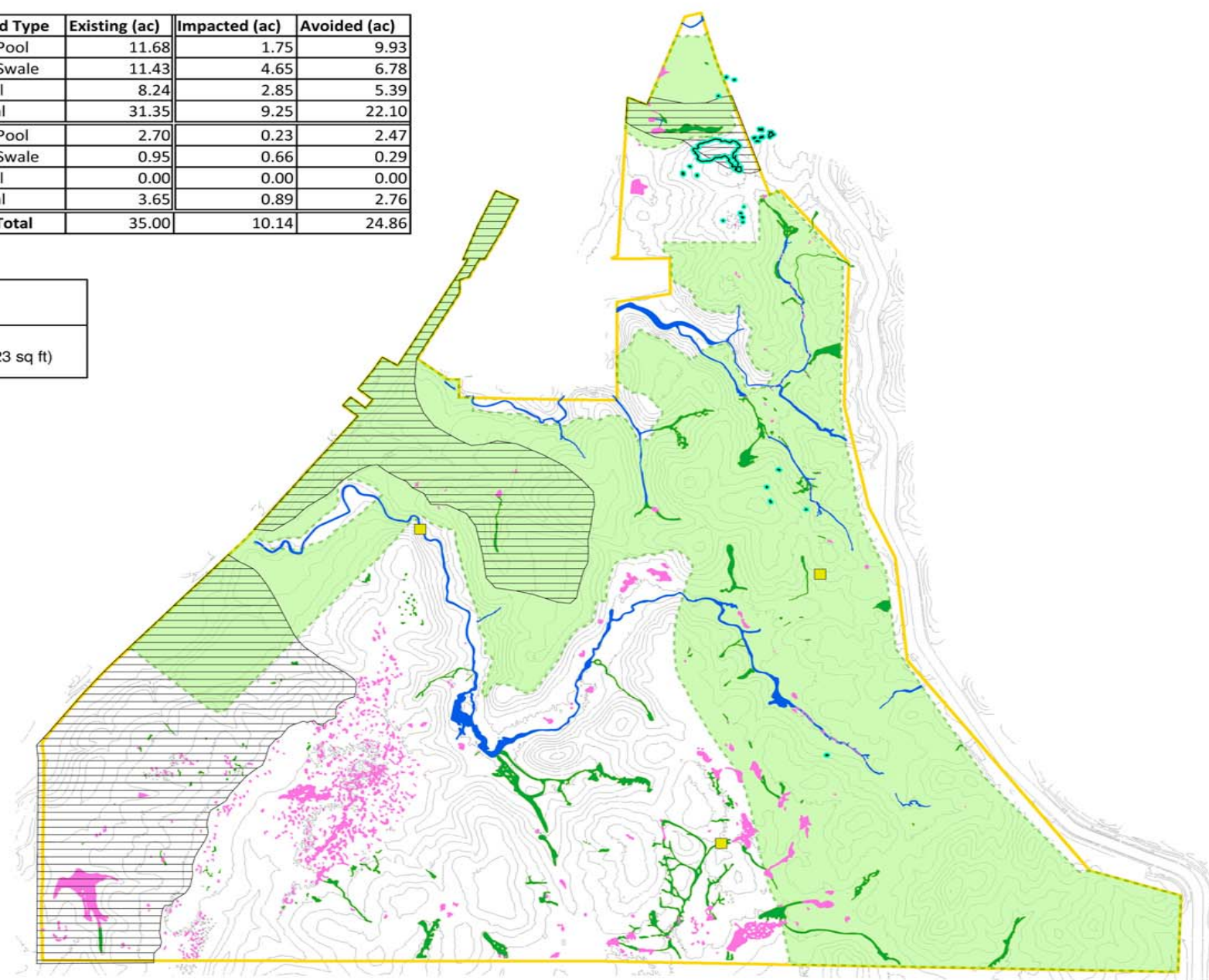
The amount of land zoned for agriculture within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, is approximately 1,328 acres. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 900 acres. The Project would result in the conversion of approximately 900 acres of land zoned AE-20 and AL-20 within the Friant Ranch Specific Plan Area to non-agricultural designations. However, the proposed land uses will be inconsistent with the existing agricultural zoning on approximately 600 acres of the existing agricultural zoned lands. There is no land within the Project Area that is currently under Williamson Act or Farmland Security Zone contract. The impacts of this

Wetland Summary Table

	Wetland Type	Existing (ac)	Impacted (ac)	Avoided (ac)
Jurisdictional	Vernal Pool	11.68	1.75	9.93
	Vernal Swale	11.43	4.65	6.78
	Channel	8.24	2.85	5.39
	Subtotal	31.35	9.25	22.10
Non-Jurisdictional (Isolated Waters)	Vernal Pool	2.70	0.23	2.47
	Vernal Swale	0.95	0.66	0.29
	Channel	0.00	0.00	0.00
	Subtotal	3.65	0.89	2.76
Grand Total		35.00	10.14	24.86

Hartweg's golden sunburst

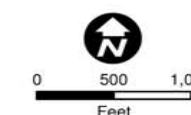
Isolated Plants
• Preserved (3) • Impacted (1)
Plant Populations (Clusters)
• Preserved (63,334 sq ft) • Impacted (523 sq ft)



Legend

- 10 Foot Contours
- Hartwegs Golden Sunburst
- Cultural Resources
- Project Boundary
- Isolated Waters
- Development Boundary**
- Alternative 2 - 493 acres
- Wetlands**
- Vernal Pool
- Vernal Swale
- Wetland Channel
- Open Space**
- Total (449 ac)

Alternative 2



286 W. Cromwell Ave.
Fresno, CA 93711-6162
(559) 449-2700

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ALTERNATIVE 2
EAST DEVELOPMENT CONFIGURATION

Figure
4 - 2

alternative on agricultural resources in the Project Area would be less than those associated with the Project because Alternative 2 would only concentrate development on 493 acres (approximately 453 acres of which are currently zoned for agriculture) within the Friant Ranch Specific Plan Area, as opposed to the approximately 600 acres of agriculturally zoned lands affected by the Project. The use of 453 acres of agriculturally zoned land for urban use is still a significant and unavoidable impact of Alternative 2. As with the Project, there would be no impact to Prime Farmland, Unique Farmland, of Statewide Importance because no such lands fall within the affected portion of the Project Area.

**Table 4-3
Alternative 2 – Land Use Table**

Land Use Designation	Specific Land Use Description	Acres	Density Range (du/ac)	Total Dwelling Units	Maximum Total Square Feet
Commercial					
Community Commercial Residential	Village Center (Mixed Use) ¹	32.6	--	50 ¹	250,000
Medium Density Res	Single-Family One (SFD-1) ³	96.7	2.0-5.0	275	--
Med High Density Res	Single-Family Two (SFD-2) ³	127	5.0-8.0	500	--
Med High Density Res	Single-Family Three (SFD-3) ³	122.3	8.0-12.0	929	--
Med High Density Res	Multi-Family (MFD) ³	13.3	12.0-18.0	166	--
	Active Adult Total	359.3	--	1,870	--
Med High Density Res	Non-Age Qualified Multi-Family (MFD) ³	14.3	12.0-18.0	180	--
Med High Density Res	Active Adult Recreation Center ³	16.1	--	--	42,000
Public Facilities					
Public Facilities	Waste Water Treatment Plant ³	4	--	--	--
Open Space					
Open Space	Undisturbed Open Space	449	--	--	--
Me/Med-High Density	Revegetated Slopes ³	16.6	--	--	--
Transportation & Circulation					
N/A	Roads	50.3	--	--	--
	Total	942.2	--	2,100	292,000

1) Fifty dwelling units are permitted within the Village Center, as either freestanding multi-family housing or vertical mixed-use development with commercial/office on the first floor and residential units on the upper floors.

2) Residential and commercial acreages include lands to be used for accessory, parks, parkways and landscaped slopes.

Air Quality and Greenhouse Gases/Global Climate Change

Air quality and greenhouse gases/global climate change impacts associated with this alternative would be substantially less than those with the Project because the Friant Ranch Specific Plan Area proposed for development would be reduced from 667 acres to 493 acres, and the number of residential units would be reduced from 2,996 to 2,100. The impacts to air quality and global climate change with this alternative would still be significant and unavoidable; however, the impact with this alternative would be substantially less than with the Project.

Biological Resources

Section 3.4 of this Draft EIR identifies the potentially significant impacts of the Project on biological resources. As identified in Section 3.4, the Project would have a less than significant

impact with implementation of mitigation measures #3.4-1a through 3.4-13. Alternative 2 would have less of an impact than the Project because this alternative would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres with the Project (with the balance of the 942-acre Specific Plan being designated as Open Space in either case), and there would be fewer residential units built with this alternative (reference Figure 4-2 for location relative to biological resources). Mitigation measures 3.4-1a through 3.4-13 would be applicable and implemented with Alternative 2 and would result in a less than significant impact. Approximately 449 acres of dedicated onsite open space would be maintained under conservation easement. Most of this open space would be contiguous with a large undeveloped parcel to the south of the Project site that consists of biotic habitats similar to those occurring in the onsite open space. A smaller area of open space would be maintained in the vicinity of the community of Friant's water tank at the northern end of the Project Site.

Under Alternative 2, the preservation of grassland and seasonal wetland habitat (excluding vernal pools) used by various wildlife species for nesting, foraging, and aestivation would increase from the approximately 250 acres under the Proposed Project to 449 acres, an increase of approximately 78%. Furthermore, most of the designated open space would be contiguous with lands supporting a mosaic of grasslands and seasonal wetlands to the south. Thus, the viability of preserved open space for many vernal pool and grassland species would be greater for Alternative 2 than would be the case for the Proposed Project. The habitat loss associated with Alternative 2 would nonetheless be considerable, and, without mitigation, including 496 acres of disturbed upland habitat for California tiger salamander and western spadefoot toads, 401 square feet of impacted Hartweg's Golden Sunburst, 8.35 acres of wetland/drainage impact (including 1.27 acres of vernal pools, which are vernal pool fairy shrimp and California tiger salamander breeding habitat, 3.96 acres of vernal swales and 3.11 acres of wetland channels). Alternative 1 may potentially impact nesting raptors, common and special status nesting birds, American badgers and burrowing owls. The mitigation measures prescribed in section 3.4 for the Project should apply in the same manner to this alternative to reduce these impacts to less than significant. All of the biological impacts would be related to the consistency with local policies, water transfer and conveyance, and Depot Parcel and Community Plan Area-related impacts would be approximately equal to those identified for the Project. The biological impacts related to wastewater disposal would be somewhat less than those identified for the Project because of the reduced number of residential units and anticipated reduction in wastewater. All of the mitigation measures described in section 3.4 apply to this alternative and, in some instances, the alternative land plan as designed will provide more benefit to species and habitat than what is required by the mitigation. The impact, however, would be far less under Alternative 2 than that of the Proposed Project (without mitigation). With mitigation the potential impacts are less than significant.

Cultural Resources

Section 3.5 of this Draft EIR identifies the potentially significant impacts of the Project on cultural resources. As identified in Section 3.5, the Project would have a significant impact to cultural resources because the Project would impact site CA-FRE-2653 which is located within the Friant Ranch Specific Plan Area development footprint. Mitigation measures are proposed (#3.5.1a through 3.5.1g) to reduce the impact to site 2653 to a less than significant impact.

The impact to site 2653 would be the same with this alternative as with the Project because site 2653 would also be within the development footprint of Alternative 2 (reference Figure 4-2 for location relative to cultural resources). Alternative 2 would include the same mitigation measures to reduce potential impacts to a less than significant level.

Geology, Soils and Mineral Resources

Section 3.6 of this Draft EIR identifies the potentially significant impacts of the Project on geology, soils and mineral resources. As identified in Section 3.6, the Project would have a less than significant impact. The impacts of Alternative 2 on geology, soils and mineral resources in the Project Area would be less than those associated with the Project because Alternative 2 would concentrate development on 493 acres of Friant Ranch as opposed to the entire 667 acre boundary as with the Project. Similar to the Project, impacts under this alternative would be less than significant.

Hazards and Hazardous Materials

Section 3.7 of this Draft EIR identifies the potentially significant impacts of the Project related to hazards and hazardous materials. As identified in Section 3.7, the Project would have a less than significant impact with implementation of mitigation measures #3.7.6a and #3.7.6b on emergency preparedness. Alternative 2 would have less of an impact than the Project because there would be less land developed, and fewer residential units built than the Project. Mitigation Measures #3.7.6a and #3.7.6b would also be applicable and implemented with Alternative 2. The impacts of this alternative on emergency preparedness in the Project Area would be less than those associated with the Project because Alternative 2 would concentrate development on 493 acres of Friant Ranch as opposed to 667 acres with the Project. Alternative 2 would still be consistent with the applicable Fresno County General Plan policies and not interfere with an adopted emergency response or evacuation plan.

Hydrology and Water Quality

Section 3.8 of this Draft EIR identifies the potentially significant impacts of the Project on hydrology and water quality. As identified in Section 3.8, the Project would have a less than significant impact with implementation of mitigation measure #3.8.3a on the alteration of the existing drainage pattern and stormwater drainage capacity. Alternative 2 would have less of an impact on the existing drainage pattern and stormwater drainage capacity compared to the Project because Alternative 2 would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres, and would result in less wastewater and stormwater due to the reduced unit count and disturbed drainage areas. The unit count reduction would reduce the anticipated amount of wastewater resulting from the Project and, as such, reduce the amount of treated effluent disposed to land or the river. The LID IMP's in Mitigation Measure #3.8.3a would still be applicable and implemented with Alternative 2 and would result in a less than significant impact.

Land Use and Planning

Section 3.9 of this Draft EIR identifies the potentially significant impacts of the Project on land use and planning. As identified in Section 3.9, the Project would have a less than significant impact. Alternative 2 would have a similar impact to the Project because Alternative 2 would require amendments to the Fresno County General Plan and Zoning Division in order to accommodate the intended uses within the Friant Ranch Specific Plan Area. Similar to the Project, impacts under this alternative would be less than significant.

Noise

Section 3.10 of this Draft EIR identifies the potentially significant impacts of the Project with regard to noise. As identified in Section 3.10, the Project would have a less than significant impact from the exposure to excessive noise levels or vibration with implementation of mitigation measure #3.10.1a. The Project would have a less than significant impact from construction noise with implementation of mitigation measures #3.10.2a through #3.10.2c. Alternative 2 would have less of an impact due to excessive noise levels or vibration, and construction noise because this alternative would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area with the Project, and there would be fewer residential units built with this alternative. Mitigation Measures #3.10.1a and #3.10.2a through #3.10.2c would still be applicable and implemented with this alternative and would result in a less than significant impact on exposure to excessive noise levels or vibration, and construction noise.

Population and Housing

Section 3.11 of this Draft EIR identifies the potentially significant impacts of the Project on population and housing. As identified in Section 3.11, the Project would have a significant impact that cannot be mitigated. Alternative 2 would have a similar impact to the Project because it will have a direct, growth inducing impact on the area's population and housing stock by facilitating the development of up to 2,100 new households within the Specific Plan Area and development of vacant properties in the Existing Friant Community Plan Area. Similar to the Project, impacts under this alternative would be significant.

Public Services

Section 3.12 of this Draft EIR identifies the potentially significant impacts of the Project on the increased demand for law enforcement services. As identified in Section 3.12, the Project would have a less than significant impact from increased demand for law enforcement services with implementation of mitigation measure #3.12.2a. Alternative 2 would have less of an impact from the increased demand for law enforcement services than the Project because this alternative would include fewer residential units than the Project, which would equate to fewer officers being needed to patrol the Project Area. Mitigation Measure #3.12.2a would still be applicable and implemented with this alternative and would result in a less than significant impact from the increased demand for law enforcement services.

Traffic and Circulation

Section 3.13 of this Draft EIR identifies and quantifies traffic impacts of the Project related to future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Tables 3.13-16 through 3.13-18 identify Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-19 and 3.13-20, several intersections and roadway segments remain significantly impacted.

Traffic impacts associated with this alternative would be less than those with the Project because the number of residential units would be reduced from 2,996 to 2,100, and therefore fewer trips would be generated. The mitigation measures set forth in Section 3.13 of this Draft EIR are applicable to this alternative, although estimated percentages calculated for mitigating cumulative impacts would be reduced based on the reduced unit counts associated with this alternative relative to the proposed unit count for the Project. The impacts to traffic related resources with this alternative would still be significant and unavoidable; however, the impact with this alternative would be less than with the Project.

Utilities and Service Systems

Section 3.14 of this Draft EIR identifies the potentially significant impacts of the Project on utilities and service systems such as water, sewer, storm drainage and solid waste disposal. As identified in Section 3.14, the Project would have a less than significant impact with implementation of mitigation measure #3.14.1 on the water supply for the Project. The Project would have a less than significant impact with implementation of mitigation measures #3.14.3a through #3.14.3i on wastewater treatment capacity. The Project would have a less than significant impact with implementation of mitigation measures #3.14.6a and #3.14.6b on compliance with Federal, State and local solid waste regulations. The Project would have a less than significant impact with implementation of mitigation measures #3.14.7a and 3.14.7b on the increased demand for electricity and natural gas within the Friant Community Plan Area. Alternative 2 would have less of an impact on wastewater treatment capacity, compliance with solid waste regulations and electricity and natural gas because this alternative would include fewer residential units than the Project, thereby resulting in less wastewater capacity needed, less solid waste going to the landfill and less electricity and natural gas being used. The mitigation measures noted above would still be applicable and implemented with this alternative and would result in a less than significant impact.

Summary and Determination

The East Development Configuration Alternative is environmentally superior to the Project in all respects with the exception of cultural resources which is unchanged. This alternative would meet most of the Project objectives.

4.5.4 ALTERNATIVE NO. 3: NORTHEAST DEVELOPMENT CONFIGURATION

The Northeast Development Configuration Alternative was chosen as a means to reduce impacts to important biological resources, especially vernal pool fairy shrimp, California tiger salamander, western spadefoot toad, and jurisdictional wetlands. Alternative 3 also provides

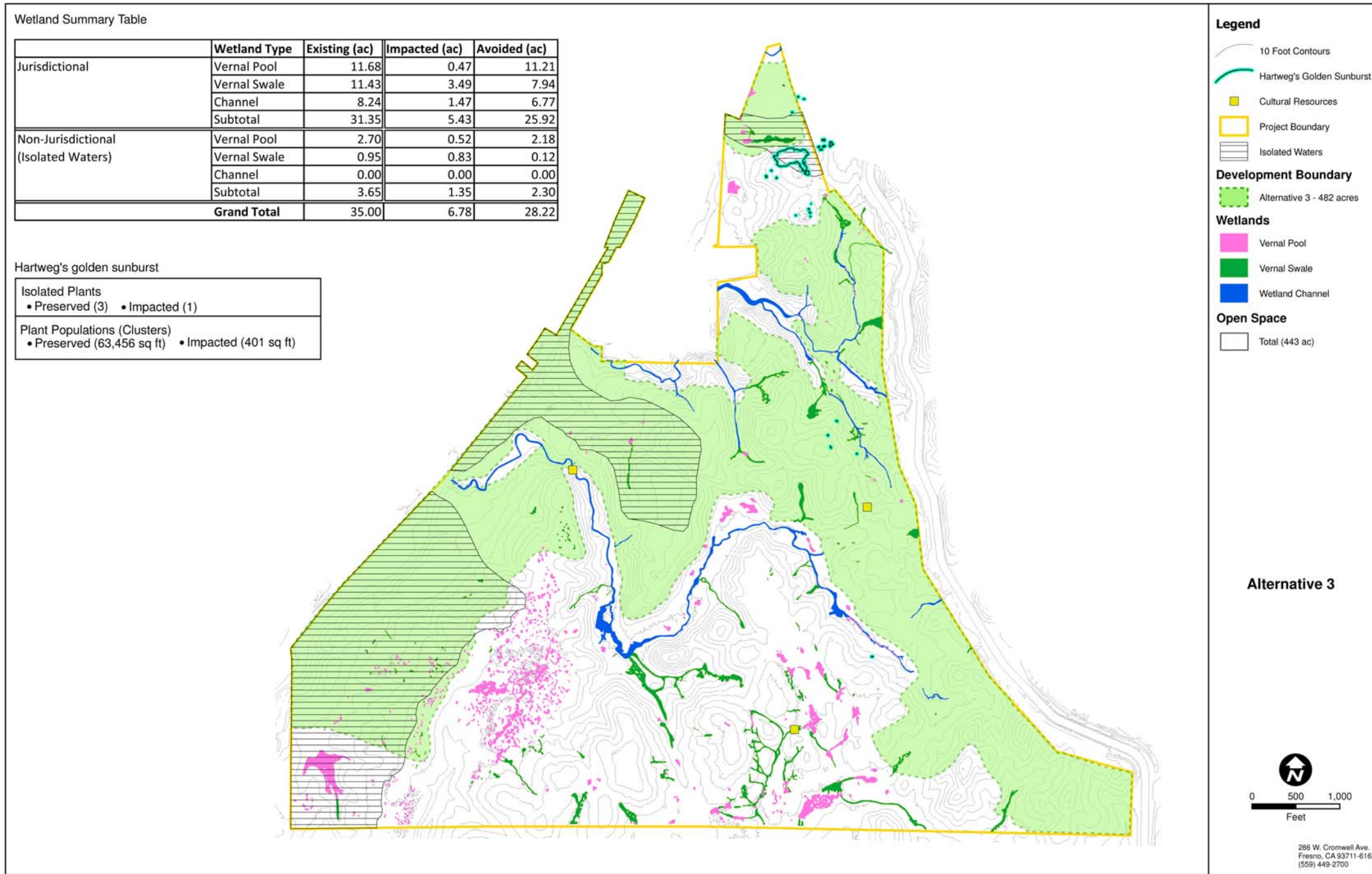
higher density development on fewer acres and a reduced unit count from the Proposed Project. As such, Alternative 3 requires less road construction and infrastructure than the Project and result in more area left as open space. The Friant Community Plan Area and Friant Redevelopment Plan Area would remain in their current state with Alternative 3, however; for Friant Ranch, Alternative 3 would concentrate development on approximately 482 acres (including approximately 2,500 residential units and 250,000 square feet of commercial) located in the western, northern, and eastern areas of the Project Site (reference Figure 4-3 which shows the location relative to sensitive biological and cultural resources). Table 4-4 shows the Alternative 3 development potential. Proposed development would not border the large undeveloped parcel to the south of Friant Ranch along the common property boundary, except for approximately 1,000 feet immediately west of the Friant-Kern Canal. With this Northeast Alternative most development would be contiguous with Friant Road, existing developed areas of the Friant Community, and the Friant-Kern Canal almost to Friant Ranch's southern boundary. Approximately 460-acres of dedicated onsite open space would be maintained under conservation easement, most of which would be located to the south of proposed development and contiguous with a large undeveloped parcel to the south of Friant Ranch that consists of lands similar to those occurring in the onsite open space.

**Table 4-4
Alternative 3 – Land Use Table**

Land Use Designation	Specific Land Use Description	Acres	Density Range (du/ac)	Total Dwelling Units	Maximum Total Square Feet
Commercial					
Community Commercial Residential	Village Center (Mixed Use) ¹	32.6	--	50 ¹	250,000
Medium Density Res	Single-Family One (SFD-1) ³	69.4	2.0-5.0	290	--
Med High Density Res	Single-Family Two (SFD-2) ³	131.5	5.0-8.0	745	--
Med High Density Res	Single-Family Three (SFD-3) ³	130.9	8.0-12.0	1,069	--
Med High Density Res	Multi-Family (MFD) ³	13.3	12.0-18.0	166	--
	Active Adult Total	345.1	--	2,270	--
Med High Density Res	Non-Age Qualified Multi-Family (MFD) ³	14.3	12.0-18.0	180	--
Med High Density Res	Active Adult Recreation Center ³	16.1	--	--	42,000
Public Facilities					
Public Facilities	Waste Water Treatment Plant ³	4	--	--	--
Open Space					
Open Space	Undisturbed Open Space	460	--	--	--
Me/Med-High Density Transportation & Circulation	Revegetated Slopes ³	22.4	--	--	--
N/A	Roads	47.7	--	--	--
	Total	942.2	--	2,500	292,000

3) Fifty dwelling units are permitted within the Village Center, as either freestanding multi-family housing or vertical mixed-use development with commercial/office on the first floor and residential units on the upper floors.

4) Residential and commercial acreages include lands to be used for accessory, parks, parkways and landscaped slopes.



ALTERNATIVE 3
NORTHEAST DEVELOPMENT CONFIGURATION

Figure
4 - 3

The following significant impacts of the Project are compared to the potential impacts of Alternative 3.

Aesthetics

Section 3.1 of this Draft EIR identifies the potentially significant impacts of the Project on aesthetic resources. As identified in Section 3.1, the Project would have a less than significant impact with implementation of mitigation measures on the introduction of new sources of light and glare and increased lighting on the night sky and degradation of the existing visual character and quality of the Project Area and its surroundings. Alternative 3 would have less of an impact than the Project because there would be less land developed, and fewer residential units built than the Project. Mitigation Measures #3.1.3a through #3.1.3f and #3.1.4a and #3.1.4b would also be applicable and implemented with Alternative 3. The impacts of this alternative on aesthetic resources in the Project Area would be less than those associated with the Project because Alternative 3 would concentrate development on only 482 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area with the Project. The impacts to aesthetics with this alternative would be less than significant.

Agricultural Resources

The amount of land zoned for agriculture within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, is approximately 1,328 acres. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 902 acres. The Project would result in the conversion of approximately 902 acres of land zoned AE-20 and AL-20 within the Friant Ranch Specific Plan Area to non-agricultural designations. However, the proposed land uses will be inconsistent with the existing agricultural zoning on approximately 600 acres of the existing agricultural zoned lands. There is no land within the Project Area that is currently under Williamson Act or Farmland Security Zone contract. The impacts of this alternative on agricultural resources in the Project Area would be less than those associated with the Project because Alternative 3 would only concentrate development on 482 acres (approximately 443 acres of which is currently zoned for agriculture) within the Friant Ranch Specific Plan Area, as opposed to the approximately 600 acres of agriculturally zoned lands affected by the Project. The use of 443 acres of agriculturally zoned land for urban use is still a significant and unavoidable impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance because no such lands fall within the affected portion of the Project Area.

Air Quality and Greenhouse Gases/Global Climate Change

Air quality and greenhouse gases/global climate change impacts associated with this alternative would be less than those with the Project because the portion of the Friant Ranch Specific Plan Area proposed for development would be reduced from 667 acres to 482 acres, and the number of residential units would be reduced from 2,996 to 2,500. The impacts to air quality and global climate change with this alternative would still be significant and unavoidable, however; the impact with this alternative would be less than with the Project.

Biological Resources

Section 3.4 of this Draft EIR identifies the potentially significant impacts of the Project on biological resources. As identified in Section 3.4, the Project would have a less than significant impact with implementation of mitigation measures #3.4-1a through 3.4-13. Alternative 3 would have less of an impact than the Project because this alternative would concentrate development on 496 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area with the Project, and there would be fewer residential units built with this alternative (reference Figure 4-3 for location relevant to sensitive biological resources). Mitigation measures 3.4-1a through 3.4-13 would be applicable and implemented with Alternative 3 and would result in a less than significant impact. Approximately 460-acres of dedicated onsite open space would be maintained under conservation easement, most of which would be located to the south of proposed development and contiguous with a large undeveloped parcel to the south of the Project site that consists of biotic habitats similar to those occurring in the onsite open space.

Under Alternative 3, the preservation of grassland and seasonal wetland habitat (excluding vernal pools) used by various wildlife species for nesting, foraging, and aestivation would increase from the approximately 250 acres under the Proposed Project to 460 acres, an increase of approximately 83%. Furthermore, most designated open space would be contiguous with lands supporting a mosaic of grasslands and seasonal wetlands to the south. Thus, the viability of preserved open space for many vernal pool and grassland species would be greater for Alternative 3 than would be the case for the Proposed Project. The habitat loss associated with Alternative 3 would nonetheless be considerable, and, without mitigation, would remain a significant adverse impact, including 482 acres of disturbed upland habitat for California tiger salamander and western spadefoot toads, 401 square feet of impacted Hartweg's Golden Sunburst, 6.8 acres of wetland/drainage impact (including .99 acres of vernal pools, which are vernal pool fairy shrimp and California tiger salamander breeding habitat, 4.31 acres of vernal swales and 1.47 acres of wetland channels). Alternative 3 may potentially impact nesting raptors, common and special status nesting birds, American badgers and burrowing owls. The mitigation measures prescribed in section 3.4 for the Project should apply in the same manner to this alternative to reduce these impacts to less than significant. All of the biological impacts would be related to the consistency with local policies, water transfer and conveyance, and Depot Parcel and Community Plan Area-related impacts would be approximately equal to those identified for the Project. The biological impacts related to wastewater disposal would be somewhat less than those identified for the Project because of the reduced number of residential units and anticipated reduction in wastewater. All of the mitigation measures described in section 3.4 apply to this alternative and, in some instances, the alternative land plan as designed will provide more benefit to species and habitat than what is required by the mitigation.. The impact, however, would be far less under Alternative 3 than that of the Proposed Project (without mitigation). With mitigation the potential impacts are less than significant.

Cultural Resources

Section 3.5 of this Draft EIR identifies the potentially significant impacts of the Project on cultural resources. As identified in Section 3.5, the Project would have a significant impact to cultural resources because the Project would impact site CA-FRE-2653, which is located within

the Friant Ranch Specific Plan Area development footprint. Mitigation measures are proposed (#3.5.1a through 3.5.1g) to reduce the impact to site 2653 to a less than significant level. The impact to site 2653 would be the same with this alternative as with the Project because site 2653 would also be within the development footprint of Alternative 3 (reference Figure 4-3 for location relative to sensitive cultural resources). Alternative 3 would include the same mitigation measures to reduce potential impacts to a less than significant level.

Geology, Soils and Mineral Resources

Section 3.6 of this Draft EIR identifies the potentially significant impacts of the Project on geology, soils and mineral resources. As identified in Section 3.6, the Project would have a less than significant impact. The impacts of Alternative 3 on geology, soils and mineral resources in the Project Area would be less than those associated with the Project because Alternative 3 would concentrate development on 482 acres of Friant Ranch as opposed to the entire 667 acre boundary as with the Project. Similar to the Project, impacts under this alternative would be less than significant.

Hazards and Hazardous Materials

Section 3.7 of this Draft EIR identifies the potentially significant impacts of the Project related to hazards and hazardous materials. As identified in Section 3.7, the Project would have a less than significant impact with implementation of mitigation measures #3.7.6a and #3.7.6b on emergency preparedness. Alternative 3 would have less of an impact than the Project because there would be less land developed, and fewer residential units built than the Project. Mitigation Measures #3.7.6a and #3.7.6b would also be applicable and implemented with Alternative 3. The impacts of this alternative on emergency preparedness in the Project Area would be less than those associated with the Project because Alternative 3 would concentrate development on 482 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area with the Project. Alternative 3 would still be consistent with the applicable Fresno County General Plan policies and not interfere with an adopted emergency response or evacuation plan. The impacts associated with hazards and hazardous materials with this alternative would be less than significant.

Hydrology and Water Quality

Section 3.8 of this Draft EIR identifies the potentially significant impacts of the Project on hydrology and water quality. As identified in Section 3.8, the Project would have a less than significant impact with implementation of mitigation measure #3.8.3a on the alteration of the existing drainage pattern and stormwater drainage capacity. Alternative 3 would have less of an impact on the existing drainage pattern and stormwater drainage capacity compared to the Project because Alternative 3 would concentrate development on 482 acres as opposed to 667 acres, and would result in less wastewater and stormwater due to the reduced unit count and disturbed drainage areas. The unit count reduction would reduce the anticipated amount of wastewater resulting from the Project and, as such, reduce the amount of treated effluent disposed of to land or the river. The LID IMP's in Mitigation Measure #3.8.3a would still be applicable and implemented with Alternative 3 and would result in a less than significant impact.

Land Use and Planning

Section 3.9 of this Draft EIR identifies the potentially significant impacts of the Project on land use and planning. As identified in Section 3.9, the Project would have a less than significant impact. Alternative 3 would have a similar impact to the Project because Alternative 3 would require amendments to the Fresno County General Plan and Zoning Division in order to accommodate the intended uses within the Friant Ranch Specific Plan Area. Similar to the Project, impacts under this alternative would be less than significant.

Noise

Section 3.10 of this Draft EIR identifies the potentially significant impacts of the Project with regard to noise. As identified in Section 3.10, the Project would have a less than significant impact from exposure to excessive noise levels or vibration with implementation of mitigation measure #3.10.1a. The Project would have a less than significant impact from construction noise with implementation of mitigation measures #3.10.2a through #3.10.2c. Alternative 3 would have less of an impact from excessive noise levels or vibration and construction noise because this alternative would concentrate development on 482 acres of Friant Ranch as opposed to 667 acres of development within the 942-acre Specific Plan Area the Project, and there would be fewer residential units built with this alternative. Mitigation Measures #3.10.1a and #3.10.2a through #3.10.2c would still be applicable and implemented with this alternative and would result in a less than significant impact from exposure to excessive noise levels or vibration, and construction noise.

Population and Housing

Section 3.11 of this Draft EIR identifies the potentially significant impacts of the Project on population and housing. As identified in Section 3.11, the Project would have a significant impact that cannot be mitigated. Alternative 3 would have a similar impact to the Project because it will have a direct, growth inducing impact on the area's population and housing stock by facilitating the development of up to 2,500 new households within the Specific Plan Area and development of vacant properties in the Existing Friant Community Plan Area. Similar to the Project, impacts under this alternative would be significant.

Public Services

Section 3.12 of this Draft EIR identifies the potentially significant impacts of the Project from the increased demand for law enforcement services. As identified in Section 3.12, the Project would have a less than significant impact from the increased demand for law enforcement services with implementation of mitigation measure #3.12.2a. Alternative 3 would have less of an impact from the increased demand for law enforcement services than the Project because this alternative would include fewer residential units than the Project, which would equate to fewer officers being needed to patrol the Project Area. Mitigation Measure #3.12.2a would still be applicable and implemented with this alternative and would result in a less than significant impact from the increased demand for law enforcement services.

Traffic and Circulation

Section 3.13 of this Draft EIR identifies and quantifies traffic impacts of the Project related to future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Tables 3.13-16 through 3.13-18 identify Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-19 and 3.13-20, several intersections and roadway segments remain significantly impacted.

Traffic impacts associated with this alternative would be less than those with the Project because the number of residential units would be reduced from 2,996 to 2,500, and therefore fewer trips would be generated. The mitigation measures set forth in Section 3.13 of this Draft EIR are applicable to this alternative, although estimated percentages calculated for mitigating cumulative impacts would be reduced based on the reduced unit counts associated with this alternative relative to the proposed unit count for the Project. The impacts to traffic related resources with this alternative would still be significant and unavoidable; however, the impact with this alternative would be less than with the Project.

Utilities and Service Systems

Section 3.14 of this Draft EIR identifies the potentially significant impacts of the Project on utilities and service systems such as water, sewer, storm drainage and solid waste disposal. As identified in Section 3.14, the Project would have a less than significant impact with implementation of mitigation measure #3.14.1 on the water supply for the Project. The Project would have a less than significant impact with implementation of mitigation measures #3.14.3a through #3.14.3i on wastewater treatment capacity. The Project would have a less than significant impact with implementation of mitigation measures #3.14.6a and #3.14.6b on compliance with Federal, State and local solid waste regulations. The Project would have a less than significant impact with implementation of mitigation measures #3.14.7a and 3.14.7b on the increased demand for electricity and natural gas within the Friant Community Plan Area. Alternative 3 would have less of an impact on wastewater treatment capacity, compliance with solid waste regulations and electricity and natural gas because this alternative would include fewer residential units than the Project; thereby resulting in less wastewater capacity needed, less solid waste going to the landfill and less electricity and natural gas being used. In addition, this Alternative would have a reduced demand on water supply, due to the lesser number of units planned. The mitigation measures noted above would still be applicable and implemented with this alternative and would result in a less than significant impact.

Summary and Determination

The Northeast Development Configuration Alternative is environmentally superior to the Project in all respects with the exception of cultural resources which is unchanged. This alternative would meet most of the Project objectives.

4.6 Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126.6(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated, and states, “[I]f the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” Table 4-5 compares the four alternatives to the Project in terms of the 14 significant impact areas that were analyzed in this Draft EIR. The conclusions contained in the table are subjective and required that judgments be made on emphasis in some areas of analysis.

**Table 4-5
Significance of Environmental Effects under Alternatives Compared to Project**

Impact Topic	No Project Alternative	North Development Configuration (Alternative 1)	East Development Configuration (Alternative 2)	Northeast Development Configuration (Alternative 3)
Aesthetics	Lesser	Lesser	Lesser	Lesser
Agricultural Resources	Lesser	Lesser	Lesser	Lesser
Air Quality	Lesser	Lesser	Lesser	Lesser
Biological Resources	Lesser	Lesser	Lesser	Lesser
Cultural Resources	Lesser	Unchanged	Unchanged	Unchanged
Geology, Soils, and Minerals	Lesser	Lesser	Lesser	Lesser
Hazards and Hazardous Materials	Lesser	Lesser	Lesser	Lesser
Hydrology and Water Quality	Lesser	Lesser	Lesser	Lesser
Land Use and Planning	Lesser	Unchanged	Unchanged	Unchanged
Noise	Lesser	Lesser	Lesser	Lesser
Population and Housing	Lesser	Unchanged	Unchanged	Unchanged
Public Services	Lesser	Lesser	Lesser	Lesser
Traffic and Circulation	Lesser	Lesser	Lesser	Lesser
Utilities and Service Systems	Lesser	Lesser	Lesser	Lesser
Number of Impact Topics Reduced	14	11	11	11
Number of Impact Topics Increased	0	0	0	0
Number of Impact Topics Unchanged	0	3	3	3

Source: Quad Knopf, Inc.

Table 4-6 illustrates the relative biological impact of the Project versus the alternatives.

**Table 4-6
Comparison of Biological Impacts of the Alternatives**

	Project	Alternative 1	Alternative 2	Alternative 3
Footprint of Project (acres)	696	496	493	482
Number of Proposed Residential Units	2,996	2,200	2,100	2,500
Preserved (undisturbed) Open Space (acres)	245	446	449	460
Impacts to Hartweg’s Golden Sunburst (square feet)	677	401	523	401
Continuity of Open Space with Lands to South	Not contiguous	Contiguous	Contiguous	Contiguous
Impacts to Wetlands/Drainages (Jurisdictional and Isolated) (acres)	12.33	8.35	10.14	6.78
Impacts to Vernal Pools (vernal pool fairy shrimp and CTS breeding habitat) – subset of above (acres)	2.29	1.27	1.98	0.99

Based on a review of the alternatives evaluated in this chapter, the No Project Alternative would result in the fewest impacts on the environment. The No Project Alternative, which would consist of maintaining existing conditions, would not result in significant impacts related to land use or land use conflicts, loss of agricultural land, aesthetic or visual quality impacts, new sources of light and glare, impacts on hydrology, need for a new surface water supply, impacts on water quality, impacts on biological resources, impacts on soils and geology, impacts on archaeological or paleontological resources, impacts on transportation and circulation, air quality impacts, noise impacts, impacts on population, impacts on housing and employment, impacts on public services and infrastructure, or creation of new hazards. The No Project Alternative would not meet the applicant’s project objectives, as identified in Section 4.2.

The North, East and Northeast Development Configuration Alternatives are similar in terms of their level of impact. Because these alternatives would reduce the acreage, square footage and number of units of development as compared to the Project, they would reduce impacts in all impact areas.

Apart from the No Project Alternative, the Northeast Development Configuration (Alternative 3) would be the Environmentally Superior alternative because it would result in the fewest adverse physical impacts to the environment with regard to biological resources. As depicted in Table 4-6 Alternative 3 would result in the fewest adverse physical impacts to the environment with regard to biological resources. Alternative 3 involves the smallest project footprint, the most open space preserved, the least impact to wetlands and drainages, and the least impact to vernal pools. This alternative is also superior in its level of continuity with open space lands to the south. Though Alternative 3 has more units than other alternatives analyzed herein, its higher density design still manages to disturb the least amount of area and thus preserve the most acreage as undisturbed open space. This higher density does not create new impacts because the design allows for sufficient flow of traffic within the Project Area and satisfies County standards for ingress and egress to ensure emergency vehicles have appropriate access to the development. Moreover, this alternative would also incorporate all of the mitigation measures prescribed for the Project, though in some instances (e.g., biological resource mitigation) the Alternative 3 design provides more benefit than what is required by the mitigation measure.

4.7 Alternative WWTP Location

The Alternative WWTP is being analyzed as a stand-alone alternative, as it is a feasible option for the project as proposed, and the project alternatives listed above.

4.7.1 ALTERNATIVE WWTP LOCATION

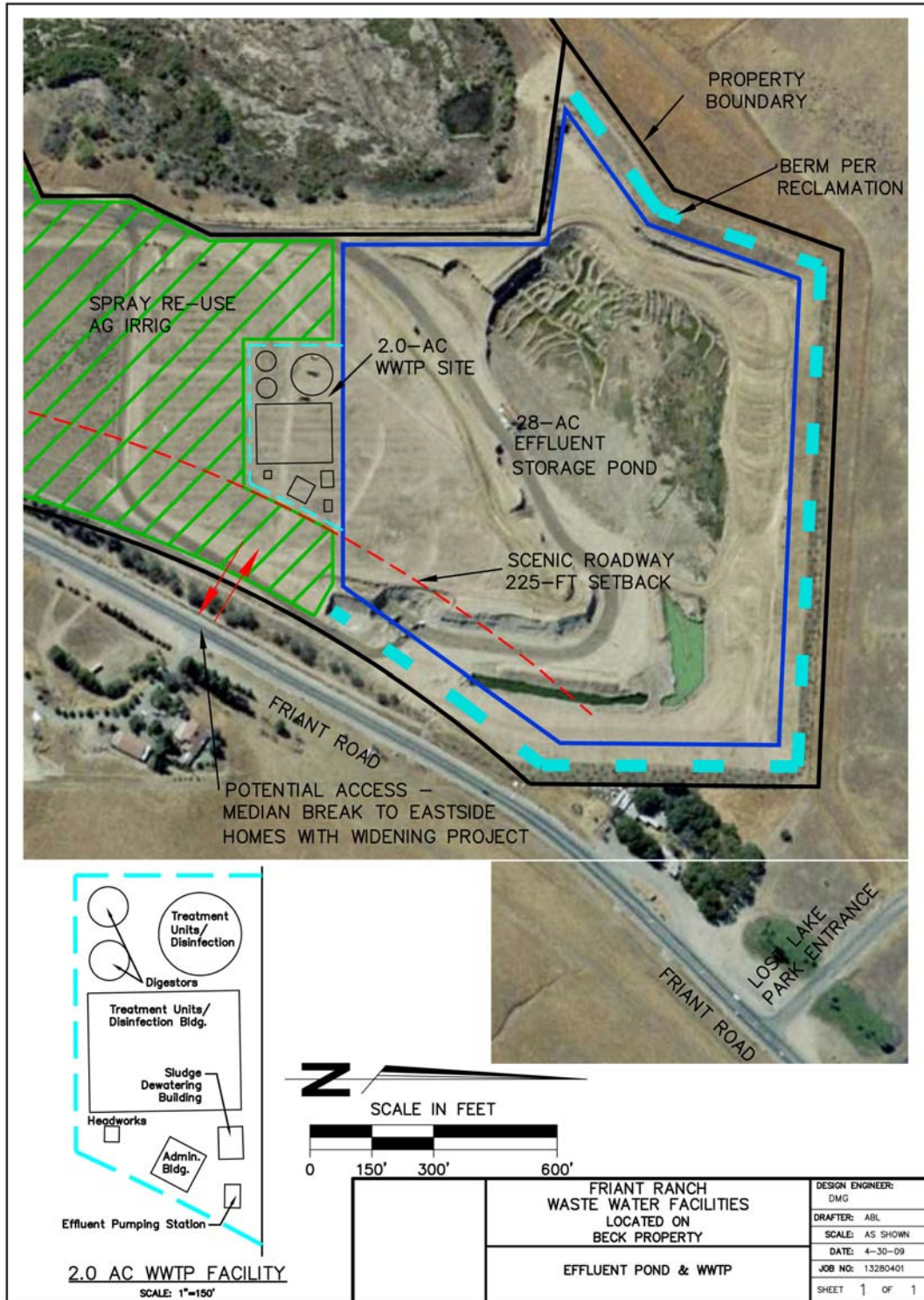
Figure 4-4 shows the Beck Property, and shows the general arrangement of a possible WWTP near the northeasterly corner of the property, adjacent to the south edge of the existing gravel excavation pit.

The Beck Property is the former 150-acre CEMEX gravel extraction facility south and east of Lost Lake Park. It consists of highly disturbed agricultural lands and an aggregate mining quarry, which has an active quarry 25 acres in size from which sand and gravel are being extracted.

A pipeline from the Friant Ranch Specific Plan area to the Alternative WWTP Location would be constructed within disturbed areas directly adjacent to existing roadways. The effluent will be treated at the Alternative WWTP location to a level that is consistent with Title 22 requirements for the unrestricted use of recycled water. Consistent with the proposed project, the mining pit will be used as an effluent storage pond for seasonal irrigation of the remaining lands on the Beck Property and the remainder of the Beck Property will be used for reclamation of the treated effluent. Recycled water from the WWTP will be applied to agricultural fields at agronomic rates, with additional recycled water pumped back to the Specific Plan area for irrigation of landscaped areas.

The Alternative WWTP Location comprises the following deviations from the proposed project described in the ADEIR:

- Change the purpose of the pump station currently proposed at or near the Public Service parcel. Rather than lifting raw sewage from the Millerton Lake Village MHP and the Project into the WWTP if located at the Proposed WWTP Location, the pump station would instead pump all raw sewage through a pipeline to the Alternative WWTP Location for treatment.
- Locate a raw sewage pipeline from the pump station at or near the Public Service parcel to the Alternative WWTP Location. This pipeline would be the same size and in the same alignment as the effluent disposal pipeline currently proposed.



ALTERNATIVE WWTP LOCATION

Figure 4 - 4

- Locate an effluent disposal pipeline from the Alternative WWTP Location to the Specific Plan area. This would be an additional purple pipeline, smaller in size than the pipeline above, that would return reclaimed effluent to the Project for use in irrigation of landscaping and open spaces.
- The WWTP itself would continue to be fully enclosed, set back from Friant Road and screened by landscaping from public view. Access could be provided from Friant Road through the existing drive at the north end of the property, or from the drive near the center of the property. No changes would be required to Friant Road at this location.
- The effluent storage pond and disposal by irrigation onto the balance of the Beck Property lands would not change from the original proposal.
- Lands comprising the Proposed WWTP Location would be repurposed as additional landscaping to enhance the commercial center. No additional commercial square footage or parking areas would be proposed under this alternative.
- Net water balance would not be affected. The agricultural acreage lost for reclamation at the Beck Property due to construction of the WWTP would be made up within the Specific Plan area by additional parks and landscaped area created by eliminating the WWTP site, which could receive reclaimed effluent for irrigation. Overall reclaimed effluent use would not be significantly affected.

Aesthetics

Section 3.1 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) on aesthetic resources. As identified in Section 3.1, the Project would have a less than significant impact with implementation of mitigation measures on the introduction of new sources of light and glare and increased lighting on the night sky and degradation of the existing visual character and quality of the Project Area and its surroundings. Relocating the WWTP to the Alternative WWTP Location would free up approximately two to three acres of space adjacent to the Central Commercial area. This would be used to expand landscaped areas and parks. No additional commercial square footage or parking is proposed for this area. The added landscape and parks would enhance the aesthetics of the Commercial Center area, allow for additional landscape buffer between the commercial center and the nearby residential areas. The additional landscaping and parks would offset the reduction in irrigation water demand at the Beck Property resulting from constructing the 3-acre plant site at the Beck Property WWTP Location. The Alternate WWTP could be smaller due to flatter terrain allowing for more efficient site arrangement. The WWTP would be fully enclosed, set back 200 feet from Friant Road and screened by landscaping from public view, to ensure no aesthetic impacts from Friant Road and nearby residences/office or trails.

Relocation of the WWTP to the Beck Property would result in a structure (the WWTP) being constructed where none has been proposed. The structure would be a single-story wood-frame building not unlike the individual residences on neighboring parcels, and the CEMEX office

located several hundred feet to the south. Since the entire Beck Property is located outside of the San Joaquin River Parkway boundary, there would be no impact upon the sight lines within the Parkway. Sight lines from Friant Road to the river could be minimally impacted depending upon the relative height of the building versus the roadway, but the small overall size of the building means that any such impact would be less than significant.

As such, the Alternative WWTP Location's aesthetic impact would be less than that of the Proposed WWTP Location and less than significant.

Agricultural Resources

Section 3.2 of this Draft EIR identifies the potentially significant impacts of the Project on agricultural resources. As identified in Section 3.2, the Project would have a significant impact because the Project would result in the rezoning of agricultural land to urban uses. There are, however, no lands under Williamson Act contract within the Friant Community Plan Area or Friant Ranch Specific Plan Area.

The amount of land zoned for agriculture within the Friant Community Plan Area, including the Friant Ranch Specific Plan Area, is approximately 1,328 acres. The amount of land zoned for agriculture within the Friant Ranch Specific Plan Area is approximately 900 acres. The Project would result in the conversion of approximately 900 acres of land zoned AE-20 and AL-20 within the Friant Ranch Specific Plan Area to non-agricultural designations. However, the proposed land uses will be inconsistent with the existing agricultural zoning on approximately 600 acres of the existing agricultural zoned lands.

The Alternative WWTP Location consists of highly disturbed agricultural lands and an aggregate mining quarry, which has an active quarry 25 acres in size from which sand and gravel are being extracted. This would result in additional loss of existing agricultural lands. As such, the Alternative WWTP Location's agricultural impact would be greater than that of the Proposed WWTP Location.

Air Quality and Greenhouse Gases/Global Climate Change

Section 3.3 of this Draft EIR identifies and, to the extent possible, quantifies air quality impacts of the Project (including the proposed WWTP) related to construction and future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Operations include both mobile and stationary source air pollutants. All of the impacts are considered significant and unavoidable.

Though the Alternative WWTP Location is farther from the Specific Plan than the Proposed WWTP Location, it is approximately 20 feet lower in elevation. This difference means that significantly less energy will be needed to pump wastewater to the plant for processing and proportionately less greenhouse gas will be produced.

The original proposal would require WWD 18 maintenance personnel to perform operations both at the Proposed WWTP Location and at the Beck Property on a regular basis. Co-locating the plant and the reclamation/storage area at the Beck Property would improve operational efficiencies for WWD 18 staff, reducing travel and related vehicle emissions.

As such, the Alternative WWTP Location's impact on air quality and global climate change is considered to be less than significant at the project level and less than the air quality and global climate change impacts of the Proposed WWTP Location. However, as identified in Section 3.3 of this Draft EIR all of the impacts to air quality and global climate change are considered significant and unavoidable.

Biological Resources

Section 3.4 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) on biological resources. As identified in Section 3.4, the Project would have a less than significant impact with implementation of mitigation measures #3.4-1a through 3.4-13.

The biological evaluation of the Beck Property as an effluent storage and disposal site considered the impacts of the effluent storage pond upon biological resources. Co-location of the WWTP would not add significant additional impacts to the site, and would not be expected to significantly change the conclusions in the biological evaluation.

As such, the Alternative WWTP Location's biological impact would be the same as that of the Proposed WWTP Location and less than significant.

Cultural Resources

Section 3.5 of this Draft EIR identifies the potentially significant impacts of the Project on cultural resources. As identified in Section 3.5, the Project would have a significant impact to cultural resources because the Project would impact site CA-FRE-2653 which is located within the Friant Ranch Specific Plan Area development footprint. Mitigation measures are proposed (#3.5.1a through 3.5.1g) to reduce the impact to site 2653 to a less than significant impact.

There would be no additional impact to cultural resources as a result of the Alternative WWTP Location, because there have been no cultural resources identified on the proposed Alternative WWTP site. Cultural resources of the Beck Property were assessed in the supplemental EIR prepared for a prior project (Buada and Associates 1987) related to the aggregate mining operation. Impacts to cultural resources were determined to be less than significant at that time. The site continues to be highly disturbed, and significant cultural resources are no more likely to occur on the site in 2009 than in 1987.

As such, the Alternative WWTP Location's cultural resources impact would be the same as that of the Proposed WWTP Location and less than significant.

Hazards and Hazardous Materials

Section 3.7 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) related to hazards and hazardous materials. As identified in Section 3.7, the Project would have a less than significant impact with implementation of mitigation measures #3.7.6a and #3.7.6b on emergency preparedness. Construction and operation of a WWTP at the Alternative WWTP Location will have no additional effect on hazards and hazardous materials. As analyzed in the Draft EIR, the WWTP will be subject to the same regulatory standards as the Proposed WWTP Location.

As such, the Alternative WWTP Location's hazards and hazardous materials impact would be the same as that of the Proposed WWTP Location and less than significant.

Hydrology and Water Quality

Section 3.8 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) on hydrology and water quality. As identified in Section 3.8, the Project would have a less than significant impact with implementation of mitigation measure #3.8.3a on the alteration of the existing drainage pattern and stormwater drainage capacity.

Construction and operation of a WWTP at the Alternative WWTP Location will have no effect on waters of the San Joaquin River or groundwater. The treatment process is fully contained, and any on-site runoff will be captured and returned to the treatment stream for cleanup and storage in the Beck Property pond. As analyzed in the ADEIR, no water from the treatment, storage, or reclamation process will be able to reach the San Joaquin River, rendering this impact less than significant.

The Alternative WWTP Location would have no effect on groundwater either at the Project site or at the Alternative location, since there is no change proposed in the method of effluent disposal versus the project itself.

As such, the Alternative WWTP Location's hydrology and water quality impact would be the same as that of the Proposed WWTP Location and less than significant.

Land Use

Section 3.9 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) on Land Use. As identified in Section 3.9, the Project would have a less than significant impact.

While the Proposed WWTP Location is surrounded by urban development and is adjacent to the most intensive commercial development in the Specific Plan area, the Alternative WWTP Location is surrounded by open space on three sides (Lost Lake Park on the north and west, range land across Friant Road on the east) and an existing heavy industrial use (the CEMEX gravel plant) to the south. There are a few rural residences and a CEMEX office nearby. The residences and the office are at least 500 feet from the proposed WWTP location. The Alternative WWTP Location facilitates more consistency with surrounding land uses than does the Proposed WWTP Location.

As such, the Alternative WWTP Location's impact on surrounding land uses is considered to be less than significant and less than the land use impacts of the Proposed WWTP Location.

Noise

Section 3.10 of this Draft EIR identifies the potentially significant impacts of the Project (including the proposed WWTP) with regard to noise. As identified in Section 3.10, the Project would have a less than significant impact with implementation of mitigation measure #3.10.1a on the exposure to excessive noise levels or vibration. The Project would have a less than significant impact with implementation of mitigation measures #3.10.2a through #3.10.2c on construction noise.

The original proposal takes care to minimize and mitigate potential effects of locating the WWTP within the proposed urban area by fully enclosing the treatment process within a building and providing for odor containment and reduction, which would mitigate potential impacts to less than significant. However, removing the potential source of impacts by moving the WWTP to the remote Alternative WWTP Location, while still implementing the noise and odor controls within the original proposal, will provide additional reductions in the Project's noise impacts.

As such, the Alternative WWTP Location's noise impact would be less than that of the Proposed WWTP Location and less than significant.

Public Services

Section 3.12 of this Draft EIR identifies the potentially significant impacts of the Project on the increased demand for law enforcement services. As identified in Section 3.12, the Project would have a less than significant impact from increased demand for law enforcement services with implementation of mitigation measure #3.12.2a. Construction and operation of a WWTP at the Alternative WWTP Location will have no additional effect on public services.

As such, the Alternative WWTP Location's public services impact would be the same as that of the Proposed WWTP Location and less than significant.

Traffic and Circulation

Section 3.13 of this Draft EIR identifies and quantifies traffic impacts of the Project (including the proposed WWTP) related to future operations within the Friant Community Plan Area and Friant Ranch Specific Plan Area. Tables 3.13-16 through 3.13-18 identify Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-19 and 3.13-20, several intersections and roadway segments remain significantly impacted. Construction and operation of a WWTP at the Alternative WWTP Location will have no additional effect on traffic and circulation.

As such, the Alternative WWTP Location's traffic impact would be the same as that of the Proposed WWTP Location and less than significant.

Utilities and Service Systems

Section 3.14 of this Draft EIR identifies the potentially significant impacts of the Project on utilities and service systems such as water, sewer, storm drainage and solid waste disposal. As identified in Section 3.14, the Project would have a less than significant impact with implementation of mitigation measure #3.14.1 on the water supply for the Project. The Project would have a less than significant impact with implementation of mitigation measures #3.14.3a through #3.14.3i on wastewater treatment capacity. The Project would have a less than significant impact with implementation of mitigation measures #3.14.6a and #3.14.6b on compliance with Federal, State and local solid waste regulations. The Project would have a less than significant impact with implementation of mitigation measures #3.14.7a and 3.14.7b on the increased demand for electricity and natural gas within the Friant Community Plan Area.

Construction and operation of a WWTP at the Alternative WWTP Location will have no effect on waters of the San Joaquin River or groundwater. The treatment process is fully contained, and any on-site runoff will be captured and returned to the treatment stream for cleanup and storage in the Beck Property pond. As analyzed in the ADEIR, no water from the treatment, storage, or reclamation process will be able to reach the San Joaquin River, rendering this impact less than significant.

The Alternative WWTP Location would have no effect on groundwater either at the Project site or at the Alternative location, since there is no change proposed in the method of effluent disposal versus the project itself.

As such, the Alternative WWTP Location's utilities impact would be the same as that of the Proposed WWTP Location and less than significant.

Summary and Determination

The Alternative WWTP Location is environmentally superior to the proposed Project WWTP Location (see Table 4-6). This alternative would meet the Project objectives.

Table 4-6
Significance of Environmental Effects of the Alternative WWTP Location

Impact Topic	Alternative WWTP Location
Aesthetics	Lesser
Agricultural Resources	Greater
Air Quality	Same
Biological Resources	Same
Cultural Resources	Same
Hazards and Hazardous Materials	Same
Hydrology and Water Quality	Same
Noise	Lesser
Public Services	Same
Traffic and Circulation	Same
Utilities and Service Systems	Same
Number of Impact Topics Reduced	2
Umber of Impact Topics Increased	1
Number of Impact Topics Unchanged	8

CHAPTER FIVE
CUMULATIVE IMPACTS

CHAPTER FIVE – CUMULATIVE IMPACTS

Introduction

CEQA requires that an EIR examine the cumulative impacts associated with a project. The range of projects to be included in the cumulative analysis encompasses “past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those outside of the control of the agency.” CEQA Guidelines Section 15130 requires cumulative impacts to be discussed “where they are significant.” A cumulative effect is deemed significant if the project’s incremental contribution to a cumulative impact is “considerable.” A cumulative impact is not considered significant if the impact can be mitigated to below the level of significance through mitigation, including providing improvements and/or contributing funds through fee-payment programs. The EIR must examine “reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project” (CEQA, Section 15130).

The CEQA Guidelines allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis:

- List Method – A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency (Section 15130 (1)(A)).
- General Plan Projection Method – 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 (Section 15130 (1)(B)).

Although the List Method was selected to conduct the cumulative impact analysis for this Draft EIR, it is important to note that certain cumulative impacts such as effects of the proposed Project on air quality (regional air basin), global climate change (worldwide) and energy usage (remote location energy production and conveyance) must consider a much larger geographic area than the area comprised of the projects constituting the “list” of projects in the general vicinity of the proposed Project.

The following section summarizes projects in the vicinity of the proposed project.

5.1 Cumulative Projects

Table 5-1 identifies related projects and other possible development in the Project vicinity determined as having the potential to interact with the Project to the extent that a significant cumulative effect might be expected to occur. Any proposed project within the Project vicinity for which an application had been filed at the time of the NOP for the Project was considered a probable future project. A map depicting the major projects identified in Table 5-1, along with the Friant Ranch Specific Plan Area and the surrounding region, is given as Figure 5-1.

**Table 5-1
List of Past, Present, and Probable Future Projects**

Key Map	Project Name	Project Type	Location	Area (acres)	Description	Number of Units	Status
1	Brighton Crest	Residential	<u>Fresno Co.</u> Immediately to east of the Millerton SPA and north of Auberry Road.	481	Residential project to be constructed adjacent to existing golf course.	420	Tentative Map approved for 420 units, originally approved in 1988. Building schedule unknown. Subsequent environmental documents have been prepared and are available from Fresno Co. Planning Department.
2	Millerton New Town	Planned residential	<u>Fresno Co.</u> Millerton SPA just south of Millerton Rd. and west of the existing Brighton Crest subdivision.	1,438	A mix of residential and commercial development has been proposed.	3,499	The EIR was certified in 1984; has approved Tentative Maps 4870, 4934, 4968, and 4976 for a total of 853 units and CUPs 2865/3035. Another 926 units are in process with the County for Tentative Maps 5393, 5430, and 5771. Subsequent environmental documents have been prepared and are available from Fresno Co. Planning Department. Building schedule is unknown.
3	Big Sandy Casino	Gaming Casino/Resort Facility	<u>Fresno Co.</u> One mile east of Table Mountain Casino on Millerton Rd.	Unknown	A large casino is proposed with slot machines, a large bingo hall, a poker room, restaurants and entertainment facilities.	N.A.	Entitlements under review with the EPA and Bureau of Indian Affairs; building schedule unknown. Environmental documents had not been prepared for this project at the time this analysis was prepared.

**Table 5-1
List of Past, Present, and Probable Future Projects (Continued)**

Key Map	Project Name	Project Type	Location	Area (acres)	Description	Number of Units	Status
4	Mira Bella	Residential Development	<u>Fresno Co.</u> South of Millerton Rd. between town of Friant and Millerton State Recreation Area.	60	Residential project per Approved Tract Map 4321. Total development of 180 units planned; entitlements and reviews yet to be completed for the remaining approx. 149 acres.	56	Fifty-six units are approved per Tract Map 4321, building schedule unknown. Total development of 180 units planned with entitlements and reviews yet to be completed for the remaining approx. 149 acres. Environmental documents have been prepared for this project and are available from Fresno Co. Planning Department.
5	Marina Estates	Residential Development	<u>Fresno Co.</u> North-west corner of Millerton Road and Winchell Cove Road.	85	Residential development.	80	Tentative Map 5594 under review by County, building schedule unknown. Environmental documents have been prepared for this project and are available from Fresno Co. Planning Department.
6	Sky Harbor	Residential Development	<u>Fresno Co.</u> Adjacent to Millerton Lake approx. 5 miles north of Millerton Rd.	80	Residential development.	220	Approx. 220 residential units, originally approved in 1964 as Tract Map 1718; building schedule unknown with approx. 175 lots still vacant. This project was approved prior to the enactment of CEQA. Environmental documents were not available for this project.
7	Gwenlee Cedar	Residential Development	<u>Fresno Co.</u> Off Sky Harbor Rd. north of Table Mountain Casino.	103	Residential development.	15	Tentative Map 5578, building schedule unknown. . Project reduced to 15-lots and now proposes a community water system.

**Table 5-1
List of Past, Present, and Probable Future Projects (Continued)**

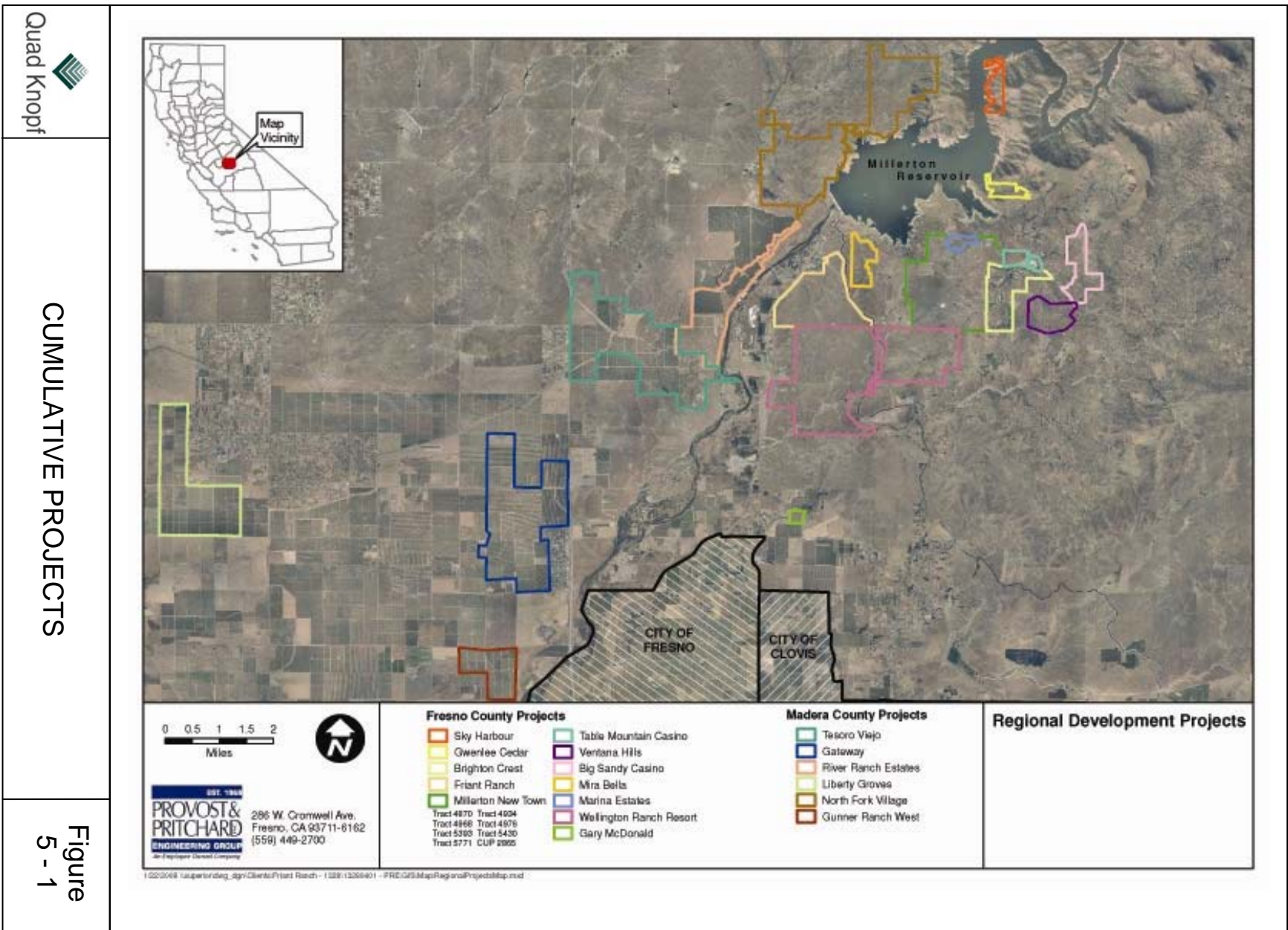
Key Map	Project Name	Project Type	Location	Area (acres)	Description	Number of Units	Status
8	Wellington Ranch	Residential Development	<u>Fresno Co.</u> East of Friant Road, south of the Friant Ranch SPA, and west and east of the Friant-Kern Canal.	2,740	Residential development.	Not known	The project is in the planning process; no estimated approval or construction date. Environmental documents were not available for this project at the time this analysis was prepared.
9	Table Mountain Casino	Gaming Casino/Resort Facility	<u>Fresno Co.</u> North of Millerton Road and east of Sky Harbor Rd.	unknown	Gaming and entertainment facility.	N.A.	This is an approved functioning facility. Environmental documents have been prepared for various phases of the gaming facility. These documents were prepared for the Table Mountain Rancheria.
10	Ventana Hills	Residential Development	<u>Fresno Co.</u> North of Auberry Rd. and south of Millerton Rd.	306	Residential development.	91	The project is approved and under construction. Environmental documents have been prepared for this project and are available from Fresno Co. Planning Department.
11	Gary MacDonald	Residential Development	<u>Fresno Co.</u> East side of Auberry Rd. 1.2 miles north of Copper Ave.	37	Residential development.	9	Environmental documents have been prepared for this project and are available from Fresno Co. Planning Department. Subsequent TT 5955 submitted for eight additional lots to build-out remainder of subdivision.

Table 5-1
List of Past, Present, and Probable Future Projects (Continued)

Key Map	Project Name	Project Type	Location	Area (acres)	Description	Number of Units	Status
12	Gateway Village	Residential and commercial development	<u>Madera Co.</u> West of Hwy 41 and north and south of Ave. 12.	2,072	Residential development.	6,578	The EIR has been certified and entitlements approved, pending resolution of a CEQA lawsuit. This document is available from the Madera County Planning Department.
13	Gunner Ranch West	Residential development	<u>Madera Co.</u> South of Avenue 9 and west of Valley Children's Hospital.	300	Residential development.	1,500	Entitlements were under environmental review at the time this analysis was prepared.
14	Liberty Groves	Residential development	<u>Madera Co.</u> South and west of Madera Ranchos and north and south of Ave. 12.	1,400	Residential development.	Not known at this time, estimated 8,000	The GPA application has been submitted and the Specific Plan application filed. Environmental has yet to be initiated.
15	North Fork Village	Planned residential and commercial development	<u>Madera Co.</u> Rio Mesa Planning Area between Road 206 and Millerton Reservoir.	1,000	Mixed development including some commercial and public use, but primarily residential.	1,000	The EIR has been approved, pending resolution of CEQA litigation.. This document is available from the Madera County Planning Department.

**Table 5-1
List of Past, Present, and Probable Future Projects (Continued)**

Key Map	Project Name	Project Type	Location	Area (acres)	Description	Number of Units	Status
16	Tesoro Viejo	Planned residential and commercial development	<u>Madera Co.</u> Rio Mesa Planning Area east of Hwy 41, west of Sumner Hill, and on either side of Rd. 204.	2,000	Residential development.	5,000	The EIR has been approved, pending resolution of CEQA litigation.. This document is available from the Madera County Planning Department.
17	River Ranch Estates	Residential development	<u>Madera Co.</u> Rio Mesa Planning Area south of Road 206 and north of Rd. 204.	700	Residential development.	900	The EIR has been approved. This document is available from the Madera County Planning Department. A CEQA lawsuit is pending.
Totals				13,344		22,360	



This analysis also considers the current Lost Lake Park Master Plan, which is within the Project Area, and cumulative impacts consequent to buildout within the existing Community of Friant. Information required for this analysis was obtained from recent aerial photography, reports from the Natural Resources Conservation Service (NRCS), U.S. Fish and Wildlife Service (USFWS), planning and environmental documents prepared for completed projects in the project vicinity, and some studies prepared by consultants within the Project vicinity. Planning documents for some projects in Table 5-1 had not yet been prepared, or were not yet available. Relevant literature is listed in the bibliography attached at the end of this section.

As stated in the introduction to this section, cumulative impacts related to regional air quality, global climate change and energy usage are not limited to consideration of the geographic area reflected in Figure 5-1

5.2 Cumulative Impacts Analysis

5.2.1 AESTHETICS

The landscape in north-central Fresno County has been changing over the years from one of predominately rural open space and agricultural grazing land to urban uses. The cities of Fresno and Clovis have been rapidly growing to the north and northwest, contributing to the landscape change. Several land development proposals envisioned by the Fresno County and Madera County general plans and individual project proposals have received their entitlements, or are seeking them, including the Rio Mesa Area Plan, Lakeview Estates, Millerton New Town, Gateway Village, Gunner Ranch West, among others. Although the urban environment that is ultimately built could be aesthetically pleasing to many, these cumulative changes will significantly degrade the existing visual character and quality of the area. Based on the standards of significance, the proposed Project individually would have a less than significant aesthetic impact as concluded in Section 3.1 of this DEIR. However, ultimate impacts of the proposed project in combination with other projects identified in this section are significant, and the project's incremental contribution to this impact is itself *cumulatively considerable* and thus *significant*. This impact cannot be mitigated to a less than cumulatively considerable level and is unavoidable.

5.2.2 AGRICULTURAL RESOURCES

The California Department of Finance Demographic Research Unit forecasts that the Central Valley's population will more than double by the year 2040 to almost 10 million people. According to the American Farmland Trust, if current land use trends continue, nearly 900,000 acres of Central Valley farmland would be converted to urban uses and ranchette development, most of it high quality farmland.

As noted in Section 3.2, the proposed Project would result in the loss of approximately 675 acres of Grazing Land within the Friant Ranch Specific Plan Area. The Friant Community Plan Update includes 403 acres of land designated Agriculture in the southwest and northeast corners of the site, which will remain designated Agriculture. While many of the projects listed previously under Section 5.1 (Cumulative Projects) in Fresno and Madera County will take prime farmland, unique farmland, and farmland of statewide importance out of agricultural production, the proposed Project will not. However, as noted above, the Project would result in

the loss of approximately 675 acres of Grazing Land. The cumulative loss of grazing land, together with other foreseeable regional development that results in loss of farmland, would be *significant and unavoidable*, and the Project's contribution would be *cumulatively considerable*.

5.2.3 AIR QUALITY

As growth continues in the San Joaquin Valley, attainment of air quality standards will become more difficult, even though overall air quality has improved. Proposed cumulative development planned in Fresno, Tulare, Kings and Madera Counties will result in thousands of new homes and millions of square feet of new retail uses.

The Project would contribute to cumulative air emissions by allowing for substantially greater development in the Project Area than currently exists. The amount of mobile and stationary emissions would be substantially greater than what would be generated under existing conditions, or future conditions if the Project Area were to remain rural. The SJVAPCD has adopted a cumulative threshold of significance of 10 pounds per day for ozone precursors (ROG and NOx). Project emissions of these two pollutants, after mitigation, would exceed this threshold. Consequently, the Project would contribute to air quality degradation, and impede the region's ability to attain air quality standards. The cumulative air quality impacts of the Project, together with other foreseeable development throughout the San Joaquin Valley air basin including build out of the Community Plan area pursuant to the existing General Plan designations, would be *cumulatively considerable* as such *significant and unavoidable*.

5.2.4 BIOLOGICAL RESOURCES

The possible presence of special status plant and animal species on the past, present and probable future projects listed above has either been documented in environmental documents prepared for the Project, or was inferred from the type of habitats present, California Natural Diversity Database records (CNDDB), and other information gleaned from planning documents and studies completed in the area. As noted in Table 5-1, environmental documents were not available for Big Sandy Casino, Sky Harbor, Gwenlee Cedar, Wellington Ranch, and Liberty Groves, either because such documentation was not required at the time of individual project approval, or because such documents were in preparation. Nonetheless, a considerable amount of information was available for each project site, including habitats and soil types present, special status species occurring on or adjacent to them, and their likely role in facilitating regional wildlife movements. This information was sufficient to identify those impacts that might be considered cumulatively significant.

A cumulative analysis is provided below for each of the biological resources potentially affected by the Project, as identified within the biological resource impact analysis for the Project Area.

Overview: Agricultural and Urban Development in the Project Vicinity

Vast areas of grassland and vernal pool habitats once present in Fresno County no longer exist. Relatively large areas of these habitats remain in the Friant/Millerton area, rolling lands to the north and east of Big Dry Creek Reservoir, and similar areas to the north and east of Round

Mountain. Lands that have been developed or otherwise modified from their natural state within the Friant/Millerton area include Lost Lake Park, the Community of Friant, some areas of Millerton State Recreation Area, some areas of the Table Mountain Rancheria/Casino, and Brighton Crest. Although the percentage of grassland and vernal pool habitats remaining in Fresno County is not known with certainty, statewide it has been estimated that 10-50% of the state's vernal pool habitats remain intact. It is likely that the remaining vernal pool habitat within the Study Area would fall in this range. Of significance to the health of these ecosystems and the species they support is the fact that many vernal pool complexes are now isolated from one another by large expanses of cultivated lands and urban and suburban development.

Similarly, historic records for Madera County clearly indicate that much of the landscape east of Highway 99 once consisted of grassland and vernal pool habitats. South of the Fresno River, these habitats within Madera County are now limited to several parcels, mostly east of Highway 41 and south of Highway 145.

Along with the loss and fragmentation of these habitats is a concomitant loss of biodiversity. Since the mid 1970's, California and the federal government have listed at least 7 vascular plant species and 7 animal species occurring or potentially occurring in grasslands and vernal pools of Fresno and Madera Counties as threatened or endangered. An additional 19 species of amphibians, birds and mammals occurring in such habitats are now designated as special status species.

This analysis considers the above overview of agricultural and urban development in assessing cumulative impacts in the Study Area to individual biological resources.

Cumulative Impacts to Special Status Species

Hartweg's Golden Sunburst

Of the projects identified in Table 5-1, only the North Fork Village Project would result in impacts to populations of this species. The project would directly impact approximately 4.1 acres of the 11.7 acres mapped for this population. Proposed mitigation was preservation and management of the remaining population, but no replacement populations were proposed. That project would, therefore, result in a net loss of individual Hartweg's golden sunburst plants, as well as habitat suitable for and occupied by this species.

The Friant Ranch Specific Plan area supports 3 small populations of this species covering an area of 1.45 acres and would result in the loss of approximately 0.02 acres of grassland habitat supporting this species. The larger Friant Community Plan area has no habitat for this species, and further development within the Community Plan area would not impact it significantly.

With proposed mitigation measures, the Project is not expected to result in a net loss of the on-site Hartweg's golden sunburst population. Less than 1 percent of the existing population will be affected by the Project, and these effects are anticipated to be offset by establishment of additional populations. Specifically, the Project will preserve more than 99% of the existing populations within dedicated and managed open space, and additional populations will be established within those areas of the open space preserve which contain its required soil type and

where it is not presently found. The size of the existing population will be maintained or increased by these measures, thus, the incremental effect of the Project on Hartweg's golden sunburst is not expected to be cumulatively considerable.

Vernal Pool Fairy Shrimp

Four of the projects in Table 5-1 occur on lands supporting vernal pool habitat suitable for the federally threatened vernal pool fairy shrimp. Those projects are Millerton New Town, Wellington Ranch, Ventana Hills, and North Fork Village. Of the four, only Millerton New Town and Wellington Ranch will result in direct impacts to this species. Mortality to vernal pool fairy shrimp and losses of vernal pool habitat from the Wellington Ranch project could not be quantified because that project was in preliminary phases at the time of this analysis and sufficient data could not be gathered to assess its impact to this species. Millerton New Town could result in impact to approximately 0.5 acres of vernal pool habitat. Since Wellington Ranch has a large number of vernal pools, impacts from that project is likely to exceed impacts consequent to Millerton New Town development.

The Project will result in the loss of approximately 2.4 acres of vernal pool habitat suitable for this species within the Friant Ranch Specific Plan Area. The larger Friant Community Plan area provides possible habitat for this species in manmade seasonal pools located within Lost Lake Park. Although a Lost Lake Park Master Plan is under development, it is unlikely that this would result in disturbance to these pools. Compliance with the San Joaquin River Parkway Plan would require avoidance of sensitive habitats such as vernal pools. Vernal pools are absent from the remainder of the Friant Community Plan area.

With mitigation, the Project will not result in a net loss of vernal pool habitat occupied by vernal pool fairy shrimp. The Project has been designed to avoid 84% of the existing vernal pool habitat within the Friant Ranch Specific Plan area. The maintenance of large buffers and management of open space to maximize habitat values for fairy shrimp will ensure that indirect effects will be minimal. Creation of new off-site fairy shrimp habitat at a 1:1 ratio will result in no net loss of vernal pool fairy shrimp habitat. Thus, the Project's incremental effect to vernal pool fairy shrimp will not be cumulatively considerable.

California Tiger Salamander (Breeding Habitat)

Two of the projects in Table 5-1 occur on lands supporting vernal pool habitat suitable for the federally threatened California tiger salamander (CTS). These projects are Millerton New Town and Wellington Ranch. Losses of vernal pool habitat from the Wellington Ranch project could not be quantified because that project was in preliminary phases at the time of this analysis and sufficient data could not be gathered to assess its impact to this species. Millerton New Town could result in impact to 0.2 to 0.5 acres of vernal pool habitat suitable for breeding habitat for this species. Since Wellington Ranch has a large number of vernal pools, impacts from that project is likely to exceed impacts consequent to Millerton New Town development.

The Project will result in the loss of approximately 2.4 acres of vernal pool habitat suitable for this species within the Friant Ranch Specific Plan Area, some or all of which constitutes suitable breeding habitat for this species. The larger Friant Community Plan area provides possible

habitat for this species in manmade seasonal pools located within Lost Lake Park. Although a Lost Lake Park Master Plan is under development, it is unlikely that this would result in disturbance to these pools. Compliance with the San Joaquin River Parkway Plan would require avoidance of sensitive habitats such as vernal pools. Vernal pools are absent from the remainder of the Friant Community Plan area.

With mitigation, the Project will not result in a net loss of breeding habitat potentially available to this species. The Project has been designed to avoid 84% of the existing vernal pool habitat within the Friant Ranch Specific Plan area. The maintenance of large buffers and management of open space to maximize habitat values for CTS will ensure that indirect effects will be minimal. Creation of new vernal pool habitat at a 1:1 ratio will result in no net loss of CTS breeding habitat. Thus, the Project's incremental effect to CTS breeding habitat will not be cumulatively considerable.

California Tiger Salamander (Aestivation Habitat)

Four of the projects in Table 5-1 occur on lands with grassland habitats likely to serve as aestivation habitat for the federally threatened CTS. These projects are Millerton New Town, Mira Bella, Wellington Ranch and North Fork Village. Mira Bella and North Fork Village may lack breeding habitat (studies of on-site breeding habitat have not been conducted), but they are adjacent to lands with suitable breeding habitat. Tesoro Viejo and Ventana Hills may once have provided CTS aestivation habitat, but due to historical disruptions of nearby breeding habitat these properties no longer provide suitable upland CTS habitat. These projects will eventually result in a combined loss of up to 5,660 acres of likely aestivation habitat for this species. The loss of habitat may be as much as several hundred acres less, depending on the final plan developed for Wellington Ranch.

The Project will result in the loss of approximately 690 acres of CTS aestivation habitat within the Friant Ranch Specific Plan area. The existing community of Friant within the larger Friant Community Plan area provides possible aestivation habitat for this species wherever vacant lands support grassland habitats inhabited by burrowing rodents. Some of the disturbed lands within Lost Lake Park may also provide aestivation habitat, thus the grasslands within the Friant Community Plan area are of marginal value to CTS.

With mitigation, the Project will avoid and preserve under conservation easement approximately 250 acres of on-site aestivation habitat within the Friant Ranch Specific Area. The applicant will also restore grassland habitat to 30 acres of the site that will be temporarily disturbed by Project construction, and include this area in open space placed under conservation easement so that it can potentially serve as CTS upland habitat. The total onsite loss of aestivation habitat after mitigation would be 660 acres. The applicant will also preserve under conservation easement existing off-site CTS aestivation habitat parcels with a combined area of approximately 1,016 acres. The approximately 1,296 acres total will be managed to maximize habitat values for CTS. Nearby vernal pool habitat will be preserved and managed, burrowing rodents that provide underground refugia for aestivating CTS will be encouraged, and selective grazing will be employed to manage vegetation density that might impede CTS movement. Finally, the applicant may pursue additional mitigation strategies to address project impacts to vernal pools and seasonal wetlands that could provide new habitat suitable for aestivating CTS. Potential

strategies include purchasing credits from an existing conservation bank for the creation and restoration of 12.4 acres of wetlands (including vernal pools and other seasonal wetlands) in Fresno or Madera Counties, or creating/restoring vernal pools and other seasonal wetlands on suitable disturbed lands in Fresno or Madera Counties. Either of these strategies could include associated grassland habitat that could provide new habitat suitable for aestivating CTS.

Preservation, creation and management of at least 1,296 acres of CTS aestivation habitat as required of the Project and described above will replace the functional values of existing CTS habitat to be affected by the Project, thus eliminating the project's contribution to significant cumulative impacts to such habitat in Fresno and Madera Counties. Thus, the Project's incremental effect on CTS aestivation habitat will not be cumulatively considerable.

Western Spadefoot Toad (Breeding Habitat)

The western spadefoot toad uses the same breeding habitat as CTS, thus the discussion of cumulative impact to CTS breeding habitat applies here as well. The anticipated loss of western spadefoot breeding habitat within the Study Area is expected to be cumulatively significant. The Project will contribute to that loss by eliminating up to 2.4 acres of vernal pool habitat that is potential breeding habitat. The loss of breeding habitat within the larger Friant Community Plan is not expected, since potential breeding habitat within the plan area is limited to Lost Lake Park, wherein such habitat is protected under provisions of the San Joaquin River Parkway Plan.

The Project will acquire, create, preserve and manage on and off-site lands sufficient to avoid a net loss of western spadefoot toad breeding habitat. Thus, Project impacts to this species will be mitigated and cumulative impacts will not be significant.

Western Spadefoot Toad (Aestivation Habitat)

The western spadefoot toad uses the same aestivation habitat as CTS, thus the discussion of cumulative impact to CTS aestivation habitat applies here as well. The anticipated loss of western spadefoot aestivation habitat within the Study Area is expected to be cumulatively significant. The Project will contribute to that loss by eliminating up to 690 acres of western spadefoot aestivation habitat.

The Project will acquire, create, preserve and manage on and off-site lands sufficient to replace the functional values of existing spadefoot toad habitat to be affected by the project, thus eliminating the project's contribution to significant cumulative effects to such habitat in Fresno and Madera Counties. Thus, Project's incremental effects on spadefoot toad aestivation habitat will not be cumulatively considerable.

Western Burrowing Owl

Eight of the projects in Table 5-1 occur on lands with grassland habitats likely to serve as habitat for this species. Those projects are: Brighton Crest, Millerton New Town, Mira Bella, Marina Estates, Wellington Ranch, North Fork Village, Tesoro Viejo and River Ranch. Up to 5,660 acres of suitable habitat for this species could be eliminated by the eight projects, although the

total may be as much as several hundred acres less, depending on the final design adopted for the Wellington Ranch project.

The Project will result in the loss of approximately 690 acres of grassland habitat suitable for the western burrowing owl within the Friant Ranch Specific Plan area. The existing community of Friant within the larger Friant Community Plan area provides possible habitat for this species wherever vacant lands support grassland habitats inhabited by burrowing rodents. Development within the Friant Community Plan area could result in an unknown amount of loss of habitat suitable for this species.

Regional impact to the western burrowing owl is expected to be cumulatively significant by virtue of the amount of habitat presently or expected to be impacted across all projects examined by this analysis.

The Project incorporates avoidance and minimization measures including pre-construction surveys for nesting burrowing owls and avoidance of occupied nest burrows within the Friant Ranch Specific Plan area. Full implementation of these measures will minimize burrowing owl mortality.

Compensating for the loss of approximately 690 acres of potential habitat will be the preservation, creation and management of at least 1,296 acres of grassland habitat that will also serve as habitat to support populations of vernal pool fairy shrimp, California tiger salamander and western spadefoot toads. Management of these lands will increase the rodent populations in order to equal or exceed nesting and foraging opportunities currently existing on lands to be developed for the Project. The Project will, therefore, acquire, create, preserve and manage on and off-site lands sufficient to replace the functional values of existing burrowing owl habitat to be affected by the project, thus eliminating the project's contribution to significant cumulative effects to such habitat in Fresno and Madera Counties. Thus, the Project's incremental effects on burrowing owl habitat will not be cumulatively considerable.

Nesting Raptors

Eight of the projects in Table 5-1 occur on lands with approximately 1,400 acres of oak woodland habitat providing nesting opportunities for various species of raptors. Projects potentially affecting these habitats include Brighton Crest, Millerton New Town, Big Sandy Casino, Marina Estates, Sky Harbor, Gwenlee Cedar, Ventana Hills and North Fork Village.

The Project will have no effect on riparian and oak woodland habitats within the Friant Ranch Specific Plan area, since these are absent from the site. Raptor nesting habitat is limited to two small cottonwoods and power poles located on the site. Neither trees nor utility poles were in use as nests during biological surveys. Raptor nesting habitat in the larger Friant Community Plan area is limited to the riparian corridor of the San Joaquin River. Impacts to this corridor would be limited due to the constraints of the San Joaquin River Parkway Plan.

The Project will have little or no impact on nesting raptors. Furthermore, the Project is obligated to conduct pre-construction surveys during nesting season, and any active nests will be avoided. Thus, the Project's incremental effect will not be cumulatively considerable.

American Badger

Fourteen of the projects in Table 5-1 occur on habitats that could support the American badger. Up to 7,500 acres of habitat suitable for this species (oak woodlands and grasslands) could be eliminated from the Study Area by these projects, although several hundred acres less may be affected, depending on the final design adopted by each.

The Project will result in the loss of approximately 690 acres of grassland habitat suitable for this species within the Friant Ranch Specific Plan area. The existing community of Friant within the larger Friant Community Plan area provides possible habitat for this species wherever vacant lands support grassland habitat. Development within the Friant Community Plan area could result in an unknown amount of loss of habitat suitable for this American badger.

Regional impact to the American badger is expected to be cumulatively significant by virtue of the amount of habitat presently or expected to be impacted across all projects examined by this analysis.

Compensating for the loss of approximately 690 acres of potential American badger habitat will be the preservation, creation and management of at least 1,296 acres of grassland habitat that will also serve as habitat to support populations of vernal pool fairy shrimp, California tiger salamander, and western spadefoot toads. Management of these lands will result in an increase in suitable denning and foraging habitat over that currently existing on lands to be developed for the Project. The Project will, therefore, acquire, create, preserve and manage on and off-site lands sufficient to replace the functional values of existing badger habitat to be affected by the project, thus eliminating the project's contribution to significant cumulative effects to such habitat in Fresno and Madera Counties. Thus, the Project's incremental effects on badger habitat will not be cumulatively significant.

Sensitive Natural Communities

Sixteen of the projects in Table 5-1 occur on lands with possible Sensitive Natural Communities. Vernal pools occur on the Millerton New Town, Wellington Ranch, and North Fork Village project sites. Other types of seasonal wetlands would potentially occur on these sites, as well as all other sites listed on Table 5-1 with the possible exception of Liberty Groves and Gateway Village. Impact to vernal pools within the larger Study Area has already been identified as cumulatively significant in this document. Impact to seasonal wetlands has not been quantified and could not be quantified at the time this analysis was prepared because formal wetland delineations have not been completed for the north Fork Villages and Wellington Ranch projects, but such impacts are likely to occur from multiple projects.

Project impacts to sensitive natural communities within the Friant Ranch Specific Plan area include approximately 12.4 acres of seasonal wetlands of various types, including vernal pools. Sensitive natural communities occurring within the larger Friant Community Plan Area would be limited to seasonal wetlands (vernal pools are absent) and the riparian woodland corridor associated with the San Joaquin River. These habitats are primarily confined to Lost Lake Park and are generally protected from disturbance by the San Joaquin River Parkway Plan.

Therefore, regional impacts to Sensitive Natural Communities are expected to be cumulatively significant by virtue of the amount of such habitat on all the project sites together, and the likelihood that site development would not avoid these communities entirely.

With mitigation, the Project will not result in a net loss of seasonal wetlands including vernal pool habitat. The Project has been designed to avoid 64% of the existing seasonal wetland habitat occurring within the Friant Ranch Specific Plan area. Creation of new seasonal wetland habitat off-site at a 1:1 ratio will ensure that the Project will not result in the net loss of such habitat. Thus, the Project's incremental effect to seasonal wetland habitat will not be cumulatively considerable.

Waters of the United States

Sixteen of the projects in Table 5-1 occur on lands with possible Waters of the United States as defined under the federal Clean Water Act, implementing regulations and applicable legal authority in the form of seasonal wetlands including vernal pools, seasonal creeks, and the San Joaquin River. Vernal pools occur on the Millerton New Town, Wellington Ranch, and North Fork Village North project sites. Seasonal wetlands occur on these sites and most other sites of the Study Area. Seasonal creeks meeting the regulatory criteria of a Water of the U.S. occur on most of the sites found in Table 5-1. The San Joaquin River passes through the town of Friant and fronts River Ranch and Tesoro Viejo. Impact to vernal pools within the larger Study Area has already been identified as cumulatively significant in this document. Impact to seasonal wetlands has not been quantified and could not be quantified at the time this analysis was prepared because delineations are not available for the North Fork Village and Wellington Ranch projects, but such impacts are likely to occur from multiple projects. Direct project impacts to the San Joaquin River are not expected from any projects listed in Table 5-1.

Impacts to seasonal wetlands from the Friant Ranch Project would total approximately 12.4 acres. Waters of the U.S. occurring within the larger Friant Community Plan Area would be limited to seasonal wetlands (vernal pools are absent) and the bed and bank of the San Joaquin River. These habitats are generally protected from disturbance by the San Joaquin River Parkway Plan.

With mitigation, the Project will not result in a net loss of Waters of the United States. The Project has been designed to avoid 64% of the existing seasonal wetland habitat and seasonal drainages occurring on the site. Creation of new seasonal wetland habitat off-site at a 1:1 ratio will ensure that the Project will not result in the net loss of such habitat. Thus, the Project's incremental effect to seasonal wetland habitat will not be cumulatively considerable.

Special Status Plant Species (others)

The only special status plant species affected by the Project is the Hartweg's golden sunburst (discussed above). Two vernal pools known to support fleshy owl's-clover will be avoided by the Friant Ranch Specific Plan design, and are included in dedicated open space. Other special status plant species have not been detected in the Project Area including the larger Friant Community Plan.

Special Status Animal Species Occurring on Site as Migrants or Transients, or that May Forage on the Site

Other special status animal species have the potential to use all of the project sites listed in Table 5-1, as well as the larger Friant Community Plan area. These include various raptor species (hawks and owls) that may forage on the sites (see Table 3.4-1 of the EIR), other migratory birds that may pass over these sites from time to time, and various bat species that may forage in the airspace over these sites. It is not known what effect the development of these sites will have on these special status species. Many will continue to move through (or over) these sites even after the proposed projects have been built. Species that forage in the airspace over the sites for insects or small birds may also continue to do so after these projects have been built. Some of these projects would reduce foraging habitat for some raptors, but the projected loss of up to 7,500 acres of grassland and oak woodland habitat in the Study Area is a small fraction of these habitat types now occurring in Fresno and Madera Counties. It is unlikely that these losses would result in a significant cumulative effect on these other special status animal species.

Wildlife Movement Corridors

There is no evidence that the Friant Ranch Specific Plan site functions as a wildlife movement corridor. Home range and dispersal movements of resident species will be altered by the Project. Migratory species (primarily birds), however, will continue to pass over the site and possibly forage in designated open space to be preserved both on and off site.

The San Joaquin River corridor passing through the larger Friant Community Plan area is likely to function as a wildlife movement corridor. This corridor is generally protected from development by the San Joaquin River Parkway Plan, and at the time this analysis was prepared, no development had been proposed within this corridor. The Project itself would have no direct effect on the functional value of the San Joaquin River (or its associated riparian habitat) on regional wildlife movement. Since the Project does not affect wildlife movement corridors, no cumulative impact discussion is required for wildlife movement corridors.

Cumulative Impacts of Water Transfers

Water for the Friant Ranch Specific Plan development will be obtained from the Lower Tule River Irrigation District (LTRID). Water releases from Millerton Lake are delivered to the LTRID via the Friant Kern Canal. The LTRID is upgrading its facilities to extract water from the Tule River, thus alleviating its reliance on delivered water, and allowing the transfer and use of that water at Friant Ranch. The CEQA document for the additional extraction of water from the Tule River found that the project would have no significant biological impacts. Water for the Friant Community Plan Area will similarly be obtained from Millerton Lake. The Friant Ranch development and development within the Friant Ranch Community Plan Area will have no significant cumulative impacts related to water transfers.

Other projects proposed in the Project vicinity are expected to total approximately 22,000 residential units. Those projects will rely on water deliveries from Millerton Lake. Depending upon the transfer water, those projects may have a significant impact upon the San Joaquin River

by reducing water flows of the River. However, the water which will be used by Friant Ranch currently does not contribute to San Joaquin River water (it is diverted to the Friant Kern Canal) and its use would not contribute to those cumulative impacts. The contribution of water deliveries to the Friant Community Plan Area will not significantly contribute to the cumulative water deliveries required from these other projects. As a result, *no significant cumulative impact* would occur.

5.2.5 CULTURAL RESOURCES

According to the cultural resources survey, based on the lack of surface evidence of cultural resources in the area identified as CAFRE-2323, it is unlikely that development of the project area will have an effect on significant archaeological or other cultural resources in the vicinity: it is therefore unlikely that cultural resources outside the Project area would be impacted. Therefore, no further cultural resource investigations are recommended for CA-FRE-2323. In the unlikely event that unanticipated buried archaeological deposits are encountered during project-related activities at this location, or at any other locality within the Friant Ranch Project Area, work in the immediate vicinity of the discovery must cease until the finds can be evaluated by a qualified archaeologist. Should human remains be encountered within the project area, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

While grading and other construction activities have the potential to impact cultural resources in the Project area, Fresno County General Plan policies and compliance with federal and State regulations reduce the project-specific impact to a less than significant level. Regional development throughout the County could also affect cultural resources located in other parts of Fresno and Madera counties. However, development in these areas would also be subject to appropriate mitigation and federal and State laws protecting cultural resources. Because build out of the Project area will include mitigation and compliance with federal and State laws to ensure protection and preservation of archaeological and cultural resources, *no significant cumulative impact* would occur.

5.2.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Significance criteria for geology and soils impacts are based on potential for damage caused by seismic or geologic hazards. There are no mineral resources in the project site. New developments in the project area would be affected to varying degrees by geologic and soil-related hazards. However, both geologic and soil-related hazards are site-specific. Development in Fresno County and the Central Valley region will continue to expose people and property to seismic hazards and adverse soil conditions. The policies contained in the Fresno County General Plan, proposed Friant Community Plan, proposed Friant Ranch Specific Plan, along with compliance with federal, State and local regulations addressing building construction, would reduce the project-level impacts associated with geology and soils to a less than significant level. Development projects in other communities would also be subject to County and State laws and regulations, local general plan policies and planning, building and engineering regulations. Review and permitting of specific development projects, including environmental review in accordance with CEQA, would be expected to involve characterization and consideration of site-specific geologic and soils conditions and mineral resources, and implementation of individual

project mitigations where needed. As a result, seismic and soils hazards and effects to mineral resources would be a *less than significant cumulative impact*.

5.2.7 HAZARDOUS SUBSTANCES AND MATERIALS

As discussed in Section 3.7, while there would be an increase in local population and employment, the proposed project would not result in a significant impact related to hazards and hazardous materials due to local, regional, State and federal regulations. Similarly, as growth occurs in the County, additional people would be exposed to the risk of hazardous materials, wastes and wildland fires. However, as would occur in Friant, regional, State and federal regulations would apply to development countywide, thereby reducing the potential for cumulative impacts associated with hazards and hazardous materials to a *less than significant* level.

5.2.8 HYDROLOGY AND WATER QUALITY

As development proceeds within the proposed Project area an increase in storm water runoff, potentially containing pollutants, will result in potential impact to surface and groundwater quality. However, as discussed in Section 3.8 of the Draft EIR, project-level water quality and flooding impacts would be reduced to a less than significant level through compliance with Fresno County General Plan policies and existing regulations and the proposed Friant Community Plan and proposed Friant Ranch Specific Plan policies. Other new development within the County as reflected in Table 5-1 would also result in additional storm water runoff. This regional development would also be required to comply with regional, State and federal regulations designed to appropriately manage and control storm water runoff, water quality and flooding. Compliance with these regulations will reduce the potential for cumulative hydrological and water quality impacts to *less than significant and* the proposed project would, therefore, result in a *less than significant cumulative impact*.

5.2.9 LAND USE

The land use analysis of the proposed project in Section 3.9 found that the Project would not conflict with established land uses or conflict with adopted land use or habitat plans or policies. Since the project would not result in a land use impact, the project would also *not contribute to a cumulative* land use impact.

5.2.10 NOISE

Table 5-2 compares year 2030 no-project and with-project traffic noise levels at existing residences to determine whether a significant impact results at the existing residential areas from the Project. A significant impact occurs if the additional traffic noise due to the Project causes noise levels to exceed 60 dB DNL, or, if a substantial increase in noise levels as defined in Section 3.10, Table 3.10-7, results due to the project. Noise levels are expected to exceed the 60 dB DNL, or substantial increase criteria for four of the 24 road segments analyzed. This is a *significant cumulative impact*. However, implementation of Mitigation Measure #3.10.1a would reduce on-site traffic noise impacts to a *less than cumulatively considerable (i.e., less than significant) level*.

**Table 5-2
Year 2030 Off-Site Traffic Noise Levels, DNL**

Roadway Name	Segment Description	2030 NP, dB	2030 WP, dB	Change, dB	Significant Impact?
Friant Road	Root to Lost Lake	64.2	66.2	2	No
	Lost Lake to Willow	56.5	58.8	2.3	No
	Willow to Copper River	65.2	66.8	1.6	Yes
	Copper to Lakeview	61.8	62.9	1.1	No
	Lakeview to Champlain	61.9	62.9	1	No
	Champlain to Ft. Washington	62.3	63.2	0.9	No
	Ft. Washington to Shepherd	65.3	65.8	0.5	No
	Shepherd to Audubon	64.8	65	0.2	No
Willow Avenue	Friant to Copper	59.5	60.7	1.2	Yes
	Behymer to Perrin	58.5	59.2	0.7	No
	Perrin to Shepherd	59.7	60.2	0.5	Yes
	Shepherd to Teague	64.6	65.1	0.5	No
	Teague to Nees	65.6	66	0.4	No
	Nees to Alluvial	65.9	66.2	0.3	No
	Alluvial to Herndon	66	66.3	0.3	No
	Herndon to Sierra	66	66.2	0.2	No
	Sierra to Bullard	66	66.1	0.1	No
	Bullard to Barstow	65.9	66	0.1	No
Millerton Road	206 to Winchell Cove	58.7	59.2	0.5	No
	Winchell Cove to Brighton Crest	58.9	59.2	0.3	No
	Brighton Crest to Sky Harbour	59.1	59.3	0.2	No
	Sky Harbour to Table Mt.	59	59.2	0.2	No
	Table Mt. to Auberry	58.5	58.7	0.2	No
Parker Avenue	Friant to Project	48.7	50.9	2.2	No

Source: Brown-Buntin Associates, Inc.

5.2.11 POPULATION AND HOUSING

As discussed previously, the proposed project includes policies and guidelines to control and direct growth in a well-planned manner, provide needed housing and facilities for a growing segment of the population and would improve jobs and housing opportunities in the community. As a result, there would not be a significant or unavoidable project-level impact. Growth will also occur outside of Friant, in other nearby cities and unincorporated communities in Fresno and Madera County. Fresno County and other incorporated and unincorporated jurisdictions are required by State law to use the General Plan process, as well as other planning processes, such as utility master plans, to plan for and control future growth. As a result, there would not be a cumulative impact associated with unplanned growth. As a result, the proposed project would *not contribute to a significant cumulative impact.*

5.2.12 PUBLIC SERVICES AND RECREATION

Police and fire protection services, educational and park and recreational services and facilities already exist or are provided in the area. The proposed project includes policies and guidelines for the provision of adequate fire protection, law enforcement, educational facilities, and park

and recreational services and facilities to serve the predicted population growth within the project area. Therefore, *no cumulative impacts* are anticipated.

5.2.13 TRANSPORTATION AND CIRCULATION

The Project would facilitate an increase in traffic generation that will affect circulation conditions on the local and regional roadway network. The Transportation Element of the Draft Friant Community Plan addresses established and planned roadways, bicycle and trail routes, alternative modes of transportation, pedestrian facilities, and the potential for light rail transit. The Transportation Element is consistent with the Fresno County General Plan. The Draft Friant Ranch Specific Plan focuses on creating a community circulation network that moves people efficiently and safely throughout Friant Ranch, whether by automobile, bicycle, foot, or by Neighborhood Electric Vehicle (NEV).

Refer to Section 3.13 for a discussion of impacts and mitigation measures related to cumulative traffic impacts. Tables 3.13-22 through 3.13-23 identify Cumulative Year 2030 With-Project conditions. A significant impact occurs if the additional traffic generation from the Project results in a Level of Service above established thresholds. After implementation of mitigation measures outlined in Tables 3.13-22 and 3.13-23, several intersections and roadway segments remain significantly impacted. The cumulative increase in traffic generation, together with other foreseeable regional development that results in additional traffic generation, would be *significant and unavoidable*, and the Project's contribution would be *cumulatively considerable*.

5.2.14 UTILITIES/SERVICE SYSTEMS

Planned development in Fresno and Madera Counties will generate additional cumulative demand for water, which will be provided through a mixture of surface and groundwater sources. As described on Table 5-1 above several land development proposals in the vicinity have recently been approved or are proposed. As discussed in Section 3.14 of the Draft EIR, the proposed Project would not result in depletion of groundwater supplies in that surface water will be used to meet Project water supply needs after all necessary approvals. Because the Project will not use groundwater, it will not contribute to cumulative groundwater impacts resulting from new development throughout the region. The project-specific analysis in Section 3.14 of this Draft EIR also concluded that construction of new and expanded water facilities to serve the proposed Project would result in a less than significant impact at the project level. In consideration of the section 3.14 conclusions, the project's contribution to cumulative water impacts is considered to be *less than cumulatively considerable*.

Based upon the analysis in the Water Supply Assessment for Fresno County Waterworks #18, there is sufficient water to supply the proposed Project through 2030. Regardless, it is widely recognized that water is a finite resource, especially in the West. Water supplies in the future may be affected by the effects of global climate change. It is anticipated that the winter snow season would be shortened if the temperature of the ocean warms, thereby affecting snowpack in the Sierra Nevada mountains. According to a California Climate Change Center report (*Our Changing Climate: Assessing the Risks to California*), the snowpack portion of water supply could potentially decline by 70 to 90% by the end of the 21st century. This phenomenon could

lead to changes in the amount of surface and ground water and could result in significant challenges to securing an adequate water supply. Potential impacts specific to Fresno County and the Waterworks #18 water supply sources are not known at this time. With conservation, implementation of smart growth techniques and reclamation/recycling measures in place to reduce demands on this finite resource, cumulative impacts of the project and related projects are considered *less than cumulatively considerable* in the context of global warming.

Demands for wastewater collection, treatment, and disposal that will arise from the approval of the proposed Project, in addition to the demands for these services from other proposed and/or approved projects as described on Table 5-1, would have a cumulative impact upon the providers of these services. In the context of cumulative development, wastewater collection, treatment, and disposal facilities would require expansions, improvements, and modifications and various wastewater service providers would need to have their WDRs revised for the increased flows above the current permitted flow limits. Based on the standards of significance, the cumulative impacts of the project and related projects are potentially significant. However, implementation of the project-specific mitigation measure identified in Section 3.14 of this Draft EIR will fully mitigate individual impacts and thereby avoid contributing to cumulative impacts. Accordingly, the project's contribution to cumulative wastewater impacts is considered to be *less than cumulatively considerable*.

As described on Table 5-1, several land development proposals have recently been approved or are proposed. These cumulative changes have the potential to contribute to flooding in the vicinity of the proposed Project. Based on the standards of significance, the cumulative impacts of the project and related projects are potentially significant. However, proper implementation of the policies and guidelines of the proposed Community Plan Update, Friant Ranch Specific Plan and Friant Ranch Infrastructure Master Plan referenced in Section 3.14 of this Draft EIR ensure the proposed Project's incremental impact compared with the cumulative flooding impact of the proposed Project along with other past, present, and reasonably foreseeable future projects is not cumulatively considerable. Accordingly, the project's contribution to cumulative stormwater impacts is considered to be *less than cumulatively considerable*.

As discussed in Section 3.14 of the Draft EIR, the American Avenue landfill has capacity until at least 2031, and is planning for additional expansions to meet the regional demand for solid waste disposal. The cumulative population growth within the County was considered when evaluating the lifespan of the facility and planning for future expansions. Accordingly, the project's contribution to cumulative solid waste impacts is considered to be *less than cumulatively considerable*.

As discussed in Section 3.14, the project would avoid a significant project-level impact associated with the wasteful use of energy by implementing Fresno County General Plan policies, policies and guidelines in the Friant Community Plan and Friant Ranch Specific Plan as well as by complying with State regulations. Similarly, other jurisdictions in Fresno County are required to meet State regulations in regard to energy conservation, such as required by Title 24. As a result, the project's contribution to cumulative impacts related to the use and transmission of electricity and natural gas is considered to be *less than cumulatively considerable*.

5.2.15 GREENHOUSE GAS EMISSIONS AND GLOBAL CLIMATE CHANGE

As described above in the Section 3.15 - Greenhouse Gas Emissions and Global Climate Change, the cumulative increase in Greenhouse Gas (GHG) concentrations in the atmosphere has resulted in and will continue to result in increases in global average temperature and associated shifts in climatic and environmental conditions. The Project would contribute to greenhouse gas emissions by allowing for substantially greater development in the Project area than currently exists. The amount of emissions would be substantially greater than what would be generated under existing conditions, or future conditions if the Project area were to remain rural. See Section 3.15 for a complete discussion. The cumulative greenhouse gas emission and global climate change impacts of the Project, together with other foreseeable worldwide development, would be *cumulatively considerable* and as such *significant and unavoidable*.

CHAPTER SIX
OTHER CEQA REQUIREMENTS

CHAPTER SIX - OTHER CEQA REQUIREMENTS

6.1 *Significant Unavoidable Environmental Effects*

The CEQA Guidelines, Section 15126.2(b), requires a description of any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described. The project was evaluated with respect to specific resource areas to determine whether implementation would result in significant adverse impacts. The resource areas analyzed included agricultural resources; air quality and greenhouse gas/global climate change; climate change; biological resources; cultural resources; geology/soils/mineral resources; hazards/ hazardous materials; hydrology and water quality; land use and planning; noise; population and housing; public services and recreation; transportation/traffic; and utilities/service systems.

The potential environmental impacts that would result from implementation of the proposed project are summarized in Table ES-1 in the Executive Summary of this Draft EIR. In some cases, impacts that have been identified would be less than significant. In other instances, incorporation of the mitigation measures proposed in this Draft EIR would reduce the impacts to levels that are less than significant. Although the proposed project contains policies and guidelines that mitigate certain impacts, no mitigation measures have been identified to reduce the following impacts to a less than significant level. Those impacts that cannot feasibly be mitigated to a less than significant level, or for which no mitigation measures are available, would remain as significant unavoidable adverse impacts.

Agricultural Resources:

Impact #3.2.2 - Conflict with Agricultural Zoning or Williamson Act Contracts: The proposed redesignation of 900 acres of grazing land within the Friant Ranch Specific Plan Area currently zoned for agriculture is a significant and unavoidable impact. The proposed residential and commercial uses on approximately 600 acres of those lands will conflict with the existing agricultural zoning.

Air Quality and Greenhouse Gas/Global Climate Change:

Impact #3.3.1 – Construction Impacts for the development of the Friant Ranch Specific Plan (5 phases) and Community Plan Update Carbon Monoxide (CO), Reactive Organic Gases (ROG), Nitrogen Oxide (NOx), Particulate Matter (PM₁₀), & Fine Particulate Matter (PM_{2.5}): Air pollutant emissions by construction activities associated with the first and second phase of development will degrade local air quality. The calculated emissions exceed SJVAPCD thresholds and the impact is potentially significant for Phases 1 and 2.

Impact #3.3.2 – Violation of Air Quality Standards by Area and Operational Emissions: The Friant Ranch Specific Plan and Community Plan Update propose to add land for residential, public facilities, commercial uses, public and open space and park uses. The primary source of emissions is from vehicular traffic. The impact will be lessened by policies of the proposed

Specific Plan and Community Plan, which will promote the use of alternative transportation, air quality mitigation for new developments, and strategies to minimize the number and length of vehicle trips. However, there are no known additional feasible mitigation measures which will reduce the impact to a less than significant level.

Traffic and Circulation:

Impact #3.13-8b (TR-9): The Project will exacerbate existing delays and an existing LOS already below the minimum acceptable LOS at the intersection of Friant Road and Audubon Drive, and is expected to exacerbate anticipated delays and a cumulative LOS that will fall below the acceptable LOS even without the Project under the 2030 no Project condition. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Mitigation #3.13-8b (TR-9): None feasible. The intersection of Friant Road and Audubon Drive is constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is *significant and unavoidable*.

Impact #3.13-8c (TR-10): The Project will exacerbate delays and a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition at the intersection of Friant Road and Fresno Street. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Mitigation #3.13-8c (TR-10): None feasible. The intersection of Friant Road and Fresno Street is constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue and accepts LOS F with six lanes since additional widening is not considered to be feasible. This impact is *significant and unavoidable*.

Impact #3.13-9a (TR-22): The Project will exacerbate existing and anticipated future delays and will contribute to a cumulative level of service below the minimum acceptable level of service at the intersection of Willow Avenue and Nees Avenue in the 2030 plus project condition. The Project's contribution to the anticipated 2030 cumulative condition is cumulatively considerable. This is a *significant impact*. (County of Fresno, City of Fresno, City of Clovis jurisdiction)

Mitigation #3.13-9h (TR-22): None feasible. The intersection of Willow Avenue and Nees Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. This impact is *significant and unavoidable*.

Impact #3.13-9b (TR-23): The Project will exacerbate anticipated delays and contribute to a cumulative level of service that will fall below the minimum acceptable level of service at the intersection of Willow Avenue and Herndon Avenue in the 2030 plus project condition. The

Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Mitigation #3.13-9i (TR-23): None feasible. The intersection of Willow Avenue and Herndon Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. The City of Fresno General Plan identifies the ultimate need for 12 lanes on Herndon Avenue and accepts LOS F with six lanes since additional widening is not feasible. This impact is *significant and unavoidable*.

Impact #3.13-9c (TR-24): The Project will exacerbate anticipated delays and a cumulative level of service that will fall below the minimum acceptable level of service at the intersection of Willow Avenue and Sierra Avenue in the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is a *significant impact*.

Mitigation #3.13-9j (TR-24): None feasible. The intersection of Willow Avenue and Sierra Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. Therefore, this impact is *significant and unavoidable*.

Impact #3.13-9d (TR-25): The Project will exacerbate existing delays, and will exacerbate anticipated delays and a cumulative level of service below the minimum acceptable level of service at the intersection of Willow Avenue and Bullard Avenue under the 2030 condition without the Project. The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This will result in an individually and cumulatively *significant impact*.

Mitigation #3.13-9k (TR-25): None feasible. The intersection of Willow Avenue and Bullard Avenue is planned to be constructed to the largest reasonable configuration and no further intersection improvements are feasible. Therefore, this impact is *significant and unavoidable*.

Impact #3.13-7k (TR-27): The Project will contribute to an unacceptable LOS under the existing plus Project condition and exacerbate a cumulative LOS that will fall below the minimum acceptable LOS under the 2030 no Project condition at the following County of Fresno segments of Friant Road:

- Between North Fork Road (Road 206) and Parker Avenue;
- Between Parker and Granite Avenues;
- Between Granite and Root Avenues; and
- Between Root Avenue and Lost Lake Road.

The Project's contribution to the anticipated cumulative condition is cumulatively considerable. This is an individually and cumulatively *significant impact*.

Mitigation #3.13-7k (TR-27): None feasible. Friant Road between North Fork Road (Road 206) and Lost Lake Road requires six lanes to achieve an acceptable LOS (LOS C or better). Widening this segment of Friant Road to six lanes is not feasible due to the physical constraints

of the adjacent land uses and the Fresno County General Plan policy that prohibits six lane rural roadways. Although the Measure C Tier 1 Rural project widening Friant Road to four lanes between Copper Avenue and Millerton will partially mitigate this impact, the impact will remain *significant and unavoidable*.

Impact #3.13-8f (TR-29): The Project will contribute to an existing and cumulative LOS already below the minimum acceptable LOS on the following City of Fresno segments of Friant Road:

- Between Shepherd Avenue and Audubon Drive.
- Between Audubon Drive and Fresno Street; and
- Between Fresno Street and SR 41.

These are *significant impacts*.

Mitigation #3.13-8f (TR-29): None feasible. The City of Fresno General Plan identifies the need for 12 lanes on Friant Road between SR 41 and Shepherd Avenue to accommodate the anticipated cumulative conditions due to regional growth and accepts LOS F with six lanes since additional widening is not feasible due to physical constraints associated with the adjacent land uses. This condition, as already contemplated and accepted in the City of Fresno General Plan, is *significant and unavoidable*.

Impact #3.13-9f (TR-32): The Project will exacerbate a cumulative LOS that falls below the minimum acceptable level of service under the 2030 condition without the Project on Willow Avenue at the following locations:

Between Alluvial and Herndon Avenues;
Between Herndon and Sierra Avenues;
Between Sierra and Bullard Avenues; and
Between Bullard and Barstow Avenues.

The Project's contribution to the anticipated cumulative condition is cumulatively considerable. These are *significant impacts*.

Mitigation #3.13-9n (TR-32): None feasible. The City of Fresno General Plan identifies the ultimate need for six lanes on Willow Avenue between Alluvial and Barstow Avenues and accepts LOS E. The City of Clovis requires LOS D. A width of six lanes is typically considered the maximum width for roadways in Fresno even when additional lanes are warranted (for example, Herndon Avenue and Friant Avenue are limited to six lanes even where the ultimate mitigation requires more lanes). The proposed Project does not create the need for additional lanes. The Project's share of this cumulative impact is considered to be *significant and unavoidable*.

6.2 Significant Irreversible Environmental Changes

Section 15126.2(c) of the CEQA Guidelines requires an EIR to address significant irreversible environmental effects which cannot be avoided if the proposed project is implemented.

Where the decision of the public agency allows the occurrence of significant effects which are identified in the Final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action based on the Final EIR and/or the information in the record (Section 15093(b)). This statement is called a “Statement of Overriding Considerations.” This statement will be prepared at the end of the CEQA review process, after the Final EIR for this project has been completed.

Implementation of the proposed project would result in the short-term commitment of nonrenewable and/or slowly renewable energy resources and natural resources including lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water due to construction activities. As the project site develops, both residential and nonresidential development would require further commitment of energy resources in the form of natural gas and electricity. Increased motor vehicular travel as a result of the increased commitment of public services would also be required.

Significant impacts resulting from development of the proposed project, for which complete mitigation is unavailable, infeasible, or outside the jurisdiction of the County to implement, are summarized in Section 6.1, Significant Unavoidable Environmental Impacts, and are described in detail in the appropriate subsections in Chapter Three of this Draft EIR.

6.3 Irreversible Changes to the Environment

Implementation of the proposed project would result in the long-term commitment of resources to serve the proposed project site. The most notable significant irreversible impacts are a loss of agricultural grazing land; a commitment of energy resources in the form of natural gas and electricity; increased demand on public services and infrastructure, particularly water supply; and increased generation of pollutants. Implementation of the proposed project will also result in the short-term commitment of non-renewable and/or slowly renewable natural and energy resources such as lumber and other forest products, mineral resources, and water resources during construction activities. These irreversible impacts, which are currently unavoidable consequences of urban development, are described in detail in the appropriate sections of Chapter Three of this Draft EIR.

6.4 Growth-Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires a discussion of how the potential growth-inducing impacts of the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Induced growth is distinguished from the direct employment, population, or housing growth of a project. If a project has characteristics that “may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively,” then these aspects of the project must be discussed as well. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of the proposed project. For example, a project could induce growth by lowering or removing barriers to growth or by creating or allowing a use such as an industrial facility that attracts new population or economic activity. CEQA Guidelines also indicate that the topic of growth should not be assumed to be either beneficial or detrimental.

The proposed project would involve the adoption and implementation of the Friant Community Plan and Friant Ranch Specific Plan. The proposed project will foster economic and population growth by the development of 2,996 housing units, 250,000 square feet of retail, office and commercial uses, and add additional public services, utilities, and infrastructure provided by the project to support predicted growth. This will facilitate the growth and future development of the area, resulting in a possible exceedance of predicted growth. However, one of the goals/guiding principles of both Plans is to define the limits for extending public services and infrastructure so as to only accommodate new development anticipated by each Plan.

The Project is growth inducing, as it provides a product (55+ housing) in a major project which does not exist elsewhere in the San Joaquin Valley. It will attract residents from throughout the Valley and the state. The indirect growth inducing impacts of the project are held as potentially significant impacts according to Appendix G of the CEQA Guidelines. However, the policies and guidelines of the Community Plan and Specific Plan have been formulated to control and guide new development in the area in a manner compatible with existing uses and consistent with the General Plan.

6.5 Effects Not Found to be Significant

CEQA Guidelines, Section 15128, states that “an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.” During the scoping process for this EIR, it was determined that all the issues cited in the Notice of Preparation (NOP) should be evaluated in detail; therefore, the Project was analyzed in detail with respect to all impact areas described within the 2008 Appendix G guidelines. To the extent a particular Project feature was not analyzed in detail in any given discussion of an impact area, it is implied that this Project feature did not result in a significant impact.

Results of the comprehensive environmental analysis are presented in Chapter Three of this EIR. Most impacts were found to be either less than significant or below a level of significance after mitigation.

CHAPTER SEVEN

REFERENCES & PERSONS CONTACTED

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CHAPTER EIGHT
REPORT CONTRIBUTORS

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APPENDICES

(INCLUDED ON CD)

