# TABLE OF CONTENTS

1. INTRODUCTION .................................................................................1-1
2. SUMMARY ................................................................................................2-1
3. PROJECT DESCRIPTION ........................................................................3-1
4. ENVIRONMENTAL DETERMINATION ..................................................4-1
5. ENVIRONMENTAL CHECKLIST ..........................................................5-1
   5.1 Aesthetics ...................................................................................5-3
   5.2 Agriculture and Forestry Resources .........................................5-13
   5.3 Air Quality and Greenhouse Gas Emissions ...........................5-23
   5.4 Biological Resources.................................................................5-47
   5.5 Cultural Resources ..................................................................5-67
   5.6 Geology and Soils ....................................................................5-73
   5.7 Hazards ..................................................................................5-83
   5.8 Hydrology and Water Quality ..................................................5-103
   5.9 Land Use and Planning ..........................................................5-121
   5.10 Mineral Resources ..................................................................5-131
   5.11 Noise ......................................................................................5-135
   5.12 Population and Housing ........................................................5-145
   5.13 Public Services .........................................................................5-149
   5.14 Recreation ..............................................................................5-157
   5.15 Transportation/Traffic .............................................................5-161
   5.16 Utilities and Service Systems .................................................5-193
6. MANDATORY FINDINGS OF SIGNIFICANCE .....................................6-1
7. BIBLIOGRAPHY ...................................................................................7-1
8. PREPARERS OF THE INITIAL STUDY ...............................................8-1

APPENDICES

Appendix A 1994 MEIR Mitigation Monitoring Program
Appendix B Applicant Signature for Approved Mitigation Measures
Appendix C Environ Air Study
Appendix D Special-Status Plant and Wildlife Species Evaluated for Potential to Occur In Neighborhoods K and L
## Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1</td>
<td>Regional and Project Location</td>
<td>2-2</td>
</tr>
<tr>
<td>2-2</td>
<td>Specific Plan Boundaries</td>
<td>2-3</td>
</tr>
<tr>
<td>2-3</td>
<td>Preliminary Layout for Neighborhood K</td>
<td>2-5</td>
</tr>
<tr>
<td>2-4</td>
<td>Preliminary Layout for Neighborhood L</td>
<td>2-6</td>
</tr>
<tr>
<td>3-1</td>
<td>Mountain House Adopted Master Plan Land Use Designations</td>
<td>3-2</td>
</tr>
<tr>
<td>3-2</td>
<td>Tentative Subdivision Map for Neighborhood K</td>
<td>3-3</td>
</tr>
<tr>
<td>3-3</td>
<td>Tentative Subdivision Map for Neighborhood L</td>
<td>3-4</td>
</tr>
<tr>
<td>3-4</td>
<td>Specific Plan II Zoning</td>
<td>3-5</td>
</tr>
<tr>
<td>3-5</td>
<td>Preliminary Second Unit Plan for Neighborhood K</td>
<td>3-9</td>
</tr>
<tr>
<td>3-6</td>
<td>Preliminary Second Unit Plan for Neighborhood L</td>
<td>3-10</td>
</tr>
<tr>
<td>3-7</td>
<td>Preliminary Plans for Trails, Transit and Bike Paths for Neighborhood K</td>
<td>3-17</td>
</tr>
<tr>
<td>3-8</td>
<td>Preliminary Plans for Trails, Transit and Bike Paths for Neighborhood L</td>
<td>3-18</td>
</tr>
<tr>
<td>3-9</td>
<td>Community Edge Map Along Old River, Neighborhood K</td>
<td>3-20</td>
</tr>
<tr>
<td>3-10</td>
<td>Community Edge Map Along Old River, Neighborhood L</td>
<td>3-21</td>
</tr>
<tr>
<td>5.1-1</td>
<td>Views of Neighborhood K</td>
<td>5-4</td>
</tr>
<tr>
<td>5.1-2</td>
<td>Views of Neighborhoods K and L</td>
<td>5-5</td>
</tr>
<tr>
<td>5.1-3</td>
<td>View of Neighborhood L</td>
<td>5-6</td>
</tr>
<tr>
<td>5.1-4</td>
<td>Photos of Existing Mountain House Development</td>
<td>5-10</td>
</tr>
<tr>
<td>5.2-1</td>
<td>Infrastructure Improvements on Project Site</td>
<td>5-20</td>
</tr>
<tr>
<td>5.7-1</td>
<td>Neighborhood L Areas of Contamination</td>
<td>5-88</td>
</tr>
<tr>
<td>5.8-1</td>
<td>100-Year FEMA Flood Hazard Zone</td>
<td>5-106</td>
</tr>
<tr>
<td>5.9-1</td>
<td>Mountain House Master Plan in Relation to Surroundings</td>
<td>5-128</td>
</tr>
<tr>
<td>5.10-1</td>
<td>Mineral Rights</td>
<td>5-132</td>
</tr>
<tr>
<td>5.11-1</td>
<td>Location of Future Soundwalls</td>
<td>5-140</td>
</tr>
<tr>
<td>5.15-1</td>
<td>Existing Lane Configurations and Peak Hour Volumes</td>
<td>5-169</td>
</tr>
<tr>
<td>5.15-2</td>
<td>Existing Plus Proposed Project Turning Movement Volumes</td>
<td>5-175</td>
</tr>
<tr>
<td>5.15-3</td>
<td>2035 Cumulative Plus Approved Neighborhoods K and L Buildout Lane Configurations and Turning Movement Volumes</td>
<td>5-178</td>
</tr>
<tr>
<td>5.15-4</td>
<td>Trip Distribution</td>
<td>5-184</td>
</tr>
<tr>
<td>5.15-5</td>
<td>2035 Cumulative Plus Proposed Neighborhoods K and L Turning Movement Volumes</td>
<td>5-185</td>
</tr>
</tbody>
</table>
### Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 3-1</td>
<td>Project-Proposed and Specific Plan II Land Use Acreages for Neighborhoods K and L</td>
<td>3-6</td>
</tr>
<tr>
<td>Table 3-2</td>
<td>Proposed Residential Lot Sizes for Neighborhood K</td>
<td>3-11</td>
</tr>
<tr>
<td>Table 3-3</td>
<td>Proposed Residential Lot Sizes for Neighborhood L</td>
<td>3-11</td>
</tr>
<tr>
<td>Table 3-4</td>
<td>Projected Residential Population for Neighborhoods K and L</td>
<td>3-13</td>
</tr>
<tr>
<td>Table 3-5</td>
<td>Job Generation By Land Use In Neighborhood K and L</td>
<td>3-13</td>
</tr>
<tr>
<td>Table 3-6</td>
<td>Comparison of Jobs Estimated For Proposed Neighborhoods K and L Tentative Subdivision Maps To Projected Jobs Identified in Mountain House Master Plan and Specific Plan II</td>
<td>3-13</td>
</tr>
<tr>
<td>Table 5.3-1</td>
<td>Criteria Air Pollutants: State and National Standards, Effects, and Sources</td>
<td>5-25</td>
</tr>
<tr>
<td>Table 5.3-2</td>
<td>San Joaquin Valley Attainment Status</td>
<td>5-26</td>
</tr>
<tr>
<td>Table 5.3-3</td>
<td>Recommended Actions for Reducing Greenhouse Gas Emissions, By Sector</td>
<td>5-32</td>
</tr>
<tr>
<td>Table 5.3-4</td>
<td>Summary of Project Greenhouse Gas Emissions</td>
<td>5-44</td>
</tr>
<tr>
<td>Table 5.6-1</td>
<td>Active and Potentially Active Faults in the Vicinity of the Specific Plan II Area</td>
<td>5-75</td>
</tr>
<tr>
<td>Table 5.7-1</td>
<td>Agricultural Chemicals Used at Mountain House</td>
<td>5-91</td>
</tr>
<tr>
<td>Table 5.11-1</td>
<td>Existing Noise Environment in Project Site Vicinity</td>
<td>5-136</td>
</tr>
<tr>
<td>Table 5.15-1</td>
<td>Level of Service (LOS) Standards</td>
<td>5-163</td>
</tr>
<tr>
<td>Table 5.15-2</td>
<td>San Joaquin County Regional Transit District (SJRTD) Interregional Commuter Bus Service (as of July 2011)</td>
<td>5-166</td>
</tr>
<tr>
<td>Table 5.15-3</td>
<td>Level of Service Criteria for Signalized Intersections</td>
<td>5-168</td>
</tr>
<tr>
<td>Table 5.15-4</td>
<td>Existing Levels of Service</td>
<td>5-170</td>
</tr>
<tr>
<td>Table 5.15-5</td>
<td>Trip Generation for Proposed Project (Neighborhoods K and L)</td>
<td>5-174</td>
</tr>
<tr>
<td>Table 5.15-6</td>
<td>Existing Plus Proposed Project (Neighborhoods K and L) Level of Service Conditions</td>
<td>5-176</td>
</tr>
<tr>
<td>Table 5.15-7</td>
<td>Trip Generation for Approved Neighborhoods K and L Project</td>
<td>5-177</td>
</tr>
<tr>
<td>Table 5.15-8</td>
<td>2035 Cumulative Mountain House Buildout Transportation Improvements</td>
<td>5-179</td>
</tr>
<tr>
<td>Table 5.15-9</td>
<td>2035 Cumulative Plus Previously Approved Neighborhoods K and L Plus Mountain House Buildout Level of Service Conditions</td>
<td>5-182</td>
</tr>
<tr>
<td>Table 5.15-10</td>
<td>Trip Generation for Proposed Neighborhoods K and L Project</td>
<td>5-183</td>
</tr>
<tr>
<td>Table 5.15-11</td>
<td>2035 Cumulative Plus Proposed Neighborhoods K and L Tentative Map Revision Level of Service Conditions</td>
<td>5-186</td>
</tr>
<tr>
<td>Table 5.15-12</td>
<td>Changes in Intersection Delays – Proposed Neighborhoods K and L Project Compared to Approved Neighborhoods K and L Project</td>
<td>5-187</td>
</tr>
<tr>
<td>Table 5.15-13</td>
<td>Summary of Mountain House Transportation Demand Management (TDM) Measures</td>
<td>5-190</td>
</tr>
<tr>
<td>Table 5.15-14</td>
<td>Summary of Mountain House Transit Measures</td>
<td>5-190</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

This Initial Study evaluates the proposed Tentative Subdivision Maps for Neighborhoods K and L within the larger Mountain House community (Application No. PA-1000266 and PA-1000267).

The applicant, Shea Mountain House, LLC, has submitted planning applications to the San Joaquin County Community Development Department (SJCCDD), the lead agency for the approval of this project. This project would be part of Specific Plan II (SPII), the second major phase of the development identified in the Mountain House Master Plan Final EIR, which is a Master EIR (adopted in 1994 by the San Joaquin County Board of Supervisors and referred to hereinafter as the “1994 MEIR”). SPII was approved in 2005. The 1994 MEIR, incorporated herein by reference, can be reviewed at the San Joaquin County Community Development Department, 1810 East Hazelton Avenue, Stockton, California. A copy of SPII can also be reviewed at this County office.

Mountain House is a master community located on a 4,780-acre site near San Joaquin County's border with Alameda County, northwest of the City of Tracy (see Figure 2-1). The Mountain House Master Plan land use map (Figure 3-1, Master Plan Designations) is the General Plan Community Plan 2010 map for Mountain House. Ultimate buildout of the community is projected to include a resident population of about 42,000 persons and jobs for about 22,000. Buildout of SPII would accommodate about 24,900 of the projected total Mountain House population of 42,000. Currently, approximately 3,000 residential dwelling units and other uses (including office and retail, schools, and other civic facilities) have been developed in the community. Neighborhoods K and L would be the final residential development within the project.

The purpose of this Initial Study is to determine whether the proposed project is “within the scope” of the 1994 MEIR and to examine the continued adequacy of the 1994 MEIR. This Initial Study assesses whether 1) there are any additional significant environmental effects not previously examined in the 1994 MEIR, 2) any new mitigation measures are required, and 3) any substantial changes have occurred with respect to the circumstances under which the 1994 MEIR was certified or whether there is new available information that was not known and could not have been known at the time the 1994 MEIR was certified such that major revisions of the previous 1994 MEIR would be required (CEQA Guidelines Sections 15176, 15177, and 15179). A “substantial change” must involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines Section 15162). The Initial Study also assesses whether there are any additional environmental impacts that may require further mitigation that were not previously addressed in
the 1994 MEIR. Since certification of the Master EIR in 1994, the California Environmental Quality Act (CEQA) Guidelines have been amended to address greenhouse gas (GHG) emissions, a topic that is addressed in Chapter 5 with the air quality analysis. Other minor changes have also been made to the checklist questions. The updated questions are listed in Chapter 5 of this Initial Study.

Earlier environmental documents addressing Mountain House community development include the following:


8. Draft Expanded Initial Study for the Mountain House Community Services District (SCH #98032047) (for wastewater treatment plant), 1999.

9. Initial Study and Negative Declaration for Wastewater Treatment Plant at Mountain House (Use Permit 98-16), 1991.

10. Initial Study and Negative Declaration for Mountain House New Community Water Treatment Plant Use Permit, January 5 (Use Permit 97-13).


All of the above documents can be viewed at the San Joaquin County Community Development Department, 1810 East Hazelton Avenue, Stockton, California.
CHAPTER 2
SUMMARY

This is an Initial Study format used to determine, pursuant to CEQA Guidelines Section 15177, whether a project 1) is within the scope of a Master EIR (MEIR), 2) may result in additional significant environmental effects not previously examined in the MEIR, or 3) requires new, additional mitigation measures or alternatives.

1. PROJECT SUMMARY DATA

Project Title: Mountain House Neighborhoods K and L Project

Lead Agency Name and Address:
San Joaquin County Community Development Department
1810 East Hazelton Avenue
Stockton, CA 95205

Contact Person and Phone Number:
Ms. Corinne King
Associate Planner
209-953-7509

Project Location: Neighborhoods K and L are two (of 12 total) neighborhoods within the Mountain House Master Plan. The Mountain House community is located in the southwestern portion of San Joaquin County north of the City of Tracy (see Figure 2-1). The community is subject to the Mountain House Master Plan, along with a series of Specific Plans (see Figure 2-2). General boundaries of the Neighborhoods K and L project site include Old River to the north and other neighborhoods of the Mountain House community to the south and west. The only Mountain House neighborhoods currently developed or under construction are Neighborhoods E, F, G, and H, which are south of the project site between Grant Line Road and Byron Road.

Project Sponsor’s Name and Address:
Shea Mountain House, LLC
2580 Shea Center Drive
Livermore, CA 94551
Contact Person: Mr. David Sargent

General Plan and Master Plan Designations: Low and Medium Density Residential (R/L, R/M); Mixed Use (M/X); Medium-High Density Residential
Figure 2-1

REGIONAL AND PROJECT LOCATION

SOURCE: Carlson, Barbee & Gibson, Inc.
2. SUMMARY

2. OVERVIEW OF PROJECT DESCRIPTION

The proposed project is made up of two new Tentative Subdivision Maps – one for Neighborhood K and the other for Neighborhood L. The proposed project would include development of 691 acres, or 14.5 percent of the approximately 4,780 acres of Mountain House. Proposed land uses are as follows (see Figures 2-3 and 2-4):

- Two residential neighborhoods (approximately 361.29 acres), containing 1,578 single-family detached homes and 838 attached homes (total of 2,416 dwelling units);
- 38.93 acres of commercial uses, consisting of 2.95 acres of neighborhood commercial, 19.01 acres of community commercial, and 16.97 acres of mixed use (Old River site);
- 136.45 acres of neighborhood, community and regional parks, including a linear park/trail system along Old River that forms the northern boundary of Mountain House and a park along Mountain House Creek that is part of Neighborhood L;
- 47.33 acres of lakes (storm drainage system) in Neighborhood K and 52.93 acres of lakes in Neighborhood L;
- 12.67 acres of water quality basins in Neighborhood L;
- One 2-acre area in Neighborhood L for a transit station adjoining the Union Pacific Railroad (UPRR) and Byron Road;
- 1.13 acres for public facilities in Neighborhood K and 5.2 acres of private facilities in Neighborhood K;
- 33.11 acres for two separate K-8 schools, one in each neighborhood (17.11 acres in Neighborhood K and 16 acres in Neighborhood L);
- Landscaped roadways to interconnect the community;
- Extensions of bicycle/pedestrian trails; and
- Expansions of all required infrastructure and utilities (e.g., water and wastewater lines, etc.).
Figure 2-3
PRELIMINARY LAYOUT FOR NEIGHBORHOOD K
Figure 2-4

PRELIMINARY LAYOUT FOR NEIGHBORHOOD L

RESIDENTIAL SUMMARY

<table>
<thead>
<tr>
<th>RES</th>
<th>AREA (SF)</th>
<th># LOTS</th>
<th>DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2SF</td>
<td>3,196</td>
<td>92</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>R2SF</td>
<td>3,000</td>
<td>110</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>R1SF</td>
<td>4,000</td>
<td>75</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>R0SF</td>
<td>4,000</td>
<td>67</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>R0SF</td>
<td>3,000</td>
<td>57</td>
<td>LOW</td>
</tr>
<tr>
<td>RV1SF</td>
<td>6,000</td>
<td>171</td>
<td>LOW</td>
</tr>
<tr>
<td>RV1SF</td>
<td>9,500</td>
<td>82</td>
<td>LOW</td>
</tr>
<tr>
<td>RV1SF</td>
<td>9,000</td>
<td>103</td>
<td>LOW</td>
</tr>
<tr>
<td>RV1SF</td>
<td>6,000</td>
<td>74</td>
<td>LOW</td>
</tr>
<tr>
<td>TOTAL</td>
<td>744</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Carlson, Barbee & Gibson, Inc., 2011
The projected population of Neighborhoods K and L is 6,301 people. Development in Neighborhoods K and L would also produce an estimated 1,564 jobs.

3. SURROUNDING LAND USES AND SETTING

Currently, land uses surrounding the boundaries of Neighborhoods K and L include vacant lands under agricultural production for alfalfa, corn, and irrigated farmland to the west and southwest where Neighborhoods I and J are proposed. Lands to the east of Neighborhood L are proposed to be developed as part of the Old River Industrial Park and currently include the wastewater treatment plant operated by the Mountain House Community Services District. Old River forms the northern boundary of Neighborhoods K and L. Neighborhoods E, F, and G (recently completed in the last 10 years) are located south of Neighborhoods K and L, on the south side of Byron Road. The Mountain House Community Services District (MHCSD) water treatment plant, located at the south end of Neighborhood I, has been completed and is currently operating to serve existing neighborhoods within Mountain House.

4. REQUIRED APPROVALS

The proposed project would require Tentative Subdivision Map approvals from San Joaquin County. Grading and building permits would also be issued by San Joaquin County.

Federal, state, regional, and local agencies that may require permits for the proposed project prior to its construction and/or operation include the following:

- Regional Water Quality Control Board (National Pollutant Discharge Elimination System [NPDES] permit).
- San Joaquin Valley Air Pollution Control District (applicable construction-related permits).

5. INFORMATION SOURCES

The following are some of the information sources used to complete this Initial Study:

- San Joaquin County Development Title (1992).
2. SUMMARY

Mountain House Specific Plan II Initial Study (Draft) (December 2004, approved February 2005).
Natural Diversity Data Base (California Department of Fish and Game).
On-site visits by staff and consultants.
Application submittal material provided with Tentative Subdivision Map applications.

A more detailed list of references can be found in Chapters 5 and 8.

6. PURPOSE OF INITIAL STUDY

This Initial Study is intended to determine whether the proposed project is within the scope of the MEIR completed for the Mountain House New Community Master Plan and Specific Plan I (SPI) in 1994. A project will be considered within the scope of the MEIR if it is described in that document and would 1) have no additional significant effect not previously examined in the MEIR, and 2) require new or additional mitigation measures or alternatives. The Environmental Checklist questions in Chapter 5 are used to answer these questions. If the two conditions described above are satisfied, no further environmental document is required for the project. If one of them is not satisfied, the County would determine that an EIR or a Mitigated Negative Declaration should be prepared for the project. The conclusions are addressed below.

7. SCOPE AND CONTENT OF THE INITIAL STUDY

This Initial Study contains the following chapters:
- Chapter 1. Introduction: This chapter provides an overview of the project and previous environmental documents completed for the Mountain House community.
- Chapter 2. Summary: This chapter provides a summary of the project contacts, lead agency, and project characteristics. Background information on the MEIR Initial Study is provided to clarify the type of findings that must be made in determining whether or not an Environmental Impact Report or other CEQA document is necessary. A summary of the project description is provided. In addition, the discretionary actions and permits associated with the project are described.
- Chapter 3. Project Description: This chapter describes the land uses and infrastructure proposed by the project for Neighborhoods K and L. Relevant graphics are included to identify proposed future development within the project site.
Chapter 4. Environmental Determination: This chapter identifies the environmental topics for which there would be a potentially significant impact. In addition, a determination regarding the required documentation in compliance with the California Environmental Quality Act is made at the conclusion of this chapter.

Chapter 5. Environmental Checklist: This chapter reviews the topics required to be evaluated in accordance with Section 15063 of the California Environmental Quality Act (CEQA) Guidelines. Each topic (Air Quality, Hydrology, etc.) includes a specific set of questions relevant to evaluating a project for which a MEIR has been prepared. The significant impacts identified in the 1994 MEIR and a summary of findings are provided for each topic.

Chapter 6. Mandatory Findings of Significance: This chapter addresses the three mandatory findings of significance: 1) potential degradation of the environment as related to plants, animals, and historic resources; 2) cumulatively considerable impacts; and 3) substantial adverse effects on human beings.

Chapter 7. Bibliography: This chapter identifies all references used in the analysis.

Chapter 8. Preparers of the Initial Study: This chapter identifies the team of scientists and planners who completed the Initial Study.

8. USE OF THE MEIR AND AUTHORITY FOR INITIAL STUDY

A MEIR (San Joaquin County, 1994) was adopted in 1994 for the Mountain House New Community Master Plan. The area within Specific Plan II (SPII), which includes Neighborhoods K and L, is included within the Master Plan area, and thus almost all of the topics relevant to this Initial Study were evaluated in the MEIR in 1994.

The MEIR (hereinafter referred to as the “1994 MEIR”) included a number of mitigation measures that were applicable to the Master Plan and thus would apply to Neighborhoods K and L. Some mitigation measures were incorporated into the adopted Master Plan and others applied to future stages of permitting and development. A copy of the 1994 MEIR Mitigation Monitoring Program is included in Appendix A. The 1994 MEIR is incorporated herein by reference. A full copy of the 1994 MEIR can be viewed at the San Joaquin County Community Development Department offices, 1810 East Hazelton Avenue, Stockton, California.


The 1994 MEIR was certified in 1994. Section 15177 of the CEQA Guidelines addresses subsequent projects within the scope of the 1994 MEIR and states that new environmental documentation (except as stated in “b” below) or findings
are not required when specific requirements are met. These requirements include the following:

a. The lead agency for the MEIR is the same as for the subsequent project;

b. The lead agency prepares an Initial Study on the subsequent project to determine if any additional significant effect on the environment could occur that was not addressed in the MEIR; and

c. The lead agency determines, on basis of written findings, that no additional significant environmental effect would result, that no new mitigation measures are needed, and that the project is within the scope of the MEIR.

CEQA Guidelines Section 15179 states that the Initial Study done for a project that was the subject of a MEIR must make the following findings if more than five years have elapsed since certification of the MEIR:

1. There have been no substantial changes with respect to the circumstances under which the MEIR was certified; or

2. There is no new available information that was not known and could not have been known at the time the MEIR was certified.

If this determination cannot be made, the standard Initial Study process will be used to determine the scope of an EIR for the project, or the need for a Mitigated Negative Declaration.

The conclusion of this Initial Study is that, based on new available information, some potentially significant impacts could result from the project and a Mitigated Negative Declaration would be appropriate for the project. In addition, the CEQA Guidelines have been amended since the MEIR was prepared and new topics such as greenhouse gas (GHG) emissions must be evaluated. The applicant’s approval of the mitigation measures identified in this Initial Study can be found in Appendix B.
CHAPTER 3
PROJECT DESCRIPTION

PROJECT LOCATION

The proposed Mountain House Tentative Subdivision Maps for Neighborhoods K and L (hereinafter referred to as the “proposed project”) are a project within the larger Mountain House community located in San Joaquin County along its border with Alameda County (see Figure 2-1). The Neighborhoods K and L project site (hereinafter referred to as the “project site”) is in the northern portion of Mountain House and covers two of the 12 proposed neighborhoods within the community. Mountain House Creek divides the two neighborhoods. The proposed project is part of Specific Plan II (SPII) (see Figure 2-2), which was approved in February 2005. The property was previously annexed into both the Mountain House Community Services District (MHCSD) and Byron Bethany Irrigation District (BBID) jurisdictions.

Regional access is provided from Interstate 205 (I-205), with local access currently provided by Mountain House Parkway along the Mountain House community’s eastern edge, and Byron Road south of the project site. Additional access from an extension of Central Parkway bridging over Byron Highway and the Union Pacific Railroad (UPRR) is currently under construction. Mountain House Parkway north of Byron Road would also provide local access, but this portion of the parkway has not been constructed.

PROJECT CHARACTERISTICS

Development Overview

The proposed project is made up of two new Tentative Subdivision Maps – one for Neighborhood K and the other for Neighborhood L. The proposed project would facilitate development of 691 acres, or 14.5 percent, of the approximately 4,780 acres of Mountain House (see Table 3-1 and Figure 3-1). Figure 3-1 shows the adopted Master Plan map, as amended when Neighborhoods I and J were permitted. Figures 3-2 and 3-3 show the lot layouts for Neighborhoods K and L that are the basis of proposed Tentative Subdivision Maps. Zoning, as designated in SPII, is shown in Figure 3-4.
Figure 3-1

MOUNTAIN HOUSE ADOPTED MASTER PLAN LAND USE DESIGNATIONS

SOURCE: SWA 2006
Figure 3-2
TENTATIVE SUBDIVISION MAP FOR NEIGHBORHOOD K

SOURCE: Carlson, Barbee & Gibson, Inc., 2011
<table>
<thead>
<tr>
<th>Land Use – General</th>
<th>Land Use – Specific (Dwelling Units/Acre)</th>
<th>L Proposed</th>
<th>L SPII</th>
<th>K Proposed</th>
<th>K SPII</th>
<th>Total Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>High Density (18-20)</td>
<td>2.91</td>
<td>3.0</td>
<td>4.64</td>
<td>4.0</td>
<td>7.55</td>
</tr>
<tr>
<td></td>
<td>Medium-High Density (12-14)</td>
<td>30.07</td>
<td>30.0</td>
<td>22.82</td>
<td>20.0</td>
<td>52.89</td>
</tr>
<tr>
<td></td>
<td>Medium Density (5.7-7.0)</td>
<td>49.81</td>
<td>49.1</td>
<td>65.45</td>
<td>69.1</td>
<td>115.26</td>
</tr>
<tr>
<td></td>
<td>Low Density (3.75-4.75)</td>
<td>100.24</td>
<td>104.0</td>
<td>85.35</td>
<td>89.0</td>
<td>185.59</td>
</tr>
<tr>
<td></td>
<td>Very Low Density (1-2)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Senior Housing High Density (18-20)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Senior Housing Medium-High Density (12-14)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>183.03</td>
<td>186.1</td>
<td>178.26</td>
<td>182.1</td>
<td>361.29</td>
</tr>
<tr>
<td>Commercial</td>
<td>Neighborhood Commercial</td>
<td>1.59</td>
<td>1.5</td>
<td>1.36</td>
<td>1.2</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>Community Commercial</td>
<td>2.75</td>
<td>2.75</td>
<td>16.26</td>
<td>15.0</td>
<td>19.01</td>
</tr>
<tr>
<td></td>
<td>General Commercial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Office Commercial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Recreation (Golf Club, Rec. Ctr.)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Mixed-Use (Town Center)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Mixed-Use (Old River Site)</td>
<td>0</td>
<td>0</td>
<td>16.97</td>
<td>14.0</td>
<td>16.97</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>4.34</td>
<td>4.25</td>
<td>34.59</td>
<td>30.2</td>
<td>38.93</td>
</tr>
<tr>
<td>Industrial</td>
<td>Limited Industrial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Open Space</td>
<td>Neighborhood Park</td>
<td>5.0</td>
<td>5.0</td>
<td>5.56</td>
<td>5.0</td>
<td>10.56</td>
</tr>
<tr>
<td></td>
<td>Community Park</td>
<td>22.29</td>
<td>22.3</td>
<td>2.90</td>
<td>2.5</td>
<td>25.19</td>
</tr>
<tr>
<td></td>
<td>Creek Community Park</td>
<td>23.60</td>
<td>23.6</td>
<td>0</td>
<td>0</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td>Regional Park</td>
<td>36.96</td>
<td>37.0</td>
<td>40.14</td>
<td>40.0</td>
<td>77.1</td>
</tr>
<tr>
<td></td>
<td>Lakes/Dry Creek</td>
<td>52.93</td>
<td>57</td>
<td>47.33</td>
<td>47.0</td>
<td>100.26</td>
</tr>
<tr>
<td></td>
<td>Water Quality Basin</td>
<td>12.67</td>
<td>12.7</td>
<td>0</td>
<td>0</td>
<td>12.67</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>153.45</td>
<td>157.6</td>
<td>95.93</td>
<td>94.5</td>
<td>249.38</td>
</tr>
<tr>
<td>Schools</td>
<td>K-8 School</td>
<td>16.0</td>
<td>16.0</td>
<td>17.11</td>
<td>16.0</td>
<td>33.11</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>16.0</td>
<td>16.0</td>
<td>17.11</td>
<td>16.0</td>
<td>33.11</td>
</tr>
<tr>
<td>Public</td>
<td>Transit</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Public Facilities (Public)</td>
<td>0</td>
<td>0</td>
<td>1.13</td>
<td>1.0</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>Public Facilities (Private)</td>
<td>0</td>
<td>0</td>
<td>5.20</td>
<td>5.0</td>
<td>5.20</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>2.0</td>
<td>2.0</td>
<td>6.33</td>
<td>6.0</td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>358.82</td>
<td>365.9</td>
<td>332.22</td>
<td>328.8</td>
<td>691.04</td>
</tr>
</tbody>
</table>

*This is an existing water quality basin maintained by the MHCSD.*

The following is a summary of the proposed land uses.

**Housing**

- Two residential neighborhoods (approximately 361.29 acres), containing 1,578 single-family detached homes and 838 attached homes (total of 2,416 dwelling units).
- Projected population of 6,301 persons.

**Commercial Uses**

- 38.93 acres of commercial uses, consisting of 2.95 acres of neighborhood commercial, 19.01 acres of community commercial, and 16.97 acres of mixed use (Old River site).
- Estimated 1,564 jobs.

**Parks, Recreation, Schools, and Community Facilities**

- 136.45 acres of neighborhood parks (10.56 acres), community parks (48.79 acres), and regional parks (77.1 acres), including a linear park/trail system along Old River that forms the northern boundary of Mountain House and a park along Mountain House Creek that is part of Neighborhood L.
- 47.33 acres of lakes (storm drainage system) in Neighborhood K and 52.93 acres of lakes in Neighborhood L.
- 12.67 acres of water quality basins in Neighborhood L.
- One 2-acre area in Neighborhood L for a transit station adjoining the UPRR and Byron Road.
- 1.13 acres for public facilities in Neighborhood K and 5.2 acres of private facilities in Neighborhood K.
- 33.11 acres for two separate K-8 schools, one in each neighborhood (17.11 acres in Neighborhood K and 16 acres in Neighborhood L).

**Transportation and Infrastructure**

- Landscaped roadways to interconnect the community.
- Extensions of bicycle/pedestrian trails.
- Expansions of all required infrastructure and utilities (e.g., water and wastewater lines, etc.).
Residential Uses

Neighborhood K would include 178.26 acres of residential uses out of the total 332.22 acres in this neighborhood. Neighborhood L would include 183.03 acres of residential uses out of the total of 365.71 acres in this neighborhood.

Neighborhood K would contain a total of 1,174 units, consisting of 401 units that are low density (3.75 to 4.75 dwelling units per acre [du/ac]), 413 units that are medium density (5.7 to 7.0 du/ac), 280 units that are medium-high density (12 to 14 du/ac) and 80 units that are high density (18 to 20 du/ac). The neighborhood’s 814 single-family lots would range in size from 3,570 square feet (sf) to 6,500 sf. The low-density lots would generally be between 5,000 sf and 6,500 sf in size. The medium-density lots would be between 3,570 and 4,500 sf in size (see Table 3-2). The medium-high density areas of Neighborhood K would be concentrated in the northeast corner of the neighborhood, focused around the mixed-use area and the community park as well as the regional park along Old River.

Neighborhood L would contain a total of 1,242 units, consisting of 467 units that are low density (3.75 to 4.75 dwelling units per acre [du/ac]), 297 units that are medium density (5.7 to 7.0 du/ac), 420 units that are medium-high density (12 to 14 du/ac) and 58 units that are high density (18 to 20 du/ac). Lot sizes would be similar to those proposed for Neighborhood K as explained above (see Table 3-3). For Neighborhood L, the medium-high density residential area would be concentrated near Mountain House Creek at the southwest edge of the neighborhood and fronting on the future Mountain House Parkway. A high-density residential area would be located just north of the Community Commercial area.

Lots allowing second units (in-law units) are shown in Figures 3-5 and 3-6. A total of 53 lots would allow second units in Neighborhood K and 50 lots would allow second units in Neighborhood L. No senior housing is proposed in either Neighborhood K or Neighborhood L.

Commercial Uses

Neighborhood K would include a large Community Commercial area (16.26 acres) adjoining Central Parkway and a 1.36-acre Neighborhood Commercial area next to the neighborhood park in the center of the neighborhood (see Figure 2-3).

Neighborhood L would include a 2.75-acre Community Commercial area next to the proposed transit station at the south end of the neighborhood and a 1.59-acre Neighborhood Commercial area next to the neighborhood park near the north end of the neighborhood (see Figure 2-4).

A 16.97-acre Mixed-Use area would be provided in Neighborhood K in the northwestern corner adjacent to the community park. This Mixed-Use area would include a range of commercial, office, higher-density housing, and
Figure 3-5

PRELIMINARY SECOND UNIT PLAN FOR NEIGHBORHOOD K

SOURCE: Carlson, Barbee & Gibson, Inc., 2010

LEGEND

★ Designated lot with second unit (53 total)
PRELIMINARY SECOND UNIT PLAN FOR NEIGHBORHOOD L

LEGEND

★ Designated lot with second unit (50 total)
### Table 3-2  **PROPOSED RESIDENTIAL LOT SIZES FOR NEIGHBORHOOD K**

<table>
<thead>
<tr>
<th>Lot Size Category (Square Feet)</th>
<th>Minimum Lot Dimensions</th>
<th>Number of Lots</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,570</td>
<td>42 feet x 85 feet</td>
<td>104</td>
<td>9%</td>
</tr>
<tr>
<td>3,600</td>
<td>45 feet x 80 feet</td>
<td>104</td>
<td>9%</td>
</tr>
<tr>
<td>4,500</td>
<td>45 feet x 100 feet (alley)</td>
<td>79</td>
<td>7%</td>
</tr>
<tr>
<td>4,500</td>
<td>50 feet x 90 feet</td>
<td>126</td>
<td>11%</td>
</tr>
<tr>
<td>5,000</td>
<td>50 feet x 100 feet</td>
<td>115</td>
<td>10%</td>
</tr>
<tr>
<td>5,225</td>
<td>55 feet x 95 feet</td>
<td>64</td>
<td>5%</td>
</tr>
<tr>
<td>5,500</td>
<td>55 feet x 100 feet</td>
<td>121</td>
<td>10%</td>
</tr>
<tr>
<td>6,000</td>
<td>60 feet x 100 feet</td>
<td>51</td>
<td>4%</td>
</tr>
<tr>
<td>6,500</td>
<td>65 feet x 100 feet</td>
<td>50</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Subtotal – Single Family** 814 69%

| Attached                          | Varies                     | 360            | 31%             |

**Total** 1,174 100.0%


### Table 3-3  **PROPOSED RESIDENTIAL LOT SIZES FOR NEIGHBORHOOD L**

<table>
<thead>
<tr>
<th>Lot Size Category (Square Feet)</th>
<th>Minimum Lot Dimensions</th>
<th>Number of Lots</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,570</td>
<td>42 feet x 85 feet</td>
<td>50</td>
<td>4%</td>
</tr>
<tr>
<td>3,600</td>
<td>45 feet x 80 feet</td>
<td>110</td>
<td>9%</td>
</tr>
<tr>
<td>4,500</td>
<td>45 feet x 100 feet (alley)</td>
<td>70</td>
<td>6%</td>
</tr>
<tr>
<td>4,500</td>
<td>50 feet x 90 feet</td>
<td>67</td>
<td>5%</td>
</tr>
<tr>
<td>5,000</td>
<td>50 feet x 100 feet</td>
<td>57</td>
<td>5%</td>
</tr>
<tr>
<td>5,225</td>
<td>55 feet x 95 feet</td>
<td>171</td>
<td>14%</td>
</tr>
<tr>
<td>5,500</td>
<td>55 feet x 100 feet</td>
<td>80</td>
<td>6%</td>
</tr>
<tr>
<td>6,000</td>
<td>60 feet x 100 feet</td>
<td>103</td>
<td>8%</td>
</tr>
<tr>
<td>6,500</td>
<td>65 feet x 100 feet</td>
<td>56</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Subtotal – Single Family** 764 62%

| Attached                          | Varies                     | 478            | 38%             |

**Total** 1,242 100%


recreational services. It is intended to serve as an activity hub for the northern portion of Mountain House.

**Parks, Recreation, and Community Facilities**

Each neighborhood would have a mixture of park and recreation facilities. Neighborhood parks would be provided adjacent to the K-8 school sites and
community and regional parks would be located generally at the outer edges of each neighborhood.

Old River Regional Park would be located along the northern boundary of both Neighborhoods K and L. A 2.9-acre community park would be located in the northwestern portion of Neighborhood K near the terminus of Central Parkway and adjacent to a mixed-use area. The 22.29-acre North Community Park would be located in Neighborhood L adjacent to the Mountain House Creek Park and just north of the UPRR and Byron Road. The 23.60-acre Mountain House Creek Park would form the western boundary of Neighborhood L and would extend from the existing Mountain House Creek Park south of Byron Road.

The primary staging area for Old River Regional Park would be at Old River Center at the end of Central Parkway in Neighborhood K. This staging area would include a small boat ramp and parking, among other amenities. The boat launch would be open to the public and would be operated by the MHCSD to accommodate local recreational and wildlife-oriented boating.

Residential Population

Using the same population assumptions as those used in the February 2005 Mountain House New Community SPII document, the residential development proposed by the project would result in an on-site population of about 6,301 persons for Neighborhoods K and L (see Table 3-4).

Job Generation

Total employment generated by the non-residential uses within Neighborhoods K and L is anticipated to be 1,564 jobs, which is about 190 more than projected with the adopted SPII (see Tables 3-5 and 3-6).

Drainage

The MHCSD prepared a Storm Water Master Plan Update Addendum No. 1 (May 2004) that provides hydrological and hydraulic data for the design of project-related storm drain trunk lines, Mountain House Creek improvements, and water quality treatment/detention basins for the entire Mountain House community. This plan was evaluated in the Initial Study/Mitigated Negative Declaration prepared for Neighborhoods E and G in 2003. A second Addendum to the Storm Water Master Plan Update was prepared in conjunction with the Revised Neighborhood I and J Map.

In accordance with the MHCSD’s Storm Water Master Plan Update, and subject to additional detailed investigation and engineering, the applicant would construct a series of interim stormwater protection ditches and berms, as well as permanent stormwater conveyance facilities. Storm drainage handling would be
### Table 3-4  PROJECTED RESIDENTIAL POPULATION FOR NEIGHBORHOODS K AND L

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Dwelling Units</th>
<th>Persons Per Unit</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low and Low Density Residential</td>
<td>868</td>
<td>3.12</td>
<td>2,708</td>
</tr>
<tr>
<td>Medium Density Residential</td>
<td>710</td>
<td>2.70</td>
<td>1,917</td>
</tr>
<tr>
<td>Medium-High Density Residential</td>
<td>700</td>
<td>2.00</td>
<td>1,400</td>
</tr>
<tr>
<td>High Density Residential</td>
<td>138</td>
<td>2.00</td>
<td>276</td>
</tr>
<tr>
<td>Senior Housing (R/MH)</td>
<td>0</td>
<td>2.00</td>
<td>0</td>
</tr>
<tr>
<td>Senior Housing (R/H)</td>
<td>0</td>
<td>2.00</td>
<td>0</td>
</tr>
<tr>
<td>Mixed-Use Residential in Town Center</td>
<td>0</td>
<td>2.00</td>
<td>0</td>
</tr>
<tr>
<td>Second Unitsa</td>
<td>103a</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Additional/Bonus Units</td>
<td>0</td>
<td>2.00</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,516</strong></td>
<td><strong>6,301</strong></td>
<td></td>
</tr>
</tbody>
</table>

*a  Second units are not included in the total unit count or population estimates to be consistent with Master Plan projections. If they were included, an additional 103 persons would be present.
NA = not applicable

### Table 3-5  JOB GENERATION BY LAND USE IN NEIGHBORHOOD K AND L

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Jobs/Acre</th>
<th>Acres</th>
<th>Total Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Commercial</td>
<td>24</td>
<td>2.95</td>
<td>71</td>
</tr>
<tr>
<td>Community Commercial</td>
<td>24</td>
<td>19.01</td>
<td>456</td>
</tr>
<tr>
<td>Mixed-Use (Old River site)</td>
<td>51</td>
<td>16.97</td>
<td>865</td>
</tr>
<tr>
<td>Neighborhood, Community, Parks, Lakes, and Regional Parks</td>
<td>0.2</td>
<td>236.71</td>
<td>47</td>
</tr>
<tr>
<td>Schools</td>
<td>2.5</td>
<td>33.11</td>
<td>83</td>
</tr>
<tr>
<td>Public Facilities</td>
<td>5.0</td>
<td>6.33</td>
<td>32</td>
</tr>
<tr>
<td>Transit</td>
<td>5.0</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
<td><strong>1,564</strong></td>
<td><strong>1,564</strong></td>
</tr>
</tbody>
</table>

*a  Ratios taken from Table 3.1 of the Mountain House New Community Master Plan (as amended 2000).

### Table 3-6  COMPARISON OF JOBS ESTIMATED FOR PROPOSED NEIGHBORHOODS K AND L TENTATIVE SUBDIVISION MAPS TO PROJECTED JOBS IDENTIFIED IN MOUNTAIN HOUSE MASTER PLAN AND SPECIFIC PLAN II

<table>
<thead>
<tr>
<th>Planning Document</th>
<th>Total Acres of Non-Residential Uses</th>
<th>Total Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Neighborhoods K and L Tentative Subdivision Maps</td>
<td>329</td>
<td>1,564</td>
</tr>
<tr>
<td>Mountain House Master Plan and Specific Plan II (estimates for Neighborhoods K and L)</td>
<td>326</td>
<td>1,492</td>
</tr>
</tbody>
</table>

consistent with existing plans and agreements. Storm drainage from the Neighborhoods K and L area would flow into existing drainage facilities that include Mountain House Creek and a water quality basin. These facilities have been designed in accordance with storm drainage Best Management Practices (BMPs).

Portions of Neighborhoods K and L are in a Federal Emergency Management Agency (FEMA) 100-year flood zone but would be re-mapped outside the 100-year flood zone when the site elevation is raised as part of the development allowed by the project. Subsequently, the FEMA 100-year floodplain map would be amended.

In 2007, the State of California passed Senate Bill 5, which requires 200-year flood protection for urban or urbanizing areas. As part of the Senate Bill 5 process, the Department of Water Resources released preliminary maps that indicate portions of the project site are within the 200-year floodplain. While the State has not yet determined the official 200-year floodplain elevation, flood protection would be provided in the same manner in which 100-year flood protection is being provided, by raising the elevation through fill.

The amount of fill to needed raise portions of Neighborhoods K and L above the FEMA 100-year flood elevation of 10.4 feet is approximately 2 million cubic yards. The fill material would come from the site during the excavation of the lakes and cut from the higher elevation portions of the site. Not all of the site would require fill. The portions closest to Old River are the lowest, at an elevation of 5 feet, and would be raised a minimum 5.4 feet to be removed from the FEMA 100-year floodplain. The southern portions of Neighborhoods K and L are already above the floodplain and would not require any fill.

**Water Lines and Agricultural Irrigation**

The MHCSD would provide domestic water to the project and has provided a Will Serve Letter to the applicant. The MHCSD water treatment plant is located on the north side of Byron Road west of the project site. The applicant would construct all of the required water facilities. The BBID, under contractual relations with the MHCSD, is providing raw water supply to the MHCSD. Facilities anticipated to be constructed by the applicant to provide water service to Neighborhoods K and L include the balance of backbone water facilities on the applicant’s lands, consistent with the MHCSD adopted Water Service Master Plan. However, specific requirements would be determined by the MHCSD as part of subsequent engineering design and approvals.

Several applicant-owned farm irrigation facilities currently exist on the project site. They include irrigation and drainage pipelines and ditches. Irrigation facilities would be removed during development. Improvement plans would be reviewed by the MHCSD. Additional detailed information regarding farm irrigation is included in the Neighborhood K and L Farm Irrigation and Drainage Reports completed by Condor in 2010 (Condor, 2010) and is addressed in Section 5.8, Hydrology and Water Quality, of this Initial Study.
Wastewater Lines

The MHCSD would provide wastewater service to the project. The MHCSD operates a wastewater treatment plant located north of Byron Road, east of the project site. To serve the project site, additional pipeline extensions from the existing backbone line located north of Byron Road, including some lift stations, would be installed and extended. Smaller sewer lines would be constructed under roadways to serve individual homes and businesses. The MHCSD currently discharges treated wastewater to Old River pursuant to a permit from the Central Valley Regional Water Quality Control Board (CVRWQCB).

Roads, Transit, and Other Transportation Improvements

Roads, transit, and other transportation improvements would be consistent with existing plans and agreements. Residential lots of Neighborhoods K and L would generally have access from two-lane collector and local roads, with some lots fronting on cul-de-sacs.

Roadway improvements for the proposed project are expected to be identified by the MHCSD and the San Joaquin County Community Development Department by way of conditions of approval for the Neighborhoods K and L Tentative Subdivision Maps. Specific improvements are envisioned to be built in phases according to levels of service and access requirements for each incremental phase of the subject subdivision. Actual improvements for the project site are anticipated to be constructed either by the MHCSD via developers’ payment of roadway impact fees, or by the applicant with fee credits being taken against actual improvements being constructed. Anticipated improvements to roads serving the proposed project include the following:

- **North-South Arterials – Central Parkway:** This four-lane north-south arterial at the center of the community runs from Mascot Boulevard to Byron Road. Central Parkway would be extended to the north over Byron Road across an existing four-lane bridge and would terminate at Old River.

- **North-South Arterials – Mountain House Parkway:** This four-lane, north-south arterial at the eastern edge of the community currently runs from I-205 to Byron Road. Mountain House Parkway would be extended to the north, to its terminus at Central Parkway. The extension would include a new at-grade railroad crossing.

- **East-West Arterials – Byron Road:** Byron Road is planned as a six-lane arterial road. The road would be constructed on a phased basis during the development of the SPII area, including the project site.

- **Other Internal Roads:** New internal streets within Neighborhoods K and L would be constructed as the proposed project builds out. Most of these would be collector street connections to arterial roads, and interconnected collector and local streets and alleys within each neighborhood, with some local streets terminating at cul-de-sacs. The proposed Tentative Subdivision Maps for Neighborhoods K and L show the proposed layout of collector streets (see Figures 3-2 and 3-3).
Transit: A transit stop is proposed for Neighborhoods K and L adjacent to the K-8 schools, consistent with SPII. A 2-acre transit station site has been set aside next to the UPRR tracks in Neighborhood L at the far southeastern corner of this neighborhood.

Pedestrian and Bike Trails: Class I and Class III bike paths are proposed throughout Neighborhoods K and L. Pedestrian sidewalks would be located along streets, and pedestrian connections are proposed at the termination points of many cul-de-sacs. In addition, a lakefront path is proposed for Neighborhoods K and L, consistent with SPII. Preliminary plans for bike lanes, transit stops, and trails are shown in Figures 3-7 and 3-8.

Telephone Service
Telephone and cable service would be provided by the MHCSD, which currently subcontracts with AT&T and Comcast for telephone service, cable television, and broadband.

Electrical/Gas Service
Electricity is to be provided by the Modesto Irrigation District, and gas service is to be provided by Pacific Gas & Electric Company (PG&E). These two companies would be responsible for constructing the necessary infrastructure for these services. A Modesto Irrigation District substation has been constructed outside Mountain House on the south side of Kelso Road in Alameda County. Construction of this substation was the subject of a separate environmental review document.

The existing PG&E Rio Osa overhead transmission line would remain in its current alignment just east of Neighborhood L.

Pipelines, Power Lines, and Railroad Tracks
The UPRR line, which traverses the community along Byron Road, is being treated as a future active line that may serve light commuter rail and other freight services. A specific combination of berm and masonry sound wall treatments would be used to achieve proper attenuation for noise-sensitive land uses along the north side of the rail line. These treatments would be installed wherever residential uses are proposed adjacent to the line.

Active fuel transmission lines exist in Byron Road and in the UPRR right-of-way. These pipelines would remain in place. On-site schools would be required to be set back from such lines by a specific distance. This issue is addressed in more detail in Section 5.7, Hazards, of the Initial Study.

The following fuel-related pipelines near the boundaries of the proposed project site were analyzed in conjunction with the Master EIR (MEIR) and the Initial Study dated December 2004 prepared in conjunction with the adoption of SPII:
Figure 3-8

PRELIMINARY PLANS FOR TRAILS, TRANSIT AND BIKE PATHS FOR NEIGHBORHOOD L

SOURCE: Carlson, Barbee & Gibson, Inc., 2010
Chevron/Texaco and the Kinder Morgan petroleum pipelines within the Byron Road and UPRR corridor.

A PG&E gas distribution line that runs northwest through the future Neighborhoods I and J.

All existing pipelines, except for the PG&E gas distribution line, are anticipated to remain in their existing alignments. No development is being proposed directly adjacent to the Byron Road/UPRR corridor pipelines, and all school facilities are sited to conform to state regulations for safety. The existing PG&E gas distribution line would be rerouted to follow future MHCSD arterial roadway alignments as development in the pipeline area occurs per the Facilities Agreement between the MHCSD and PG&E.

Community Edge Treatments

All community edge treatments required by the Master Plan and SPII would be provided. The edges include the Northern Community Edge along Old River. A cross-section of the community edges is shown in Figures 3-9 and 3-10.

Public Safety

Per requirements of the MHCSD, the Master Plan, and future conditions of approval for the Tentative Subdivision Maps north of Specific Plan I (SPI), the applicant would be funding, and possibly constructing on behalf of the MHCSD, a second permanent fire station (with equipment) as part of the implementation of SPII. This facility is envisioned to be located north of Byron Road, near the intersection of future Mountain House Parkway and Central Parkway in Neighborhood K just east of Neighborhood J, as recommended by the MHCSD’s fire protection provider, the Tracy Rural County Fire Protection District (which has contracted with Tracy Fire to provide fire protection services to Mountain House) (see Figure 2-3). The second fire station would be constructed at a time determined by the MHCSD to fulfill the Master Plan requirements, as well as the MHCSD’s Fire Protection Plan requirements.

Police services and ambulance services would be provided by the MHCSD through contracts with service agencies. The San Joaquin County Sheriff’s Department would provide police services, and ambulance services would be determined by the MHCSD. Further, it is assumed that a permanent law enforcement substation, as required by the Master Plan, would be constructed at a location to be determined by the MHCSD.

Off-Site Development

Improvements such as the water and wastewater plants, the raw water pump station and conveyance line, and Modesto Irrigation District electrical substation have been the subject of separate environmental review and are now constructed. Off-site locations for water storage tanks were evaluated in the Initial Study for SPII.
Figure 3-9

COMMUNITY EDGE MAP ALONG OLD RIVER, NEIGHBORHOOD K

SOURCE: Carlson, Barbee & Gibson, Inc., 2010
COMMUNITY EDGE MAP ALONG OLD RIVER, NEIGHBORHOOD L

Figure 3-10

TYPICAL COMMUNITY NORTH EDGE EDGE AT REGIONAL PARK SECTION
NOT TO SCALE

SOURCE:
Carlson, Barbee & Gibson, Inc., 2010
Based upon Master Plan implementation policies, a branch library for the Mountain House community must be provided when the population of Mountain House reaches 10,000 persons and must be a minimum of 5,000 sf. The buildout of Neighborhoods E, F, and G (SPI) may result in an exceedance of the 10,000-person threshold. A branch library has been provided at the Neighborhood Commercial Center in Neighborhood E.

A new high school is to be built when there are approximately 650 to 1,000 high school students within the Mountain House community. This high school has not yet been constructed but would be located within Neighborhood D to the south of the project site.

**APPROVALS REQUIRED FOR THE PROJECT**

The proposed project would require Tentative Subdivision Map approvals, grading permits, and building permits from San Joaquin County.

The proposed project would be consistent with the land uses and densities shown for the project site in SPII and would not require amendments to either SPII or the Mountain House Master Plan.

Federal, State, regional, and local agencies that may require permits for the proposed project prior to its construction and/or operation include the following:

- Regional Water Quality Control Board (National Pollutant Discharge Elimination System [NPDES] permit).
- San Joaquin Valley Air Pollution Control District (applicable construction-related permits).
CHAPTER 4
ENVIRONMENTAL DETERMINATION

OVERVIEW

The Environmental Checklist, consistent with California Environmental Quality Act (CEQA) Guidelines, was used to determine whether the proposed project is “within the scope” of the 1994 Mountain House Master EIR (1994 MEIR) and to examine the continued adequacy of the 1994 MEIR. The checklist and discussion assess whether 1) there are any additional significant environmental effects not previously examined in the 1994 MEIR, 2) any new mitigation measures are required, and 3) any substantial changes have occurred with respect to the circumstances under which the 1994 MEIR was certified or whether there is new available information which was not known and could not have been known at the time the 1994 MEIR was certified such that major revisions of the previous 1994 MEIR would be required (CEQA Guidelines Sections 15176 and 15179). A “substantial change” must involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines Section 15162). The Initial Study also assesses whether there are any additional environmental impacts that may require further mitigation that were not previously addressed in the 1994 MEIR.

The environmental factors checked below (black boxes) would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” requiring further mitigation, as indicated by the checklist on the following pages. As shown, five topics were identified.

☐ Aesthetics
☐ Agricultural Resources
☐ Air Quality and Greenhouse Gas Emissions
☐ Biological Resources
☐ Cultural Resources
☐ Geology and Soils
☐ Hazards
☐ Hydrology and Water Quality
☐ Land Use and Planning
☐ Mineral Resources
☐ Noise
☐ Population and Housing
☐ Public Services
☐ Recreation
☐ Transportation/Traffic
☐ Utilities and Service Systems

DETERMINATION

On the basis of this initial evaluation:

☐ I find that 1) a MEIR has been prepared for the project, 2) the Initial Study for the project has found that there are no additional significant effects and no new additional mitigation measures or alternatives required for the project that are not already discussed in the MEIR and subsequent
environmental documentation under the MEIR, 3) the project is within the scope of the MEIR, and 4) the proposed project will incorporate all feasible mitigation measures or feasible alternatives appropriate to the project as set forth in the MEIR and subsequent environmental documentation. Nothing further is required.

☐ I find that additional environmental review is required. A MITIGATED NEGATIVE DECLARATION will be prepared. The Initial Study has identified potential new or additional significant environmental effects that were not analyzed in the MEIR, but feasible mitigation measures or alternatives will be incorporated to avoid or mitigate the identified effects to a level of insignificance.

The Mitigated Negative Declaration will address any substantial changes that have occurred with respect to the circumstances under which the MEIR was certified or any new information that was not known and could not have been known at the time the MEIR was certified.

☐ I find that additional environmental review is required. A Mitigated Negative Declaration cannot be prepared under CEQA Guidelines Section 15178(b), therefore a FOCUSED ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the MEIR was certified more than five years prior to filing the application for this project and after completing an Initial Study it was determined that a Mitigated Negative Declaration would address substantial changes that have occurred with respect to the circumstances under which the MEIR was certified and would address new information.

☐ I find that the cumulative impacts, growth-inducing impacts, and irreversible significant effects identified in the MEIR are adequately addressed for the project.

Corinne King  
Associate Planner  
For: San Joaquin County Community Development Department

Signature: ___________________  
Date: 9/11/11
CHAPTER 5
ENVIRONMENTAL CHECKLIST

This section of the Initial Study includes a discussion of the existing environmental conditions at the site, the potential environmental impacts from the project, and applicable mitigation measures. Each topic (e.g., Land Use, Geology, etc.) has the following four subsections: 1) Setting, 2) Significant Impacts Identified in 1994 Master EIR (MEIR), 3) Findings Related to Significant Impacts Identified in 1994 MEIR, and 4) Discussion Regarding Neighborhoods K and L. The standard Initial Study Checklist questions are shown with boxes to denote the potential level of impact. If impacts are identified, they are followed by mitigation measures that are numbered and labeled.

The Environmental Checklist covers specific issues by topic (i.e., Aesthetics, Agricultural Resources, etc.) and is taken from Appendix G of the 2010 California Environmental Quality Act (CEQA) Guidelines. The six categories of potential impact are 1) Less than Significant or No Impact; 2) Potentially Significant Impact Adequately Addressed in MEIR; 3) MEIR Required Additional Review: No Significant Impact; 4) Less than Significant Impact due to Mitigation Measures in Project Description; 5) New Additional Significant Impact Not Addressed in MEIR; and 6) New Additional Mitigation Measures Required. One of the six boxes is checked for each issue.

The Environmental Checklist explanations follow the checked boxes so that the reader is fully informed as to why a specific box of the checklist was marked. The explanations identify earlier analyses, the source of the information for the conclusion reached, and mitigation measures either required already for the project, included in the project description, or suggested as part of the current analysis to reduce impacts to a less-than-significant level.
5.1 Aesthetics. Would the project:

a. Have a substantial adverse effect on a scenic vista? ☐ ☑ ☐ ☐ ☑ ☑ ☑
b. Substantially damage scenic resources? ☐ ☑ ☐ ☐ ☑ ☑ ☑
c. Substantially degrade the existing visual character of the surrounding area? ☐ ☑ ☐ ☐ ☑ ☑ ☑
d. Create a new source of light and glare that would affect day or night time views? ☐ ☑ ☐ ☐ ☑ ☑ ☑

Setting

Overview

The site of Neighborhoods K and L is mostly undeveloped, with lands that have historically been in agricultural use (see Figure 5.1-1, Views A and B). Old River forms the northern boundary of both neighborhoods (see Figure 5.1-2, View A). Bryon Road forms the southern boundary of Neighborhood L, while Central Parkway forms the southern boundary of Neighborhood K. There is no existing development on the project site. Mountain House Creek forms the western boundary of Neighborhood L and divides the two neighborhoods.

While Neighborhoods K and L are yet to be developed, Neighborhoods E, F, and G have been developed, and Neighborhood H, just south of Byron Road, is now under development. Portions of Central Parkway north of Byron Road have also been constructed.

The project area is currently mostly fallow land, having once been in active agricultural production (see Figures 5.1-1, 5.1-2, and 5.1-3). Portions of the project area are still farmed. All of the project area is fairly level, with only a few areas of tree cover near Mountain House Creek and Old River.

Views from Public Roads

The Neighborhood K project site is not visible from public roads that currently exist, such as Byron Road, due to the setback from these roads. The southern portion of Neighborhood L is visible from Byron Road. In the future, Neighborhoods K and L would be visible from new roads to be constructed as part of this development, such as from Central Parkway and Mountain House Parkway. None of the existing roads in the vicinity of Neighborhoods K and L are designated as a Scenic Corridor in the County General Plan 2010.
A) View south across Neighborhood K from Old River levee.

B) View southeast across Neighborhood K from Old River levee.
A) View looking west towards Neighborhood K from juncture of Mountain House Creek with Old River.

B) View southeast across Neighborhood L from Old River near Mountain Home Creek.
View looking west near center of Neighborhood L towards Mt. Diablo in the background and Neighborhood L in the foreground.
Old River forms the northern boundary of Neighborhoods K and L but is not visible from existing roads due to the levee that screens it from view. From Finck Road, just north of Old River, the project site is largely blocked from view by the existing levees.

From Byron Road, one looks north into the Neighborhood L area, across the railroad tracks toward the Old River levee and fallow fields in the foreground. Neighborhood K is separated from Byron Road by Neighborhood J, which has not yet been developed.

**Views from Waterways**

Old River forms the northern boundary of Neighborhoods K and L and the entire Mountain House community. The existing levee along Old River is about 12 feet higher than the ground level to the south, providing long-distance views when one stands atop the levee (see Figure 5.1-1, Views A and B). Vegetation that includes some mature trees along the banks of the levee creates a visual contrast to the nearby waterway and agricultural fields. Due to the height of the levee, views into the project site from boats using Old River are blocked. Boating use in this part of the river is limited due to the presence of the Department of Water Resources (DWR) barrier,¹ heavy vegetative growth (e.g., Brazilian elodea, sometimes referred to as Brazilian waterweed [*Egeria densa*], water hyacinth [*Eichhornia crassipes*]), and the shallow depth and narrow width of Old River. The nearest marina is located at the northwest corner of the Mountain House community. Many boaters head north from this point along Old River rather than east along the edge of the Mountain House community. No major roads are located at the northern side of Old River that would provide views into the Neighborhoods K and L project site. From Finck Road, a narrow two-lane road north of Old River, one cannot see the project site unless one climbs onto the adjacent levee. Even from this location, views are limited.

**Design Review Process**

The Mountain House Community Services District (MHCSD) has adopted the *Mountain House Community Services District Design Manual* (MHCSD, 1999), which addresses the design standards for public facilities that would be under the jurisdiction of the MHCSD. Elements addressed by the MHCSD Design Manual include streetscapes, walls and fences, paths, street furniture, lighting, signage, entries, community edges, parks, schools, civic facilities, and public works facilities. The MHCSD will review subdivision plans, building designs, and improvement plans for all new MHCSD facilities within the community for conformance with the MHCSD Design Manual and with all applicable Mountain House Master Plan programs, policies, and standards.

---

¹ This barrier is set up in the summer to prevent saltwater intrusion. Boaters are required to stop and to be shuttled across the barrier using boat trailers.
The design review process will also include review by the San Joaquin County Mountain House Design Consistency Review Committee (DCRC), which will review all discretionary and administrative implementing permits within Mountain House, Tentative Subdivision Maps and Special Purpose Plans, all subsequent development permits including improvement plans for community facilities and buildings, design guidelines for private development, and all development applications and building permits. The purpose of the DCRC is to verify that proposed projects are consistent with the policies and design requirements of the Master Plan, applicable Specific Plan, Development Title, and all other community approvals.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified significant visual impacts of the Master Plan related to the following:

1) Alteration of the rural visual quality of the site as seen from local roads, regional freeways, and proposed public pathways.
2) Screening of views from public roads towards Mt. Diablo and Mt. Diablo foothills to the west due to new buildings.
3) Strong visual contrast of industrial and high-density residential buildings compared to open space and potential for generating long shadows.
4) Removal of mature trees that frame views along public roads.
5) Potential generation of light and glare visible from public roads and residences.
6) Relocation of Weber-Herdlyn power line.

**Findings Related to Significant Impacts Identified in 1994 MEIR**

For all of the above potential visual impacts, the Master Plan was amended as recommended in the 1994 MEIR mitigation measures. The only mitigation measure not adopted was a recommendation to amend the MHCS Design Manual to define the composition and duties of the Community Review Board, since it was determined to be premature to do so at that time.

**Discussion Regarding Neighborhoods K and L**

a) *Would the project have a substantial adverse effect on a scenic vista?*

Currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the Specific Plan II (SPII) Initial Study. The existing rural visual quality of the project area would be replaced with urban-type development, with buildings ranging in height from one to two stories. Exceptions to the height limit would be allowed under the County's Development Title for areas zoned Residential Medium-High Density and Residential High Density (up to 3 stories), church steeples, flagpoles,
New development would be partially screened from view by proposed landscaping along roadways. (See Figures 5.1-4, Views A and B, for examples of new landscaping.) Landscaping along streets and in public areas would be required as part of the MHCSD design review and approval process. No designated scenic corridors are located in the vicinity of the Mountain House community.

While views toward Mt. Diablo and foothills to the west would be restricted by new buildings and new landscaping, some of these views would be available during winter months when deciduous trees have lost their leaves. Views for boaters along Old River would not be significantly affected, since the existing levee blocks views into the project site and most of the area along the river would be a regional park.

With the project, a substantial amount of fill would occur near the south side of Old River to raise homes out of the floodplain. The material for this fill would be derived from the cut material that would create lakes within Neighborhoods K and L. The fill material would generally match that for Neighborhoods I and J to the south and west of the project site and would not create major contrasts in elevation.

No new sound walls would be constructed in either neighborhood. Along Bryon Road, Neighborhood L would not include any residential uses. The land uses proposed in the area near this heavily travelled road would include a 12-acre water quality detention basin and a 2-acre transit station, with community commercial and high-density residential uses north of that.

As already stated, visual impacts would not be significantly different from what was evaluated in the 1994 MEIR. No additional mitigation measures would be necessary.

b) **Would the project substantially damage scenic resources?**

Some of the scenic resources in the project area include Old River, portions of Mountain House Creek, and the vegetative tree cover. Mountain House Creek would be retained in its current configuration and would continue to serve as part of the overall stormwater drainage system for the Mountain House community. While some scatterings of trees may be removed for new home construction, a significant number of new trees would be added with the new development. No significant trees visible from a major public roadway would be affected and no mitigation measures would be necessary.
A) View looking north along Great Valley Parkway near Neighborhood G. This view shows typical streetscape planting for arterial within Mountain House Community.

B) View along Mascot Boulevard, looking northeast, showing prototypical homes and streetscape within Neighborhood F.
c) Would the project substantially degrade the existing visual character of the surrounding area?

Refer to the discussion under Items (a) and (b) above.

d) Would the project create a new source of light and glare that would affect day or night time views?

Light and glare were addressed in the 1994 MEIR. No significant new light and glare impacts would result from the project. Lighting recommendations are also included in the text of SPII, which includes Neighborhoods K and L. Lighting is generally to be limited to 12 to 14 feet in height in Neighborhood Centers and is to be shielded. Parking area lights are to be shielded to minimize glare, as stated in SPII. No additional mitigation measures would be necessary.

Sources of Information

### 5.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Setting**

**Prime Farmland**

Mountain House Master Plan Area

The majority of the Mountain House Master Plan area has been designated “Prime Farmland” on the draft San Joaquin County Important Farmland Map (California Resources Agency, 1984). The exceptions include portions of Neighborhoods C, I, K, and L that contain lesser-quality “Unique Farmland,” grazing land, irrigated pasture, other lesser-quality farmland, or urban development.

---

1 This impact remains significant and unavoidable as stated in the 1994 MEIR.
Adjoining Areas
San Joaquin County has also identified lands abutting the eastern edge of the Master Plan area as Prime Farmland. Lands west of the Master Plan area (in Alameda County) are also classified as Prime Farmland, except for the area adjoining proposed Neighborhood C, which is classified as lesser-quality grazing land. Lands north of the Master Plan area are generally lesser-quality farmland (San Joaquin County, 1992).

Williamson Act Contracts and Agricultural Zoning

Specific Plan II Area
There are no Williamson Act contracts within the Specific Plan II area, including Neighborhoods K and L. All previous contracts have expired.

Adjoining Areas
Two parcels are under Williamson Act contract immediately east of Mountain House: 1) a 34-acre property at the northeast corner of Mascot Boulevard and Mountain House Parkway, and 2) a 158-acre property at the northeast corner of Grant Line Road and Mountain House Parkway. The contracts on both of these properties have been renewed.

Lands to the north and west of Neighborhoods K and L are zoned for agriculture. Lands across Old River north of the project site are zoned AG-40 and AG-80. Lands west of the Mountain House community in Alameda County are generally zoned for agriculture with 100- to 160-acre minimum lot sizes.

Other Agricultural Conditions

Project Site
The Neighborhood K and L project site consists mainly of agricultural lands that were historically leased for tenant farming. Several farm irrigation facilities once traversed the project site. Some of these facilities have since been removed or modified due to improvements made on the project site (Condor, 2010).

Adjoining Areas
Farmlands adjoin the project site to the north of Old River. Lands to the south, west, and east are part of the Mountain House project, and include Neighborhoods I and J, the Old River Industrial Park, the Town Center, and Neighborhood H.

Forest Land
There are no forest land or timberland resources on the Neighborhoods K and L project site or in the surrounding area. Trees on the site are limited to a scattering of mature trees along Old River levee. The project site and surrounding area are not zoned as forest land or timberland, or for timberland production.
Significant Impacts Identified in 1994 MEIR

The 1994 MEIR identified the following two significant agricultural impacts of the Master Plan:

1) Development of the proposed project would result in the loss of approximately 3,600 acres of Prime Farmland. (The 1994 MEIR identified this impact as significant and unavoidable.) As mentioned above, the exceptions to the Prime Farmland designation included Neighborhood K and L as they contained lesser quality “Unique Farmland,” grazing land, irrigated pasture, other lesser quality farmland, or urban development.

2) Conflicts between urban and rural land uses would occur, particularly where existing agricultural operations abut planned residential development. (The 1994 MEIR [page 6-25] also discussed pressures on adjoining agricultural lands as a potential growth-inducing impact of the proposed project.)

The 1994 MEIR also identified the following cumulative impact:

3) Cumulative loss of agricultural land in the Central Valley due to urbanization.

The 1994 MEIR did not address forest resources.

Findings Related to Significant Impacts Identified in 1994 MEIR

For the above potential agricultural impacts, the Master Plan was amended in accordance with some of the recommendations of the 1994 MEIR mitigation measures.

For Impact No. 1 above, the Master Plan (Section 17.13.4[a]) was amended to refer to a countywide agricultural mitigation fee. If such a fee were adopted within the County, funds could be used to purchase conservation easements to protect agricultural lands and the applicant for Mountain House could participate in the fee program. In November 2007, the County adopted an agricultural mitigation ordinance that provides for dedications of development rights on agricultural land or, in certain instances, a fee. However, the dedications of development rights or fee would not apply to Mountain House because the Mountain House site was shown at that time as planned for urban development and the agricultural mitigation ordinance only applies to land converted from an agricultural designation to urban uses after the adoption of the ordinance. The findings for the 1994 MEIR identified the loss of 3,600 acres of Prime Farmland as a significant unavoidable impact, and the Board of Supervisors adopted “Statements of Overriding Consideration” as required by CEQA.

For Impact No. 2 above, provisions for notification regarding the County’s Right-to-Farm Ordinance were added to the Master Plan (Section 3.2.4, Implementation, items b and c). Each deed for the parcels sold within Mountain House is to
include a reference to the County’s Right-to-Farm Ordinance. The 500-foot buffer area along the western project boundary, which the 1994 MEIR also recommended as mitigation, was changed to a 100- to 220-foot buffer. The Board of Supervisors found that the urban/rural conflict impact could be mitigated to a less-than-significant level by these measures.

For Impact No. 3 above, the 1994 MEIR (pages 6-10 through 6-11) recommended that San Joaquin County impose the agricultural mitigation fee recommended as mitigation for Impact No. 1 above, and that jurisdictions in San Joaquin County and elsewhere in the Central Valley (a) be encouraged to increase the densities of planned urban development on agricultural lands so that less agricultural acreage is used, and (b) modify their General Plans to designate agricultural lands for urban growth that will be accommodated during a planning period not to exceed 20 to 25 years. The 1994 MEIR further recommended that the legal findings adopted by each of the Local Agency Formation Commissions (LAFCOs) in the Central Valley counties when approving annexations of agricultural land or other LAFCO actions be modified to incorporate additional findings related to preservation of agricultural lands. As of June 2011, these recommended mitigation measures had not been specifically implemented.

Discussion Regarding Neighborhoods K and L

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?  

The currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the Specific Plan II Initial Study. As described in the 1994 MEIR, proposed development throughout the Specific Plan II area would convert approximately 700 acres of Prime Farmland to non-agricultural use. A portion (about 145 acres) of Neighborhood K is designated as “Unique Farmland,” which includes grazing lands and other similar agricultural lands. Another portion (about 90 acres) is designated as “Urban and Built Up” lands, which appear to include storm water basins within the project site. The remainder of Neighborhoods K and L is designated as Prime Farmland. As noted earlier, the findings for the 1994 MEIR identified the loss of this farmland as a significant unavoidable impact, and the Board of Supervisors adopted “Statements of Overriding Consideration” as required by CEQA to justify the loss of 3,600 acres of Prime Farmland associated with the entire Mountain House development.

The adopted Master Plan includes an implementation statement stating that if a countywide agricultural mitigation fee were established, an agricultural mitigation fee based on each agricultural acre converted to urban use must be paid by the developer to the County as specified in the ordinance. The County has adopted an agricultural fee. However, this fee excludes areas that have an urban General Plan designation or an urban zoning designation. At the time of
preparation of this Initial Study, all of Mountain House had an urban General Plan designation and nearly all of Mountain House had been rezoned, changing the permitted uses from agriculture to non-agriculture. Consequently, the agricultural mitigation fee would not be applicable to any development within Mountain House.

The proposed project would not have any significant new farmland conversion impacts not already addressed in the 1994 MEIR or the Specific Plan II Initial Study. Therefore, no new impacts would result and no additional mitigation measures are necessary.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Neighborhoods K and L project site does not contain land under Williamson Act contract, and the site is zoned for urban uses. No significant impacts would result and no mitigation measures are necessary.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

As noted earlier, project site and surrounding area do not contain forest or timber resources and are not zoned as forest land or timberland, or for timberland production. The project therefore would not conflict with any zoning for these land uses.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project would have no impact on forest land. See Item (c) above.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project would not involve other changes in the existing environment that would result in conversion of forest land to non-forest use; see Items (c) and (d) above.

As noted above, the development of Neighborhoods K and L would result in conversion of Prime Farmland to non-agricultural use. The following discussion describes the possibility of impacts on “Farmland” outside the project site. (As described under Item (a) above, “Farmland” is defined as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency.)
Potential for Rezoning of Off-Site Farmland. The Mountain House Master Plan and Specific Plan II (Section 2.1.2) state the following objective: “To size public services and facilities to maintain the community’s boundaries by serving only the Master Plan area.” Thus, any potential rezonings for adjoining lands, including land defined as “Farmland,” would depend upon the availability of water and wastewater services to serve such lands and would require environmental review at the time of rezoning requests. The water and wastewater treatment plants have been planned, sized, and designated to serve only development within Mountain House.

Specific Plan II (Section 2.1.2) also states the following objectives:

- To minimize impacts on County agricultural lands by developing the community in an orderly and efficient manner, at average residential densities of at least 6.5 units per acre.
- To establish strong community boundaries and reduce potential conflicts with adjacent agricultural lands by creating buffers along the western and eastern community boundaries.

Based on these provisions, it is reasonable to conclude that proposed development in Neighborhoods K and L would not create a significant potential for rezoning of off-site farmland, beyond the urban-agricultural conflicts and growth-inducing impacts assessed in the 1994 MEIR.

Potential for Land Use Conflicts with Adjoining Farmland. As noted earlier, provisions for deed notification regarding the County’s Right-to-Farm Ordinance have been added to the Mountain House Master Plan and the County’s Development Title. These provisions would apply to development in Neighborhoods K and L. The discussion below addresses additional measures being implemented to reduce potential land use conflicts with nearby agricultural operations.

Specific Plan II (Section 4.3.1) states that “all Community Edges required by the Master Plan will be implemented by Specific Plan II and implementing Tentative Maps and development applications.” These edges include the Western Community Edge along Alameda County line, the Eastern Community Edges along Mountain House Parkway and the Wicklund Cut, and the Northern Community Edge along Old River.

Specific Plan II (Section 4.3.1) further states that “during the incremental phasing of the various areas within Specific Plan II, a minimum of a 100-foot setback will be established between the ultimate build-out boundary of any phased subdivision and any interim on-going farm operations.”

A minimum 300-foot-wide setback is proposed between from the residential units in the eastern boundary of Neighborhood L and the existing agricultural operations to the east, outside of the Mountain House community. Regional
open space lands (within the project site) and Wicklund Cut provide this buffer (see Figure 2-4).

A regional park would extend along the northern boundary of Neighborhoods K and L, providing the required buffer. Old River would also serve as a buffer for agricultural lands to the north.

Potential for Disruption of Irrigation Service to Adjoining Farmland. The Mountain House Master Plan (Section 12.3.4, pages 12.11 through 12.13) contains policies and implementation measures for maintaining irrigation service to lands outside the Master Plan area that are within the Byron Bethany Irrigation District (BBID) service area. These provisions would apply to development in Neighborhoods K and L.

Farmland irrigation supply and drainage issues are described in a farm irrigation report for each Mountain House neighborhood. Farm irrigation reports must be submitted to and approved by the San Joaquin County Community Development Department with Tentative Subdivision Maps for each neighborhood. Farm irrigation reports have been prepared and approved for Neighborhoods K and L. The reports can be reviewed at the San Joaquin County Community Development Department.

Irrigation Service in Neighborhoods K and L. Neighborhoods K and L were once irrigated with water from Old River. Irrigation water was pumped from the river and distributed through pipes and ditches to individual fields by owners and/or tenants. Some fields within the project site are dry-farmed or not in production. A number of pipes and pumps exist throughout the project site, with gate valves along Mountain House Creek.

Irrigation supply facilities on the project site were abandoned when various improvements were made on the site in anticipation of development of Neighborhoods K and L. Already-abandoned improvements include the following: construction of effluent reservoirs to serve the wastewater treatment plant located east of the project site, re-alignment and reconstruction of Mountain House Creek, construction of Water Quality Basin No. 1 (near Byron Road), and construction of various storm water improvements (see Figure 5.2-1). Additionally, some of the fields within Neighborhoods K and L were used as a sprayfield for the application of treated effluent from the effluent storage reservoirs. Such use of the fields is no longer required because a discharge pipeline has been constructed to convey treated effluent from the wastewater treatment plant to Old River. The permit for the spray operations has since been closed (Condor, 2010).

Summary of Potential Effects on Irrigation Service to Adjoining Farmlands. The irrigation service changes described above would not disrupt irrigation service to farmlands outside the project site. No additional mitigation measures would be necessary for Neighborhoods K and L.
INFRASTRUCTURE IMPROVEMENTS ON PROJECT SITE

LEGEND
- Proposed neighborhood boundary
- Proposed neighborhood designation letter
- Mountain House Creek limits

SOURCE: Condor, 2010
Sources of Information

Alameda County, General Ordinance Code, Title 17, Zoning.


California Resources Agency (Department of Conservation), 2002. Alameda and San Joaquin County Important Farmland (map).

California Resources Agency (Department of Conservation), 1984. Farmland Mapping and Monitoring Program (cited in Mountain House New Community Master Plan and Specific Plan I Final Environmental Impact Report [San Joaquin County, 1994]).


San Joaquin County, 1994a. Findings Regarding Impacts Identified in Final Environmental Impact Report as Potentially Significant Environmental Impacts, County of San Joaquin, California, Mountain House/Adoption of Master Plan, Specific Plan; Conforming Amendments of General Plan and Development Title; Development Agreement.


San Joaquin County, Community Development Department, 1992. Mountain House New Town General Plan Amendment Final Environmental Impact Report. March (page 4.1-8, Figure 4.1-2 – “Prime Farmlands”).

SWA Group, 2004. Mountain House New Community Specific Plan II.
### 5.3 Air Quality and Greenhouse Gas Emissions

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d) Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) Create objectionable odors affecting a substantial number of people?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

#### Setting – Criteria Air Pollutants

**Ambient Air Quality Standards**

Air quality is regulated by several agencies, including the U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). At the federal level, the USEPA is responsible for implementation of the Federal Clean Air Act (FCAA) and establishing the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. These pollutants are called “criteria” air pollutants because standards have been established for each of them to meet specific public health and welfare criteria set forth in the FCAA. California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred

---

1 This impact remains significant and unavoidable as stated in the 1994 MEIR.
2 This impact remains significant and unavoidable as stated in the 1994 MEIR.
to as California Ambient Air Quality Standards (CAAQS) and has adopted air quality standards for some pollutants for which there are no corresponding national standards. Table 5.3-1 summarizes the national and California ambient air quality standards, along with common sources and effects of these pollutants.

**Attainment Status and Regional Air Quality Plans**

Pursuant to the 1990 Federal Clean Air Act Amendments (FCAA), the USEPA classifies air basins (or portions thereof) as “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the NAAQS had been achieved. Under the California Clean Air Act (CCAA) patterned after the FCAA, areas have been designated as attainment or nonattainment with respect to the state standards. Table 5.3-2 shows the current attainment status of the project area.

**State Implementation Plans and Federal Implementation Plans**

The FCAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The FCAA added requirements for states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the USEPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures. Failure to submit an approvable SIP or to implement the plan within mandated timeframes can result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

**San Joaquin Valley Air Pollution Control District Plans and Regulations**

The SJVAPCD is responsible for developing attainment plans for the San Joaquin Valley Air Basin (SJVAB), for inclusion in California’s SIP, as well as establishing and enforcing air pollution control rules and regulations. The attainment plans must demonstrate compliance with federal and state ambient air quality standards, and must first be approved by CARB before inclusion into the SIP. The SJVAPCD regulates, permits, and inspects stationary sources of air pollution. Among these sources are industrial facilities, gasoline stations, auto body shops, MSW landfills, and dry cleaners. While CARB is responsible for emission standards and controlling actual tailpipe emissions from motor vehicles, the SJVAPCD is required to regulate emissions associated with stationary sources such as agricultural burning and industrial operations. The SJVAPCD also works with eight local transportation planning agencies to implement transportation control measures, and to recommend mitigation measures for new growth and development designed to reduce the number of cars on the road. The SJVAPCD promotes the use of cleaner fuels and funds a number of public
### Table 5.3-1 Criteria Air Pollutants: State and National Standards, Effects, and Sources

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>State Standard</th>
<th>National Standard</th>
<th>Pollutant Health and Atmospheric Effects</th>
<th>Major Pollutant Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>1 hour</td>
<td>0.09 ppm</td>
<td>---</td>
<td>High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.</td>
<td>Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>0.070 ppm</td>
<td>0.075 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>1 hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
<td>Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.</td>
<td>Internal combustion engines, primarily gasoline-powered motor vehicles.</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>1 hour</td>
<td>0.18 ppm</td>
<td>100 ppb</td>
<td>Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.</td>
<td>Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.</td>
</tr>
<tr>
<td></td>
<td>Annual Avg.</td>
<td>0.030 ppm</td>
<td>53 ppb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>75 ppb</td>
<td>Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.</td>
<td>Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.</td>
</tr>
<tr>
<td></td>
<td>3 hours</td>
<td>---</td>
<td>0.5 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 hours</td>
<td>0.04 ppm</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM10)</td>
<td>24 hours</td>
<td>50 μg/m³</td>
<td>150 μg/m³</td>
<td>May irritate eyes and respiratory tract. Decreases in lung capacity. Can cause cancer and increased mortality. Produces haze and limits visibility.</td>
<td>Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).</td>
</tr>
<tr>
<td></td>
<td>Annual Avg.</td>
<td>20 μg/m³</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Particulate Matter (PM2.5)</td>
<td>24 hours</td>
<td>---</td>
<td>35 μg/m³</td>
<td>Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soilng.</td>
<td>Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.</td>
</tr>
<tr>
<td></td>
<td>Annual Avg.</td>
<td>12 μg/m³</td>
<td>15.0 μg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>Monthly Avg.</td>
<td>1.5 μg/m³</td>
<td>---</td>
<td>Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.</td>
<td>Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.</td>
</tr>
<tr>
<td></td>
<td>Quarterly</td>
<td>---</td>
<td>1.5 μg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 hour</td>
<td>0.03 ppm</td>
<td>---</td>
<td>Causes nuisance odor (rotten egg smell) and headache and breathing difficulties (higher concentrations).</td>
<td>Geothermal power plants, petroleum production and refining.</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 hour</td>
<td>25 μg/m³</td>
<td>---</td>
<td>Causes breathing difficulties, aggravates asthma, and reduces visibility.</td>
<td>Produced by the reaction in the air of SO₂.</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>8 hour</td>
<td>Extinction of 0.23/km visibility of 10 miles or more</td>
<td>---</td>
<td>Reduces visibility, reduces airport safety, lowers real estate value, and discourages tourism.</td>
<td>See PM2.5.</td>
</tr>
</tbody>
</table>

**Notes:** ppm = parts per million; μg/m³ = micrograms per cubic meter; km = kilometer.
Sources: California Air Resources Board (CARB), 2010 and CARB, 2009.
Table 5.3-2  **SAN JOAQUIN VALLEY ATTAINMENT STATUS**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation/Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National Standard</td>
</tr>
<tr>
<td>Ozone – 1 hour</td>
<td>No National Standard(^a)</td>
</tr>
<tr>
<td>Ozone – 8 hour</td>
<td>Nonattainment/Extreme(^c)</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM10)</td>
<td>Attainment(^e)</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM2.5)</td>
<td>Nonattainment(^f)</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Unclassified/Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>Unclassified/Attainment</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>Unclassified/Attainment</td>
</tr>
<tr>
<td>Lead</td>
<td>No Designation</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>No National Standard</td>
</tr>
<tr>
<td>Sulfates</td>
<td>No National Standard</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>No National Standard</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>No National Standard</td>
</tr>
</tbody>
</table>

\(^a\) Federal One Hour Ozone National Ambient Air Quality Standard was revoked on June 15, 2005.

\(^b\) On October 16, 2008, the USEPA proposed to approve the District’s 2004 Extreme Ozone Attainment Demonstration Plan for 1-Hour Ozone.

\(^c\) Though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, the USEPA approved reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

\(^d\) The State 8-hour ozone standard was approved by the CARB on April 28, 2005, and became effective May 17, 2006.

\(^e\) On September 25, 2008, the USEPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

\(^f\) The San Joaquin Valley is designated nonattainment for the 1997 PM2.5 federal standards. The USEPA designated the San Joaquin Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).


and private agency projects that provide innovative approaches to reducing air pollution from motor vehicles.

While all criteria pollutants are a concern of the SJVAPCD, a project’s air quality impacts are considered significant if they would violate any of the state air quality standards. Ozone precursors, PM10 emissions, and toxic air contaminants are emphasized in the review of applications for an Authority to Construct/Permit to Operate. Federal and state air quality regulations also require regions designated as nonattainment to prepare plans that either demonstrate how the region will attain the standard or that demonstrate reasonable improvement in air quality conditions. As noted, the SJVAPCD is responsible for developing attainment plans for the SJVAB for inclusion in California’s SIP.

The SJVAPCD’s primary means of implementing air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the SJVAPCD’s permit authority over such sources and through its
review and planning activities. In 2001, the SJVAPCD revised its Regulation VIII- Fugitive PM Prohibitions, in response to commitments made in the 1997 PM10 Attainment Plan to incorporate best available control measures (BACM). Regulation VIII consists of a series of dust control rules that emphasize reducing fugitive dust as a means of achieving attainment of the federal standards for PM10.

Also, District Rule 9510 Indirect Source Review (ISR) was adopted December 15, 2005. ISR was adopted to fulfill the SJVAPCD’s emission reduction commitments in the PM10 and Ozone Attainment Plans. ISR requires submittal of an Air Impact Assessment (AIA) application no later than the date on which application is made for a final discretionary approval from the public agency. The AIA will be the information necessary to calculate both construction and operational emissions of a development project. The proposed Neighborhoods K and L project qualifies as a development project under Rule 9510 because it contains more than 50 residential units.

Section 6.0 of the rule outlines general mitigation requirements for developments that include reduction in construction emissions of 20 percent of the total construction NOx emissions, and 45 percent of the total construction PM10 exhaust emissions. Section 6.0 of the rule also requires the project to reduce operational NOx emissions by 33.3 percent and operational PM10 emissions by 50 percent. Section 7.0 of the rule includes fee schedules for construction or operational emissions of NOx or PM10 in excess of those emission goals identified in Section 6.0 of the rule. Section 7.2 of the rule identifies fees for excess emissions that are $9,350 per ton for NOx emissions for year 2008 and beyond, and $9,011 per ton for PM10 emissions for year 2008 and beyond.

SJVAPCD also adopted Regulation 4901 to control wood-burning emissions from new residential development. Regulation 4901 prohibits wood-burning fireplaces within new residential development and limits the number of wood-burning heaters or stoves that can be constructed. The limit on wood-burning devices is partially based on the density of development, as follows:

- No person shall install a wood-burning fireplace in a new residential development with a density greater than two dwelling units per acre.
- No person shall install more than two Phase II Certified wood-burning heaters per acre in any new residential development with a density equal to or greater than three dwelling units per acre.
- No person shall install more than one wood-burning fireplace or wood burning heater per dwelling unit in any new residential development with a density equal to or less than two dwelling units per acre.

**CEQA Guidance Document**

In 1998, the SJVAPCD adopted a formal guidance document containing the District’s recommendations for preparing CEQA documents. This document, the
Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), was later updated in 2002.

In the guidance document, the SJVAPCD has established the standards of significance for evaluating project air quality impacts (SJVAPCD, 2002) A project impact would be significant if:

- A project results in estimated carbon monoxide concentrations exceeding the California Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours and 20 ppm for 1 hour;
- A project results in new direct or indirect emissions of ozone precursors (ROG or NOx) in excess of 10 tons per year;
- A project has the potential to frequently expose members of the public to objectionable odors; or
- A project has the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants.

For construction impacts, the pollutant of greatest concern to the SJVAPCD is PM10.3 The SJVAPCD recommends that impact significance be based on a consideration of the control measures to be implemented during project construction (SJVAPCD, 2002). Compliance with Regulation VIII, Rule 8011, and implementation of appropriate mitigation measures to control respirable particulate matter (PM10) emissions are considered by the SJVAPCD to be sufficient to render a project’s construction-related impacts less than significant. The SJVAPCD GAMAQI contains a list of feasible control measures for construction-related PM10 emissions.

Although the SJVAPCD GAMAQI recognizes that PM10 is a major air quality issue in the air basin, it does not establish quantitative thresholds for potential impact significance. However, for the purposes of this analysis, a PM10 emission of 15 tons per year from project operations is used as a significance threshold. Fifteen tons per year is the SJVAPCD threshold level at which new stationary sources requiring SJVAPCD permits must provide emissions “offsets.” This threshold of significance for PM10 is consistent with the establishment of the ROG and NOx thresholds of 10 tons per year, which are also offset thresholds established in SJVAPCD Rule 2201.

Setting – Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The accumulation of GHGs in the atmosphere has been linked to global climate change. Global climate change is a change in the average weather conditions on

3 Construction equipment emits carbon monoxide and ozone precursors. The SJVAPCD has determined that these emissions would cause a significant air quality impact only in the case of a very large or very intense construction project (SJVAPCD, 2002).
earth that can be measured by wind patterns, storms, precipitation, and temperature.

GHGs include all of the following naturally occurring and anthropogenic (human-made) gases: carbon dioxide (CO₂), methane, nitrous oxide (N₂O), sulfur hexafluoride, perfluorocarbons, hydrofluorocarbons, and nitrogen trifluoride (NF₃) (California Health and Safety Code Section 38505[g]). CO₂ is the reference gas for climate change. To account for the warming potential of GHGs, and to combine emissions of gases with differing properties, GHG emissions are typically quantified and reported as CO₂ equivalents (CO₂e).

Potential global warming impacts in California could include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity.

**State Regulations**

**AB 1493 and Amended “Pavley” Regulations**

On July 1, 2002, the California Assembly passed Bill 1493 (AB 1493) (signed into law on July 22, 2002), requiring CARB to “adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.” The regulations were to be adopted by January 1, 2005, and to apply to 2009 and later model-year vehicles. In September 2004, CARB responded by adopting “CO₂-equivalent fleet average emission” standards. The standards will be phased in from 2009 to 2016, reducing emissions by 22 percent in the “near term” (2009–2012) and 30 percent in the “mid term” (2013–2016), as compared to 2002 fleets.

**Executive Order S-3-05**

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, establishing statewide GHG emission reduction targets. This EO provides that, by 2010, emissions must be reduced to 2000 levels; by 2020, emissions must be reduced to 1990 levels; and by 2050, emissions must be reduced to 80 percent below 1990 levels. The Secretary of the California Environmental Protection Agency (Cal EPA) is charged with coordinating oversight of efforts to meet these targets and formed the Climate Action Team (CAT) to carry out the EO. Several of the programs developed by the CAT to meet the emission targets are relevant to residential construction and include prohibition of idling of certain classes of construction vehicles, provision of recycling facilities within residential buildings and communities, compliance with California Energy Commission (CEC) building and appliance energy efficiency standards, compliance with California’s green buildings and solar initiatives, and implementation of water-saving technologies and features.
Assembly Bill 32

In 2006, the California Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. In adopting this legislation (commonly known as “AB 32”), the legislature declared that “[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” Further, the legislature found that “the potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems.” The legislature added that “[g]lobal warming will have detrimental effects on some of California’s largest industries” and “increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.”

AB 32 initiated a long-term program for “the development of [GHG] emissions reduction measures.”4 It “creates a comprehensive, multi-year program to reduce GHG emissions in California, with the overall goal of restoring emissions to 1990 levels by the year 2020.”5 AB 32 recognizes that such an ambitious effort requires careful planning and a well-thought-out set of strategies. Accordingly, AB 32 delegated the authority for its implementation to CARB and directs CARB to enforce the statewide cap that would begin phasing in by 2012. Among other requirements, AB 32 required CARB to 1) identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020, and 2) develop and implement a Scoping Plan to be implemented by January 1, 2012.

In November 2007, CARB completed its estimates of 1990 GHG levels. Net emission 1990 levels were estimated at 427 million metric tons (MMTs). (Emission sources by sector were transportation, 35 percent; electricity generation, 26 percent; industrial, 24 percent; residential, 7 percent; agriculture, 5 percent; and commercial, 3 percent.6) Accordingly, 427 MMTs of CO₂ equivalent was established as the emissions limit for 2020. For comparison, CARB’s estimate for 2000 baseline GHG emissions was 473 MMT for 2000 and 532 MMT for 2010. “Business as usual” conditions for 2020 were projected to be 596 MMTs. Therefore, to comply with AB 32’s mandate, GHG emissions would need to be reduced from 596 MMTs (i.e., 2020 “business as usual”) to 427 MMTs (the 1990 level), which is a reduction of 29 percent. This latter forecast did not take any credit for reductions from measures included in the AB 32 Scoping Plan, including the Pavley GHG emissions standards for vehicles, full

---

4 As defined under AB 32, greenhouse gas emissions include the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride.
5 Written on a public notice prepared by the staff of CARB in connection with a meeting to consider “early discrete actions” related to AB 32 on October 25, 2007.
6 On a national level, the EPA’s Endangerment Finding stated that electricity generation is the largest emitting sector (34 percent), followed by transportation (28 percent), and industry (19 percent).
implementation of the Renewables Portfolio Standard beyond current levels of renewable energy, or the solar measures.

In December 2007, CARB approved a regulation for mandatory reporting and verification of GHG emissions for major sources. This regulation covered major stationary sources such as cement plants, oil refineries, electric generating facilities/providers, and co-generation facilities, which comprise 94 percent of the point source CO₂ emissions in the state.

On December 11, 2008, CARB adopted a Climate Change Scoping Plan to reduce GHG emissions to 1990 levels. The Scoping Plan’s recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, and Voluntary Early Actions and Reductions. These measures, shown below in Table 5.3-3 by sector, also put the state on a path to meet the long-term 2050 goal of reducing California’s GHG emissions to 80 percent below 1990 levels. CARB had until January 1, 2011, to adopt the necessary regulations to implement that plan. Implementation of individual measures must begin no later than January 1, 2012, so that the emissions reduction target can be fully achieved by 2020. The status of the Scoping Plan is uncertain; in January 2011, a superior court issued a tentative ruling that CARB’s environmental analysis for the Scoping Plan did not comply with CEQA, specifically in regards to alternatives to the cap-and-trade program. At this time, it is unknown whether CARB will appeal such a ruling, or whether the court will adopt a final ruling that is consistent with its tentative ruling. Nevertheless, the measures set forth in Table 5.3-3 provide useful information for purposes of identifying measures to comply with the targets in AB 32.

Renewable Portfolio Standard (RPS)

In 2002, SB 1078 required electric utilities to increase procurement of power generated by eligible renewable energy sources to 20 percent of total generation by 2017. In 2006, SB 107 accelerated the timetable to require 20 percent renewable energy by 2010. Then, in 2008, the Governor signed Executive Order S-14-08, which increased the required renewables content to 33 percent by 2020. In September 2009, the Governor signed Executive Order S-21-09, which directed CARB to adopt regulations consistent with the 33 percent renewable energy target in Executive Order S-14-08 by July 31, 2010. The 33 percent by 2020 goal was codified in April 2011 with Senate Bill X1-2, which was signed by Governor Edmund G. Brown, Jr. This new Renewable Portfolio Standard (RPS) preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020.
### Table 5.3-3  RECOMMENDED ACTIONS FOR REDUCING GREENHOUSE GAS EMISSIONS, BY SECTOR

<table>
<thead>
<tr>
<th>Measure No.</th>
<th>Measure Description</th>
<th>GHG Reductions (Annual Million Metric Tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-2</td>
<td>Low Carbon Fuel Standard (Discrete Early Action)</td>
<td>15</td>
</tr>
<tr>
<td>T-3'</td>
<td>Regional Transportation-Related Greenhouse Gas Targets</td>
<td>5</td>
</tr>
<tr>
<td>T-4</td>
<td>Vehicle Efficiency Measures</td>
<td>4.5</td>
</tr>
<tr>
<td>T-5</td>
<td>Ship Electrification at Ports (Discrete Early Action)</td>
<td>0.2</td>
</tr>
<tr>
<td>T-6</td>
<td>Goods Movement Efficiency Measures.</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>- Ship Electrification at Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- System-Wide Efficiency Improvements</td>
<td></td>
</tr>
<tr>
<td>T-7</td>
<td>Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)</td>
<td>0.93</td>
</tr>
<tr>
<td>T-8</td>
<td>Medium- and Heavy-Duty Vehicle Hybridization</td>
<td>0.5</td>
</tr>
<tr>
<td>T-9</td>
<td>High Speed Rail</td>
<td>1</td>
</tr>
<tr>
<td><strong>Electricity and Natural Gas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-1</td>
<td>Energy Efficiency (32,000 GWh of Reduced Demand)</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td>- Increased Utility Energy Efficiency Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- More Stringent Building &amp; Appliance Standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Additional Efficiency and Conservation Programs</td>
<td></td>
</tr>
<tr>
<td>E-2</td>
<td>Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)</td>
<td>6.7</td>
</tr>
<tr>
<td>E-3</td>
<td>Renewables Portfolio Standard (33% by 2020)</td>
<td>21.3</td>
</tr>
<tr>
<td>E-4</td>
<td>Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of public utilities)</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>- Target of 3000 MW Total Installation by 2020</td>
<td></td>
</tr>
<tr>
<td>CR-1</td>
<td>Energy Efficiency (800 Million Therms Reduced Consumptions)</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>- Utility Energy Efficiency Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Building and Appliance Standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Additional Efficiency and Conservation Programs</td>
<td></td>
</tr>
<tr>
<td>CR-2</td>
<td>Solar Water Heating (AB 1470 goal)</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Green Buildings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB-1</td>
<td>Green Buildings</td>
<td>26</td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W-1</td>
<td>Water Use Efficiency</td>
<td>1.4†</td>
</tr>
<tr>
<td>W-2</td>
<td>Water Recycling</td>
<td>0.3†</td>
</tr>
<tr>
<td>W-3</td>
<td>Water System Energy Efficiency</td>
<td>2.0†</td>
</tr>
<tr>
<td>W-4</td>
<td>Reuse Urban Runoff</td>
<td>0.2†</td>
</tr>
<tr>
<td>W-5</td>
<td>Increase Renewable Energy Production</td>
<td>0.9†</td>
</tr>
<tr>
<td>W-6</td>
<td>Public Goods Charge (Water)</td>
<td>TBD†</td>
</tr>
</tbody>
</table>
Table 5.3-3  **RECOMMENDED ACTIONS FOR REDUCING GREENHOUSE GAS EMISSIONS, BY SECTOR (continued)**

<table>
<thead>
<tr>
<th>Measure No.</th>
<th>Measure Description</th>
<th>GHG Reductions (Annual Million Metric Tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-1</td>
<td>Energy Efficiency and Co-Benefits Audits for Large Industrial Sources</td>
<td>TBD</td>
</tr>
<tr>
<td>I-2</td>
<td>Oil and Gas Extraction GHG Emission Reduction</td>
<td>0.2</td>
</tr>
<tr>
<td>I-3</td>
<td>GHG Leak Reduction from Oil and Gas Transmission</td>
<td>0.9</td>
</tr>
<tr>
<td>I-4</td>
<td>Refinery Flare Recovery Process Improvements</td>
<td>0.3</td>
</tr>
<tr>
<td>I-5</td>
<td>Removal of Methane Exemption from Existing Refinery Regulations</td>
<td>0.01</td>
</tr>
<tr>
<td>Recycling and Water Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RW-1</td>
<td>Landfill Methane Control (Discrete Early Action)</td>
<td>1</td>
</tr>
<tr>
<td>RW-2</td>
<td>Additional Reductions in Landfill Methane</td>
<td>TBD†</td>
</tr>
<tr>
<td></td>
<td>• Increase the Efficiency of Landfill Methane Capture</td>
<td></td>
</tr>
<tr>
<td>RW-3</td>
<td>High Recycling/Zero Waste</td>
<td>9†</td>
</tr>
<tr>
<td></td>
<td>• Commercial Recycling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increase Production and Markets for Compost</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Anaerobic Digestion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Extended Producer Responsibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Environmentally Preferable Purchasing</td>
<td></td>
</tr>
<tr>
<td>Forests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-1</td>
<td>Sustainable Forest Target</td>
<td>5</td>
</tr>
<tr>
<td>High Global Warming Potential (GWP) Gases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H-1</td>
<td>Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)</td>
<td>0.26</td>
</tr>
<tr>
<td>H-2</td>
<td>SF6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)</td>
<td>0.3</td>
</tr>
<tr>
<td>H-3</td>
<td>Reduction of Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)</td>
<td>0.15</td>
</tr>
<tr>
<td>H-4</td>
<td>Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)</td>
<td>0.25</td>
</tr>
<tr>
<td>H-5</td>
<td>High GWP Reductions from Mobile Sources</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>• Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Air Conditioner Refrigerant Leak Test During Vehicle Smog Check</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems</td>
<td></td>
</tr>
<tr>
<td>H-6</td>
<td>High GWP Reductions from Stationary Sources</td>
<td>10.9</td>
</tr>
<tr>
<td></td>
<td>• High GWP Stationary Equipment Refrigerant Management Program:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Refrigerant Tracking/Reporting/Repair Deposit Program</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.3-3  **RECOMMENDED ACTIONS FOR REDUCING GREENHOUSE GAS EMISSIONS, BY SECTOR (continued)**

<table>
<thead>
<tr>
<th>Measure No.</th>
<th>Measure Description</th>
<th>GHG Reductions (Annual Million Metric Tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-7</td>
<td>Mitigation Fee on High GWP Gases</td>
<td>5</td>
</tr>
<tr>
<td>A-1</td>
<td>Methane Capture at Large Dairies</td>
<td>1.0†</td>
</tr>
</tbody>
</table>

**Notes:** GHG = greenhouse gas, CO2e = carbon dioxide equivalent, TBD = to be determined.
† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target.

a This is not the SB 375 regional target. CARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPO’s and other stakeholders per SB 375.


**Title 24**

Although not originally intended to reduce GHGs, California Code of Regulations (CCR) Title 24 Part 6 (California’s Energy Efficiency Standards for Residential and Nonresidential Buildings) was first adopted in 1978 in response to a legislative mandate to reduce California’s energy consumption. Since then, Title 24 has been amended with the recognition that energy-efficient buildings that require less electricity and reduce fuel consumption also decrease GHG emissions.

**SB 1368**

Passed in 2006, SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 reduces carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as combined cycle natural gas plants. Overall, SB 1368 will dramatically lower GHG emissions associated with California’s energy demand as it will effectively prohibit California utilities from purchasing power from out-of-state producers that cannot satisfy the required performance standard.
SB 375

In September 2008, the California legislature adopted SB 375, legislation that 1) relaxes CEQA requirements for some housing projects that meet goals for reducing GHG emissions, and 2) requires the regional governing bodies in each of the state’s major metropolitan areas to adopt, as part of their regional transportation plan, “sustainable community strategies” that will meet the region’s target for reducing GHG emissions. SB 375 creates incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

SB 375 also directs CARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. CARB will determine the level of emissions produced by cars and light trucks, including SUVs, in each of California’s 17 metropolitan planning areas. Emissions reduction goals for 2020 and 2035 would be assigned to each area. CARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009 to provide recommendations on factors to consider and methodologies to use in this target setting process.

Local governments would then devise strategies for housing development, road-building, and other land uses to shorten travel distances, reduce vehicular travel time, and meet the new targets. If regions develop these integrated land use, housing, and transportation plans, residential projects that conform to the sustainable community strategy (and therefore contribute to GHG reduction) can have a more streamlined environmental review process.

CEQA Guidelines Amendments on Greenhouse Gases

On April 13, 2009, the California Office of Planning and Research (OPR) submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emissions, as required by Public Resources Code Section 21083.05 (Senate Bill 97) (OPR, 2009) to provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency adopted the CEQA Guidelines amendments with minor, non-substantial changes on December 31, 2009 and transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law (OAL). The adopted amendments became effective on March 18, 2010.

The adopted amendments incorporated relatively modest changes to various portions of the existing CEQA Guidelines. Modifications address those issues where analysis of GHG emissions may differ in some respects from more traditional CEQA analysis.

Adopted amendments include a new section (15064.4) to assist lead agencies in determining the significance of the GHG impacts. This section urges lead agencies to quantify, where possible, the GHG emissions of projects. In addition to quantification, this section recommends consideration of several other
qualitative factors that may be used in determination of impact significance, including:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the GHG emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The amendments include a new subdivision (15064.7[c]) to clarify that in developing thresholds of significance, a lead agency may appropriately review thresholds developed by other public agencies, including CARB’s recommended CEQA thresholds, or suggested by other experts, so long as any threshold chosen is supported by substantial evidence.

In addition, the adopted amendments add a new set of environmental checklist questions (VII. Greenhouse Gas Emissions) to CEQA Guidelines Appendix G. The new set includes the following two questions:

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

**Local Regulations**

The SJVAPCD have adopted published guidance on how to analyze GHG emissions, including the Final Staff Report: Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act (SJVAPCD, 2009a) and Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD, 2009b). SJVAPCD guidance relies on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), for assessing the significance of GHG emissions under CEQA.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified the following impacts with respect to air quality:

1) The project would increase regional emissions of criteria pollutants through new vehicle travel and new area-source emissions would have a significant and unavoidable adverse impact on air quality within the San Joaquin Valley Air Basin and adjacent San Francisco Bay Air Basin.

2) The project would cause a potentially significant increase in the potential for nuisance complaints due to adjacent agricultural activities.

3) The project would cause a less-than-significant increase in the potential for odor-related land use conflicts.
4) The project would cause a less-than-significant increase in carbon monoxide along streets and intersections providing access to the project site.

5) The project would cause significant emissions of PM10 during construction.

Findings Related to Significant Impacts Identified in 1994 MEIR

Impact Nos. 1, 2, and 5 are addressed below. Impact Nos. 3 and 4 were less than significant and mitigation measures were not required.

Impact No. 1

The 1994 MEIR identified three mitigation components for Impact No. 1 above. The first was:

a) The County should incorporate a Countywide requirement for an air quality mitigation fee as part of the Development Title. Such a fee should be imposed when new projects generating more than 200 trips per day are not able to reduce trip generation by at least 25 percent. This fee could be used for air quality mitigation improvements, such as park and ride facilities, transit, vehicle inspection, or old car buy-back programs.

The County has not adopted an air quality mitigation fee. However, the SJVAPCD recently adopted Rule 9510 (Indirect Source Review), which will require developers to submit plans for review before construction can begin. The indirect source review program will also require developers to mitigate emissions of nitrogen oxides and PM10 either from project-implemented mitigation measures and/or from fees paid to fund other air quality projects in order to offset emissions from development.

The second mitigation measure, which is advisory in nature, was:

b) Industrial or commercial operations at the project site with equipment that causes or has a potential for air pollution or that controls such air pollution may need to apply for an Authority to Construct and Permit to operate according to regulations of the San Joaquin Valley Unified Air Pollution Control District.

The third mitigation measure identified four conditions of approval regarding residential development. Section 10.5 of Specific Plan II (SPII) implements these four conditions.

The fourth of these conditions limited the number of fireplaces per residence to one. Subsequently, the SJVAPCD adopted Regulation 4901, which prohibits wood-burning fireplaces within new residential development and limits the number of wood-burning heaters or stoves that can be constructed based on the density of development. The adopted SJVAPCD regulation is a much more
stringent control on this source of emissions than Section 10.5 of SPII. Enforcement of this regulation would reduce emissions from wood burning from within the project, but regional emissions would remain significant and unavoidable.

**Impact No. 2**

For Impact No. 2 above, Section 3.3.4 of SPII addresses the recommended changes from the 1994 MEIR measures intended to reduce the potential for nuisance complaints due to adjacent agricultural activities. Deed notices addressing the County’s Right-to-Farm Ordinance are required for all homes within Mountain House.

**Impact No. 5**

For Impact No. 5 above, the 1994 MEIR identified as mitigation two additional construction practices in addition to the requirements of SJVAPCD Regulation VIII. Section 10.4 of SPII requires that construction practices comply with the adopted requirements of the SJVAPCD. Since the 1994 MEIR, the SJVAPCD has greatly expanded the requirements of Regulation VIII and the SJVAPCD rule goes well beyond the requirements of the mitigation measures identified in the 1994 MEIR. The provisions of Regulation VIII pertaining to construction activities require:

- Effective dust suppression for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities.
- Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days.
- Control of fugitive dust from onsite unpaved roads and offsite unpaved access roads.
- Removal of accumulations of mud or dirt at the end of the work day or once every 24 hours from public paved roads, shoulders and access ways adjacent to the site.

Regulation VIII requires that a dust control plan be prepared, and violations of the requirements of Regulation VIII are subject to enforcement action. Violations are indicated by the generation of visible dust clouds and/or generation of complaints.

**Discussion Regarding Neighborhoods K and L**

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The SJVAB is currently a federal and state nonattainment area for ozone and PM2.5, as well as nonattainment of the state PM10 standard. On September 25, 2008, the USEPA redesignated the SJVAB to attainment for the NAAQS and approved the PM10 Maintenance Plan. The SJVAPCD adopted the 2008 PM2.5 Plan (SJVAPCD, 2008) to assure attainment of the federal and State PM2.5
standards as soon as possible. The 8-hour ozone plan is the 2007 Ozone Plan (SJVAPCD, 2007), which assures attainment of the federal 8-hour ozone standard in the SJVAB. In regards to the 1-hour ozone standard, the adopted plans are the 2004 Extreme Ozone Attainment Demonstration Plan (SJVAPCD, 2004) and the California Clean Air Act Triennial Progress Report and Plan Revision 1997-1999 (SJVAPCD, 2001).

In formulating these and other compliance strategies associated with the air quality plans, the SJVAPCD relies on mobile-source inventories based on traffic forecasts provided by regional transportation planning agencies, which are in turn based on population and employment projections forecasted in local general plans. The SJVAPCD also relies on the newly adopted Indirect Source Review Rule (Rule 9510) to reduce ozone precursor and PM10 emissions from new development. A project would be judged to conflict with implementation of the regional air quality plan if it would result in population or employment projections substantially greater than those used in the preparation of a regional air plan.

The project would result in a small increase (approximately 13 percent) in employment compared to the assumptions used for the area in SPII. These changes do not result in population or employment projections substantially greater than those used in the preparation of the regional air plan. Project impacts would be less than significant.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction. For construction impacts, the pollutant of greatest concern to the SJVAPCD is PM10, which is discussed in greater detail under Item (d) below. Off-road equipment and on-road vehicle usage would also generate exhaust emissions during active construction. Although operated temporarily at construction sites, construction equipment is a substantial source category within the San Joaquin Valley Air Basin, generating ozone precursors (ROG and NOx) as well as PM10. However, since construction equipment is normally considered part of the existing inventory of sources, quantification of this emission is not typically recommended by the SJVAPCD (SJVAPCD, 2002).

Operations. As previously identified, project traffic emissions would have an impact on air quality outside the project vicinity. Trips to and from the project site would result in air pollutant emissions within the San Joaquin Valley and San Francisco Bay air basins. The residential portions of the project would also contain area sources such as natural gas combustion for heating, wood burning, and consumer products. The annual increase in regional emissions from auto travel and area sources for build out of the entire area was identified in the 1994 MEIR as significant and unavoidable, since emissions would well exceed the thresholds established by the SJVAPCD. Thus, project buildout emissions are well above the thresholds of significance for ROG, NOx, and PM10. Mitigation measures identified in the 1994 MEIR cannot provide the percent reduction in emissions that would be required to reduce impacts to below the SJVAPCD
thresholds of significance, so this impact would be significant and unavoidable, as was stated in the 1994 MEIR.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project’s incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. Notably, any project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. As discussed above under Item (b), project operations for the entire Mountain House community would result in significant emissions of ROG, NOx, and PM10 and would thus be considered cumulatively significant.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Localized Criteria Pollutants. Project traffic would increase concentrations of carbon monoxide along streets providing access to the project. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volume and congestion. Both the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2002) and statewide Transportation Project-Level Carbon Monoxide Protocol (Garza et al., 1997) recommend that carbon monoxide impacts be quantified for signalized intersections at Level of Service E or worse, as these locations represent “hot spots” for carbon monoxide and are the locations where violations of an ambient air quality standard are most likely.

The traffic impact analysis prepared by TJKM for the project examined Level of Service (LOS) for affected intersections. No existing or future signalized intersection is forecast to operate at LOS E or worse through the year 2035 with the proposed project. Since the project is within an attainment area for carbon monoxide (ambient air quality standards are currently attained) and in an area with low background concentrations, changes in carbon monoxide levels resulting from the project would not result in violations of the ambient air quality standards and would represent a less-than-significant impact.

Construction would result in numerous activities that would generate fugitive dust particulate matter, which is another localized pollutant. The fine, silty soils in the project area and often strong afternoon winds exacerbate the potential for dust, particularly in the summer months. Clearing, grading, leveling, earthmoving, and excavation are the activities that generate the most PM10 emissions. Impacts
would be localized and variable. However, with implementation of Regulation VIII controls, construction impacts would be reduced to less-than-significant levels.

**Toxic Air Contaminants (TACs).** Construction of the proposed project would result in short-term diesel particulate matter (DPM) emissions, which are TACs, from on-site heavy-duty equipment. Project construction would generate DPM emissions from the use of off-road diesel equipment required for site grading and excavation, and other construction activities.

The dose to which sensitive receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

Thus, the duration of the proposed construction activities (approximately 4.5 years) would only constitute approximately 6.4 percent of the total 70-year exposure period. In addition, there are no sensitive receptors in close proximity to the project construction activities. Because the use of mobilized equipment would be temporary and there are no sensitive receptors located immediately adjacent to areas where construction would occur for prolonged periods, DPM from construction activities would not be anticipated to result in the exposure of sensitive receptors to levels that exceed applicable standards.

In addition, the long-term operation of the project would not result in any non-permitted sources of toxic air emissions. As a result, exposure of sensitive receptors to substantial toxic air emissions from the project would be a less-than-significant impact.

**e) Would the project create objectionable odors affecting a substantial number of people?**

Project development would occur near the existing wastewater treatment plant that could be a potential source of odors under certain operational and meteorological conditions. (As discussed in Section 5.9, Land Use and Planning, of this Initial Study, the wastewater treatment plant is located in the Old River Industrial Park near the southeast corner of Neighborhood L.) Objectionable odors are not anticipated at the project due to the prevailing wind direction. However, since project development would be within the SJVAPCD screening distance of 2 miles for wastewater treatment plants and because wind direction
could change, mitigation has been added below to ensure odor impacts would be less than significant.

The potential for nuisance complaints due to nearby agricultural activities was addressed in the 1994 MEIR, and the Master Plan and Development Title included a requirement for deed notification of the County's Right-to-Farm Ordinance.

Mitigation Measures

**Mitigation Measure AIR-1:** The applicant shall implement the following measures to control exposure of sensitive receptors within the project site to odors generated by the nearby wastewater treatment plant:

- Prior to approval of the Tentative Subdivision Map, the project applicant shall relocate the 54 residential lots that are closest to the wastewater treatment plant and project boundary of Neighborhood L so that an increased buffer (e.g., on-site lake area) could be created between residential units and the wastewater treatment plant operations.

- The deeds to all project properties within Neighborhood L shall be accompanied by a written disclosure from the transferor, in a form approved by the County, advising any transferee of the potential adverse odor impacts from nearby wastewater treatment operations.

- If any odor complaints are received, the applicant shall work with the MHCSD to implement new technologies or handling procedures to minimize odors to the maximum extent possible.

f) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). This analysis uses both a quantitative approach and a qualitative approach, which are discussed under Items (f) and (g), respectively. The quantitative approach is used below evaluate whether the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

As described above, SJVAPCD guidance relies on the use of BPS, which are performance-based standards, for assessing the significance of GHG emissions under CEQA. According to SJVAPCD guidance, projects implementing BPS would be determined to have a less-than-significant individual and cumulative impact on global climate change and would not require project-specific quantification of GHG emissions. However, projects not implementing BPS are required to demonstrate a 29-percent reduction in GHG emissions, compared to business-as-usual, in order to have a less than significant impact. The 29-percent reduction target is consistent with GHG emission reduction targets established in the CARB AB 32 Scoping Plan. The following discussion summarizes the results of the Greenhouse Gas Emissions Technical Report,
Mountain House – Neighborhoods K & L (ENVIRON, 2011), which is included in this document as Appendix C.

The project inventory considers GHG emissions from energy use associated with residential buildings and non-residential buildings, mobile sources, area sources, solid waste, water and wastewater, swimming pools at recreational facilities, and vegetation. Promulgated regulations that would affect the project’s emissions are accounted for in this inventory. In particular, the Pavley Standards and the Renewable Portfolio Standards (RPS) would be in effect at the anticipated time of buildout of the project, and therefore are accounted for in the project emission calculations. Table 5.3-4 below presents baseline and project scenario GHG emissions, as well as the percentage reduction of the project over baseline.

The project’s GHG emissions, after incorporation of BPS (Mitigation Measure AIR-2) and other GHG reductions described in Appendix C, such as improved vehicle fuel efficiency and cleaner electricity generation (due to promulgated regulations) would be 42,951 metric tons of carbon dioxide equivalent per year (MT CO₂e/yr) and the baseline GHG emissions would be 61,019 MT CO₂e/yr. Therefore, the project’s GHG emissions would be approximately 29.6 percent below business as usual emissions. Thus, the project would not exceed the SJVAPCD GHG threshold, and the impact would be considered less than significant after mitigation.

Mitigation Measures

Mitigation Measure AIR-2: The applicant shall incorporate the following Best Performance Standards (BPS) into the project design:

- Minimization of Pedestrian Barriers. Site design and building placement shall minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation shall be avoided whenever possible. Barriers to pedestrian access of neighboring facilities and sites shall be minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, etc. (Credit: 1.0 percent reduction over baseline)

- Neighborhood Electric Vehicle Access. Physical development shall be consistent with requirements for neighborhood electric vehicles (NEV). Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For 1.0 percent reduction, a neighborhood shall have internal and external connections to surrounding neighborhoods. (Credit: 1.0 percent reduction over baseline)

---

7 Credit is defined as an anticipated reduction applied to project GHG emissions associated with the implementation of a specified SJVAPCD BPS.
Table 5.3-4  SUMMARY OF PROJECT GREENHOUSE GAS EMISSIONS

<table>
<thead>
<tr>
<th>Operational Category</th>
<th>Baseline (MT CO₂e/yr)(^a)</th>
<th>Project (MT CO₂e/yr)(^b)</th>
<th>Percent Reduction Over Baseline(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Sources</td>
<td>31.3</td>
<td>30.9</td>
<td>1.3%</td>
</tr>
<tr>
<td>Energy Usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>7,108</td>
<td>3,333</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>7,355</td>
<td>5,015</td>
<td>32%</td>
</tr>
<tr>
<td>Non-Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>382</td>
<td>179</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>1,320</td>
<td>928</td>
<td>30%</td>
</tr>
<tr>
<td>Mobile Sources</td>
<td>42,657</td>
<td>33,175</td>
<td>22%</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>1,027</td>
<td>1,027</td>
<td>0%</td>
</tr>
<tr>
<td>Water</td>
<td>910</td>
<td>827</td>
<td>9.1%</td>
</tr>
<tr>
<td>Swimming Pools</td>
<td>229</td>
<td>38</td>
<td>83%</td>
</tr>
<tr>
<td>Total Before BPS Reduction(^d)</td>
<td>61,019</td>
<td>44,552</td>
<td>27.0%</td>
</tr>
<tr>
<td>BPS Percent Reduction(^d)</td>
<td>–</td>
<td>–</td>
<td>2.6%</td>
</tr>
<tr>
<td>Total After BPS Reduction(^d)</td>
<td>61,019</td>
<td>42,951</td>
<td>29.6%</td>
</tr>
<tr>
<td>Vegetation (amortized)(^e)</td>
<td>-136</td>
<td>-136</td>
<td>0%</td>
</tr>
<tr>
<td>Total with Vegetation</td>
<td>60,883</td>
<td>42,814</td>
<td>29.7%</td>
</tr>
</tbody>
</table>

Notes:  MT CO₂e/yr = million tons of carbon dioxide equivalent per year, BPS = Best Performance Standards.
\(^a\) Baseline emissions for area sources, mobile sources, waste, and water are calculated by CalEEMod using 2005 as the modeled year. Baseline energy emissions for residential land use types are calculated using San Joaquin Valley Air Pollution Control District (SJVAPCD) baseline metrics for energy use, which are 2.88 MT CO₂e/DU/yr for natural gas and 2.98 MT CO₂e/DU/yr for electricity use (with “DU” representing a dwelling unit). The reduction achieved between this baseline metric and the project emissions is applied to non-residential land uses after removing the benefit for EnergyStar appliances from residential land uses. Baseline emissions here represent the project if it were built out in a business-as-usual manner. Additional methodology information and assumptions are detailed in Appendix C.
\(^b\) Project scenario represents emissions from the project in 2020.
\(^c\) Consistent with SJVAPCD guidance, the percentage reduction was calculated as the difference between the baseline and project emissions divided by the Baseline emissions.
\(^d\) Shea Homes has committed to incorporating BPS measures into the project. These are described in Mitigation Measure AIR-2 below.
\(^e\) Vegetation sequestration numbers presented here have been amortized over 40 years. The project would result in a net increase in vegetation and sequestered carbon dioxide (CO₂). This sequestration was not included in the 29 percent comparison, but is listed here for informational purposes only.

Source: Environ, 2011.
• **Bike Parking.** Non-residential portions of the project shall provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand. Short-term facilities shall be provided at a minimum ratio of one bike rack space per 20 vehicle spaces. Long-term facilities shall provide a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces. (Credit: 0.625 percent reduction over baseline)

g) **Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

The discussion below uses a qualitative approach, which addresses whether the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Theoretically, if a project implements reduction strategies identified in AB 32, the Governor’s Executive Order S-3-05, or other strategies to help reduce GHGs to the level proposed for California, it could reasonably follow that the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. However, this analysis considers that, because the quantifiable thresholds established by the SJVAPCD were formulated based on AB 32 reduction strategies, a project cannot exceed the numeric threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As discussed above under Item (f), the project would not exceed the numeric SJVAPCD GHG threshold, and the impact would be considered less than significant after mitigation. In addition, San Joaquin County has not established a GHG reduction plan. Therefore, the potential for the project to conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions would be less than significant with mitigation.

**Mitigation Measures**

**Mitigation Measure AIR-3:** Implement Mitigation Measure AIR-2.

**Sources of Information**

California Air Pollution Control Officers Association (CAPCOA), 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.


San Joaquin Valley Air Pollution Control District, 2002. *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)*.


### 5.4 Biological Resources

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, 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?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

#### Setting

The Mountain House project is located on the San Joaquin Valley floor, northwest of the City of Tracy, in southwest San Joaquin County, California. Neighborhoods K and L are located in the northeast portion of Mountain House, north of Byron Road and south of Old River. Both neighborhoods abut Old River to the north, and are separated by Mountain House Creek. Wicklund Cut forms the eastern edge of the Neighborhood L. The majority of the area has historically been farmed for hay or grain crops. Elevations were raised in recent years on the Neighborhood L site to construct the temporary evaporation and storage ponds.

---

1 This impact remains significant and unavoidable as stated in the 1994 MEIR.
ponds associated with the Mountain House Wastewater Treatment Plant operated by the Mountain House Community Services District (MHCSD). In addition, fills were imported over much of the Neighborhood K area in anticipation of future development and creation of the interconnected lake system.

The farmed fields and filled lands provide low quality habitat for wildlife and botanical resources and support a limited number of plant and animal species. In contrast, the Mountain House and Old River corridors and their associated wetlands contain the diversity of habitats required to support a variety of wildlife species that occur in southwest San Joaquin County.

**Previous Environmental Studies**

The Mountain House project area has been the subject of numerous prior environmental studies conducted over more than a decade. The methods and results of these prior studies are described in detail in the 1994 MEIR and the Master Plan (Baseline Environmental Consulting, 1994; San Joaquin County Community Development Department [SJCCDD], 1994a and 1994b), and the subsequent CEQA documents prepared for individual projects within the Specific Plan II (SPII) area (SJCCDD, 2004). The SPII area, which encompasses Neighborhoods K and L, was the subject of a number of more recent field surveys undertaken specifically for the 2004 CEQA document for the adoption of SPII, including preconstruction surveys for nesting birds were conducted to ensure that mass grading did not result in a take of protected nesting birds (Moore Biological Consultants, 2007a and 2007b).

**Field Surveys**

A number of field surveys were conducted between 2001 and 2010 within the SPII area that includes Neighborhoods K and L. In March and August 2001, preconstruction surveys for burrowing owl (*Athene cunicularia*) and San Joaquin kit fox (*Vulpes macrotis mutica*) were conducted for the Byron Bethany Irrigation District (BBID) raw water pipeline, water treatment plant, detention basin, and wastewater treatment plant sites (Moore Biological Consultants, 2001a and 2001b). All of these sites are situated along or adjacent to Byron Road, just south of Neighborhoods K and L. The BBID raw water pipeline extends into Alameda County. The only sensitive species observed during these surveys were a few burrowing owls observed just east of the detention basin site in Neighborhood L in March and August 2001.

In September 2003, a focused search for rose mallow (*Hibiscus lasiocarpus* [also known as California hibiscus]) was undertaken along the banks of Old River via boat (North Fork Associates, 2003). This survey, which was conducted during the appropriate time of year when the species would have been detectable, did not find the species. In October 2003, the south bank of Old River was comprehensively searched for blue elderberry shrubs with negative results. In addition, preconstruction surveys for nesting birds were conducted for Neighborhoods I, J, and K in May, June, and July 2007 (Moore Biological
Consultants, 2007a) and for nesting burrowing owls on Neighborhood L in July 2007 (Moore Biological Consultants, 2007b).

In 2010, biological assessments were conducted for Neighborhood K (Moore Biological Consultants, 2010a) and Neighborhood K (Moore Biological Consultants, 2010b). These involved surveys conducted in September and November 2010 and updated records search with the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Game (CDFG). The biological assessments provide a general description of vegetation and wildlife habitats found on the site, and conclusions regarding the potential for jurisdictional wetlands and occurrence of special-status species.

Field reconnaissance surveys of the site were conducted by the biologist retained for this Initial Study in July 2011. Following review of available documentation, field reconnaissance surveys were conducted to confirm previous studies and mapping, and to provide an update of existing conditions on the site. The survey was conducted by foot and automobile around the perimeter and through key areas within the site.

**Vegetation**

The vegetation within Neighborhoods K and L consists primarily of annual hay and grain crops, non-native grasses in fallow fields, and ruderal (weedy) species along field margins and areas of stockpiled soil.

**Vegetation in Fallow Fields**

Disturbed California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describes vegetation within the fallow fields throughout the project site. The ruderal strips along the edges of fields, roads and irrigation canals also support disturbed California annual grassland series vegetation. Some of the more common grass and weed species include yellow star thistle (*Centaurea solstitialis*), oats (*Avena* spp.), soft chess brome (*Bromus hordeaceus*), and ripgut brome (*Bromus diandrus*), filaree (*Erodium botrys*) and tumbleweed (*Amaranthus albus*).

**Riparian Habitats**

The riparian habitats along the north side of the Old River levee, lower Mountain House Creek and banks of Wicklund Cut are vegetated with small tree and shrub species that include willows (*Salix* spp.), Himalayan blackberry (*Rubus discolor*), California wild rose (*Rosa californica*), and alder (*Alnus rhombifolia*). Species such as mugwort (*Artemisia douglasii*), creeping wild rye (*Leymus triticoides*), and poison hemlock (*Conium maculatum*) are found in the understory of the riparian scrub habitats and banks of one of the ditches on the landward side of Wicklund Cut.
**Trees and Shrubs**

There are a number of trees in a patchy distribution along the bank of Old River, including larger willows, alders, and a few coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*). The only trees in the non-riparian areas on the site consist of two large, multitrunk willows in the northeastern corner of Neighborhood L, with trunk diameters of several feet. No blue elderberry shrubs, known to support the federally listed threatened Valley Elderberry Longhorn Beetle in the Central Valley, were observed within the project site.

**Notable Vegetation Communities**

The CNDDB (CDFG, 2011) contains records and classifications of sensitive, unique, or biologically important vegetation communities. Unique vegetation communities listed within the CNDDB in this portion of San Joaquin County include Great Valley Valley Oak Riparian Forest, Valley Sink Scrub, and Alkali Meadow as described in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland, 1986). These communities are entirely associated with aquatic and wetland habitat types that are not present within the project site. The riparian habitats associated with Old River and Mountain House Creek are not mapped as unique vegetation communities in the CNDDB.

**Wildlife**

The vegetation communities found within the project area provide limited quality habitat for wildlife species, with the exception of the riparian and aquatic habitats that border the site to the north along Old River and Mountain House Creek. A variety of raptors forage on small rodents in agricultural fields; however, both the diversity and abundance of these small mammals are limited by farming practices and recent fill activities. A number of songbirds and migratory birds also forage on grains and stubble in the fields; this use is seasonal and variable as crops change over time. Wildlife use of ruderal areas adjacent to roads, agricultural fields, and canals is even more limited due to habitat disturbance and activity levels associated with adjacent farming practices.

Different bird species have been observed in the project area during field surveys conducted over the past decade. Most of these birds are common species found in agricultural settings of San Joaquin County. Some of the species observed include turkey vultures (*Cathartes aura*), Swainson’s hawks (*Buteo swainsoni*), mourning doves (*Zenaida macroura*), Brewer’s blackbirds (*Euphagus cyanocephalus*), western kingbirds (*Tyrannus verticalis*), and California quail (*Callipepla californica*).

A variety of mammals occur within the project area, with the highest diversity using the riparian habitat along Old River. Desert cottontail (*Sylvilagus auduboni*), black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), and signs of coyote (*Canis latrans*) and raccoon (*Procyon lotor*) have been observed, and species such as striped skunk (*Mephitis mephitis*) and Virginia opossum (*Didelphis virginiana*) are known from the greater project area. A number of species of small rodents including mice...
Voles (Microtus californicus) are also likely to occur in the project area. Based on habitat types present, a number of amphibians and reptiles are also expected to occur in the area.

**Special-Status Species**

For the purpose of this assessment, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS); those listed or proposed for listing as rare, threatened, or endangered by the CDFG; plants occurring on lists 1B or 2 of the California Native Plant Society’s *Inventory of Rare and Endangered Plants of California*, (2001 and electronic edition update); and animals designated as "Species of Special Concern" by the CDFG.

**Plant Species**

A list of special-status plants evaluated for their potential to occur in the project area is presented in Table D-1 in Appendix D. This list was compiled through review of previous reports prepared for the Mountain House project area, a query of the CNDDB (CDFG, 2011), the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2001 and electronic edition update), and the biological assessments prepared for the site (Moore Biological Consultants, 2010a and 2010b). The CNDDB query included occurrences within a 5-mile radius of the project site.

Fifteen species of special-status plants were evaluated for their potential to occur in the project area (Table D-1). Of these species, only two, rose mallow (*Hibiscus lasiocarpus*) and Mason’s lilaeopsis (*Lilaeopsis masonii*), were identified as having the potential to occur in the project area, along suitable aquatic habitat that borders the site. Potentially suitable habitat for Mason’s lilaeopsis and rose mallow exists in some of the wetland areas associated with Old River, and Mason’s lilaeopsis has been located along Old River in the Mountain House project area in the past (Baseline Environmental Consulting, 1994). However, neither Mason’s lilaeopsis nor rose mallow was observed during focused surveys conducted by North Fork Associates in 2003 along the portion of Old River that abuts Neighborhoods K and L. No other special-status plants were observed within Neighborhoods K and L during the most recent surveys of the SPII area conducted in 2004, or the subsequent surveys conducted in 2010.

**Wildlife Species**

Special-status wildlife species with the potential to occur in the project area were also identified through review of previous documents and a search of the CNDDB (CDFG, 2011). The species evaluated are listed in Table D-1. Swainson’s hawk (*Buteo swainsoni*) and California burrowing owl (*Athene cunicularia*) have been reported to occur in the project area, and sensitive fish have been observed or are known to occur in habitats associated with Old River.
Other wildlife species that could use habitats in the project area include white-tailed kite (*Elanus leucurus*), tricolored blackbird (*Agelaius tricolor*), western pond turtle, and San Joaquin kit fox. These species are discussed individually below. Sensitive fish and an assortment of non-listed yet sensitive bird species are also discussed below. The remaining species listed in Table D-1 have little to no potential to occur within the project area on more than an occasional basis.

**Swainson’s Hawk.** The Swainson’s hawk is a state-listed threatened species. In the Central Valley, this hawk typically nests in oak or cottonwood trees associated with riparian habitats and agricultural fields. Swainson’s hawks prefer nesting locations that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, alfalfa, hay, and wheat crops. Swainson’s hawk nests have been observed in trees along the bank of Old River on the site in 2007 and in a eucalyptus tree on the west side of Kelso Road, approximately one-quarter mile north of the junction with Byron Road in 2002. Most Swainson’s hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson’s hawks leave their breeding territories by late August to early September.

**Burrowing Owl.** Burrowing owls are a CDFG California Special Concern Species (SCS). These owls are typically year-long residents in a variety of grasslands as well as scrub lands that have a low density of trees and shrubs with low-growing vegetation. However, burrowing owls that nest in the Central Valley may winter elsewhere. The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often use artificial burrows such as pipes, culverts, and piles of concrete pieces.

No evidence of nesting owls was observed during the preconstruction surveys performed in 2007 and the more recent biological assessment in 2010. Nevertheless, because burrowing owls are known to move between nesting locations where there are available burrows and good foraging opportunities, and because they have been observed in the project site vicinity, they could move into the project site on a seasonal basis or establish new breeding colonies on the site in the future.

**Tricolored Blackbird.** The tricolored blackbird is a CDFG California SCS and is also protected during its nesting season by the federal Migratory Bird Treaty Act (MBTA). Tricolors are colonial nesters requiring very dense stands of emergent wetland vegetation and/or dense thickets of wild rose (*Rosa* sp.) or blackberries (*Rubus* sp.) adjacent to open water for nesting. No tricolored blackbirds were observed nesting, foraging, or perching within Neighborhoods K and L (including the area along Old River) during the preconstruction surveys in 2007 or the biological assessment in 2010. However, tricolored blackbirds likely fly over or
forage in the project area on occasion, and there is suitable nesting and foraging habitat along the Old River corridor.

**White-Tailed Kite.** The white-tailed kite is protected during its nesting season by the federal MBTA, and is a fully protected species by CDFG. White-tailed kites forage in grasslands and agricultural fields. Suitable nesting habitat occurs in the project site, in trees along the Old River corridor, although no nests have been reported during recent surveys conducted in 2007 and 2010.

**Western Pond Turtle.** The western pond turtle is considered a California SCS by the CDFG. This turtle requires permanent or nearly permanent freshwater aquatic habitats with adequate basking sites such as logs or islands. Their nest locations may be found up to one-half mile from water. Old River, the lower reach of Mountain House Creek, and Wicklund Cut provide suitable habitat for western pond turtle, and this turtle was observed in Old River adjacent to the project area (Baseline Environmental Consulting, 1994).

**San Joaquin Kit Fox.** The San Joaquin kit fox is a federally listed endangered and state-listed threatened species. The kit fox dens in subterranean burrows and forages primarily for small mammals and insects in annual grasslands, pasturelands, and cultivated fields, and along the edges of orchards. The majority of the project site is considered potential San Joaquin kit fox wandering and foraging habitat, although intensive agricultural operations, residential buildout on adjacent properties, and human activity have substantially reduced habitat suitability.

No San Joaquin kit fox or concrete evidence of kit fox (i.e., scat, tracks, photographs) has been observed on the project site. However, there are two recorded sightings within a couple of miles. In 1991, prints of a San Joaquin kit fox were observed on a track plate about 1.1 miles north-northwest of the Henderson and Bethany Road junctions. In 2000, several recent dens were observed on Bureau of Reclamation property approximately one-quarter mile northwest of the intersection of Kelso Road and Mountain House Road, west of Neighborhood K.

**Other Special-Status Bird Species.** The project area contains patches of habitats that may be used by a number of non-listed birds that are either protected during their nesting seasons by the MBTA and/or California Fish and Game Code. For example, northern harrier (*Circus cyaneus*) is widespread in the Central Valley and may nest on occasion in agricultural fields or the few patches of emergent marsh habitat associated with Mountain House Creek and Old River. Similarly, California horned lark (*Eremophila alpestris actica*) may forage in agricultural fields within the project site and could conceivably nest in on-site grasslands. Loggerhead shrike (*Lanius ludovicianus*) and snowy egret (*Egretta thula*) could nest in on-site trees. Species such as white-face ibis (*Plegadis chihi*) and Aleutian Canada goose (*Branta canadensis leucopareia*) may forage on-site, but the site is not within the breeding range of these species.
**Sensitive Fish**

There are two sensitive salmonids that may potentially migrate through Old River on their way to or from upstream spawning grounds on a seasonal basis: fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead (*O. mykiss*). While no suitable salmonid spawning habitat occurs along the section of Old River adjacent to the project site, fish likely pass through this waterway on occasion in the fall and spring. While fall-run Chinook salmon are known to occur in Old River, federally listed winter-run Chinook salmon only use Central Valley drainages located farther to the north. Both fall-run Chinook salmon and steelhead use areas farther upstream in the San Joaquin River system that are suitable for spawning and rearing.

In addition to salmonids, both the federally listed threatened Delta smelt (*Hypomesus transpacificus*) and now de-listed Sacramento splittail were identified in the 1994 MEIR as potentially occurring in Old River on a seasonal basis. The Master Plan includes a requirement for future surveys for these species (as well as salmonids) in Old River, using otter trawls prior to project development along Old River. These surveys have not been undertaken, however, due to elimination of the proposed marina on Old River that was part of the original Mountain House proposal, the listing of Chinook salmon as a threatened species, and the associated need for a federal take permit to handle the species. Furthermore, since publication of the 1994 MEIR, the seasonal distribution of Delta smelt has been better documented and the likelihood of occurrence in Old River or nearby waterways is considered extremely low as this species rarely, if ever, migrates so far upstream from the Bay and lower Delta. Additionally, potential impacts on Delta smelt are routinely mitigated through construction scheduling pursuant to a programmatic agreement between USFWS and U.S. Army Corps of Engineers (USACOE), negating the need for project-specific surveys unless determined necessary by resource agencies for confirmation purposes.

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

Neighborhoods K and L are located within the Central/Southwest Transition Zone designated by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin COG, 2001). The SJMSCP was adopted in 2001 and is intended to provide a strategy for conserving agricultural lands and wildlife habitat while accommodating a growing population and property rights of individual landowners. The SJMSCP has established an assessment process for conversion of land to non-open space uses when such conversion might affect the plant and animal species covered by the SJMSCP. The species of concern known to or potentially occurring in the project area and covered by the SJMSCP include but are not limited to San Joaquin kit fox, Swainson’s hawk, western pond turtle, and burrowing owl. Sensitive species that have even a remote potential for occurrence in the SPII area, such as California tiger salamander and California red-legged frog, are addressed under the SJMSCP.
The ultimate goal of the SJMSCP is to provide 100,841 acres of habitat preserves over the projected 50-year lifetime of the SJMSCP. Most of the land for these preserves would be designated as conservation easements over existing agricultural lands in the areas covered by the SJMSCP. All of the SPII lands within the boundaries of the Mountain House community are within the area covered by the SJMSCP and would be subject to the adopted fee. Participation in the SJMSCP includes payment of a fee for each acre of land converted to urban use and compliance with Incidental Take Minimization Measures defined in Section 5.2 of the SJMSCP. The Incidental Take Minimization Measures pertinent to Neighborhoods K and L include pre-construction surveys for covered species, as well as measures to prevent and control ground squirrel occupation of the area early in the planning process. The applicant paid the respective development fees in 2007 assessed on a per acre basis in compliance with the SJMSCP (San Joaquin COG, 2007a and 2007b).

**Waters of the U.S. and Wetlands**

A number of wetland delineations have been conducted that have documented the types, locations, and areal extent of waters of the U.S. and wetlands within the Mountain House Master Plan area. The history of wetlands determination and mapping within Mountain House, as documented in the 1994 MEIR, began in 1990. The most recent wetland delineation in the Mountain House area was undertaken by Gibson & Skordal (2002) and subsequently verified by the U.S. Army Corps of Engineers (USACOE) in January 2003. Delineated waters of the U.S. within Neighborhoods K and L, according to this delineation, include Mountain House Creek and a wetland along a former irrigation ditch in the southeast corner of Neighborhood L referred to as the Wicklund Wetlands (0.85 acre), as well as the jurisdictional waters along Old River. The jurisdictional determination issued by the USACOE that included Neighborhoods K and L remained valid until January 30, 2008. The recent biological assessment conducted in 2010 confirmed that the limits of jurisdictional waters remain the same (Moore Biological Consultants, 2010a and 2010b). The 2003 verification expired in 2008 and will have to be reverified by the USACOE.

**Significant Impacts Identified in 1994 MEIR**

The following biological resource impacts were identified as potentially significant in the 1994 MEIR:

1) Project implementation would result in the elimination of over 4,000 acres of agricultural land and associated wildlife habitat on the site.

2) Project implementation would result in the elimination of suitable on-site foraging and dispersal habitat for San Joaquin kit fox.

3) Project implementation would result in the elimination of all existing and potential on-site foraging habitat for Swainson’s hawk.

4) In addition to San Joaquin kit fox and Swainson’s hawk, proposed development would affect a number of other special-status taxa.
5) The project would block the movement of most terrestrial species between the eastern base of the Altamont Hills and the Delta farmland region to the east.

6) Development of the project site would eliminate seasonal wetlands and temporarily flooded areas such as irrigated pasture and drainage swales.

7) Construction and operation of the proposed 60-acre marina would affect the productive inshore zone and riparian edge of Old River (no longer relevant since the marina has been removed from SPII).

8) Off-site improvements, such as the raw water conveyance pipeline and pumping facilities, wastewater storage ponds, and application of wastewater irrigation, would adversely affect sensitive biological resources.

Findings Related to Significant Impacts Identified in 1994 MEIR

The following discussion addresses the status of mitigation measures recommended in the 1994 MEIR for biological resources impacts that apply to construction of Neighborhoods K and L.

Mitigation Measure M4.11-1: The 1994 MEIR found that full mitigation that would offset project impacts of overall loss of farmland and open space was unachievable. While specific measures recommended to mitigate potential adverse impacts on San Joaquin kit fox, Swainson's hawk, other special-status species, the Mountain House Creek corridor, wetlands, and habitats associated with Old River would serve to partially mitigate the loss of existing wildlife habitat, the loss of over 4,000 acres of wildlife habitat was identified as a significant and unavoidable impact that could not be fully mitigated to a less-than-significant level.

Mitigation Measure M4.11-2: Mitigation for project impacts on San Joaquin kit fox consisted of a number of mitigation scenarios for off-site compensatory habitat mitigation and implementation of take avoidance measures during construction. The mitigation measures set forth in the 1994 MEIR were contingent upon further negotiation with regulatory and resource agencies, and increased compliance with the San Joaquin County General Plan, state and federal Endangered Species Acts, and California Fish and Game Code. The findings determined that there was the little support for the 1994 MEIR determination that implementation of the Master Plan would result in loss of San Joaquin kit fox habitat. Mitigation Measure M4.11-2 was modified to consist only of standard take avoidance measures during construction. These take avoidance measures were revised to be consistent with the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 1997b).
Mitigation Measure M4.11-3: Mitigation for project impacts on Swainson’s hawk consisted of a number of mitigation scenarios for on-site and/or off-site compensatory habitat mitigation and implementation of take avoidance measures during construction. The mitigation measures set forth in the 1994 MEIR were contingent upon further negotiation with regulatory and resource agencies, and increased compliance with the San Joaquin County General Plan, California Fish and Game Code, and the CDFG’s draft mitigation guidelines for Swainson’s hawk in the Central Valley (CDFG, 1994). The findings determined that adoption of the Mountain House Multi-Purpose Habitat Management Plan (HMP) with revisions proposed in this mitigation would reduce impacts on Swainson’s hawks to less-than-significant levels. While the Mountain House Multi-Purpose HMP was not adopted, the County has adopted the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) that will accomplish the desired mitigation objectives.

Mitigation Measure M4.11-4: Mitigation to protect any special-status species that may occur along the Old River corridor in the 1994 MEIR consisted of future surveys and preparation of habitat protection plans. This mitigation measure called for a focused survey for California hibiscus along the banks of Old River. This mitigation measure also called for trawling surveys in Old River to confirm presence or absence of Delta smelt, winter-run Chinook salmon, and Sacramento splittail. This mitigation measure further called for preparation of a habitat protection plan for special-status species that may occur along the Old River corridor prior to approval of a Specific Plan in this area.

Focused surveys for California hibiscus were conducted in 2003 as part of the environmental review for SPII. No California hibiscus was observed along the banks of Old River during these surveys. Trawling surveys in Old River were not done for SPII due to elimination of the proposed marina on Old River, the listing of Chinook salmon as a threatened species, and the associated need for a federal take permit to handle the species. Furthermore, since publication of the 1994 MEIR, the seasonal distribution of Delta smelt has been better documented and the likelihood of occurrence in Old River or nearby waterways is considered extremely low as this species rarely, if ever, migrates so far upstream from the Bay and lower Delta. Additionally, potential impacts on Delta smelt are routinely mitigated through construction scheduling pursuant to a programmatic agreement between USFWS and U.S. Army Corps of Engineers (USACOE), negating the need for project-specific surveys. SPII was approved in February 2005.

The project description for Neighborhood K includes the possibility of a future boat ramp as part of the park improvements along Old River. No details have been prepared identifying the location and design for the boat ramp, but further environmental review and permit authorization would be required to address the significance of potential impacts and need for construction avoidance and mitigation measures. This could include...
restrictions to protected special-status species associated with Old River as identified in Mitigation Measure M4.11-4.

Mitigation Measure M4.11-6: Mitigation for potential project impacts on wetlands called for a revision of the Draft Master Plan provisions regarding wetlands management to ensure adequate setbacks from wetlands and coordination with jurisdictional agencies. The findings determined that the requirement for increased setbacks should not be adopted due to inappropriate habitat value assumptions. The Master Plan addresses wetlands under Policies 7.2.8 (a - j), 7.2.9 (h), and 7.3.6 (a - g).

Mitigation Measure M4.11-7: Mitigation for potential impacts of the proposed marina on the Old River corridor called for future studies to determine if marina impacts could be mitigated to less-than-significant levels. This mitigation measure also reiterated the necessity of implementing Mitigation Measure M4.11-4 and posting boat speed limit signs (5 miles per hour) along the length of the Old River frontage. Although the marina is no longer proposed as part of SPII, the possible boat ramp in Neighborhood K could lead to similar impacts and would require further environmental review and possible restrictions as addressed above under Mitigation Measure M4.11-4.

Discussion Regarding Neighborhoods K and L

Construction of the residential areas, lakes, utilities, parks, and associated facilities in Neighborhoods K and L would result in potentially significant impacts on existing vegetation and wildlife habitats. Implementation of the 1994 MEIR mitigation measures listed above would reduce the majority of these potential impacts to less-than-significant levels. Further, the Neighborhood K and L project includes several implementation measures designed to reduce any outstanding impacts to less-than-significant levels. These implementation measures focus on reducing potential project impacts on existing habitats, sensitive species, jurisdictional waters of the U.S. (including wetlands), and trees. A discussion of each of the Initial Study checklist items, as it pertains to Neighborhoods K and L, is provided below.

a) Would the project 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?

Potential Habitat Loss. Development of Neighborhoods K and L would result in the conversion of approximately 442 acres of land that is primarily in agricultural production or fallow fields. This impact was evaluated in the 1994 MEIR. With the exception of the levee along Old River and Mountain House Creek corridor, virtually all of the project area has been leveled at some time in the past as part of agricultural production. Ongoing cultivation and maintenance of fence lines, roads, and canal banks have precluded tree and shrub growth, which is limited to
riparian vegetation along the banks of Old River and the two willows in the northeastern portion of Neighborhood L.

The project area is known or suspected to provide habitat for sensitive wildlife species, including Swainson’s hawks, burrowing owl, and other raptors such as white-tailed kite and northern harrier. Although the San Joaquin kit fox has not been documented in this area in the recent past, the project area has been suspected to be used on occasion by foraging kit fox. Sensitive aquatic species, including Delta smelt, fall-run Chinook salmon, and western pond turtle, may occur in Old River but are not likely to be directly affected by the project, since the project provides for a regional park along Old River. Further environmental review would be conducted if plans for the possible boat ramp in Neighborhood K are ever developed, ensuring that adequate measures are developed to protect these species associated with Old River. Mitigation Measure BIO-1 recommended below under Item (c) would serve to ensure that appropriate authorizations are secured and additional conditions are implemented as part of any modifications to jurisdictional waters, including the possible future boat ramp.

Master Plan and Specific Plan II Provisions. The Mountain House Master Plan calls for a combination of mitigation lands for impacts on wildlife and preservation of agricultural land. The Master Plan further indicates that reclaimed wastewater may be used on lands designated for habitat conservation. Off-site lands dedicated to habitat mitigation are intended to offset the loss of Swainson’s hawk, white-tailed kite, and northern harrier foraging habitat from development projects. The Master Plan calls in a general sense for preservation of a suite of sensitive plant and animal species that may occur in the area. Finally, the Master Plan identifies the need for future surveys of each Specific Plan area focused on identifying sensitive species. Such surveys were completed for SPII, which includes Neighborhoods K and L, as discussed earlier in this section.

To offset the loss of general habitat and open space as well as obtain authorization for incidental take of listed species, one of the primary SPII implementation measures involves participation in the SJMSCP, including all required take avoidance and pre-construction measures. Alternately, if the SJMSCP terminates or is unable to serve the project, applicants within the SPII area would use the HMP (see discussion under “Mitigation Measure M4.11-3” above) that would require adoption. A second general SPII implementation measure requires compliance with state and federal Endangered Species Acts and assures that the applicant will take sole responsibility for such compliance. A third general SPII implementation measure directs preservation of the existing Old River levee and associated habitats for both common and sensitive plant and wildlife species.

Detailed mitigation measures addressing the potential impacts of development on special-status species were incorporated into the Master Plan during the 1994 CEQA review process. No new significant impacts on biological resources have been identified related to development of Neighborhoods K and L that were not addressed during the 1994 CEQA review process or the SPII CEQA review.
process. The policies outlined in Sections 7.3.1, 7.3.2, and 7.3.4 of SPII would ensure that no significant impacts would occur.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Riparian habitats within the project area are limited to Old River, Mountain House Creek, and Wicklund Cut. Project activities within these habitats are limited to development of regional parklands along all three of these areas, the future extension of Mountain House Parkway and a pedestrian bridge across Mountain House Creek, and new outfalls from man-made lakes in both neighborhoods. The bridge crossings and outfalls into Mountain House Creek would be designed to minimize disturbance to the bed and bank of the creek, and would require authorizations from jurisdictional agencies. Regional park improvements would be designed to minimize disturbance and enhance habitat values along Old River and Mountain House Creek. The possible future boat ramp in Neighborhood K could also affect riparian habitat along Old River, and would be subject to further environmental review and permit authorizations from jurisdictional agencies when the design has been finalized.

There are no other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS, within the project area. The project would not result in substantial adverse impacts on sensitive natural communities.

c) Would the project 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?

Federally protected wetlands, as defined by Section 404 of the Clean Water Act, within the project area include Mountain House Creek, the 0.85 acre of wetlands along the west side of Wicklund Cut, and Old River. The lake in Neighborhood K is presumably exempt from regulatory jurisdiction as man-made features constructed in uplands.

The Master Plan requires maximum practicable preservation of jurisdictional waters of the U.S. and wetlands, and mitigation for unavoidable impacts. The Master Plan also identifies the need for buffers around preserved and enhanced wetlands, while still allowing passive recreation within the buffered areas. Further, urban (i.e., storm water) runoff must be treated prior to discharge into the jurisdictional areas contained within Mountain House Creek, which is part of the intended purpose of the lakes in Neighborhoods K and L. The Master Plan

2 A portion of this wetland may be off the site but the exact boundaries will be reverified with the USACOE.
requires preparation of a Wetlands Management Plan for every Specific Plan area that contains wetlands.

Direct impacts on jurisdictional waters would be relatively limited, requiring installation of rip-rap slopes at the outfalls from future lakes into Mountain House Creek, and possible abutment installations for the bridge crossings. No plans have been prepared for the possible future boat ramp in Neighborhood K, but it would require modifications to the bank of Old River. All modifications to jurisdictional waters would require authorizations from regulatory agencies, including the CDFG, USACOE, and Regional Water Quality Control Board (RWQCB). All conditions and mitigation requirements from these authorizations would have to be followed during construction to minimize adverse effects on wetlands and aquatic habitat. Mitigation Measure BIO-1 (below) is recommended to ensure appropriate authorizations would be obtained for proposed modifications to jurisdictional waters, including the possible future boat ramp in Neighborhood K.

**Mitigation Measures**

**Mitigation Measure BIO-1:** The following measures shall be implemented to ensure appropriate authorizations are secured as part of any modifications to jurisdictional waters, including the possible future boat ramp in Neighborhood K:

- Where verified waters of the United States are present and cannot be avoided, authorization for modifications to these features shall be obtained from the United States Army Corps of Engineers (USACOE) through the Section 404 permitting process. Similarly, a Section 401 Certification shall be obtained from the Regional Water Quality Control Board (RWQCB) where waters of the United States are directly affected. All conditions required as part of the authorizations by the USACOE and RWQCB shall be implemented as part of the project.

- A California Department of Fish and Game (CDFG) Stream Bed Alteration Agreement shall also be required where proposed project activities would affect the bed or banks of Mountain House Creek or Old River and any other regulated drainages on the site. The applicant shall submit a notification form to the CDFG, shall obtain all legally required agreements, and shall implement any conditions contained within that agreement.

- Consultation or incidental take permitting may be required under the California and federal Endangered Species Acts. The applicant shall obtain all legally required permits or other authorizations from the United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and CDFG for the potential “take” of protected species under the Endangered Species Acts.

- Orange construction fencing shall be installed around the boundary of all wetland areas to be preserved so that they are not disturbed during
construction. The fencing shall be placed a minimum of 25 feet out from the boundary of the wetland but may need to be adjusted if restoration activities are to be conducted within this area. Grading, trail construction, and restoration work within the wetland buffer zones shall be conducted in a way that avoids or minimizes disturbance of existing wetlands. In some cases, this may mean use of smaller equipment such as a Bobcat.

- A biologist/restoration specialist shall be available during construction to provide situation-specific wetland avoidance measures or planting recommendations, as needed.

d) Would the project 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?

Construction of Neighborhoods K and L would result in the conversion of open cropland to urban uses, and increased outdoor lighting along or near Mountain House Creek and Old River could result in a reduction in the habitat suitability of these riparian corridors. The loss of habitat and increased human activities could generate potentially significant impacts on species that occasionally move through the project area. The 1994 MEIR Mitigation Measure M4.11-5, which was subsequently incorporated into the Master Plan, would serve to mitigate the potential impact to a less-than-significant level.

Due to intensive agriculture, movement of native resident or migratory fish or wildlife species through the project area is limited. Lack of cover and the presence of structures, including fences, canals, and roads, currently limit movement of wildlife species, and no established native resident or migratory wildlife corridors are known to exist within the project area. However, conversion of open cropland to urban uses would contribute to a cumulative loss of habitat and limit the future movement of any species that occasionally move through the open fields. This cumulative loss of habitat was addressed in the 1994 MEIR and would be mitigated through participation in the SJMSCP.

The Old River and Mountain House Creek corridors provide opportunities for wildlife movement, as these corridors contain variable topography, shrubs, and emergent vegetation, as well as a source of water conducive to movement of species. Direct impacts on these riparian corridors are limited to the bridge crossings and lake outfalls into Mountain House Creek, and possibly the new boat ramp on Old River in Neighborhood K. In addition, increased human activity in the regional parklands and outdoor lighting along or near these corridors could result in a reduction in their habitat suitability. The increase in human activity and effects of nighttime lighting on wildlife movement is considered a potentially significant impact. However, implementation of adopted Master Plan policies addresses this issue and would mitigate the impact to a less-than-significant level.
e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Master Plan requires maximum practicable preservation of healthy trees. The project area contains only a few notable trees along the edge of Old River and the two large willow trees in the northeast corner of Neighborhood L. None of the trees along Old River would be removed, and it is uncertain whether the two willows can be retained because of fills that would be imported as part of future development. However, these trees are not considered “heritage oaks” or “historical” trees in San Joaquin County. Therefore, the project would not conflict with any policy or ordinance protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?

Construction of Neighborhoods K and L would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. The project area is located within lands covered by the SJMSCP, which was approved and adopted by San Joaquin County. The project applicant has complied with the SJMSCP Incidental Take Minimization Measures for all areas of Neighborhoods K and L to be disturbed, and thus is in compliance with the applicable Habitat Conservation Plan and the 1994 MEIR. The applicant paid the respective development fees in in compliance with the SJMSCP (San Joaquin COG, 2007a and 2007b). In the event that the SJMSCP terminates, the applicants within the project area would be required to comply with the Habitat Management Plan (HMP) but this HMP would need to be adopted formally. Use of the HMP would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan.

Sources of Information


California Department of Fish and Game, CDFG, 1994. *Staff Report Regarding Mitigation for Impacts to Swainson’s Hawk (Buteo swainsoni) in the Central Valley of California.* November 1.

California Department of Fish and Game, 2011. California Natural Diversity Database (CNDDB), Record Search, Biogeographic Data Branch, Sacramento, California.


Moore Biological Consultants, 2004b. *Biological Resources Inventory for the 14+/-Acre Silva-Vosti Site, Alameda County, California.* Prepared for Trimark Communities, April 19.


San Joaquin Council of Governments (COG), 2001. *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).*


San Joaquin County Community Development Department (SJCCDD), 1994a. *Final Environmental Impact Report: Mountain House Master Plan and Specific Plan I.*


San Joaquin County Community Development Department (SJCCDD), 2004. *Mountain House Specific Plan II; Initial Study, San Joaquin County, California.* December.


U.S. Army Corps of Engineers (USACOE), 1987. Technical Report Y87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MI.


United States Fish and Wildlife Service (USFWS), 1997b. *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. April.


### Issue

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5 Cultural Resources</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

#### Setting

In July 2003, a cultural resources study was completed for the entire Specific Plan II (SPII) area, of which Neighborhood K and L are a part (Peak & Associates, Inc., 2003). This study included a review of historical records and an intensive inspection of the study area in April, May, and June 2003. The intensive site investigation included a team of archaeologists walking parallel transects across the approximately 2,500-acre site, spaced at intervals of 15 meters or less.

As a result of the investigation, three newly identified resources from the historic period (greater than 50 years in age) were discovered and evaluated. Previously identified cultural resources were also examined. Of 19 cultural resources located within the study area and evaluated, none was found to be eligible for listing in the California Register of Historical Resources.

#### Historical Resources Criteria

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project would affect an archaeological site, it needs to be determined whether the site is an historical resource, which is defined as any site that:

Contains any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California and therefore may be considered an historical resource. Generally, the resource shall be considered by the lead agency to be "historically significant" if the resource...
meets the criteria for listing in the California Register of Historical Resources (Public Resources Code Section 5024.1, Title 14 CCR, Section 4852) including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) 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

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

For the California Register of Historical Resources, an historical resource must be eligible at the local, state, or national level under one (or more) of the four criteria, and retain integrity. Integrity is the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Historical resources must meet one of the criteria of significance and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Archaeological Studies in Project Area

A total of 10 archaeological studies were completed within the area of the overall Mountain House community between 1990 and 2001. The information gathered during these investigations is maintained by the Central California Information Center of the California Historical Resources Information System. From these earlier studies, 16 prehistoric and historic period cultural resources were identified within the boundaries of SPII. However, none of these resources was found to be eligible for listing in the California Register (Peak & Associates, Inc., 2003).

During the field reconnaissance undertaken in April, May, and June 2003, three newly identified cultural resources were discovered and two of the previously identified resources were re-recorded because the original recorders of these resources did not have complete access to the sites. The other 14 previously identified resources were spot-checked to see if conditions had changed enough to warrant re-recording, but they had not. The three newly identified cultural resources were all located south of Byron Road and south of the project site.

Two sites within the boundaries of Neighborhoods K and L were studied further. One included a potential midden site and the other included a potential “Indian Burial Mound.” Thirty-one test backhoe trenches were excavated to address the potential midden site and no concentration of artifacts was found. Other indicators of cultural activity, such as culturally modified sediment, also were not found. Based on the results of the test trenches, the archaeologist did not find
the evidence sufficient to warrant the placement of an archaeological monitor during the excavation of this particular area.

The second site, the potential "Indian Burial Mound," was tested by means of the excavation of 36 backhoe test trenches. None of the test trenches uncovered evidence of cultural material, although differences in the color of the excavated sediment were noted in one of the test trenches. Darker color, showing more organically enriched sediments, is sometimes indicative of cultural activity. The test zone depth was 5 feet.

Peak & Associates recommended that an archaeological monitor be present during any subsurface excavation in the area studied if excavation would occur below 5 feet.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified the following three potential impacts associated with Master Plan development:

1) Development of the project could result in the disturbance of currently unknown subsurface prehistoric cultural deposits or artifacts related to the prehistoric setting or historic archaeological deposits or features dating from the establishment of Euro-American settlement in San Joaquin County.

2) Development of the proposed project could disturb previously unknown human prehistoric burial sites.

3) The proposed project could destroy structures over 50 years of age that may have significant historical value.

**Findings Related to Significant Impacts Identified in 1994 MEIR**

For Impact No. 1 above, Section 7.4 of the Master Plan, Implementation Measures (a) through (f), deal with the recommended changes from the 1994 MEIR, addressing measures to undertake should unknown cultural resources be found. These measures also address the need for additional archaeological surveys when specific plans are developed.

For Impact No. 2 above, Section 7.4 of the Master Plan, Implementation Measure (e), was adopted regarding procedures to follow should unknown human prehistoric burial sites be discovered during construction.

For Impact No. 3 above, Section 7.4 of the Master Plan, Implementation Measures (d) and (f), were adopted regarding the need for surveys for each specific plan to determine if structures more than 50 years old could be affected by development. Measures required at the time of SPII have been completed.
Discussion Regarding Neighborhoods K and L

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

The Neighborhoods K and L development would not affect historical resources. As discussed in the “Setting” section above, none of the historical resources that were assessed was found eligible for listing in the California Register.

As with any surface inspection, there is always a remote possibility that previous activities (both natural and cultural) have obscured prehistoric or historic period artifacts or habitation areas, leaving no surface evidence to identify the resources. If, during construction activities, artifacts or non-native stone (obsidian, fine-grained silicates, basalt) are exposed, or if unusual amounts of bone or shell are observed, or if areas that contain dark-colored sediment that do not appear to have been created through natural processes are discovered, then work should cease in the immediate area of the discovery and a professionally qualified archaeologist should be contacted immediately for an on-site inspection of the discovery. If any bone is uncovered that appears to be human, then state law requires that the San Joaquin County Coroner be contacted. If the coroner determines that the bone most likely represents a Native American interment, then he or she must contact the Native American Heritage Commission in Sacramento so that they can identify the most likely descendants.

The above mitigation measure is addressed in the County’s Development Title, Section 9-1053.8M and 9-1053.9M. Therefore, no additional mitigation measures are considered necessary.

While Peak & Associates recommended the presence of an archaeological monitor for any subsurface excavations below 5 feet, this depth of excavation would not occur in the area studied because the area would be filled to bring the elevation of the project site above the 100-year floodplain. Thus, no monitor is considered necessary.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Refer to the discussion under Item (a) above.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Unique geologic features and paleontological resources have not been identified within the Neighborhoods K and L project site, and there is no evidence that paleontological resources exist at the site. The County’s Development Title, Section 9-1053.9M, would provide mitigation should as-yet unknown paleontological resources be uncovered during construction. Paleontological resources were not addressed in the 1994 MEIR.
d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Refer to Item (a) above. No additional mitigation measures would be needed beyond what is already required as part of the County’s Development Title, Sections 9-1053.8M and 9-1053.9M.

Sources of Information


San Joaquin County, 1992, San Joaquin County Development Title. Adopted July 29, as amended.
5.6 Geology and Soils. Would the project:

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?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

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 waste water disposal systems where sewers are not available for the disposal of waste water?

### Setting

**Topography**

The Neighborhoods K and L project site is relatively flat, sloping gently downward from south to north toward Old River. Elevations range from about 17 feet above mean sea level (msl) in the northern corner to about 25 feet above msl in the southern portion of the site.

---

1 This impact remains significant and unavoidable as stated in the 1994 MEIR.
Regional Geology

The project site, located in the upper San Joaquin Valley, is considered part of the Great Valley geomorphic province of California. The Great Valley is a relatively flat alluvial plain that is infilled with as much as 6 vertical miles of alluvial and marine sediment. The Great Valley is bounded to the west by the Coast Ranges and to the east by the Sierra Nevada. The Sacramento and San Joaquin Rivers drain the Great Valley through San Francisco Bay.

Regional geologic maps indicate that the geology in the vicinity of the project site is dominated by sediments that were deposited by streams draining the eastern slopes of the Altamont Hills to the west. These unconsolidated sedimentary deposits are of Holocene age (less than 11,000 years old) and comprise the surface and near-surface soils across the Mountain House community. For the Great Valley geomorphic province, sediments within the valley were mostly derived from erosion of the Sierra Nevada mountain range to the east and Coast Range Mountains to the west (Engeo, 2007a).

Seismicity

The San Joaquin Valley is a seismically active region of California, subject to occasional earthquakes. The seismicity of this region is concentrated near the boundary between the Coast Ranges and the Great Valley, two diverse geographic and geologic provinces. No known active nor potentially active faults have been mapped across the project site, and the site is not located in a Fault Rupture Hazard Zone as established by the Alquist-Priolo Earthquake Fault Zoning Act. The California Geologic Survey has defined active faults as faults that have had surface displacement within Holocene time (within the last 11,000 years). Potentially active faults are faults that show evidence of surface displacement during Quaternary time (within the past 1.6 million years). The active and potentially active faults in the vicinity of the Specific Plan II area (which includes the Neighborhoods K and L project site) are listed in Table 5.6-1.

The Great Valley Thrust fault is the nearest active fault to the project site. The United States Geological Survey (USGS) Working Group on California Earthquakes has mapped the surface rupture of the nearest segment of the Great Valley Thrust fault zone beneath the eastern foothills of the Diablo Range, approximately 5 miles southeast of the project site. Since rupture of the Great Valley fault zone does not usually extend to the ground surface, this fault system has only recently been recognized as a potential source of earthquakes. This fault is omitted from both the jointly published California Division of Mines and Geology (CDMG) and International Conference of Building Officials (ICBO) documents entitled “Maps of Known Active Fault Trace Near-Source Zones in California and Adjacent Properties of Nevada (1998)” and “Determining Distances from Faults Within and Bordering the State of California (1997)” for the purpose of determining near source seismic factors used in structural design (Engeo, 2007a).
Table 5.6-1  **ACTIVE AND POTENTIALLY ACTIVE FAULTS IN THE VICINITY OF THE SPECIFIC PLAN II AREA**

<table>
<thead>
<tr>
<th>Fault</th>
<th>Status</th>
<th>Distance to Project Area (Miles)</th>
<th>Estimated Maximum Earthquake (Moment Magnitude)a</th>
<th>Estimated Peak Horizontal Acceleration (%g)b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Valley Thrust (Segment 7)</td>
<td>Active</td>
<td>4</td>
<td>6.7</td>
<td>0.59</td>
</tr>
<tr>
<td>Greenville</td>
<td>Potentially Active</td>
<td>8</td>
<td>6.6</td>
<td>0.27</td>
</tr>
<tr>
<td>Concord-Green Valley</td>
<td>Active</td>
<td>25</td>
<td>6.2</td>
<td>0.12</td>
</tr>
<tr>
<td>Calaveras</td>
<td>Potentially Active</td>
<td>21</td>
<td>6.8</td>
<td>0.13</td>
</tr>
<tr>
<td>Hayward</td>
<td>Active</td>
<td>26</td>
<td>6.4</td>
<td>0.13</td>
</tr>
<tr>
<td>San Andreas</td>
<td>Active</td>
<td>46</td>
<td>7.9</td>
<td>0.13</td>
</tr>
</tbody>
</table>

a  The moment magnitude is related to the physical size of fault rupture, the movement across the fault, and the strength of the rock that is faulted. Earthquakes with magnitudes of 6 or greater are capable of causing widespread damage.

b  Peak horizontal acceleration is defined as the speed at which the ground moves with respect to the force of gravity (g). An upward vertical ground acceleration of 1.0 g would throw loose objects into the air.

Source: Condor, 2002.

**Site Soils**

Under the San Joaquin County Development Title and Chapter 4 Article 7 of the California Subdivision Act, the project applicant is required to prepare preliminary soils reports (i.e., geotechnical studies) prior to the submittal of each Tentative Subdivision Map area within the Mountain House community. Geotechnical engineering studies were conducted in March 2007 for Neighborhood K and in September 2010 for Neighborhood L and included subsurface explorations and laboratory soil testing (Engeo, 2007b and 2010). The purpose of the completed studies was to characterize geotechnical conditions that might affect design or construction of proposed development and to provide geotechnical recommendations and design criteria to mitigate any identified impacts. A separate geotechnical study was completed for the potential fire house location within Neighborhood K (Engeo, 2007a).

Subsurface explorations were conducted throughout Neighborhoods K and L to depths ranging to 26.5 feet below the ground surface (bgs). The explorations indicate that the neighborhoods are underlain by medium stiff to hard silty clay and sandy clay with occasional thin layers of soft silty clay and medium dense to dense silty and clayey sand to a depth of 26.5 feet.

**Soil Expansion**

Soil expansion is a phenomenon in which clayey soils expand in volume as a result of an increase in moisture content, and shrink in volume upon drying. Changes in soil volume as a result of changes in moisture content can cause
stress and result in damage to foundations. Expansive soils are commonly identified with an expansion index test that evaluates the percentage of clays and liquid limit. It is generally accepted that soils with an expansion index greater than 50 are susceptible to soil expansion.

For Neighborhood K, surface residual soils were characterized as having an expansion index of 25 to 57. For Neighborhood L, the expansion index ranged from 12 to 40 (Engeo, 2007b and 2010).

**Liquefaction**

Another issue is liquefaction potential. Liquefaction hazards are most common in loose to medium dense, granular and saturated soils; such soils include sands and silts in which the space between individual particles is completely filled with water. Liquefaction occurs when soil with little or no cohesion loses strength when saturated and starts to flow. This is triggered by shaking, such as that caused by an earthquake, or could be due to any significant ground vibration. Liquefaction can occur when the strength and density of a soil is decreased by seismic shaking. Liquefaction is caused by four main factors: depth of groundwater, soil type, soil density, and the seismicity of the area. Liquefaction can be responsible for widespread structural failure, lateral spreading of liquefied deposits and overlying soils, and localized settlement of the ground surface.

The liquefiable potential of site soils was determined by measuring penetration resistance using the Standard Penetration Test (SPT). The results of the analysis indicate that isolated areas of subsurface sands exist in Neighborhoods K and L that have the potential to liquefy during a strong seismic event.

**Lateral Spreading**

Lateral spreading is defined as the lateral movement of earth materials and overlying structures during an earthquake as a result of pore pressure build-up or liquefaction. Some of the proposed lake slopes in Neighborhoods K and L are located within potentially liquefiable material that has the potential for lateral spreading to occur during a design-level liquefaction event. However, due to the non-continuous nature of the potentially liquefiable material, the lateral movement in a design-level earthquake is expected to be minimal (Engeo, 2007b and 2010).

**Groundwater**

Generally, groundwater is a reflection of the surface topography. In the project area, depth to groundwater is expected to fluctuate in response to both seasonal rainfall and irrigation of surrounding farmland. During subsurface investigations conducted in 2007 and 2010, groundwater was encountered in all soil borings in Neighborhood K at depths of 3 to 12 feet below ground surface (bgs) and in Neighborhood L at 4.5 to 14.5 feet bgs. It was noted that dewatering of groundwater may be required for backfilling of irrigation ditches and installation of underground utilities (Engeo, 2007b and 2010).
Significant Impacts Identified in 1994 MEIR

The 1994 MEIR identified a significant and potentially significant geology and soils impact of the Master Plan, as follows:

1) Strong ground shaking during an earthquake could cause structural damage and injuries to residents of the proposed project.

Findings Related to Significant Impacts Identified in 1994 MEIR

The Master Plan required the preparation and distribution of a Community Earthquake Preparedness Plan to reduce project impacts associated with strong ground shaking during an earthquake (Policy 6.8.3a). Structures will be designed and constructed in accordance with recommendations listed in the geotechnical engineering study for each neighborhood. Despite mitigation efforts, this remains a significant, unavoidable impact and findings related to this fact were adopted for the 1994 MEIR certification.

Discussion Regarding Neighborhoods K and L

a) Would the project 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.

No Alquist-Priolo Earthquake Fault Zones have been mapped in San Joaquin County. No active faults have been identified within the Mountain House community. Therefore, surface ground rupture from faulting is not considered a significant hazard at the project site. No impact related to fault rupture is expected to occur as a result of project development. No mitigation measures are necessary.

ii) Strong seismic ground shaking?

San Joaquin Valley is a seismically active region of California. Strong ground shaking resulting from earthquakes along nearby or distant faults represents the greatest seismic hazard at the Mountain House community. Active and potentially active faults in the vicinity of the project site are listed in Table 5.6-1.

The intensity of ground shaking at any particular site is a function of many factors, including 1) earthquake magnitude, 2) the site’s distance from the epicenter, 3) the duration of strong ground motion, 4) local geologic conditions (soil characteristics and topography), and 5) depth to bedrock. As indicated in Table 5.6-1, the project site may be susceptible to earthquake magnitudes of 6.2 or higher. During an earthquake, structural damage at the project site may include damage to buildings and infrastructure (roads, bridges, utilities).
The project would be required to comply with all California laws designed to minimize the potential adverse effects of an earthquake. These laws include the Essential Services Buildings Seismic Safety Act of 1986, the Hospital Seismic Safety Act of 1972, the Field Act of 1933, and the requirements of the latest California Building Code (CBC). Mountain House Community Services District (MHCSD) standards and the Uniform Building Code (UBC) would also apply.

The 1994 MEIR identified Mitigation M4.6-1 (preparation of a Community Earthquake Preparedness Plan) to promote public awareness and education on earthquake hazards. This plan has been completed and is currently being implemented by the MHCSD.

Existing mitigation measures and policies related to strong seismic ground shaking can be found in the 1994 MEIR (Mitigation M4.6-1) and the Master Plan (Policies 6.5.I(b) [Emergency Preparedness] and 6.8.3 [Soils, Geologic, and Seismic Hazards]).

Despite project compliance with California laws related to earthquake hazards and the implementation of mitigation measures called for in the Master Plan and 1994 MEIR, the impact on Neighborhoods K and L related to ground shaking would be significant and unavoidable and could not be mitigated to a less-than-significant level. No additional mitigation measures are available. This impact was addressed in the 1994 MEIR, and no new impacts related to ground shaking have been identified for the Neighborhoods K and L development.

iii) Seismic-related ground failure, including liquefaction?
Laboratory soil testing conducted and summarized in geotechnical engineering studies for Neighborhoods K and L indicates that thin, discontinuous, potentially liquefiable deposits are present in the project area. These deposits create the potential for hazards to people or structures, such as damage to structural foundations, lateral spreading, and/or localized settlement of ground surfaces. Although the studies also suggest that overlying non-liquefiable soils make liquefaction in the area unlikely, they provide recommendations to mitigate potential liquefaction hazards in the project area.

Liquefaction hazards at Neighborhoods K and L were evaluated using Standard Penetration Test (SPT) blow counts or Cone Penetration Test (CPT) data, a peak ground acceleration (PGA) of 0.4g, and a mean moment magnitude of 6.4. The results of the analysis indicate that potentially thin, discontinuous deposits of liquefiable materials (e.g., isolated layers of sands and low-plasticity silts) exist in Neighborhood K and L (as discussed earlier).

With respect to seismic-related ground failure, the proposed project would result in less-than-significant impacts with mitigation incorporated. The geotechnical engineering studies for these neighborhoods identified a number of ways to minimize such impacts. These measures would be integrated into the design of structures for Neighborhoods K and L to mitigate impacts to less-than-significant levels.
iv) Landslides?

Neighborhoods K and L are located on flat terrain (less than 1-percent slopes). The 1994 MEIR indicated that the project site is located outside areas of southwest San Joaquin County identified as susceptible to landsliding. Evidence of slope failures and/or landslides has not been mapped within or immediately adjacent to Neighborhoods K or L or the greater Mountain House community. The geotechnical studies completed for Neighborhoods K and L also concluded that the potential for earthquake-induced landsliding to occur is considered very low (Engeo, 2007b and 2010). Therefore, no significant landslide impacts are expected, and no mitigation is necessary.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Excessive soil erosion is not expected to occur within Neighborhoods K or L because average slopes at the project site are less than 1 percent. However, project grading for cuts and fills made for building pads, roadbeds, and surface drainage would require the stripping of such areas of all vegetation, debris, organic topsoil, or any existing fill or other unsuitable material or soil.

Project construction would be required to comply with National Pollutant Discharge Elimination System (NPDES) program requirements. The Phase I NPDES storm water program, administered by the State Water Resources Control Board (SWRCB) Division of Water Quality, regulates storm water discharges from major industrial facilities, large and medium-sized municipal separate storm sewer systems (those serving more than 100,000 people), and construction sites that disturb 5 or more acres of land. Under the program, all land disturbances of 5 acres or more are required to implement Best Management Practices (BMPs) to prevent soil erosion and the off-site migration of sediment-laden runoff during construction. The site-specific plan that includes erosion control BMPs is called the Storm Water Pollution Prevention Plan (SWPPP). Additionally, Master Plan Policy 6.8.3(b) and the County Development Title require that adequate efforts be implemented during construction to control or eliminate soil erosion and sedimentation associated with construction activities.

Once construction is completed and project topsoil has become stabilized with hardscape and vegetation, soil erosion in the project area would be greatly reduced. Additionally, all urban runoff from the project site would flow to online water quality basins within the Mountain House Creek corridor that would help to remove sediment and soil particles from site runoff. These basins would require periodic maintenance, including desilting and vegetative clearing to ensure proper functionality. Sedimentation and soil erosion water quality issues are further addressed in Section 5.8, Hydrology and Water Quality, of this Initial Study.

Soil erosion and sedimentation were also addressed by Policies 4.2.2.P.a and 4.2.2.P.d (Grading Standards) and Policy 6.8.3.P.b (Soils, Geologic, and Seismic Hazards) of the Master Plan. No additional mitigation measures are required to
reduce project impacts related to soil erosion and loss of topsoil to less-than-significant levels.

c) **Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

See responses under Items (a)(iii) and (a)(iv) above. The geotechnical engineering studies for these neighborhoods identified a number of ways to minimize such impacts. These measures would be integrated into the design of structures for Neighborhoods K and L to mitigate impacts to less-than-significant levels.

d) **Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1994), creating substantial risks to life or property?**

The UBC classifies the expansive nature of soils based on an expansion index. It is generally accepted that soils with an expansion index greater than 50 are susceptible to soil expansion. Soil expansion was also addressed in Master Plan Policy 6.8.3.O.a (Soils, Geologic, and Seismic Hazards).

Laboratory testing indicates that soils in Neighborhoods K and L have a medium to high expansion potential, creating the potential for substantial risks to life or property. Unless properly mitigated, soil expansion has the potential to damage foundations; cause large cracks in exterior walls, floors, and ceilings; and cause wavy "roller coaster" surfaces along driveways, sidewalks, and streets. Some techniques to mitigate these problems are moisture conditioning, lime treatment, or the replacement of expansive soils with engineered fill. Site preparation and structural design in Neighborhoods K and L would be completed in accordance with geotechnical engineering studies for these neighborhoods to mitigate the impacts. Therefore, the impacts would be less than significant.

e) **Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

No septic tanks or alternative waste disposal systems are proposed for the project site. All wastewater would be collected in a piping system connected to the existing wastewater treatment plant located just east of Neighborhood L. The wastewater treatment plant is further discussed in Section 5.16, Utilities and Service Systems, of this Initial Study. The project would have no impact on septic systems or alternative wastewater disposal systems. Thus, no mitigation is necessary.
Sources of Information


5.7 Hazards. Would the project:

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?

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 located 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?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Setting

Introduction

The Mountain House Master Plan requires that an Environmental Site Assessment be prepared and submitted with each Tentative Subdivision Map. A Phase I Environmental Site Assessment (ESA) report was prepared for Neighborhoods K and L (Condor, 2004a). The purpose of the Phase I ESA was to identify, to the extent feasible, recognized environmental conditions in
connection with the Neighborhoods K and L sites. The Phase I ESA investigated
previous ownership and uses of the sites to partially satisfy the innocent
landowner defense to the Comprehensive Environmental Response,
Compensation and Liability Act (CERCLA) and to document those environmental
conditions that could potentially affect development. A Limited Phase II ESA was
also prepared to evaluate recognized environmental conditions for
Neighborhoods K and L identified in the Phase I ESA (Condor, 2004b). The
Phase II ESA more closely evaluates potential contamination issues and
potential health risks associated with historical agricultural land use practices at
the sites.

Site Topography and Natural Features

Mountain House is located in the upper San Joaquin River Valley of the Great
Valley Geomorphic Province of California. The Great Valley is an alluvial plain
that is drained by the San Joaquin and Sacramento Rivers through San
Francisco Bay.

Mountain House Creek, Dry Creek, and Old River are the primary drainages for
storm water runoff at Neighborhoods K and L. Mountain House Creek originates
in the Altamont Hills and flows southwest to northeast between Neighborhoods K
and L to Old River at the northern project site boundary. Dry Creek runs parallel
to Mountain House Creek and traverses the westernmost corner of Neighbor-
hood K before discharging to Old River. Old River flows east to west along the
northern project site boundary.

The ground surface in and around Neighborhoods K and L is generally level and
slopes gently (less than one percent) northeast toward Old River. The average
ground surface elevations in Neighborhoods K and L are approximately 10 feet
above mean sea level (msl) and 18 feet above msl, respectively. However,
ground surface elevations range from 0 feet above msl along the northern site
boundaries at Old River to 25 feet above msl in the south.

Generally, groundwater flows as a subdued reflection of the surface topography.
During subsurface investigations conducted in 2007 and 2010, groundwater was
encountered in all soil borings in Neighborhood K at depths of 3 to 12 feet below
the ground surface (bgs) and in Neighborhood L at 4.5 to 14.5 feet bgs (Engeo,
2007, 2010).

Past and Present Land Use

Agricultural land uses have dominated Neighborhoods K and L since the early
1900s. The primary crop types cultivated at these sites included alfalfa, sugar
beets, corn, and wheat (SJCCDD, 1994). Pesticides and herbicides have been
used on the sites due to past and present agricultural land uses and represent

---

1 The “innocent landowner defense” is the defense to the CERCLA liability. One of the
requirements of this defense is that the party make “all appropriate inquiry into the previous
ownership and uses of the property consistent with good commercial or customary practice.”
the greatest source of hazardous materials (Condor, 2004a). Currently, the greater portions of the Neighborhoods K and L sites are fallow, with the exception of limited areas that are still farmed.

Structures associated with agricultural use that were formerly located on the Neighborhoods K and L project site include irrigation-related piping and drainage ditches, a residence and a small garage in Neighborhood L, and two effluent storage reservoirs in the southeastern portion of Neighborhood L associated with the wastewater treatment plant located on the adjacent parcel. Around 1992, the residence in Neighborhood L was torn down and two or three wells were reportedly abandoned in accordance with regulatory requirements (Condor, 2004a).

The results of a Phase I ESA site reconnaissance indicate that in 2004 a small garage and a large pole barn with bales of hay and construction piping stored around it were located in the southwestern corner of Neighborhood L. The eastern portion of Neighborhood L was under agricultural production and irrigated with effluent from the adjacent wastewater treatment plant. An irrigation pond, pump catwalk, and piping were observed in the northwestern portion of Neighborhood L; the southeastern portion of Neighborhood L had two reservoirs belonging to the Mountain House Community Services District. The majority of Neighborhood K site was used as agricultural land, but the eastern portion of the site was used to facilitate construction of Mountain House (e.g., storage of soils, etc.). Two water pumps, irrigation piping, stand pipes, and monitoring wells were also observed on the Neighborhood K site.

Review of aerial photography on Google Earth (2010) suggests that all former agricultural buildings have been removed from the Neighborhoods K and L project site. The two effluent storage reservoirs are still present in Neighborhood L.

**On-Site Fuel Storage**

In 2004, at the time of the Phase I ESA site reconnaissance, an approximately 20-gallon gasoline or diesel fuel aboveground storage tank (AST) was observed outside of the small garage located in the southwestern corner of Neighborhood L. No indications of leaks or spills were observed (Condor, 2004a).

**Electrical Transformers**

Between the 1930s and 1970s, polychlorinated biphenyls (PCBs) were commonly used as a replacement for the oil bath in electrical transformers and capacitors. Studies have shown that PCBs may be carcinogenic to humans. In 1976, concern over the toxicity and persistence of PCBs in the environment led Congress to enact the Toxic Substances Control Act (TSCA), which included, among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs.
The Master Plan requires a letter from Pacific Gas & Electric Company (PG&E) stating whether existing electrical transformers on the site contain PCBs and whether there are any records of spills from such equipment. The Master Plan also requires that all PCB-containing equipment be replaced and that any identified spill areas be evaluated for clean-up.

Several electrical transformers were observed during the Phase I ESA site reconnaissance conducted for Neighborhoods K and L in 2004. One electrical transformer was observed on a utility pole (next to an irrigation pump) along the northern boundary of Neighborhood K. In Neighborhood L, three electrical transformers were observed on the southeastern portion of the site and one on the northwestern portion of Assessor’s Parcel Number (APN) 209-170-02; three were marked as non-PCB containing. No staining was observed on the transformers or soils beneath. PG&E was contacted for verification that the two unlabelled transformers do not contain PCBs; however, PG&E responded that testing would be required to assess the presence of PCBs (Condor, 2004a). Verification by PG&E that these transformers do not contain PCB is a condition of project approval. If PCB-containing material is found, proper disposal and the replacement of the existing transformers with non-PCB-containing transformers would be necessary.

The Weber Herdlyn power line that formerly crossed Neighborhoods K and L was relocated along Byron Road in 2007; therefore, the pole-mounted transformers previously observed are no longer present.

**Fuel-Related Pipelines**

Two active fuel pipelines are located within the Byron Road/Union Pacific Railroad corridor along the southwestern boundary of Neighborhood L: a 6-inch-diameter Chevron/Texaco petroleum pipeline and a 12-inch-diameter Kinder Morgan petroleum pipeline. The pipelines are located along the north side of Byron Road.

Several abandoned pipelines are also located within the Byron Road/Union Pacific Railroad corridor. From the early 1900s to the late 1960s, the Chevron Old Valley Pipeline (OVP) and the Tidewater Associated Oil Company (TAOC) Pipeline conveyed crude oil from Kern County to San Francisco Bay Area refineries. During the early 1940s, the OVP was used to transport Bunker C fuel oil² from the refineries to railroad locomotive fueling terminals near Tracy (RWQCB, 2008). Subsurface investigations have assessed residual concentrations of crude oil and Bunker C fuel oil in soil and groundwater resulting from previous releases from the abandoned pipelines. Several areas of crude oil leaks in the vicinity of Neighborhood L have been identified (see Figure 5.7-1):

- **Chevron Mountain House Site No. 1, Byron Road.** This site is located adjacent to the intersection of Byron Road and the Mountain House Creek Bridge crossing. The affected soil and groundwater occur primarily within the

---

² Bunker C fuel oil is a dense, viscous oil produced by blending heavy residual oils with a lighter oil.
Byron Road/Union Pacific Railroad corridor. Subsurface investigations conducted between 2001 and 2004 indicate that the area of affected soil is limited, with approximate dimensions of 150 by 200 feet to an approximate depth of 48 feet below ground surface (bgs). Due to the physical characteristics of crude oil, this contaminant plume is not anticipated to migrate, degrade significantly, or expand (SAIC, 2008). In 2007, a human health risk screening evaluation was performed based on the anticipated future uses of the contaminated site. This evaluation assumed that the site would remain a roadway and railroad easement, and that the only potential exposure to soil beneath the roadway and railroad tracks would be that of a construction worker during excavations or maintenance activities within the plume. Based on the findings, the residual crude oil remaining at the site is not anticipated to pose a public health risk under existing conditions and the Central Valley Regional Water Quality Control Board (RWQCB) determined that no further action is required. Chevron prepared a Soil Management Plan that designates Chevron as the responsible party for any issues that arise related to crude oil leaks and provides guidance to interested parties related to future excavations or maintenance activities within the contaminated site (RWQCB, 2008).

- **Chevron Mountain House Site No. 2, Byron Road.** This site is located approximately 100 feet northwest of the intersection of Byron Road and the Mountain House Creek Bridge crossing. The affected soil and groundwater occur beneath the Byron Road right-of-way. The plume is approximately 75 feet wide, 100 feet long, and 36 feet deep. Similar to Chevron Mountain House Site No. 1, this site was found by the RWQCB to require no further investigation (RWQCB, 2008).

- **Chevron Mountain House Site No. 3, Byron Road.** This site is located along the Byron Road/Union Pacific Railroad corridor and on private property (formerly an alfalfa field), approximately 2,000 feet southeast of the Mountain House Creek bridge crossing and east of Mountain House Parkway. The affected soil and groundwater are confined to an area approximately 400 feet wide, 500 feet long, and 54 feet deep. A human health risk screening evaluation was conducted based on construction worker exposures and the proposed future residential uses of the site. The evaluation determined that the threat to human health from residual contaminants is low and that no further action is required, based on proposed uses (RWQCB, 2011). According to a Soil and Groundwater Management Plan prepared for this environmental case, Chevron retains responsibility for soil contamination resulting from the abandoned pipelines and must be notified if there are any plans to excavate through affected areas (SAIC, 2011).

**Gas Wells**

The Master Plan requires that a map showing the location of abandoned gas wells within 500 feet be submitted with the Tentative Subdivision Map for each
Figure 5.7-1

NEIGHBORHOOD L AREAS OF CONTAMINATION

Abandoned gas well

Former barn and AST location

Mountain House Site No. 2

Mountain House Site No. 1

Mountain House Site No. 3

Old Valley Pipeline and Tidewater Associated Oil Company Pipeline

SOURCES: Carlson, Barbee & Gibson, Inc., 2011; RWQCB, 2008 and 2011; Condor, 2004
The mapping of abandoned gas wells and investigation of appropriate closures have been completed for Neighborhoods K and L. According to the Department of Oil, Gas, and Geothermal Resources records, one abandoned exploration well is located in the northwestern corner of Neighborhood L. The well was non-productive for oil or natural gas, was abandoned, and received closure shortly after it was drilled. The well summary report indicates that the well was plugged with cement to 5 feet below the ground surface (bgs), the casing was cut, and ¼-inch-thick steel plates were welded on the top of the casing. No productive gas wells currently exist within 500 feet of Neighborhoods K and L (Condor, 2004a).

**Additional Exterior Site Observations**

During the Phase I ESA site reconnaissance conducted for Neighborhoods K and L, debris was observed in the southeastern and northeastern portions of Neighborhood K and along the southern boundary of Neighborhood L. The debris included soil, broken concrete, rusted metal items, and household debris. A pesticide storage area was also identified near the garage on Neighborhood L (Condor, 2004a).

**Environmental Database Search**

Environmental database searches of known hazardous materials sites within one-quarter mile of the proposed project were conducted by Environmental Science Associates in 2011 in preparation of this Initial Study to identify hazardous materials releases with the potential to affect soil and groundwater in Neighborhoods K and L. The State Water Resources Control Board Geotracker database (SWRCB, 2011) and the California Department of Toxic Substances Control Envirositor database (DTSC, 2011) websites were reviewed. In addition, environmental investigation records available on these websites were reviewed to assess the potential for soil and groundwater contamination to exist on Neighborhoods K and L. Environmental cases that were identified during the environmental database search are described below. No environmental cases were identified in the immediate vicinity of Neighborhood K.

The following hazardous materials sites were identified in the vicinity of Neighborhood L (see Figure 5.7-1), due to releases from abandoned fuel-related pipelines and are discussed under “Fuel-Related Pipelines” above:

- Chevron Mountain House Site No. 1, Byron Road
- Chevron Mountain House Site No. 2, Byron Road
- Chevron Mountain House Site No. 3, Byron Road

The following three other listed hazardous materials sites were considered to have a low potential to affect soil or groundwater at Neighborhoods K or L for the following reasons:
- **Neighborhood E School, Mountain House Parkway/Byron Road.** The Neighborhood E school is listed due to an investigation by the Department of Toxic Substances Control (DTSC) to assess potential contamination associated with former agricultural uses on the site prior to construction of the school. The DTSC's investigation concluded that there are no significant health risks associated with historical land uses and that no further action is needed (DTSC, 2004). This site is distant from Neighborhoods K and L.

- **Chevron Mountain House Site No. 6, Byron Road.** This site, another release from the abandoned fuel pipeline, is located near Wicklund Road and has a low potential to affect soil or groundwater because of its distance from Neighborhood L.

- **Yoders Flying Services, 17263 Finck Road.** This site was listed on the Geotracker database as a land disposal site. No further information was available; however, because this site is located across Old River, it is unlikely that any hazardous materials releases at this site would affect soil or groundwater at either Neighborhood K or Neighborhood L.

### Historical Use of Agricultural Chemicals

Agricultural chemicals are classified as “restricted” and “nonrestricted.” There are several local, state, and federal laws regulating the use of agricultural chemicals. In San Joaquin County, compliance with such laws is monitored primarily by the San Joaquin County Agricultural Commissioner’s Office (SJCAO). The SJCAO requires that farmers using “restricted” chemicals obtain Private Applicator Certification and a Restricted Materials Permit. Private Applicator Certification is renewed every three years upon completion of a safety course on pesticide use and hazards. The Restricted Materials Permit gives farmers with Private Applicator Certification the right to possess and use “restricted” chemicals. Farmers are also required to submit a Notice of Intent (NOI) for both “restricted” and “nonrestricted” pesticide usage at least 24 hours before the application of such chemicals. Every month, farmers are required to submit a Monthly Pesticide Use Report that provides specific information on the date, time, pesticide name, pesticide dilution, total area treated, and rate of application. The SJCAO maintains Pesticide Use Reports and Restricted Materials Permits on file for a period of five years.

Table 5.7-1 lists agricultural chemicals previously used in the entire Mountain House community. This list was derived from past and present records available at the SJCAO for the Mountain House community.

### Analysis of Residual Agricultural Chemicals in Soil

Potential contamination issues and contaminant exposure levels associated with historical agricultural land use practices at Neighborhoods K and L were evaluated in the Limited Phase II ESA (Condor, 2004b).

Agricultural chemical contamination levels at Neighborhoods K and L were analyzed by soil sampling and laboratory analysis. Sixteen soil samples evenly
dispersed across each site were collected and composited at a two-to-one ratio by the laboratory. Three additional soil samples were collected in and around the former barn in Neighborhood L.

The eight composite samples and three discrete samples were analyzed for organochlorine pesticides and chlorinated herbicides. These substances are generally referred to as persistent organic pollutants (POPs), many of which have been banned. POPs are absorbed into water, air, and soil. POPs accumulate and are stored in the tissues of fish and animals, and eventually make their way to the top of the food chain. A number of POPs have been linked to birth defects and cancer in animals.

No organochlorine pesticides or chlorinated herbicides were detected in soil samples collected from Neighborhood K. As no pesticides or herbicides were detected, no chemicals of potential concern were identified. For this reason, a human health risk assessment was not conducted for Neighborhood K.

Table 5.7-1  AGRICULTURAL CHEMICALS USED AT MOUNTAIN HOUSE

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-DB</td>
<td>FC Herbicide Activator</td>
<td>Pounce</td>
</tr>
<tr>
<td>2,3-D Amine 4</td>
<td>FC Neutralizer</td>
<td>Paraquat</td>
</tr>
<tr>
<td>2,4-D Amine</td>
<td>Furadan</td>
<td>Prism</td>
</tr>
<tr>
<td>41-A</td>
<td>Furadan 4F</td>
<td>Progress</td>
</tr>
<tr>
<td>Accent</td>
<td>Garlon 3A</td>
<td>Pursuit W DG</td>
</tr>
<tr>
<td>Alochlor</td>
<td>Cramozene Extra Herbicide</td>
<td>Pyramin FL</td>
</tr>
<tr>
<td>Aluminum Phosphide</td>
<td>Herbicide 273</td>
<td>Sevin</td>
</tr>
<tr>
<td>Anthraquinone</td>
<td>Herbicide Activator</td>
<td>Strychnine</td>
</tr>
<tr>
<td>Auxigro</td>
<td>Lannate 90SP Insecticide</td>
<td>Systox</td>
</tr>
<tr>
<td>Bayleton 50% Dry Flowable</td>
<td>Lorsban 4E</td>
<td>Tough</td>
</tr>
<tr>
<td>Betamix</td>
<td>MCPA, Dimethyla</td>
<td>Toxaphene</td>
</tr>
<tr>
<td>Comite</td>
<td>Methyl Parathion</td>
<td>Trilin 10G</td>
</tr>
<tr>
<td>Diazinon</td>
<td>Methomyl</td>
<td>Trifluralin 10G</td>
</tr>
<tr>
<td>Direx 4L</td>
<td>NB 8-8-2</td>
<td>Velpar L Herbicide</td>
</tr>
<tr>
<td>Di-Syston</td>
<td>No Foam B</td>
<td>Warrior</td>
</tr>
<tr>
<td>Dusting Sulfur</td>
<td>Nortron SC</td>
<td>Weedestray</td>
</tr>
<tr>
<td>Epbest</td>
<td>Nutra Wet</td>
<td>Zinc Phosphate</td>
</tr>
<tr>
<td>FC Foliar Pride</td>
<td>Orthene</td>
<td></td>
</tr>
</tbody>
</table>

Source: Condor, 2004a.
No chlorinated herbicides were detected in the 11 samples collected from Neighborhood L. A low concentration of 4, 4'-DDE (2.1 micrograms per kilogram [ug/kg]) was detected in one of the eight composite samples. Concentrations of 4,4'-DDE (at 4.2 ug/kg) and 4,4'-DDT (at 7.6 ug/kg) were detected in one of the discrete soil samples collected from the northern corner of the former barn in Neighborhood L.

To put these analytical results in context, for comparison, the U.S. Environmental Protection Agency (USEPA) Region 9 Preliminary Remediation Goal (PRG) for clean-up of soil contaminated by these compounds is 1,700 ug/kg for residential use. The highest detected concentration of DDT at 7.6 ug/kg falls well below this threshold. Despite the low level of organochlorine pesticides detected, a human health risk screening evaluation was performed to provide an estimate of the potential chronic health hazard from contamination at Neighborhood L using the accepted methodology and assumptions of the USEPA, California Environmental Protection Agency (Cal EPA), and DTSC for quantifying risk and hazard. The cancer risk and non-cancer hazard quotients for all constituents of concern were summed to obtain the total cancer risk and total hazard index posed by these constituents. The total calculated cancer risk was determined to be 8.5 in one billion (8.55E-09); the total hazard was less than unity. The general screening value for cancer risk is one in one million (1E-06); the screening value for non-cancer hazard is one (unity).

Based on these results, the detected concentrations of DDE and DDT do not appear to present an elevated cancer risk or hazard quotient. The Limited Phase II ESA concluded that past practices of handling agricultural chemicals have not resulted in a significant release or threat to the site and there is not a potential hazard to public health or the environment from former agricultural use (Condor, 2004b).

**Electromagnetic Fields**

Electromagnetic fields (EMFs) are invisible energy fields composed of electric and magnetic fields that are generated by electrical devices. EMFs are emitted by everything that uses and/or conducts electricity, including power lines, electrical wiring, computers, television, hair dryers, and household appliances. While electrical fields are weakened by materials that conduct electricity (including trees, buildings, soil, and human skin), magnetic fields pass through most materials and are therefore difficult to shield. Both electric and magnetic fields decrease as the distance from the source increases (California Department of Health Services, 1999).

Different forms of EMFs are produced by a variety of sources and may be differentiated based on their strength (frequency) and the ability of a particular EMF to cause ionization, a process that can produce molecular changes that can lead to damage in biological tissue and can potentially cause cancer. In the United States, electric energy facilities generate EMFs at a frequency of 60 hertz.
(Hz). Electromagnetic radiation ranging from 1 Hz to 300 Hz is considered to be extremely low frequency and nonionizing (OSHA, 2004).

Over the last 20 years, public concerns over the potential effects of EMFs on human health have resulted in several epidemiological, laboratory, and clinical studies. Some studies have suggested that there may be an association between electromagnetic fields and childhood leukemia. However, studies have not concluded that there is such a connection. At present, studies do not provide strong evidence for an association between EMF exposure and adult cancer or other forms of cancer in children (EMF RAPID, 2002).

In 1989 and 1993, the California Department of Education enacted requirements for setbacks from electrical transmission lines between new schools and the edge of the transmission easement (EHIB, 2004). These requirements were not based on specific health effects, but on the rationale that EMF radiation is reduced with increased distance from the source. There are no state or federal regulations that establish setbacks for other land uses. The setbacks required by the Department of Education for new schools are as follows:

- 100 feet from 50- to 133-kilovolt (kV) lines;
- 150 feet from 220- to 230-kV lines; and
- 350 feet from 500- to 550-kV lines.

Despite the lack of state and federal regulations regarding setbacks from other land uses, the Master Plan (Section 6.3, page 194) designates the following setbacks for residential land uses from the edge of the Rio Oso-Tesla power line easement located approximately 500 feet east of Neighborhood L:

- 25 feet for residential dwelling units;
- 10 feet for non-residential structures; and
- No setback for parking and storage areas.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified significant and potentially significant public health and safety impacts of the Master Plan as follows:

1) Public and environmental health may be affected by potential historic pesticide and/or herbicide residues in the environment, as well as by future pesticide and/or herbicide applications off-site.

2) Potential health impacts may result from public exposure to PCBs associated with transformers or electromagnetic fields associated with overhead electrical lines.

3) Asbestos, if present in existing farm structures, could cause adverse health impacts to workers during renovation and/or demolition.

4) Materials disposed of at the small household landfill on the site may have affected soil and groundwater quality.
5) Open water bodies within the project site could provide active breeding sites for mosquitoes, potentially causing an environmental nuisance condition and disease transmission.

6) The development of the project may increase the potential for public exposure to explosives, fire, or the release of materials during railway accidents on the railway line crossing the northern portion of the project site.

7) Increased development along the natural gas pipelines traversing the site could increase the risk of pipeline rupture and fire or explosion which could result in death and injury or property damage.

8) Improperly abandoned wells, wells without appropriate sanitary seals, and agricultural canals may act as conduits for agricultural chemical migration, potentially affecting surface and groundwater quality, or may represent a safety hazard.

Findings Related to Significant Impacts Identified in 1994 MEIR

**Impact No. 1**

In response to potential hazards associated with residual pesticides and/or herbicides, the Master Plan was changed to require that an ESA report prepared in accordance with ASTM standards be submitted with the submittal of each Tentative Subdivision Map to assess the presence of any state or federal listed toxic materials (i.e., fuel, pesticide, herbicide, or chemical residue) in the soil. If any residues are found in excess of the allowable amounts, a program of corrective action must be implemented prior to recordation of a Final Subdivision Map. Corrective actions must be conducted in accordance with the requirements of the County Environmental Health Department and all applicable state agencies. The project applicant has been in compliance with this requirement.

It should be noted that the 1994 MEIR recommended that aerial spraying be restricted within 500 feet of the nearest dwelling along the western site boundary. This component of the 1994 MEIR Mitigation Measure 4.10-1 was found unnecessary due to the setbacks of residences from the western site boundary.

**Impact No. 2**

The following measures were adopted into the Master Plan to address potential health impacts associated with public exposure to PCBs: 1) prior to each development permit submittal, the developer is required to request that PCB-containing electrical transformers be replaced with non-PCB-containing equipment and that any identified spill areas be evaluated for clean-up, and 2) the developer is required to prepare an annual information packet that includes a summary of major studies regarding electric and magnetic field effects and a list of reference studies. PCB-containing electrical transformers have not been discovered at the project site. Verification by PG&E that all transformers are not PCB-containing is a condition of approval. If PCB-containing material is found,
mitigation in the form of proper disposal will be necessary. These will be replaced with non PCB-containing transformers. An information packet that includes a summary of major studies regarding electric and magnetic field effects and a list of reference studies is a condition of approval.

The 1994 MEIR also recommended that any metal structures or objects within and adjacent to transmission line easements be grounded to avoid nuisance induction effects such as shocks. This component of the 1994 MEIR Mitigation Measure 4.10-2 was found not to be feasible in the findings adopted for the 1994 MEIR.

**Impact No. 3**

The following implementation measures were adopted into the Master Plan to address potential impacts associated with asbestos-containing building materials in existing structures: 1) all existing structures must be tested for asbestos-containing materials prior to demolition, and if asbestos is present, a licensed asbestos abatement contractor shall perform demolition; and 2) a demolition permit shall be required prior to any proposed building demolition.

Since preparation of the Master Plan, all former agricultural buildings within Neighborhoods K and L have been removed. It is assumed that these structures were tested for hazardous building materials prior to demolition. Since no structures remain on the Neighborhoods K and L sites, these mitigation measures do not apply to the proposed project.

**Impact No. 4**

With respect to the household landfill located in the center of Mountain House, the 1994 MEIR recommended that the developer be required either to 1) conduct soil and groundwater sampling in and within 500 feet of the household landfill, or 2) conduct a health risk assessment to determine whether an engineered cap would effectively mitigate environmental and public health impacts associated with the landfill. Since this landfill was located outside of Neighborhoods K and L, this mitigation measure does not apply to the proposed project.

**Impact No. 5**

The 1994 MEIR recommended that general criteria, standards, and maintenance schedules for mosquito abatement be developed in consultation with the Mosquito Abatement District and be incorporated into maintenance requirements for the project. The creation of a project-specific operations and maintenance program that describes mosquito abatement and other maintenance activities that would be necessary for the continued effectiveness of the basins is a condition of approval.

**Impact No. 6**

The 1994 MEIR recommended that potential hazards associated with public exposure to explosives, fire, or the release of materials during railway accidents
be addressed through increased emergency response, prevention and preparedness. Implementation measures adopted into the Master Plan include 1) the establishment of buffer zones between structures proposed in areas adjacent to railroads and track rights-of-way, 2) the requirement that businesses and public institutions located adjacent to railway buffer zones maintain emergency contingency and evacuation plans, and 3) the requirement that the Incident Action Plan for the project include a component on emergency response to railway accidents and release of hazardous materials. Railway buffer zones were established. An Emergency Operations Plan (EOP) has been prepared and approved by the MHCSD in 1998.

**Impact No. 7**

The 1994 MEIR recommended that policy changes be made to the Master Plan to address the need for a Pipeline Safety Plan as part of the Incident Action Plan (also referred to as “Emergency Response Plan”). Policy language changes were also recommended regarding limiting densities in the vicinity of pipelines.

**Impact No. 8**

The 1994 MEIR recommended that potential contamination of surface and ground water by improperly abandoned wells, wells without sanitary seals, and agricultural canals be addressed by requiring that 1) site assessments include an investigation of the location and condition of currently used and abandoned water wells, and 2) on-site agricultural canals and ditches be properly fenced and screened by the developer as required by the Byron Bethany Irrigation District (BBID) to eliminate site hazards.

The Phase I ESA performed for Neighborhoods K and L indicates that two to three wells associated with the former house in Neighborhood L were properly abandoned, based on an interview with the owner’s representative. The Phase I ESA does not indicate the location and condition of active and abandoned water wells, or documentation of proper abandonment. A well survey performed for the Chevron Mountain House Sites Nos. 1 and 2 closure request suggests that two water supply wells may be located on the southern portion of Neighborhood L (SAIC, March 2008). Documentation of existing and abandoned wells in Neighborhoods K and L is a condition of project approval.

Existing on-site agricultural canals would be removed prior to development. Thus, fencing of agricultural canals is not necessary.

**Discussion Regarding Neighborhoods K and L**

*Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

During project construction, minor amounts of hazardous materials would be used and transported through the project area. Construction activities typically involve the use of hazardous materials such as paints, fuels, and solvents.
Construction activities and the transportation of hazardous materials would be subject to federal, state, and local laws and requirements designed to minimize and avoid the potential health and safety risks associated with hazardous materials. The project applicant would be required to submit a Stormwater Pollution Prevention Plan (SWPPP) to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) construction general permit. The SWPPP must include measures to protect against the accidental release of construction-related chemicals. Adherence to regulatory requirements for construction activities and hazardous materials use, transportation, and disposal would ensure that impacts during project construction would be less than significant.

After project construction, minor amounts of hazardous materials would likely be used in residences and commercial businesses, and for maintenance of park areas; the latter would be subject to federal, state, and local laws and requirements. The use of minor amounts of hazardous materials in residences and commercial businesses and during park maintenance activities would not result in a significant impact related to hazardous materials.

No mitigation measures are necessary.

b) Would the project 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?

PCBs. Verification by PG&E that any on-site transformers do not contain PCBs is a condition of project approval. If PCB-containing material is found, proper disposal and the replacement of the existing transformers with non-PCB-containing transformers would be necessary. This is standard practice for PG&E.

Agricultural Chemicals. The Neighborhoods K and L sites have been in agricultural production since the early 1900s. The potential contaminant levels and associated human health risks associated with the use of agricultural chemicals, primarily pesticides and herbicides, in Neighborhoods K and L were assessed in the Limited Phase II ESA for these neighborhoods. No pesticides or herbicides were detected in soil samples collected at Neighborhood K. Very low levels of DDT and DDE were detected in two soil samples collected at Neighborhood L. Based on the results of a human health risk screening evaluation, the detected residual concentrations of DDE and DDT do not appear to contribute to a potential hazard to public health or the environment (Condor, 2004b).

Storage Tanks/Soil Contamination in Neighborhood L. One 20-gallon gasoline or diesel fuel AST was observed near the former small garage located at the southeastern corner of Neighborhood L during the site reconnaissance performed as part of the Phase I ESA in 2004. There are no documented
releases associated with this AST. However, under the ASTM standard, ASTs represent a "recognized environmental condition" because leaks from an AST could introduce petroleum hydrocarbons to soil and groundwater. A release from a 20-gallon AST, however, would be relatively minor and no staining or other evidence of a release were noted in the Phase I ESA (Condor, 2004a). It is believed that the AST was removed in accordance with state and local requirements at the time the small garage was demolished.

Soil and Groundwater Contamination Adjacent to Neighborhood L. Residual soil and groundwater contamination related to historical crude oil leaks from the abandoned OVP remains beneath portions of Byron Road and the adjacent railroad tracks. Three separate locations with petroleum hydrocarbon contamination (Chevron Mountain House Sites Nos. 1, 2, and 3) have been identified adjacent to Neighborhood L. The contamination has been detected along the Byron Road/Union Pacific Railroad corridor, and at an adjacent agricultural field (see Figure 5.7-1). The petroleum hydrocarbons in site soils and groundwater are considered to be highly immobile, limited in extent, and concentrated in close proximity to the abandoned pipeline. Following delineation of the areas of soil and groundwater contamination and a human health risk screening evaluation for these contaminated sites, the RWQCB determined that the residual levels of petroleum hydrocarbons in soil and groundwater do not pose a threat to public health or the environment under the existing and proposed site uses, and that no further action is required unless these areas are disturbed by subsurface excavation. Therefore, the potential health risks to future site occupants from residual soil and groundwater contamination associated with historical crude oil releases in the site vicinity are considered to be low.

Based on the delineation of soil and groundwater contamination associated with Chevron Mountain House Sites 1, 2, and 3, it appears that excavation and grading for Neighborhoods K and L would be unlikely to encounter soil and groundwater contamination originating from these sites. However, considering the long history of crude oil pipeline operations and leaks, there is a potential for contaminants to be encountered in the Neighborhood L areas bordering Byron Road. Exposure to these contaminants could potentially result in harmful health effects for construction workers, and an accidental release of contaminated soil or groundwater could result if precautions are not taken. This impact is potentially significant, but could be reduced to a less-than-significant level with implementation of Mitigation Measure HAZARDS-1. This measure requires that if any indications of petroleum hydrocarbon contamination, such as stained soil or odors, are encountered during excavation or grading, the construction contractor must immediately notify the RWQCB and Chevron Environmental Management Company to investigate and ensure the proper handling and disposal of contaminated material.

Fuel-Related Pipelines. With implementation of the proposed project, the two existing fuel-related pipelines along Byron Road that border Neighborhood L would remain in their existing alignments. All development would conform to
state and local regulations for proximity to gas and petroleum lines. No residential development is planned over these pipelines.

All school facilities in Mountain House are sited to conform to school regulations and setbacks for safety with respect to fuel-related pipelines. A buffer zone of 1,500 feet from natural gas pipelines is required for all new schools. The proposed schools are well over 1,500 feet from existing gas pipelines. The Master Plan requires that a Pipeline Safety Plan encompassing new neighborhoods as they are developed be incorporated into the Incident Action Plan (also known as the Emergency Response Plan) for the Mountain House community as a condition of project approval.

Asbestos and Lead in Structures. Because no structures (other than the treated effluent storage reservoirs) are present on the Neighborhoods K and L sites, potentially hazardous materials such as lead-based paint and/or asbestos-containing building materials would not be encountered during project construction.

Although not relevant to Neighborhoods K and L because no structures remain on these sites, the Master Plan requires that the applicant test all existing structures in the project area for lead-based paint and asbestos-containing building materials prior to demolition. If it is found that painted surfaces contain lead-based paint and/or the structures contain asbestos materials, the applicant would prepare a Demolition Plan for the safe demolition of all site structures.

Master Plan Provisions. Issues regarding the accidental release or upset of hazardous materials were addressed in the following Master Plan Sections: 6.5 (Implementation Measures [a] and [b]) (Emergency Preparedness); 6.7 (Implementation Measure [e]) (Waste Management); 6.8.4 (Implementation Measure [b]) (Other Potential Hazards); and 6.10 (Implementation Measures [a] and [b]) (Asbestos).

Mitigation Measures

Mitigation Measure HAZARDS-1: Protocols for Petroleum Hydrocarbons in Soil. If indications of petroleum hydrocarbon contamination in site soil, such as staining and odors, are observed during excavation or grading activities adjacent to Byron Road, the contractor shall stop work and notify the Chevron Environmental Management Company and the RWQCB in accordance with the procedures specified in the Soil and Groundwater Management Plans for Chevron Mountain House Sites Nos. 1, 2, and 3. The contractor shall ensure that any contaminated soil and groundwater encountered during project construction is handled in a safe and lawful manner.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
School siting criteria with respect to hazardous materials were discussed in Master Plan Section 5.1.4 (Implementation Measures [a] and [b]) (School Siting Criteria). With implementation of these measures, no impacts associated with hazardous materials within one-quarter mile of the proposed schools would occur.

d) Would the project 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?

The environmental database review did not identify any listed hazardous materials sites within Neighborhoods K and L; however, Neighborhood L is adjacent to three documented releases (Chevron Mountain House Sites Nos. 1, 2, and 3) associated with abandoned crude oil pipelines located beneath Byron Road and the adjacent railroad tracks. As discussed above under Item (b) above, there may be the potential to encounter contaminated soil or groundwater during excavation or grading in close proximity to these pipelines, a potentially significant impact. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure HAZARDS-1. No additional mitigation is required.

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?

Neighborhoods K and L are not located within the boundaries of an airport land use plan. The nearest airport is the Byron Airport, approximately 5 miles to the northwest. The Byron Airport does not pose health risks to future residents of Neighborhoods K and L. Therefore, no impacts related to airport safety hazards would occur, and no mitigation measures are necessary.

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No private airstrips are located within or near Neighborhoods K and L. No safety impact related to private airstrips would occur. No mitigation measures are necessary.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

An Emergency Response Plan (or Incident Action Plan) has been prepared for the Mountain House Community Services District (Security Concepts and Planning, 2008). The proposed project would not impair implementation or physically interfere with this plan. No mitigation measures are necessary.
h) Would the project 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?

Neighborhoods K and L are not located in an area that is associated with wildland fires. No impact from wildland fires would occur. No mitigation measures are necessary.

**Sources of Information**

California Department of Health Services, 1999. “Short Fact Sheet on EMFs.”


Contra Costa County Airport Land Use Commission, 2000. *Contra Costa County Airport Land Use Compatibility Plan*.


Regional Water Quality Control Board, Central Valley Region (RWQCB), 2008. Fact Sheet, Proposed No Further Action Required, Mountain House Site #1, Historical Crude Oil Pipelines, West Byron Road, San Joaquin County. August 1.

Regional Water Quality Control Board, Central Valley Region (RWQCB), 2008. Fact Sheet, Proposed No Further Action Required, Mountain House Site #2, Historical Crude Oil Pipelines, West Byron Road, San Joaquin County. August 1.

Regional Water Quality Control Board, Central Valley Region (RWQCB), 2011. No Further Action Required and Consideration of Request for No Further Action Required Determination, Mountain House Development Site #3, West Byron Road, San Joaquin County. May 6.


San Joaquin County Community Development Department (SJCCDD), 2000. *Initial Study and Negative Declaration for Mountain House New Community Water Treatment Plant Use Permit*. January 5 (Use Permit 97-13).
### 5.8 Hydrology and Water Quality

Would the project:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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 (and uses or planned uses for which permits have been granted)?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Otherwise substantially degrade water quality?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>j) Inundation by seiche, tsunami, or mudflow?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Setting

Climate and Topography

Mountain House is located on the western edge of the San Joaquin River Valley. Average annual rainfall in the vicinity of Mountain House is approximately 12 inches. Average temperatures generally range from 38 degrees Fahrenheit in winter months to 93 degrees Fahrenheit in summer months (WRCC, 2002).

The Neighborhoods K and L project site is generally level and slopes gently (less than 1 percent) northeast toward Old River. Ground surface elevations range from 0 feet above mean sea level (msl) in the northern portion of the site along Old River to about 25 feet above msl in the southern portion of the site (USGS, 1978).

Surface Water Hydrology

Regionally, Mountain House is located within the Sacramento-San Joaquin River Delta (Delta). California’s two largest rivers, the southward-flowing Sacramento River and the northward-flowing San Joaquin River, converge in the Delta. The Delta is a flat, low-lying network of 57 islands, interconnected by approximately 700 miles of waterways. The Delta, comprised of over 1,100 square miles, is the largest estuary on the West Coast and drains over 40 percent of the water in California. The Delta and its watersheds provide approximately two-thirds of California’s water supplies (PACE, 2005).

Mountain House is located within the Mountain House Creek and Dry Creek watersheds. Mountain House Creek drains an area of approximately 6.5 square miles between the Altamont Hills and Old River. Mountain House Creek runs in a northeasterly direction between Neighborhoods K and L and discharges to Old River at the northern project site boundary. Dry Creek flows in a northeasterly direction parallel to and approximately 1.5 miles northwest of Mountain House Creek. Dry Creek has a drainage area of approximately 6.8 square miles and discharges to Old River at the western corner of Neighborhood K. Old River, which flows east to west along the northern project site boundary, is bordered by levees and is part of the Delta conveyance system.

Currently, runoff on the Neighborhoods K and L project site generally flows in a northeasterly direction to Old River. Existing drainage infrastructure and improvements on the project site are limited to agricultural drainage ditches and some drainage pipes at street crossings, a 13-acre water quality basin at the southern corner of Neighborhood L, and restoration improvements along the Mountain House Creek corridor. Historically, agricultural drainage ditches were used to convey irrigation water from Old River to farmland in Mountain House, including Neighborhoods K and L. These agricultural ditches are gradually being replaced with new drainage infrastructure as Mountain House builds out (Condor, 2010). Drainage improvements proposed for the Neighborhoods K and L project site are discussed later in this section.
100-Year Floodplain

Current Federal Emergency Management Agency (FEMA) maps for San Joaquin County designate roughly half of Neighborhoods K and L (the portions of the site located at or below 10 feet above msl) as being within the 100-year flood hazard zone for Old River (see Figure 5.8-1). The flood zone forms a band about 1,500 to 2,000 feet wide along the Old River levee at the northern edge of the Mountain House community (FEMA, 2009).

Groundwater

The Department of Water Resources (DWR) defines state groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, Neighborhoods K and L are located within the Tracy groundwater subbasin. The subbasin has an area of approximately 540 square miles and is drained by the San Joaquin River and Corral Hollow Creek. Primary water-bearing formations in the subbasin include semi-consolidated deposits of clay, silt, and gravel of the Tulare Formation, flood basin deposits, and older and younger alluvium (DWR, 2006).

Generally, groundwater flows as a subdued reflection of the surface topography. Hydrographs for the Tracy groundwater subbasin indicate that the majority of water levels in wells within the subbasin have remained relatively stable over time (DWR, 2006). During subsurface investigations conducted in 2007 and 2010, groundwater was encountered in all soil borings in Neighborhood K at depths of 3 to 12 feet below the ground surface (bgs) and in Neighborhood L at 4.5 to 14.5 feet bgs (Engeo, 2007, 2010).

The water quality of the Tracy groundwater subbasin is somewhat impaired. Areas of poor water quality exist throughout the subbasin and elevated levels of chloride and nitrate have been encountered in the vicinity of the City of Tracy. According to the 1994 MEIR, elevated levels of total dissolved solids (TDS), nitrates, and sulfides have been encountered in groundwater in and around the Mountain House community. The high levels of TDS may be the result of saltwater intrusion from the Delta. Relatively high levels of nitrates may be the result of poor livestock management in the surrounding area and/or releases from household septic systems.

Project Studies

The applicant has completed the following studies related to storm water drainage for Neighborhoods K and L:

- Pacific Advanced Civil Engineering (PACE), Inc., September 28, 2006. Storm Water Master Plan Update, Addendum II.
Pacific Advanced Civil Engineering (PACE), Inc., December 2005. *Conditional Letter of Map Revision Based on Fill, Mountain House between Byron Road and Old River.*


All of these studies can be reviewed at the San Joaquin County Community Development Department.

**Removal of Farmland Irrigation Infrastructure**

As described above, Neighborhoods K and L were historically irrigated by water from Old River via a series of irrigation pumps, pipes, and ditches. The proposed development of Neighborhoods K and L would require the abandonment and removal of all irrigation infrastructure within these two neighborhoods. A Farm Irrigation Report has been prepared for Neighborhoods K and L (Condor, 2010). Farm Irrigation Reports must be submitted to and approved by San Joaquin County Community Development with each Tentative Subdivision Map.

**Storm Water Master Plan Update**

The Mountain House Storm Water Master Plan Addendum II (PACE, 2006) presents the results of HEC-1 modeling conducted for Mountain House and forms the basis for the updated conceptual drainage improvements associated with the development of Neighborhoods K and L. Drainage-related improvements proposed for Neighborhoods K and L include primary and secondary storm drain systems, Old River levee improvements, and permanent lake features. These drainage improvements would be built as needed based on the phased construction of Neighborhoods K and L. Certain elements of the drainage infrastructure for Neighborhoods K and L have already been constructed as part of prior development projects in the Mountain House community (i.e., Water Quality Basin No. 1 and the Mountain House Creek restoration).

**Primary Storm Drain System**

The primary storm drainage system would provide conveyance of all off-site runoff and on-site runoff and would include trunk storm drain pipes (72-inch-diameter and larger), open channels, and lakes. Pipes and open channels would be designed for the 100-year flood capacity to the point of terminal discharge at Old River.

**Secondary Storm Drain System**

The secondary storm drainage system would be located within the local and collector streets and would consist of gutters, local drainage swales, minor channels, catch basins, catch basin laterals, and smaller storm drain pipes (smaller than 72-inch-diameter). This system would transport on-site drainage to trunk lines and lake features.
Lake Features

Development of Neighborhoods K and L would include permanent lake features (47.33 acres in Neighborhood K and 52.93 acres in Neighborhood L) to be used for flood protection, water quality enhancement, and recreational purposes. The lake features would be similar to the golf course water features in Neighborhoods I and J. The permanent lake features in Neighborhoods K and L would discharge to Mountain House Creek. The lakes would be surrounded primarily by low-density residential land uses and would include some lakefront properties. The lakes would provide sufficient storm water storage to allow for the 100-year flood event to be stored in the lakes without overtopping.

Water Quality Basin (WQB) No. 1

WQB No. 1 is an existing 13-acre water quality/detention basin located at the southern corner of Neighborhood L. WQB No. 1 captures and treats “urban” runoff from existing Neighborhoods B, D, and F. The runoff is stored for a minimum of 24 hours before being discharged by gravity to Mountain House Creek.

Flood Protection at Old River

Engineered fill would be used to raise all building pads above the 100-year FEMA flood hazard zone. The FEMA-designated 100-year base flood elevation is 10.4 feet above msl.

In 2007, the State of California passed Senate Bill 5, which requires 200-year flood protection for urban or urbanizing areas. Preliminary maps released by the DWR indicate that portions of Neighborhoods K and L are within the 200-year floodplain. While the state has not yet determined the official 200-year floodplain elevation, flood protection for those portions of Neighborhoods K and L located within the 200-year flood elevation would be provided in the same manner in which 100-year flood protection would be provided, by raising the ground surface elevation through the placement of engineered fill.

Recent Changes Regarding Use of Reclaimed Water for Irrigation

The Master Plan required the evaluation of using reclaimed secondary and/or tertiary water for on-site and/or off-site landscape and/or agricultural irrigation. Since preparation of the Master Plan, a permit has been obtained from the Regional Water Quality Control Board (RWQCB) and a discharge pipeline has been constructed to convey treated effluent from the wastewater treatment plant to Old River, thereby eliminating the need to identify suitable locations for application of treated effluent. As a result, the use of reclaimed water for landscape irrigation is no longer proposed as part of the Neighborhoods K and L development project.
Significant Impacts Identified in 1994 MEIR

The 1994 MEIR identified significant and potentially significant hydrological/water quality impacts of the Master Plan related to the following:

1) Increased sedimentation within Old River caused by runoff from Mountain House Creek and operation of the proposed marina [no longer relevant].¹

2) Water quality problems associated with inadequate water circulation in the proposed on-site marina [no longer relevant].

3) Impacted water quality in Old River due to construction or proposed marina [no longer relevant].

4) Shallow groundwater conditions presenting adverse conditions for construction of foundations and detention/retention basins. The project could result in elevation of groundwater levels due to removal of subsurface drains.

5) Erosion of levees by waves generated by boat wakes as a result of increased boating within Old River and South Delta waterways and operation of the proposed marina [no longer relevant].

6) Deposition of sediment transported by Mountain House Creek and deposited within the project site, potentially interfering with flood control and the enhanced habitat function of the Mountain House Creek corridor. If transported to Old River, sediment could have adverse impacts on downstream water quality.

Findings Related to Significant Impacts Identified in 1994 MEIR

Project impacts associated with the construction of a marina are no longer relevant since this element has been removed from the project. As part of Specific Plan II (SPII), the formerly proposed marina land use has been converted to a regional and community park through the extension of the Old River Regional Park to the west by approximately one-half mile. This change in land use would reduce the potential negative impacts of project development on “waters of the state.” A small public boat launch facility is proposed as part of the Old River Regional Park within Neighborhood K. However, this facility is significantly smaller than the facility originally proposed and would not have the water quality impacts related to the marina that were identified in the 1994 MEIR and described above.

The following mitigation measures were adopted into the Master Plan to mitigate project impacts associated with erosion and sedimentation: 1) construction of sedimentation basins and other effective sediment control structures (i.e., water quality ponds) to effectively remove sediment associated with runoff from the project site (Policy 7.2.8)), and 2) development of a basin maintenance program

---

¹ The marina is no longer proposed as part of the Mountain House community.
that describes maintenance activities that would be necessary for continued effectiveness of basins (Policy 15.6a).

The 1994 MEIR recommends that potential project impacts associated with shallow groundwater levels be mitigated through the preparation of a Preliminary Soils Report (i.e., Geotechnical Engineering Report) for each subdivision to determine seasonal groundwater levels and provide appropriate design recommendations (Section 6.8.3). At the time of this Initial Study, geotechnical engineering reports for Neighborhoods K and L had been completed.

Discussion Regarding Neighborhoods K and L

a) Would the project violate any water quality standards or waste discharge requirements?

Project implementation could potentially affect water quality if project construction activities adversely affected the water quality of downstream water bodies as a result of increased soil erosion and/or the accidental release of construction-related chemicals into site runoff; resulted in the degradation of water quality from construction dewatering discharges; or resulted in a long-term increase in pollutant levels in storm water originating from Neighborhoods K and L.

Degradation of Water Quality During Construction Activities. During project construction, grading and earthwork would result in the removal of established groundcover that serves to stabilize site soils, and the exposure of soils to the erosional forces of rainfall and runoff, thereby potentially resulting in increased sediment load in downstream waters. Construction activities at the Neighborhoods K and L project site could also result in the accidental release of hazardous waste products such as adhesives, solvents, paints, and petroleum products that, if not managed properly, could adhere to soil particles, become mobilized by rain or runoff, and degrade water quality. Construction dewatering in excavations also has the ability to adversely affect downstream water quality if the dewatering effluent is contaminated or if the rate of the effluent discharge is erosive. In the absence of proper controls, construction activities could affect water quality in downstream water bodies, including Mountain House Creek and Old River.

Project construction activities would be subject to the National Pollutant Discharge Elimination System (NPDES) construction general permit requirements described below. Mandatory adherence to NPDES permit requirements would ensure that impacts on water quality during construction would be less than significant.

The project would be required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (construction general permit, Order No. 2009-0009). Effective on July 1, 2010, Order No. 2009-0009 applies to construction sites that include one or more acres of soil disturbance. Construction activities include clearing, grading,
grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement of facilities.

The construction general permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction, and then pay an annual fee. These documents include a notice of intent, risk assessment, site map, storm water pollution prevention plan (SWPPP), and signed certification statement. The permit specifies a risk-based permitting approach that includes requirements specific to three overall levels of risk, which are determined based on the potential for the project to cause sedimentation as well as the sensitivity of the receiving water to sedimentation. The three risk levels are used to determine specific numeric action levels and effluent limitations for pH and turbidity, and the requirements for a rain event action plan, best management practice (BMP) implementation, monitoring, and reporting.

The SWPPP must include measures to ensure that all pollutants and their sources are controlled; non-storm water discharges are identified and eliminated, controlled, or treated; site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges; and BMPs that are installed to reduce or eliminate pollutants after construction are completed and maintained. The SWPPP must demonstrate that calculations and design details as well as BMP controls for site runoff are complete and correct. Non-storm water discharges include those from improper dumping, accidental spills, and leakage from storage tanks or transfer areas. The general construction permit specifies minimum BMP requirements for storm water control based on the risk level of the site.

The general construction permit stipulates that effluent and receiving water monitoring must demonstrate compliance with permit requirements, and that project proponents must take corrective action if these limitations are exceeded. The results of the monitoring and corrective actions must be reported annually to the State Water Resources Control Board (SWRCB). The construction general permit specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner (SWRCB, 2010).

Post-Construction Degradation of Water Quality. Pollutants from roofs, streets, parking areas, and landscape areas are carried by runoff into the storm water drainage network. Pollutant concentrations in site runoff are dependent on a number of factors, including land use, site drainage, intensity and duration of rainfall, and the climatic conditions preceding the rainfall event. Due to the variability of urban runoff characteristics, it is difficult to estimate pollutant loads in post-construction runoff; however, increases in urban contaminants such as oil and grease, petroleum hydrocarbons, and metals are likely in post-construction runoff from Neighborhoods K and L.

In addition, storm water runoff volumes and rates generated from undeveloped, unpaved areas can increase significantly when a site is paved, the impervious surface area is increased, and the ability of surface water to infiltrate the ground...
surface is reduced or eliminated. Impervious surfaces can increase peak flows in creeks, cause erosion, and result in increased sedimentation in downstream water bodies.

Phase II of the NPDES program regulates storm water discharges from small municipal storm water systems (MS4s) and requires that regulated small MS4s obtain coverage under California’s General Permit (Order No. 2003-0005), Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. The Phase II NPDES program is enforced by the RWQCB. To comply with the Phase II NPDES permit requirements, the Mountain House Community Services District (MHCSD) prepared a Storm Water Management Plan (SWMP) that addresses post-construction storm water management for new development and redevelopment in the Mountain House community (Jacobs, 2008).

The proposed drainage system for Neighborhoods K and L is designed to ensure that the initial one-half inch of rainfall runoff (first flush) is drained into the permanent 47.33-acre lake feature in Neighborhood K and the 52.93-acre lake feature in Neighborhood L. The lake features would serve to treat storm water runoff from these neighborhoods prior to discharging to Mountain House Creek. The lake features would help to settle out sediment and particulates from runoff, as well as trace metals, nutrients, and hydrocarbons as these pollutants tend to adhere to soil particles. The lake features would also capture and detain storm water to attenuate peak flows and control erosion. With the proposed project, WQB No. 1 would continue to treat runoff from Neighborhoods B, D, and F.

Per the SWMP, the developer would be required to install catch basin inserts in all new catch basins to filter out sediment, hydrocarbons, and chemicals from site runoff. Commercial, industrial, and public facilities that generate runoff that differs in pollutant concentration or content when compared to residential runoff could also be required to implement additional water quality BMPs, depending on the operations proposed at each facility. Commercial and industrial water quality BMPs in Neighborhoods K and L would be determined on a case-by-case basis and approved by the MHCSD in accordance with Phase II NPDES requirements (Jacobs, 2008).

The SWMP also includes provisions for regular inspections and maintenance of water quality BMPs to ensure proper performance. The MHCSD would be responsible for periodically inspecting the BMPs to determine effectiveness and identify maintenance issues. The lake features would require periodic maintenance, including desilting, vegetation clearing, and trash and debris removal. Maintenance of the lake features and catch basin inserts would be conducted by the MHCSD (Jacobs, 2008).

Master Plan Policy 15.7 (Implementation Measure [a]) states that Mountain House shall implement a SWMP to reduce the discharge of pollutants from the storm sewer system to the maximum extent practicable and protect water quality in the receiving waters. At a minimum, the Master Plan states that the SWMP
shall include the following elements: 1) public education and outreach on storm water impacts, 2) public involvement/participation, 3) illicit discharge detection and elimination, 4) construction site storm water runoff control, 5) post-construction storm water management, and 6) pollution prevention/good housekeeping for municipal operations. As indicated above, the SWMP was prepared in 2008 (Jacobs, 2008).

Issues related to water quality standards and waste discharge requirements are also addressed in the Master Plan in the following: Policies 7.2.8 (Implementation Measure [h] and [z]); Policy 7.3.6 (Implementation Measure [e]) (Wetlands Management); Policy 15.6 (Implementation Measure [a]) (Mountain House Creek Improvements); and Policy 15.7 (Implementation Measure [a]) (BMPs). The proposed storm water drainage system for Neighborhoods K and L is consistent with the water quality standards and waste discharge requirements in the Master Plan.

As required by the Master Plan, the MHCSD will prepare a Maintenance and Operations Manual for the Neighborhoods K and L project site. The Maintenance and Operations Manual must describe sediment basin and water quality pond maintenance activities, including mosquito abatement, access and maintenance to access roads, desilting, vegetation clearing, and trash and debris removal, to ensure the continued maintenance of the ponds. This plan must be completed prior to issuance of grading and building permits for Neighborhoods K and L.

Conclusions. Adherence to the NPDES construction general permit requirements would ensure that impacts on water quality during project construction are less than significant. The proposed storm water drainage system, including the two lake features, implementation of the post-construction water quality BMPs described in the SWMP, and regular inspection and maintenance of these water quality BMPs, would ensure that post-construction impacts on water quality are less than significant. No additional mitigation measures would be necessary.

b) Would the project 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)?

Implementation of the proposed project could result in impacts on groundwater supplies and recharge if construction dewatering were to result in temporarily lowered groundwater levels in the vicinity of nearby groundwater production wells, if the project relied on groundwater for water supplies, and/or if the new impervious surfaces constructed by the project were to substantially interfere with groundwater recharge.
Temporary Lowering of Groundwater Levels During Construction. Groundwater elevations in Neighborhoods K and L range from 3 to 15 feet below ground surface (bgs). If groundwater were encountered during project construction, dewatering of excavated areas would be necessary to create a dry work area. Groundwater is likely to be encountered near Mountain House Creek and Old River, and in areas where deeper excavation is needed for the construction of project facilities.

Dewatering of groundwater during project construction activities could temporarily lower groundwater levels in the vicinity of Neighborhoods K and L. After being treated in accordance with regulatory requirements, the majority of groundwater removed by dewatering would be returned to the subsurface and allowed to infiltrate back into the groundwater table. Due to marginal groundwater quality, there are few groundwater wells in the project area that could be affected by lowered groundwater elevations. Since any lowering of groundwater elevations from construction dewatering would be localized and temporary in nature, impacts on groundwater from construction dewatering would be less than significant.

Domestic Water Supplies. The Byron Bethany Irrigation District (BBID), through contractual relations with the MHCSD, provides domestic water to Mountain House. The water is Delta water that is diverted at the Clifton Court Forebay. Domestic water supply for Neighborhoods K and L would be the same as for the rest of the Mountain House community. The installation of new wells is not a part of the proposed project, and thus groundwater would not be used for the project's water supply. Implementation of Neighborhoods K and L therefore would not deplete groundwater supplies.

Interference with Groundwater Recharge. The construction of new impervious surfaces areas associated with roadways, new residences, and other proposed land uses in Neighborhoods K and L would reduce the ability of surface water to infiltrate the ground surface, thereby reducing groundwater recharge. However, the permanent lake features, which would contain water year-round, would help to induce groundwater recharge. Thus, the lake features would offset any decrease in groundwater recharge associated with new impervious surfaces.

No mitigation measures would be necessary.

c) Would the project 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?

Currently, on-site runoff occurs primarily as sheet flow and concentrated shallow flow north across the former agricultural fields to Old River. The removal of the existing irrigation ditches and associated drainage infrastructure, changes in site topography, creation of new impervious surfaces, and construction of the lake features and storm water drainage infrastructure associated with the proposed
development of Neighborhoods K and L would substantially alter the existing drainage patterns of the Neighborhoods K and L project site after construction.

Once the project is completed, storm water runoff generated on the Neighborhood K and L project site would be conveyed via a series of street gutters, local drainage swales, catch basins, and storm drain pipes to the respective lake features. The lake features would help to settle out sediment and particulates in storm water runoff. Storm water would be detained in each lake until water elevations in the lake rise to a critical elevation below the streets and building pads at which time the storm water would enter an inlet structure and be discharged to Mountain House Creek via a new outfall structure. The proposed outfall for the Neighborhood K lake would be located approximately 1,200 feet south of the confluence with Old River; the proposed outfall for the Neighborhood L lake would be located approximately 600 feet south of the confluence. Each outfall structure would be comprised of a retaining headwall with flap gates, concrete apron, and rip rap slope protection. The concrete apron and rip rap would dissipate the energy of the discharges and protect the creek from erosion. The outfall structures are designed to release the full volume of the 100-year storm at a constant rate over a 48-hour period (CBG, 2010). As a result of the improvements described above, the alterations in drainage patterns associated with the proposed project would not result in substantial soil erosion or sedimentation on- or off-site, and the impact would be less than significant.

Issues related to drainage and potential erosion/siltation are also addressed in the following: Master Plan Policies 15.3 (Implementation Measure [a]) (Off-Site Watersheds); 15.4 (Policies[b], [c], and [h]) (Primary Storm Drain Collection System); 15.6 (Policy [d], and Implementation Measure [a] (Mountain House Creek Improvements); 4.2.2 (Policies [a] and [d]) (Grading Standards); and 6.8.3 (Objective [b] and Policy [b] (Soils, Geologic and Seismic Hazards).

No additional mitigation measures are required to reduce potential project impacts related to erosion and siltation.

d) Would the project substantially alter the existing drainage pattern of the site or area, including 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?

As discussed above under Item (a), the removal of the existing irrigation ditches and associated infrastructure, changes in site topography, creation of new impervious surfaces, and construction of the lake features and storm water drainage infrastructure associated with the proposed development of Neighborhoods K and L would substantially alter the existing drainage patterns of the project site after construction. The conversion of the existing agricultural fields to suburban development would result in an increase in impervious surfaces on the Neighborhoods K and L project site. Without implementation of measures to reduce post-construction runoff, an increase in impervious surface
areas typically results in increases in the peak flows and the volume of storm water runoff generated on a site.

Mountain House Storm Water Master Plan Addendum II (PACE, 2006) presents the results of HEC-1 modeling conducted for the SPII area, including Neighborhoods K and L, and forms the basis for the proposed drainage improvements. The proposed storm water drainage system is designed to accommodate the 100-year flood event, and the lake features proposed in Neighborhoods K and L are designed with sufficient storage to detain 100-year flood flows without overtopping. The proposed flood storage in the lakes, coupled with the completed restoration improvements to Mountain House Creek and the placement of engineered fill to remove all building pads in Neighborhoods K and L from the 100-year flood hazard zone for Old River, would ensure that implementation of the proposed project would not result in on-site flooding. (Also, see discussion under Item (g) below.)

There are no other structures or properties in the vicinity of Neighborhoods K and L that could experience flood problems due to project development. Therefore, project development would not result in an increase in off-site flooding.

Issues related to potential flooding are also addressed in the following Master Plan policies: 4.3.1 (Policy [e]) (Community Edges); 5.1.4 (Policy [d]) (School Siting Criteria); 6.5 (Implementation Measure [b]) (Emergency Preparedness); 7.2.8 (Objective [c], Policies [a] and [e], and Implementation Measures [a] and [g]) (Mountain House Creek Park); 15.4 (Policy [a]) (Primary Storm Drain Collection System); 15.5 (Policy [a]) (Secondary Storm Drain Collection System); 15.6 (Policy [a] and Implementation Measures [a](1) and [a](9)) (Mountain House Creek Improvements); 15.8 (Flood Protection); and 15.11.2(a) (Operations and Maintenance).

No additional mitigation measures are required related to on- and off-site flooding.

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

As described above under Item (d), the proposed storm water drainage system is designed to accommodate the 100-year flood event. The storm drain system would also be designed to accommodate runoff resulting from a sudden and complete failure of earthen dams located upstream of the project site in Alameda County. The lake features proposed in Neighborhoods K and L are designed with sufficient storage to detain 100-year flood flows without overtopping. Thus, project implementation would not create or contribute runoff that would exceed the capacity of the proposed storm water drainage system.

As discussed above under Item (a), while the conversion of the Neighborhoods K and L sites from agricultural uses to suburban uses could result in an increase in
the levels of oils, grease, metals, and petroleum hydrocarbons in site runoff, the proposed lake features and water quality BMPs described in the SWMP, as well as regular inspection and maintenance of these lakes and water quality BMPs, would treat the first flush and ensure that post-construction impacts on water quality would be less than significant.

Issues related to runoff quality and quantity are also discussed in the following: Master Plan Policies 7.3.6 (Implementation Measure [e]) (Wetland Management) and 15.7 (Implementation Measures [a], [c], [d], [e], [g], [h], and [i]) (BMPs).

Project impacts related to runoff quality and quantity are considered less than significant due to mitigation measures in the project description. No additional mitigation measures are necessary.

f) **Would the project otherwise substantially degrade water quality?**

All project-related water quality impacts are addressed above under Item (a).

The Master Plan and the Initial Study prepared for the SPII discussed the possibility of using reclaimed water for on-site irrigation of landscaped areas. The use of reclaimed water for site irrigation is no longer proposed as part of the Neighborhoods K and L project. Thus, no impact related to the use of reclaimed water for irrigation would result.

No mitigation measures are necessary.

g) **Would the project 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?**

As discussed above, ground surface elevations in Neighborhoods K and L range from 0 feet above msl along Old River to about 25 feet above msl in the southern portion of the site. Current FEMA maps for San Joaquin County (FEMA, 2011) indicate that the northern portions of Neighborhoods K and L are located within the 100-year flood hazard zone for Old River. The current 100-year flood elevation for Old River is approximately 10.4 feet above msl.

As part of the proposed project, building pads within areas that are currently mapped as being within the designated 100-year flood hazard zone for Old River would be elevated above the FEMA 100-year base flood elevation. Approximately 2 million cubic yards of engineered fill would be needed to remove the northern portions of Neighborhoods K and L from the 100-year flood hazard zone. Portions of the Neighborhoods K and L project site with ground surface elevations above 10.4 feet above msl would not require fill. In addition, the northern portion of the Neighborhoods K and L project site bordering Old River is proposed as park land, which would provide a flood buffer between Old River and proposed development areas. These improvements would result in the removal of all portions of Neighborhoods K and L from the 100-year flood hazard zone and would be consistent with the approved Conditional Letter of Map...
Revision (CLOMR) issued by FEMA on November 29, 2005. The property would be formally removed from the 100-year floodplain upon a civil engineer certifying the final pad elevations after grading. In addition, as discussed above, portions of the project site that are located within the 200-year flood hazard zone for Old River would be elevated above the 200-year floodplain by elevating building pads above the 200-year base flood elevation. Therefore, the proposed project would not result in negative impacts associated with 100-year or 200-year flood hazard areas and no additional mitigation measures are required.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

See the discussion under Items (d) and (g) above.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?

The proposed project would not rely on levees for flood protection. Flood protection would be provided by elevating building pads above the 100-year flood hazard. Additionally, improvements to Mountain House Creek constructed as part of prior developments were designed to convey the 100-year storm event and to accommodate runoff resulting from a sudden and complete failure of both earthen dams located upstream of the project site, in Alameda County. Thus, the proposed project would not expose people or structures to flood hazards as a result of the failure of a levee or dam. No additional mitigation measures are required to reduce project impacts related to levee or dam failure.

j) Would the project be subject to inundation by seiche, tsunami, or mudflow?

A seiche is a rhythmic motion of water in a partially or completely landlocked water body caused by landslides, earthquake-induced ground accelerations, or ground offset. The proposed lake features in Neighborhoods K and L would be landlocked and surrounded by new development. However, the lake features would wind through the neighborhoods and would not be large enough to pose a threat of inundation by seiches. Neighborhoods K and L are not situated in an area that is vulnerable to tsunamis or mudflows. Therefore, project impacts related to inundation by seiche, tsunami, or mudflow are considered less than significant. No mitigation measures are necessary.

Sources of Information


Jacobs Carter Burgess (Jacobs), 2008. Storm Water Master Plan, Mountain House Community Services District. August.


5.9 Land Use and Planning. Would the project:

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?  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]

d) Create land use conflicts, e.g., by placing incompatible land uses next to each other?  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]

Setting

Land Uses in Project Area

The majority of the Neighborhoods K and L project site was used for irrigated and non-irrigated pasture, alfalfa, and irrigated farmland, but the land is now mostly fallow. Temporary wastewater storage ponds were located on the project site when wastewater was treated and used to irrigate fields. However, this type of irrigation no longer occurs and all wastewater is disposed after treatment to Old River, per a permit from the Regional Water Quality Control Board (RWQCB). The 60-kilovolt PG&E Weber-Herdlyn electrical line, which extends from Weber Point in Stockton to the Herdlyn substation, used to pass through the northern part of the project site parallel to Old River, but the line has been relocated along Byron Road.

Existing land uses surrounding the Neighborhoods K and L project site consist of the following:

- **North of Neighborhoods K and L**: Old River forms the northern boundary of Neighborhoods K and L. Agricultural fields are located to the north of the river and have access from Finck Road. To the northwest of Neighborhoods K and L, in Contra Costa County, lands are in agricultural grain crop production. The Byron Airport is located approximately 4 miles northwest of the project site.

- **East of Neighborhood L**: A wastewater treatment plant that is to serve all of Mountain House is located in the Old River Industrial Park near the southeast corner of Neighborhood L. The remainder of the industrial park is undeveloped.
- **West of Neighborhood K**: Lands once under agricultural production are located to the west of the Neighborhood K. These lands are part of Neighborhoods I and J, which are proposed for an age-restricted community centered around a golf course.

- **South of Neighborhoods K and L**: Neighborhood H and the Town Center, which are approved but only partially developed, are just south of Neighborhood L, on the south side of Byron Road. The proposed Neighborhood J is located just south of Neighborhood K. The only other existing residential development within Mountain House is located farther south in Neighborhoods E, F, G, and H.

The northwestern edge of the City of Tracy is approximately 3.3 miles southeast of Mountain House.

**Applicable Land Use Plans, Policies, and Regulations**

The Neighborhoods K and L project site is subject to the San Joaquin County General Plan and the Mountain House Master Plan. Current General Plan and Master Plan designations for the project site are Low and Medium Density Residential (R/L, R/M), Mixed Use (M/X), Medium-High Density Residential (R/MH), High Density Residential (R/H), Neighborhood Commercial (C/N), Neighborhood Park, Community Park, Regional Park, Other Open Space (OS/O), Public (P), Community Commercial (C/C), Neighborhood Center, and K-8 School.

The San Joaquin County General Plan designation for lands to the east of Mountain House is General Agriculture. Lands to the west in Alameda County are designated for agricultural use. Lands to the northwest are within Contra Costa County and are also designated for agricultural use. Lands to the north are within San Joaquin County and are designated General Agriculture. Lands to the south of Neighborhoods K and L are designated for urban uses as part of the Mountain House Master Plan.

The project site is also subject to the San Joaquin County Development Title, which includes zoning regulations. Lands within the project site are currently zoned Low Density Residential (R-L), Medium Density Residential (R-M), Medium-High Density Residential (R-MH), High Density Residential (R-H), Community Commercial (C-C), Mixed Use (M-X), Neighborhood Commercial (N-C), Public Facilities (P-F), and Open Space (OS and OS/RC). Zoning was defined at the time of adoption of the Specific Plan for areas within Mountain House.

**Applicable Habitat Conservation Plans and Natural Community Conservation Plans**

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) has been prepared and adopted to provide a strategy for conserving agricultural lands and wildlife habitat while accommodating a growing population in San Joaquin County. The SJMSCP is designed to establish an

---

(9/7/11) 5-122
assessment process for conversion of land to non-open space uses when such conversion may affect the plant, fish, and wildlife species covered by the SJMSCP. The SJMSCP includes all the lands within Mountain House, but some lands outside and adjoining Mountain House are not covered by the SJMSCP. Some of the species of concern covered under the SJMSCP include San Joaquin kit fox, Swainson’s hawk, western pond turtle, and burrowing owl. The ultimate goal of the SJMSCP is to provide 100,841 acres of “preserves” over the 50-year lifetime of the plan, with most acres purchased as conservation easements over agricultural lands.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified the following significant land use impact of the Master Plan:

1) The construction of wastewater storage ponds on Fabian Tract may be inconsistent with the Sacramento-San Joaquin Delta Protection Act. (Note: According to the 1994 MEIR, the area north of Old River, including Fabian Tract, the Mountain House project’s preferred long-term wastewater reclamation site, is located in the “primary zone” of the Delta. Thus, no use of reclaimed wastewater is currently proposed for this area to the north.)

The 1994 MEIR also identified the following significant impacts regarding General Plan and Development Title consistency:


3) Some of the Draft Master Plan design and land use standards conflict with standards in the County Development Title.

**Findings Related to Significant Impacts Identified in 1994 MEIR**

For the above impacts, the Master Plan was amended in accordance with some of the recommendations of the 1994 MEIR mitigation measures.

For Impact No. 1 above, the 1994 MEIR recommended that, if the preferred location for the project’s wastewater irrigation and storage ponds was determined to be Fabian Tract, all recommended wastewater and biological resources mitigation measures should be complied with; alternatively, the 1994 MEIR recommended that another location for wastewater disposal be identified outside the Delta “primary zone” or alternative wastewater treatment options (i.e., tertiary treatment) be implemented. Subsequently, the Master Plan was revised to eliminate Fabian Tract as an alternative site for wastewater reclamation or wastewater storage ponds. The selected alternative wastewater storage ponds were outside the primary zone. Recently, the Mountain House community has been permitted to dispose of treated wastewater to Old River and no land disposal is planned.
For Impact No. 2 above, the 1994 MEIR recommended changes in either the San Joaquin County General Plan or the Mountain House Master Plan to resolve conflicts involving land use designations, permitted uses and densities, and roadway classifications, right-of-way widths, and level of service standards. It also recommended revising Master Plan policies and performance standards for regional park standards and for wildlife mitigation in accordance with other mitigation measures recommended in the 1994 MEIR. In conjunction with adoption of the Master Plan, the County adopted General Plan amendments to resolve the conflicts with the Master Plan, but found that the Master Plan was not inconsistent with regional park standards or wildlife mitigation requirements.

For Impact No. 3 above, the 1994 MEIR recommended either changing the Master Plan standards or amending the Development Title to resolve the inconsistencies that allowed more lenient standards in the Master Plan. For each such inconsistency, the County amended the Development Title to resolve the differences.

Discussion Regarding Neighborhoods K and L

a) Would the project physically divide an established community?

Development of Neighborhoods K and L as proposed by the project would not divide an established community because it would be constructed in an area that was historically used for farming. No housing would be removed to accommodate development of the two neighborhoods.

Other on- and off-site modifications such as road improvements and infrastructure construction would not physically divide any established communities. The PG&E Weber-Herdlyn electrical line, which once passed through the northern part of the Neighborhoods K and L project site parallel to Old River, was relocated to an alignment that parallels Byron Road.

b) Would the project 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?

The Mountain House Master Plan has over 300 policies addressing land use, environmental issues, densities, provision of services/utilities, and other issues for development within the Mountain House community. The proposed Neighborhoods K and L Tentative Subdivision Maps would not create any inconsistencies with Master Plan policies.

The discussion below reviews the main chapters of the 1994 Master Plan. For each topic, the potential for the project to conflict with goals and policies of the Master Plan is addressed. Where appropriate, reference is made to specific sections of the Initial Study where the topic is addressed in more detail.
**Community Vision.** This section of the Master Plan addresses the overall goals for the community as related to community character, land use, housing, and other topics. The project would conform to the Master Plan provisions that address community character and would include a mix of land uses as proposed in the Master Plan.

**Land Use.** Land uses within Neighborhoods K and L would generally conform to land uses identified in the Master Plan and Specific Plan II (SPII). However, slightly more acreage would be designated as High Density Residential and Medium-High Density Residential and slightly less acreage would be designated as Medium Density Residential and Low Density Residential (see Table 3-1 of Chapter 3). Compared to the adopted SPII, the project proposes two fewer dwelling units for Neighborhood K and two more dwelling units for Neighborhood L. The total number of dwelling units for Neighborhood K and Neighborhood L combined is the same as compared to SPII. The Cunha property, which is technically part of Neighborhood L, is not included in the proposed project at this time, and the owner would be required to request a Tentative Subdivision Map approval at a later date. The Cunha property will include 108 dwelling units, consistent with SPII.

**Development and Design.** No major design changes for Neighborhoods K and L are proposed, and the project would be consistent with Master Plan goals and policies.

**Education, Child Care, and Library Services.** Refer to Section 5.13, Public Services, regarding this topic. No major changes regarding schools or library services are proposed. Two K-8 schools would be located within Neighborhoods K and L within the proposed Neighborhood Centers. The project would be consistent with Master Plan goals and policies.

**Public Health and Safety.** Public health and safety are addressed herein in Section 5.7, Hazards. No policy conflicts have been identified.

**Recreation and Open Space.** As discussed in Section 5.14, Recreation, the Parks, Recreation, and Leisure Plan for Mountain House addresses Old River Regional Park and other recreational facilities within Neighborhoods K and L. This section of the Master Plan also addresses biological resources. A number of measures are included in the Master Plan policies to address protection of special-status species. This topic is addressed in Section 5.4, Biological Resources, of the Initial Study, which summarizes all the background studies completed for Neighborhoods K and L.

Protection of cultural resources is also addressed in this chapter of the Master Plan. This topic is discussed in Section 5.5, Cultural Resources, of the Initial Study. No major conflicts with the Master Plan have been identified.

**Energy and Telecommunications.** This chapter of the Master Plan addresses the provision of gas and electrical service to the community, as well as
telecommunications systems. No conflicts with the Master Plan have been identified. Review of Neighborhoods K and L by PG&E and any other pipeline owners should occur due to the possible existence of underground lines that could be affected by Neighborhoods K and L development. This review is expected to occur prior to approval of the Neighborhoods K and L Tentative Subdivision Maps.

Transportation and Circulation. The Master Plan addresses many steps that developers within Mountain House must take regarding improvements to roadways affected by the project. This chapter of the Master Plan also addresses freeway improvements, arterial intersections, roadway maintenance, parking, bicycle and pedestrian facilities, and transit. Section 5.15, Transportation/Traffic, of this Initial Study addresses all of these topics and compares the proposed project to that identified in the SPII Initial Study. No Master Plan or SPII amendments related to transportation are proposed by the project and no conflicts with these policy documents have been identified.

Air Quality and Transportation Management. This chapter of the Master Plan addresses both the protection of air quality and the need for a Transportation Demand Management (TDM) program for the overall community. Air quality is addressed in Section 5.3 of this Initial Study. No major conflicts with this chapter of the Master Plan have been identified, and no policy changes for this topic are proposed by the applicant.

Noise. This chapter of the Master Plan addresses mobile and stationary noise sources at Mountain House. The project does not propose any amendments to this chapter of the Master Plan, and no major conflicts with Master Plan policy have been identified.

Potable Water Systems. This chapter of the Master Plan addresses water supply, water demand, water treatment, and water storage. Section 5.16, Utilities and Service Systems, of this Initial Study addresses water issues. No amendments are proposed for this chapter of the Master Plan and no policy conflicts have been identified.

Wastewater Treatment and Collection System. This chapter of the Master Plan addresses wastewater generation and collection, treatment, sludge disposal, odors, and costs/permits. No amendments are proposed for this chapter of the Master Plan. This topic is covered in Section 5.16, Utilities and Service Systems, of this Initial Study. No policy conflicts have been identified.

Storm Drainage and Flood Protection. The issue of storm drainage is addressed in Section 5.8, Hydrology and Water Quality, of this Initial Study. No amendments are proposed for this chapter of the Master Plan. No policy conflicts have been identified.
c) **Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?**

Compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) would be achieved through the applicant’s payment of the SJMSCP fee along with preconstruction surveys and take avoidance measures spelled out in the SJMSCP. These are consistent with the 1994 MEIR mitigation alternatives and the Master Plan. The fee associated with the SJMSCP is to be paid directly to the San Joaquin County Council of Governments (COG) for the SJMSCP. Any and all mitigation would be further reviewed and approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service. These measures are addressed in more detail in the Section 5.4, Biological Resources, of this Initial Study.

d) **Would the project create land use conflicts, e.g., by placing incompatible land uses next to each other?**

Neighborhoods K and L development would not create any significant land use conflicts. The following discussion reviews proposed land uses and potential on- and off-site conflicts. See Figure 5.9-1 for an illustration of the proposed Master Plan in relation to its surroundings.

**Neighborhood K Land Uses.** Land uses in Neighborhood K would mainly consist of low-, medium-, medium-high-, and high-density housing surrounding a series of lakes developed for the purpose of storm water management. A neighborhood park and K-8 school would be located near the center of Neighborhood K, with an adjoining small neighborhood commercial center. Housing would adjoin the Old River Regional Park and would also front on the proposed internal lakes and local collector streets. A concentration of medium-high-density residential uses and a mixed-use center would be located at the western edge of Neighborhood K, with a community park in the center of this area. Public facilities and a large community commercial area are proposed in the southeast corner of Neighborhood K adjacent to Central Parkway. Old River Park would extend across the entire northern edge of both neighborhoods.

Land uses adjoining Neighborhood K would be as follows:

- **To the west:** Some low- and medium-density housing development would occur in Neighborhood I to the east (adjacent to medium-high density housing in Neighborhood K), and a portion of Old River Regional Park would adjoin the Neighborhood K park uses at the northern boundary. The golf course in Neighborhoods I and J would also adjoin Neighborhood K, across Central Parkway. Central Parkway would serve as the eastern and southern boundary for much of Neighborhood K.

- **To the north:** Housing along the northern boundary of Neighborhood K would adjoin Old River Regional Park. This park would adjoin Old River and off-site agricultural uses to the north. (See further discussion in Section 5.2, Agriculture and Forestry Resources.)
Overview of Mountain House Master Plan on aerial view of general area, using Google Earth satellite photos.

Figure 5.9-1

MOUNTAIN HOUSE MASTER PLAN IN RELATION TO SURROUNDINGS

SOURCE: R. Twiss, 2006 and Google Earth
To the south: Central Parkway would form the southern boundary of Neighborhood K, with the golf course and residential uses on the opposite side of Central Parkway in Neighborhood J.

To the east: Mountain House Creek would form the eastern edge of Neighborhood K. Future residential uses and portions of lakes within Neighborhood L would be located just east of Mountain House Creek.

Neighborhood K land uses would not create any conflicts with adjoining uses, either on- or off-site.

Neighborhood L Land Uses. Land uses in Neighborhood L would mainly consist of low-, medium-, and medium-high-density housing surrounding internal lakes and a central school and neighborhood park area, similar to Neighborhood K. The neighborhood park, K-8 school, and a small neighborhood commercial center would be located at the center of Neighborhood L. A high-density residential area, community commercial center, and transit center would be located at the south end of Neighborhood L near Byron Road. Land uses adjoining Neighborhood L would be as follows:

To the west: The western edge of Neighborhood L would contain Mountain House Creek and an adjoining community park, which would border Neighborhood K to the west.

To the north: Old River forms the northern boundary of Neighborhood L, with agricultural uses located on the north side of the river.

To the south: The North Community Park in Neighborhood L, a water quality basin, and a transit station area would adjoin the railroad tracks, Byron Road, and park and commercial uses in the Town Center to the south of Byron Road.

To the east: The existing wastewater treatment plant that serves Mountain House would be located just east of a portion of Old River Park and a residential area in Neighborhood L. The Cunha property, which is to include residential and commercial uses as part of Neighborhood L (when the owner applies for Tentative Subdivision Map approval), is located east of Neighborhood L and would include similar residential and commercial uses. The Old River Industrial Park would also be located to the east but has not yet been developed. Industrial uses in this area would adjoin residential uses at the east side of Neighborhood L.

Neighborhood L land uses would not create any conflicts with adjoining uses, either on- or off-site. Indirect land use issues associated with the proximity of the MHCSD wastewater treatment plant are discussed in Section 5.11, Noise, and Section 5.3, Air Quality and Greenhouse Gas Emissions, of this Initial Study.
Sources of Information

San Joaquin County, 1994. *Findings Regarding Impacts Identified in Final Environmental Impact Report as Potentially Significant Environmental Impacts, County of San Joaquin, California, Mountain House/Adoption of Master Plan, Specific Plan; Conforming Amendments of General Plan and Development Title; Development Agreement.*


5.10 Mineral Resources. Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Setting

The San Joaquin County General Plan identifies mineral deposits in the County, pursuant to the California Surface Mining and Reclamation Act of 1975 (SMARA). The County General Plan (Figure VI-4, “Significant Sand and Gravel Aggregate Resource Sectors,” and Figure VI-5, “Generalized Aggregate Extraction Sites”) does not identify any mineral resources in the Specific Plan II (SPII) area, which includes Neighborhoods K and L.

According to SPII (Section 3.3.5), however, five of the existing parcels in the SPII area have mineral rights with rights to surface access by third-party mineral rights owners. The rights are located in Neighborhoods D, H, J, and L (see Figure 5.10-1). Such rights enable owners to explore and extract mineral resources that may exist below the subject properties. For this area, the resources are likely to be natural gas. According to the State Department of Conservation Division of Oil, Gas, and Geothermal Resources, wells have been drilled in the SPII area in the past but have not produced any usable resources (Habel, 2004).

Drill sites are typically 1 to 2 acres in size, allowing access for a drilling rig structure. As shown on Figure 5.10-1, the mineral rights map indicates that the potential drill sites in Neighborhood L would be located on designated parklands (North Community Park and Old River Regional Park).

Significant Impacts Identified in 1994 MEIR

The 1994 MEIR did not identify any mineral resources impacts for the Master Plan.

Findings Related to Significant Impacts Identified in 1994 MEIR

As noted above, the 1994 MEIR did not identify any mineral resources impacts for the Master Plan.
Figure 5.10-1

MINERAL RIGHTS

LEGEND

- Potential Drill Sites
- Legal Parcel with Third Party Rights to Surface Entry
- Mineral Rights Boundary
- SPII Area

NOTE:
Potential Drill Site Locations Subject to Change
Discussion Regarding Neighborhoods K and L

a) Would the project 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?

As noted above, parcels within Neighborhood L have mineral rights with rights to surface access by third-party mineral rights owners. Development in this area has the potential to result in the loss of this access. While wells previously drilled in the SPII area have not produced usable resources, it is reasonable to assume that any natural gas in the area would have some value, particularly in an energy crisis (Habel, 2004). Therefore, development in Neighborhood L has the potential to result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State.

SPII (Section 3.3.5) identifies the parcels with mineral rights and states that “several conceptual surface entry locations have been identified within the area of Specific Plan II” (see Figure 5.10-1). An implementation measure states as follows:

In accordance with applicable law, a surface entry site may be provided on original parcels encumbered by third party surface entry rights to access minerals. To the maximum extent possible, these sites will be located in public areas such as Community Parks, and shall be located to allow convenient vehicular access. Siting criteria will also consider pipeline conveyance routes to existing off-site transmission pipelines. All extraction and conveyance facilities shall specifically be located away from school facilities, and shall to the greatest extent possible, avoid being located within any neighborhood within Mountain House. Drilling and well site operators shall comply with applicable federal, State, County and MHCSD code requirements.

As shown on Figure 5.10-1, all of the potential drill sites would adjoin major roads in the SPII area. No conflicts with pipeline conveyance routes to existing off-site transmission pipelines have been identified at this stage. Each of the potential drill sites would be located approximately 1,000 to 2,000 feet away from schools on the Neighborhoods K and L project site. The two sites within Neighborhood L would be located within North Community Park and Old River Regional Park.

The State Department of Conservation Division of Oil, Gas, and Geothermal Resources supervises the drilling, operation, maintenance, and plugging and abandonment of oil, gas, and geothermal wells in California. Before drilling, reworking, or plugging and abandoning a well, operators must file a Notice of Intention with the appropriate Division of Oil, Gas, and Geothermal Resources district office. The Mountain House Community Services District (MHCSD) would require encroachment permits for any work within public rights-of-way or MHCSD-owned land. Permits from the local air pollution control district or Regional Water Quality Control Board (RWQCB) may also be required. The Division of Oil, Gas, and Geothermal Resources typically requires additional
safety equipment for wells drilled within 300 feet of residential areas (Habel, 2004).

Since SPII identifies and provides for access and standard state, local, and MHCSD requirements would apply, no additional mitigation measures would be necessary. No drill sites have been identified in Neighborhood K.

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

As noted above, SPII does identify parcels in Neighborhood L that have mineral rights. SPII provisions along with standard applicable state, local, and MHCSD requirements would ensure access to on-site mineral resources.

Sources of Information


5.11 **Noise.** Would the project result in:

- **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 ground borne vibration or ground borne 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 2 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?

### Setting

#### Existing Noise Conditions

The major existing noise sources in the vicinity of the Neighborhoods K and L project site are traffic on Mountain House Parkway and Byron Road. A wastewater treatment plant exists adjacent to the southeast corner of Neighborhood L. Aircraft overflights are also audible in the project area.

Existing noise-sensitive receptors in the area are Neighborhoods I and J, located south and east of Great Valley Parkway; and the homes along Mountain House Parkway and Byron Road.

To quantify existing noise levels along the Byron Road and Union Pacific Railroad corridor, a 24-hour-long measurement was conducted between 2:00 PM on Wednesday, July 13, 2011 and 2:00 PM on Thursday, July 14, 2011. In addition, three short-term (5-minute) measurements were conducted between approximately 1:30 and 2:00 PM on Wednesday, July 13, 2011. Table 5.11-1 shows the locations and noise levels recorded during the study.
Table 5.11-1 | EXISTING NOISE ENVIRONMENT IN PROJECT SITE VICINITY*a

<table>
<thead>
<tr>
<th>Location</th>
<th>Time Period</th>
<th>Recorded Noise Levels</th>
<th>Noise Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 feet from center of Byron Road (long-term measurement)</td>
<td>Wednesday, July 13 to Thursday, July 14, 2011</td>
<td>24-Hour Ldn: 84 Hourly Average Leq (Decibel) Range, 70–79</td>
<td>Unidentified. (Unattended noise measurements do not specifically identify noise sources.)</td>
</tr>
<tr>
<td>50 feet from center of Byron Road (short-term measurement)</td>
<td>Wednesday, July 13, 2011, 1:32–1:47 PM</td>
<td>5-Minute Average Noise Levels, Leq (decibels): 74, 74, 72</td>
<td>Noise from traffic on Byron Road/wind causing high background levels. Semi truck, 85 dBA Car, 80 dBA</td>
</tr>
</tbody>
</table>

*a All noise levels measured in decibels (dBA). Noise measurement data presented here using a Metrosonics dB-308 sound level meter, calibrated prior to use.

Source: ESA, 2011

The railroad is used only a few times per year. Noise levels are typically dominated by truck and automobile traffic on Byron Road. The measured 24-hour average day/night noise level (L_{dn}) was 84 dB at this location. It should be noted that weather conditions included high winds during this time period. These winds contributed to an increased ambient noise level, especially during the nighttime hours, which create an inflated L_{dn} calculation. This shows that weather conditions in the area can dominate the noise environment at times.

General aviation aircraft flyovers associated with the Byron Airport, which is located to the west in Contra Costa County, are occasionally audible in the area. However, aircraft noise is not significant. The Contra Costa Airport Land Use Compatibility Plan (prepared December 13, 2000) shows that the annual average Community Noise Equivalent Level (CNEL) in the Mountain House community due to Byron Airport activity is less than 55 dB everywhere within the community.

**Noise Standards and Regulations**

The 1994 MEIR and the Mountain House Master Plan require that noise levels in primary outdoor use areas in new residential developments, schools, and other noise-sensitive land uses must not exceed 65 dB. The Master Plan further states that community walls should be no more than 7 feet high whenever possible. Specifically, the Development Title for Mountain House requires the following (San Joaquin County, 1992):

9-1025.9M NOISE

The regulations concerning noise shall be as specified in the development title with the following modifications:

---

1 Day/Noi**t**e Level, L_{dn}, is 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 PM and 7:00 AM.

2 Decibel, dB, is 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).
(a) Standards for Commercial and Industrial Uses. For new commercial uses, industrial uses or utilities, the exterior non-transportation noise level performance standards specified in Table 9-1025.9M in the San Joaquin County Development Title shall be applicable.

Table 9-1025.9 MAXIMUM ALLOWABLE NOISE EXPOSURE

<table>
<thead>
<tr>
<th>Noise Sensitive Land Use (Use Types)</th>
<th>Part I – Transportation Noise Sources</th>
<th>Part II – Stationary Noise Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outdoor Activity Areas(^1) dB Ldn</td>
<td>Indoor Spaces dB Ldn</td>
</tr>
<tr>
<td>Residential</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Administrative Office</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Child Care Services-Child Care Centers</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Community Assembly</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Cultural &amp; Library Services</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Educational Services: General</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Funeral &amp; Interment Services—Undertaking</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Lodging Services</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Medical Services</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Professional Services</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Public Services (excluding Hospitals)</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Public Services (hospitals only)</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Recreation—Indoor Spectator</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Religious Assembly</td>
<td>65</td>
<td>45</td>
</tr>
</tbody>
</table>

1 Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

2 Each of the noise level standards specified shall be reduced by 5 dB for impulsive noise, single tone noise, or noise consisting primarily of speech or music.

(Ord. 3675; Ord. 4036 § 2(part), 1999)

(b) Standards for Residential Uses. New residential development shall not be allowed where noise levels due to stationary noise sources would exceed the exterior noise level standards set forth in Table 9-1025.9:

1 Noise levels from mobile noise sources in primary outdoor use areas of new residential development shall not exceed an Ldn of sixty (60) dB unless the project design includes mitigation measures to reduce noise in outdoor activity areas to sixty (60) dB, or as reasonably close to sixty (60) dB as is possible. Where it is not possible to reduce noise in outdoor
activity areas to an Ldn of sixty (60) dB or less, an exterior noise level of up to, but not exceeding an Ldn of sixty-five (65) dB may be allowed by the Review Authority.

(2) Exterior noise levels shall not create an interior noise level exceeding forty-five (45) dB.

(3) Noise studies for specific residential projects proposed in areas with noise levels from mobile sources above Ldn sixty (60) dB shall address how noise levels in outdoor areas could be maintained at or below an Ldn of sixty-five (65) dB.

(c) Standards for Other Specified Uses.

(1) Noise-sensitive land uses other than residential uses shall not be allowed where noise levels due to stationary noise sources would exceed the exterior noise level standards set forth in Table 9-1025.9.

(2) On school sites and other noise-sensitive land uses, any outdoor instructional areas or areas which require speech audibility shall be located outside the sixty (60) dB Ldn noise contour from mobile sources or shielded from mobile noise in excess of sixty (60) dB Ldn.

(3) Exterior noise levels shall not create an interior noise level exceeding forty-five (45) dB.

(4) Noise studies prepared for noise-sensitive land uses shall address how noise levels in outdoor areas from mobile sources shall be maintained at or below an Ldn of sixty (60) dB.

Significant Impacts Identified in 1994 MEIR

The 1994 MEIR identified significant noise impacts related to the following:

1) Compatibility of the proposed uses with the future onsite noise environment;

2) Impacts on existing land uses in the area due to project-generated traffic noise increases;

3) Impacts on future residences due to agriculturally-generated noise on parcels adjacent to the community of Mountain House; and

4) Potential aircraft overflight noise impacts.

Findings Related to Significant Impacts Identified in 1994 MEIR

For all of the potential noise impacts, the Master Plan was amended as recommended in the 1994 MEIR mitigation measures. One exception was that the recommended acceptable outdoor noise level of an Ldn of 60 dB was raised to 65 dB to be consistent with the Noise Element of the San Joaquin County General Plan. Also, the original 1994 MEIR-recommended mitigation measures to reduce noise from agricultural machinery and helicopters were not adopted.

Discussion Regarding Neighborhoods K and L

a) Would the project result in 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?
For the Neighborhoods K and L project, the main concern would be potential exposure of project residents to noise levels that exceed applicable standards. Non-residential uses proposed by the project (e.g., commercial uses, schools, parks) would be unlikely to be exposed to excessive noise.

The Neighborhoods K and L project plans include berms and sound walls to maintain noise levels at or below an L_{dn} of 65 dB in primary outdoor use areas of future residential development, as described below.

Byron Road/Union Pacific Railroad. Table 5.11-2 shows existing and future noise levels along road segments in the project site vicinity. Noise levels along the Byron Road/Union Pacific Railroad corridor are expected to increase. Future traffic volumes on Byron Road are expected to increase from 7,105 average daily vehicles (existing) to 34,865 average daily vehicles (2035 plus Project). Speeds would likely be reduced as compared to the existing speed on the road due to stop lights and signage, and the overall truck percentage would be slightly lower than it is today.

While the resulting noise level is expected to be higher than what exists today, the L_{dn} in the yards of the closest proposed homes would be less than 65 L_{dn} without mitigation. Neighborhood L would include a sound wall along the future Mountain House Parkway at the entrance to the neighborhood. The wall would be approximately 7 feet high relative to the rear yards of the closest homes (see Figure 5.11-1).

Trains on the Union Pacific Railroad do not currently represent a noise problem. There is only about one train per year on the track and there are no plans for a significant change in the use of the tracks. The rail might be used in the future for a commuter-type operation similar to the Ace Train with up to four trains per day. If the L_{dn} associated with this activity would be above 65 dB outside of the closest homes, additional mitigation would need to be incorporated at the time the new train service is proposed. Future development on the north side of Byron Road would be consistent with the guidelines of the Master Plan.

Future noise levels outside of the closest residential units on the north side of Byron Road would be as high as an L_{dn} of 62 dB but below the 65 dB threshold. Additionally, the transit station and community commercial development may block the view and result in increased attenuation from traffic noise to the outdoor activity use areas of the closest sensitive receptors.

Farther east along Byron Road, there are one or two homes on the south side of Byron Road (outside the project site) that may be affected by increased traffic. Specific Plan II (SPII) indicates that noise mitigation for these homes will be addressed at the time of the proposed road widening for Byron Road.

Project-Proposed Road Improvements. Roadway improvements for the proposed project are expected to include the following: Central Parkway would be extended north to Old River, Mountain House Parkway would extend north to
Figure 5.11-1
LOCATION OF FUTURE SOUND WALLS

SOURCE: Carlson, Barbee & Gibson, Inc.
## Table 5.11-2  Traffic Noise Levels Along Roadways in the Project Site Vicinity

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Existing (A)</th>
<th>Existing plus Project (B)</th>
<th>Incremental Increase (B - A)</th>
<th>Significant? (Yes or No)c</th>
<th>2035 Plus Approved Projects (C)</th>
<th>2035 Plus Project (D)</th>
<th>Incremental Increase (D-A)</th>
<th>Significant? (Yes or No)c</th>
<th>Incremental Increase (D-C)</th>
<th>Cumulatively Considerable? (Yes or No)c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain House Parkway south of Byron Road</td>
<td>60.4</td>
<td>67.0</td>
<td>6.6</td>
<td>Yes</td>
<td>70.9</td>
<td>71.0</td>
<td>10.6</td>
<td>Yes</td>
<td>0.1</td>
<td>No</td>
</tr>
<tr>
<td>Mountain House Parkway south of Grant Line Road</td>
<td>64.3</td>
<td>67.2</td>
<td>3.0</td>
<td>No</td>
<td>69.9</td>
<td>69.9</td>
<td>5.7</td>
<td>Yes</td>
<td>0.1</td>
<td>No</td>
</tr>
<tr>
<td>Byron Road east of Mountain House Parkway</td>
<td>64.5</td>
<td>67.0</td>
<td>2.5</td>
<td>No</td>
<td>71.4</td>
<td>71.4</td>
<td>6.9</td>
<td>Yes</td>
<td>0.0</td>
<td>No</td>
</tr>
<tr>
<td>Byron Road west of Mountain House Parkway</td>
<td>63.9</td>
<td>65.1</td>
<td>1.1</td>
<td>No</td>
<td>68.4</td>
<td>68.3</td>
<td>4.3</td>
<td>No</td>
<td>-0.2</td>
<td>No</td>
</tr>
<tr>
<td>Grant Line Road east of Mountain House Parkway</td>
<td>58.9</td>
<td>59.3</td>
<td>0.4</td>
<td>No</td>
<td>67.5</td>
<td>67.6</td>
<td>8.7</td>
<td>Yes</td>
<td>0.1</td>
<td>No</td>
</tr>
<tr>
<td>Grant Line Road west of Mountain House Parkway</td>
<td>60.6</td>
<td>61.0</td>
<td>0.5</td>
<td>No</td>
<td>67.6</td>
<td>67.8</td>
<td>7.2</td>
<td>Yes</td>
<td>0.2</td>
<td>No</td>
</tr>
<tr>
<td>Great Valley Parkway north of Grant Line Road</td>
<td>n/a(d)</td>
<td>n/a(d)</td>
<td>n/a(d)</td>
<td>n/a(d)</td>
<td>58.7</td>
<td>58.2</td>
<td>n/a(d)</td>
<td>n/a(d)</td>
<td>-0.5</td>
<td>No</td>
</tr>
<tr>
<td>Great Valley Parkway south of Grant Line Road</td>
<td>52.0</td>
<td>56.1</td>
<td>4.1</td>
<td>No</td>
<td>61.0</td>
<td>60.9</td>
<td>8.9</td>
<td>Yes</td>
<td>-0.1</td>
<td>No</td>
</tr>
</tbody>
</table>

\(a\)  Road center to receptor distance is 30 meters (approximately 100 feet) for values shown in this table. Noise levels were calculated using the FHWA Traffic Noise Prediction Model (FHWA RD-77-108).

\(b\)  Vehicle mix on based on actual percentages observed during short-term measurements. The speed for these segments was assumed to be 45 miles per hour for all segments except Great Valley Parkway which has a speed limit of 35 miles per hour.

\(c\)  Considered significant if the incremental increase in noise is greater than 5 dB Ldn as defined in the Master Plan.

\(d\)  Not applicable.

Source: ESA, 2011.
Central Parkway, and other internal roads would be built within the neighborhoods.

In accordance with the Mountain House Master Plan (Section 4.2.7[c]) and SPII (Section 4.2.5), no community walls are permitted along Central Parkway. Mountain House Parkway, proposed to be extended north of Byron Road along Neighborhood L, would include 7-foot-high sound walls to shield affected outdoor use areas, similar to those used in the development of Neighborhoods E, F, and G (see Figure 5.11-1) and would be adequate to mitigate traffic noise impacts. Existing homes on the east side of Mountain House Parkway could be subject to increased traffic noise on this main arterial when it is ultimately widened to six and eight lanes. SPII indicates that mitigation for these existing homes should occur when the MHCSD approves the planned road widening.

Along Byron Road, there are one or two homes on the south side of Byron Road (outside the project area) that may be affected by increased traffic. SPII addresses the fact that noise mitigation for these homes will be addressed at the time of proposed road widening for Byron Road. Mitigation could include stretches of sound walls near the homes, new fencing around outdoor use areas, and/or new ventilation systems in homes to allow windows to be kept closed. Some of these homes have already had sound walls constructed.

Stationary Noise Sources. Stationary noise sources in Neighborhood L include the water treatment plant at the eastern edge of the project site, which has access via Bethany Road and/or Wicklund Road. Localized noise impacts could occur around this source depending upon the proximity of other noise-sensitive land uses to individual noise sources such as pumps. The Mountain House Master Plan requires that noise from these commercial facilities be controlled to an hourly Leq of 55 dBA in the daytime (7:00 AM to 10:00 PM) and 50 dBA during the nighttime (10:00 PM to 7:00 AM).

Mitigation Measures

Mitigation Measure NOISE-1: The applicant shall conduct noise monitoring at homes within Neighborhood L that are adjacent to the MHCSD wastewater treatment plant. If measured noise levels are higher than the adopted standards, the applicant shall work with the MHCSD to incorporate mitigation (sound walls or housings) that would result in noise levels within Master Plan requirements. This mitigation measure would reduce the impact to a less-than-significant level.

b) Would the project result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

The only potential source of ground-borne vibration would be rail traffic on the Union Pacific Railroad. The closest proposed homes (High Density Residential in the southern portion of Neighborhood L) would be set back over 200 feet from these tracks. Measurements along commuter rail corridors have shown that at distances of 100 feet or more, ground vibration levels are insignificant. Thus, no impacts due to ground-borne vibration would be expected.
c) **Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

Refer to the discussion under Item (a) above. Noise mitigation for existing scattered homes on the east side of Mountain House Parkway and south side of Byron Road is addressed under Item (a) above and in Sections 11.2.2 and 11.2.6 of SPII.

d) **Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

Temporary increases in noise levels would be associated with construction of buildings and infrastructure, schools, parks, and commercial uses. This construction noise would be of most concern along the perimeter of existing neighborhoods. Homes that would be built in Neighborhoods K and L would also become new sensitive receptors affected by future construction within the neighborhoods. This construction would be required to comply with the local ordinances. While occasionally audible, construction noise is not expected to be significant and no additional mitigation measures would be necessary.

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The Byron Airport is located several miles to the west of the project area. The Contra Costa County Airport Land Use Compatibility Plan shows that future noise levels due to aircraft overflight noise for worst-case conditions would be less than 50 dB. This noise level is far below the $L_{dn}$ of 65 dB allowed by the Master Plan. The aircraft noise impacts anticipated by the 1994 MEIR were based on information available at that time. Figure 11.1 of the Master Plan, which shows areas of potential noise impacts, is no longer applicable and the noise data contained in the current Contra Costa County Airport Land Use Compatibility Plan should be used. Aircraft noise would not be a significant impact.

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?**

This project is not located near any private airstrip.

**Sources of Information**


San Joaquin County, 1992. San Joaquin County Development Title, adopted July 29, as amended.
### 5.12 Population and Housing

Would the project:

- **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?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Setting

The Neighborhoods K and L project site currently contains no residential units or other structures. No employment occurs on the site.

### Significant Impacts Identified in 1994 MEIR

The 1994 MEIR identified the following two potential impacts associated with Master Plan development:

1. Possible failure to attain an adequate balance between jobs and housing, especially during the initial phases of the project.
2. Potential insufficient supply of housing that is affordable to very low and low income workers employed in the community.

### Findings Related to Significant Impacts Identified in 1994 MEIR

For the above-identified potential population and housing impacts, the Master Plan was amended as recommended in the 1994 MEIR mitigation measures.

For Impact No. 1 above, Section 3.9.2 of the Master Plan, Implementation Measures (d), (e), and (f) deal with the issue of jobs/housing balance as follows:

- Implementation Measure (d) requires that the San Joaquin County Board of Supervisors shall hold a Jobs/Housing Review, to review the progress of the jobs/housing program at specified times;
- Implementation Measure (e) specifies actions to be taken, after the Jobs/Housing Review, to address the jobs/housing issue; and
Implementation Measure (f) states that redesignation and rezoning of commercial and industrial land to non-employment uses (such as residential uses) shall be approved only if the County determines that the proposed redesignation or rezoning will not have a negative impact on the Mountain House Jobs/Housing and Affordable Housing programs.

For Impact No. 2 above, Section 3.9.3, of the Master Plan, Implementation Measures (a) (8) and (9) address the supply of housing to low income workers as follows:

Implementation Measure 8 (Minimum Residential Densities), states that, subject to the provisions of Section 3.3: Land Use Regulations and Permitted Uses, residential densities in each land use category in each neighborhood shall not fall below a specified minimum number of dwelling units per acre as indicated in Table 3.3: Neighborhood Minimum and Maximum Residential Units.

Implementation Measure 9 (Rezoning to Lower Densities), states that rezoning of higher density residential land (e.g., R-H) to lower density (e.g., R-M) uses shall be approved only if the County determines that the proposed rezoning will not have a negative impact on the Mountain House Jobs/Housing Program and the Affordable Housing Program.

Discussion Regarding Neighborhoods K and L

a) Would the project 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)?

The proposed development for Neighborhoods K and L would induce population growth on the two neighborhood sites. The 1994 MEIR evaluated the overall growth inducement impacts of the Mountain House community.

Growth-inducing impacts elsewhere in the area could result if the Mountain House water and wastewater plants were sized with a greater capacity than that needed to serve the project. The capacity of the on-site water and wastewater plants would serve no more than the projected on-site population for the entire community, however, eliminating this potential growth-inducing impact.

As discussed in the 1994 MEIR, the Mountain House community was planned with a mix of land uses to be a "self-contained community" and, thus, to minimize growth-inducing impacts. However, over time, development in this agricultural area could expand beyond the boundaries of the site due to both economic and environmental factors. The 1994 MEIR concluded that Interstate 205 and Old River would provide an adequate buffer to minimize growth-inducing impacts to the south and north of the project site, respectively. The costs of extending infrastructure across these two barriers...
would deter new development. The Findings for the 1994 MEIR concluded that a buffer consisting of Great Valley Parkway combined with residential setbacks was adequate to minimize growth-inducing impacts to the west of the site. Mountain House Parkway forms a buffer along the eastern edge of Mountain House. No mitigation measures would be needed.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No housing would be removed for the proposed project.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Refer to Item (b) above.

Sources of Information

### 5.13 Public Services.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire protection?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Police protection?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Schools?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Parks?[^1]</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other public facilities?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### Setting

#### Fire Protection Services

In March 1998, the Mountain House Community Services District (MHCSD) adopted a Fire Protection Plan that defines the standards for fire protection at the Mountain House community. In May 1996, the MHCSD entered into an agreement with the Tracy Rural Fire Protection District (TRFPD) whereby the TRFPD would provide fire protection and emergency medical response services at Mountain House. Since then, the TRFPD has entered into an agreement with the City of Tracy whereby the City of Tracy Fire Department provides fire protection and emergency medical response within the boundaries of the TRFPD and to the Mountain House community.

#### Existing and Future Fire Stations

A permanent fire station has been constructed on Mascot Boulevard between De Anza Boulevard and Central Parkway as part of the development of Specific Plan I (SPI). An engine company with one Type I pumper engine and three-person crews, consisting of two fire fighters and one emergency medical technician (EMT), has been assigned to the station.

[^1]: Addressed in Section 5.14, Recreation, of this Initial Study.
The MHCSD Fire Protection Plan states that fire stations shall be located to 1) provide a maximum response time of three minutes, or 2) be within 1.5 miles of property to be protected. However, in September 2004, San Joaquin County amended its General Plan and the Mountain House Master Plan to delete these specific requirements. The two plans were amended to state that “fire stations shall be strategically located so as to offer fire protection to all portions of the community consistent with standards for comparable communities in the County.” On September 1, 2004, the City of Tracy Fire Chief sent a letter to the County stating, in part, that the amendment will allow the community to work with the fire protection provider to locate fire stations at strategic locations to provide the best possible emergency services to the community.

The MHCSD Fire Protection Plan also addresses house and building construction standards, fire-fighting personnel staffing and training, public education on fire prevention, weed abatement, hazardous materials handling and storage, and mutual aid.

**Ambulance Service**

Ambulance service would be provided by a private ambulance service company permitted by San Joaquin County. According to the 1994 Master EIR (MEIR), the first permanent fire station should be equipped with an ambulance if the on-site fire fighters are responsible for emergency medical service transport to the nearest hospital emergency room or emergency care facility. To date, the Mascot Boulevard fire station does not have an ambulance but, as already noted, it does have emergency medical technician (EMT) and paramedics on staff (Groover, 2011).

**Police Services**

The MHCSD has an existing agreement with the San Joaquin County Sheriff’s Department for law enforcement services at the Mountain House community. The agreement describes the standards for providing law enforcement. The staffing plan conforms with the San Joaquin County General Plan 2010, which specifies that the standard ratio for law enforcement shall be 1.5 sworn officers assigned to patrol duty per 1,000 residents in urban areas. As initial fulfillment of this requirement, the MHCSD paid for two officers whom the Sheriff’s Department hired specifically to patrol the Mountain House community. The Sheriff’s Department has a satellite office located at the MHCSD office for 24/7 availability (Groover, 2011). The department’s main office is located in Stockton.

The Master Plan (page 6.1) states that an urban level of police service consistent with standards for comparable communities within San Joaquin County as identified in the Police Protection Plan and consistent with the San Joaquin County General Plan will be provided in the Mountain House community when it reaches an urban level of development. The service agreement between the MHCSD and the Sheriff’s Department called for negotiations for an enhanced level of service to begin no later than the issuance of the first residential building permit within the boundaries of the MHCSD.
SCHOOLS

The Mountain House community is located within the boundaries of the Lammersville Unified School District (LUSD). The LUSD became a unified school district in July 2011 and was formerly the Lammersville Elementary School District (LESD).

Elementary Schools

Wicklund Elementary School in Neighborhood F (in the SPI area) opened for the fall 2004 semester. The school’s originally planned capacity was 897 students, but its capacity is now expected to be less due to restrictions on class size. Current enrollment is approximately 800 students, and the school is operating at capacity (Hansen, 2011).

Two K-8 elementary schools – Bethany Elementary and Sebastian Questa Elementary Schools – were also built for Neighborhoods E and H and are now open for operation.

High Schools

High school students from Mountain House attend Kimball High School in Tracy approximately 5 miles east of Mountain House. This school is within the Tracy Unified School District. Currently, about 700 students from the Mountain House community are attending this school. The school has a total enrollment of approximately 2,000 students and is not experiencing any capacity problems (Hansen, 2011).

Students would attend Kimball High School or other schools in the TUSD until the high school proposed for the south side of Mascot Boulevard within the Mountain House community is constructed. Plans for this new school have just recently been approved and will be submitted to the State Department of Education in December 2011 (Hansen, 2011). The LUSD would determine the phasing of construction of the high school. The Mountain House Master Plan states that construction would occur in phases starting when there are 650 high-school students in Mountain House, with the final phase to be completed when there are 1,800 students. As noted above, as of July 2011, Mountain House had approximately 700 high school students (Hansen, 2011).

Library Services

The Mountain House Master Plan calls for the provision of a public library within Mountain House to serve the new community. An implementation measure in SPII states that Mountain House shall be served by interim leased library facilities until the population necessitates construction of a permanent full-service branch library. The timing and scope of the interim facility shall be determined by the MHCSD to correspond with service need and available operational revenues and capital improvement funds.
A library facility is currently located at the one commercial building within Mountain House located on Wicklund Crossing. In 2010, there were over 50,000 visits. The library includes books, periodicals, multi-media material, and 18 public-use computers. This library now operates seven days per week (Buffleben, 2011).

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified significant public services impacts of the Master Plan related to the following:

**Fire Protection and Police Services**

1) Demand for fire protection and police services would increase until on-site services are provided.

**Schools**

1) Planned elementary/middle schools may not accommodate all the community’s students.

2) Several proposed school sites are located close to high voltage electric power transmission lines, natural gas pipelines, and a household waste disposal area.

3) School sites may not conform to State and County requirements.

**Findings Related to Significant Impacts Identified in 1994 MEIR**

For all the above potential public service impacts, the Master Plan was amended as recommended by the 1994 MEIR mitigation measures, except that only one high school will be required within Mountain House based on the Tracy Unified School District’s needs assessment.

**Discussion Regarding Neighborhoods K and L**

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

   **Fire protection?**

The proposed development would allow 2,416 new residential units. These dwelling units would house approximately 6,301 residents. The proposed development would create about 190 more jobs than projected for the area under
SPII, but this increase would not cause any changes in the impact on fire protection services.

In accordance with requirements of the MHCSD, the Mountain House Master Plan, and future Conditions of Approval for the Tentative Subdivision Maps north of SPI, the applicant would be funding, and possibly constructing on behalf of the MHCSD, the second permanent fire station (with equipment) as part of the implementation of SPII. This facility is envisioned to be located north of Byron Road, near the intersection of future Mountain House Parkway and Central Parkway, in an area zoned as Public Facilities (P-F). The second fire station would be constructed at a time determined by the MHCSD to fulfill the Master Plan requirements, as well as the MHCSD’s Fire Protection Plan requirements. Personnel and equipment are expected to be similar to those provided for the first fire station on Mascot Boulevard.

The Mountain House Fire Protection Plan was written to conform with the San Joaquin County General Plan. As stated above, the General Plan and the Mountain House Master Plan were amended to delete distance and time response standards for fire service. The current goal of the City of Tracy Fire Department is to respond to a call within five minutes 95 percent of the time in all of its service areas. The department intends to monitor its response times at Mountain House to determine if the times are within the department’s five-minute goal.

The currently proposed Neighborhoods K and L development would not have any significant impacts on fire protection services that were not addressed in the 1994 MEIR or SPII Initial Study, and no additional mitigation measures are necessary.

**Police protection?**

SPII assumed that the MHCSD would provide the permanent sheriff’s substation required by the Master Plan at the MHCSD Administration Building that will be built in the Town Center as part of SPII. The actual location, timing, and design parameters for the permanent substation will be addressed in the Police Protection Plan that is to be developed by the MHCSD and the Sheriff’s Department. As noted in the Setting section above, the Sheriff’s Department currently has a satellite office in the MHCSD office (Groover, 2011).

The SPII Initial Study indicated that, with a total buildout population of approximately 41,800 in SPI, SPII, and SPIII, 63 duty officers would be required to meet Master Plan and San Joaquin County standards of 1.5 duty officers per 1,000 residents. These officers would be added gradually as the population of the Mountain House community increases over the next decade.

The currently proposed Neighborhoods K and L development would not have any significant impacts on police protection services that were not addressed in
the 1994 MEIR or SPII Initial Study, and no additional mitigation measures are necessary.

**Schools?**

The student population created by development of Neighborhoods K and L is expected to be within the capacities of existing and future schools.

A new elementary school would be built in each of Neighborhoods K and L. The schools would be built when the LUSD determines they are needed. Title for the land on which the schools would be built would be transferred from the applicant to the LUSD. Environmental impacts of construction of these schools are addressed throughout this Initial Study.

Kimball High School and the future high school at Mountain House are expected to have adequate capacity for high school students from Neighborhoods K and L.

The currently proposed Neighborhoods K and L development would not have any significant impacts on schools that were not addressed in the 1994 MEIR or SPII Initial Study, and no additional mitigation measures are necessary.

**Parks?**

Refer to Section 5.14, Recreation, regarding existing and proposed park facilities.

**Other Public Facilities?**

**Libraries.** As already noted, the currently proposed development within Neighborhoods K and L would produce roughly the same number of dwelling units and about 190 more jobs than anticipated under SPII. No new significant impacts on library services have been identified, and no mitigation measures are necessary.

**Child Care Facilities.** The Master Plan requires a minimum of three child care centers within the Mountain House community located at appropriate, easily accessible locations. These centers probably would be provided at elementary schools. Implementation measures in SPII state that 1) a minimum of one 1-acre site shall be provided for a child care facility within a neighborhood center or, alternatively, within a Village Center commercial area; 2) the MHCSD shall continue to coordinate with the LESD (now LUSD) to provide child care at the neighborhood elementary schools; and 3) the MHCSD shall maintain a clearinghouse for day care information. A 1-acre parcel in each 16-acre elementary school site may be reserved at the discretion of the LESD (now LUSD) for a possible child care center. In addition, SPII allows for child care facilities at neighborhood centers, in business parks, and adjacent to churches and commercial uses. No new significant impacts on child care services have been identified, and no mitigation measures are necessary.
Sources of Information

Buffleben, Kathleen, Branch Librarian, Mountain House, 2010. Personal communication, July 19.

Groover, Morgan, Community Services Director, Mountain House Community Services District, 2011. Personal communication, June 15.


--- | --- | --- | --- | --- | --- | ---
5.14 Recreation.
   a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | | | | | | |
   b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | | | | | | |

**Setting**

No recreational facilities currently exist within Neighborhoods K or L. Old River, which forms the northern boundary of Neighborhoods K and L, offers recreational opportunities such as Del’s Boat Harbor, which is located northwest in Alameda County and provides boat launching and guest docking facilities, a snack bar, and fishing boat rentals. Other recreational facilities within Mountain House are located south of Byron Road, south of the Neighborhoods K and L project site.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified the following significant recreation impacts of the Master Plan:

1) Regional park facilities proposed for the Mountain House community would neither meet County General Plan standards nor be adequate for residents’ needs.

2) Parks may not be available to the first residents.

**Findings Related to Significant Impacts Identified in 1994 MEIR**

For the above potential recreation impacts, the Master Plan was amended as recommended in the 1994 MEIR mitigation measures, except that no additional regional park land was added within or outside the Mountain House community. The findings of the 1994 MEIR concluded that adequate recreational facilities were provided by local and neighborhood facilities, and that the developer would be paying for development of the proposed on-site 70-acre regional park at Old River. The 70-acre regional park originally proposed in the Master Plan was expanded to 82 acres in Specific Plan II (SPII) due to removal of the originally proposed marina.
Discussion Regarding Neighborhoods K and L

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The currently proposed development within Neighborhoods K and L, including proposed parks and recreational facilities, would not be substantially different from that evaluated in the 1994 MEIR. The proposed development would provide parks and recreational facilities, including two neighborhood parks and a portion of the future regional park along Old River. Community parklands would also be provided in the western portion of Neighborhood K and the southern portion of Neighborhood L. The proposed development would create about 190 more jobs than projected for the area under SPII, but this increase would not cause any changes in the impact on parks and recreational facilities.

Current plans for Neighborhoods K and L propose an approximately 5-acre neighborhood park for each neighborhood. The total neighborhood park and open space acreage for Neighborhoods K and L would be 249 acres.

Each neighborhood would have a 5-acre, or slightly larger, neighborhood park adjacent to the proposed elementary schools. Neighborhood K also would include a 2.9-acre community park, 40 acres of regional parkland along Old River, and 47 acres of lake area. Neighborhood L would also include a 22.3-acre community park (near Byron Road), a 23.6-acre Creek Community Park, 37 acres of regional parkland along Old River, and 53 acres of lakes. In addition, Neighborhood L would include a 12.67-acre water quality basin near Byron Road. A boat ramp is proposed in Neighborhood K along Old River, to be accessible to the public. It is assumed that all parklands and water quality basins would be maintained by the Mountain House Community Services District (MHCSD). Lakes would be maintained either by the MHCSD or by a private maintenance association.

Class I, II, and III bike paths would be provided throughout the two neighborhoods. In addition, pedestrian sidewalks would be located along streets, and pedestrian connections are proposed at the termination points of many cul-de-sacs.

Currently proposed plans for Neighborhoods K and L provide a significant array of park and recreational facilities. No significant impact on existing neighborhood and regional parks or other recreational facilities, either at the Mountain House community or off-site, is expected such that substantial physical deterioration of the facility would occur. The Mountain House Master Plan and SPII include an implementation measure requiring the MHCSD to begin construction of each neighborhood park as soon as 50 percent of the dwelling units in that neighborhood receive their final inspections. Each park must be completed before 80 percent of the dwelling units for that neighborhood receive their final inspections. These requirements could result in residents of a new neighborhood using the neighborhood parks in previously constructed
neighborhoods, depending on the actual timing of the construction of the parks. The period between initial residential occupation of a neighborhood and completion of its neighborhood park is estimated to be 1 to 2 years. However, the temporary potential overuse of existing neighborhood parks would not substantially accelerate their physical deterioration, given the implementation measure requiring construction of new parks.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The parks and recreational facilities described above would be constructed as part of the overall construction of Neighborhoods K and L. No existing recreational facilities would be expanded. In most cases, the timing for construction of the new parks would be tied to completion of the specific percentages of dwelling units and buildings. No significant impacts associated with construction of new parks and recreation facilities are expected other than those associated with construction of the neighborhoods as a whole. Construction impacts would be short-term and include movement of earth for excavation and fill, delivery of construction materials, and generation of dust and noise from operating equipment. These construction impacts were addressed in the 1994 MEIR.

Master Plan Implementation Measure 7.2.6(c) states that residents of the neighborhood in which the park is proposed shall be surveyed to determine which facilities and improvements are most needed and desired. Chapter 3 of the Mountain House Parks, Recreation and Leisure Plan includes a public outreach and publicity program. As part of this program, the MHCSD may establish a Parks and Recreation Committee to advise the General Manager (of the MHCSD) on leisure issues. The plan also includes neighborhood outreach to encourage neighborhood involvement in planning for programs and facilities by holding periodic meetings at community centers once they are built. This public outreach and publicity program satisfies the intent of Master Plan Implementation Measure 7.2.6(c).

Master Plan Implementation Measure 7.2.8(p) states that when paths cross Byron Road and the adjacent railroad tracks, the paths shall be grade-separated.

Master Plan Implementation Measure 7.2.9(b) states that early access to Old River shall be provided during development of SPI, but no later than the issuance of the 2,000th building permit. To date, no access has been provided.

Implementation of currently proposed plans for Neighborhoods K and L would require construction of recreation facilities that are an integral part of the overall Mountain House community addressed by the Master Plan SPII, and the 1994 MEIR and approved by the San Joaquin Board of Supervisors. Construction impacts would be temporary and would consist of noise and dust from construction equipment and traffic impacts associated with truck traffic delivering
construction materials. Construction of parks and recreation facilities would be concurrent with construction of housing and other amenities in the neighborhoods where the recreational facilities would be located. These construction impacts were adequately addressed in the 1994 MEIR, and new design considerations discussed above are adequately addressed in SPII or the Mountain House Parks, Recreation and Leisure Plan. No new recreational impacts have been identified as compared to the 1994 MEIR.

Sources of Information
5.15 Transportation/Traffic. Would the project:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? 

- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

- 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) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Setting

TJKM was retained to evaluate the traffic impacts associated with the proposed Neighborhoods K and L Tentative Subdivision Map application. The purpose of this Initial Study section is to determine whether 1) there are any additional significant transportation/traffic effects not previously examined in the approved 1194 Master EIR (1994 MEIR), 2) any new mitigation measures are required, 3) any substantial changes have occurred with respect to the circumstances under which the approved MEIR was certified, or 4) any information is available that was not known and could not have been known at the time the MEIR was certified such that major revisions of the previous MEIR would be required (CEQA Guidelines Sections 15176 and 15179). A “substantial change” must

1 This impact remains significant and unavoidable as identified in the 1994 MEIR.
involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines Section 15162). The transportation/traffic section assesses whether there are any additional traffic or transportation impacts that may require further mitigation not previously addressed in the 1994 MEIR.

Planning and regulatory documents that have been consulted in preparation of this traffic analysis include the following:

- **Final EIR (SCH# 90020776) Mountain House Master Plan and Specific Plan I, Vols. I and II (1994).**
- **San Joaquin County General Plan (Volumes I – III) (1992).**
- **San Joaquin County Development Title (1992).**
- **Mountain House New Community Master Plan (1994);**
- **Mountain House Master Plan (1994, amended 2000).**
- **Mountain House Specific Plan I (1994).**
- **Mountain House Specific Plan II, (2005).**
- **Mountain House Specific Plan II Initial Study (Draft) (December 2004, approved February 2005).**
- **Application submittal material provided with Tentative Subdivision Map applications.**
- **Mountain House Neighborhood F Project Initial Study and Mitigated Negative Declaration (SCH No. 900020776) (2000).**
- **Mountain House Villages E and G Expanded Initial Study (2003).**

**Traffic Models**

The traffic assessment for the 1994 MEIR was conducted during 1993. To assess project impacts, three forecast years were considered at that time: 1) 1993 for existing conditions, 2) year 2000 for short-term impacts, and 3) year 2010 for cumulative impacts. Since the completion of the 1994 MEIR, the model that was used for that evaluation has not been kept up-to-date. The analysis presented in this section uses a more current gravity model developed for the San Joaquin County Council of Governments (SJCOG). Therefore, to determine any changes in cumulative traffic impacts as compared to the 1993 analysis, this more recently updated model has been used for recent projects in San Joaquin County.

Before performing the future demand forecasting, it was important to calibrate the model. The network was modified to include all the study area intersections. Based on the collected traffic counts, the AM and PM turning movement volumes were entered into the “existing condition” portion of the model. TJKM successfully performed the model calibration for the study area by revising the network topology and attributes as well as the Origin-Destination (OD) demand. The model was calibrated to within 6 percent of the relative errors between the...
computed and observed volumes. Therefore, the model has been calibrated to a high level of accuracy.

A total of four scenarios were studied:

- Existing Conditions;
- Existing plus Project;
- 2035 Cumulative plus Previously Approved Neighborhoods K and L Project plus Mountain House Buildout Conditions; and
- 2035 Cumulative plus Currently Proposed Neighborhoods K and L Project plus Mountain House Buildout Conditions.3

Thresholds of Significance

The level of service standards shown in Table 5.15-1 were taken from the San Joaquin County General Plan, Mountain House Master Plan, and San Joaquin Regional Congestion Management Plan. Mountain House gateway road segments include Grant Line Road from the county line to Mountain House Parkway, Mountain House Parkway from Byron Road to I-205, and Byron Road from the County line to Wicklund Road.

At unsignalized intersections, at least one signal warrant (as defined in the Manual on Uniform Traffic Control Devices (MUTCD)) must be met before a traffic signal can be considered as a potential mitigation. The level of service is reported for the minor approach. Depending on the availability of gaps, the minor approach might be operating at level of service (LOS) D, E, or F while the intersection as a whole operates at LOS C or better. A minor approach that operates at LOS D, E, or F does not automatically translate into a need for a traffic signal. A signal warrant would still need to be met. There are many instances where only a few vehicles are experiencing LOS D, E, or F on the minor approach while the whole intersection operates at an acceptable level of service. A signal is usually not warranted under such conditions. (See further discussion under “Intersection Level of Service Methodology” below.)

<table>
<thead>
<tr>
<th>Roadways</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community gateway roads within Mountain House, including Byron Road, Grant Line Road, Mountain House Parkway</td>
<td>D</td>
</tr>
<tr>
<td>Freeways</td>
<td>E</td>
</tr>
<tr>
<td>Alameda County roads</td>
<td>D</td>
</tr>
<tr>
<td>Other roads</td>
<td>C</td>
</tr>
</tbody>
</table>

Source: TJKM, 2011.

2 Previous approvals for Neighborhoods K and L were from the adoption of Specific Plan II. No Tentative Subdivision Maps were previously approved.

3 The buildout conditions were changed from the year 2010 (1993 analysis) to the current year 2035 SJCOG model buildout.
Existing Traffic Operations and Conditions

Freeways

The Mountain House project area is served by the following freeways:

- **Interstate 580 (I-580)** is a major east-west freeway located south of the project area and extending from Interstate 5 (I-5) in San Joaquin County to State Route 101 (SR 101) in Marin County. Near the project area, I-580 is a four-lane divided freeway carrying approximately 35,000 vehicles per day near its interchange with Patterson Pass Road/Mountain House Parkway (Caltrans, 2009). This freeway serves as a connector between I-5 (a principal north-south freeway for both auto and truck traffic) and the Bay Area.

- **Interstate 205 (I-205)** is located just to the south of the Mountain House community and provides access to Tracy and to the greater San Francisco Bay Area and the Silicon Valley job centers to the west. It has six lanes in the vicinity of the Mountain House community and along its entire length. The I-205/Mountain House Parkway interchange is located between interchanges at Eleventh Street to the east and I-580 to the west. Currently Mountain House Parkway is generally a four-lane roadway. The I-205 interchange is a four-lane overpass (two lanes each way). The improvements to the signalized on/off ramp intersections at the interchange and overpass were completed in the spring of 2007.

The 2009 Caltrans volume report estimates of annual average daily traffic volumes on I-205 is 110,000 vehicles per day (vpd) east and west of Mountain House Parkway. The peak month average daily traffic volumes are 120,000 east and west of Mountain House Parkway. Truck travel on I-205 is relatively high (approximately 11 to 12 percent) near the project area. The existing peak-hour (2009), peak-directional volume on I-205 in the vicinity of Mountain House Parkway is approximately 8,400 vehicles per hour (vph).

Local Roads

The following roads provide local access to the freeway and the immediate areas:

- **Byron Road** is a two- to four-lane rural road that runs parallel to the Union Pacific Railroad (UPRR) and transects the northern portion of the Mountain House community just south of Neighborhood L. It provides access to downtown Tracy to the east and Contra Costa County to the west. Ultimately it is planned as a four- to six-lane roadway.

- **Mountain House Parkway** is generally a four-lane, north-south roadway that provides a connection between I-205 and Byron Road. It is located at the eastern boundary of a large segment of the Mountain House community. Ultimately, it is planned to be a six-lane road near Grant Line Road and an eight-lane road near I-205. South of I-205, Mountain House Parkway extends to I-580 and has two to four lanes.
- **Grant Line Road** is a two-lane, east-west road that runs parallel to and north of I-205. It provides access to the City of Tracy and also connects to the I-580 freeway to the west of I-205 via Altamont Pass Road. In the vicinity of Grant Line Road and Mountain House Parkway, it is generally a rural road with posted speeds limits of 45 miles per hour. The existing average daily traffic (ADT) is approximately 3,700 vpd.

- **Mascot Boulevard** is a minor arterial within the Mountain House community that connects the residential area to Mountain House Parkway to the east. The ADT is approximately 5,700 vpd with a posted speed limit of 35 miles per hour.

### Transit Services

The San Joaquin Regional Transit District (SJRTD) provides public transit services in the Stockton metropolitan area as well as countywide, intercity, commuter, and rural transit services. The SJRTD provides bus services between the San Joaquin County region and other Bay Area cities and Sacramento. The SJRTD operates nearly 11 bus trips per day between San Joaquin County (Stockton, Tracy, Lodi, Escalon, Ripon, and Manteca) and the South Bay, East Bay, Sacramento, and Napa regions. Current SJRTD commuter routes are shown below in Table 5.15-2.

The SJRTD provides County Area Transit (CAT) Elderly and Disabled Dial-A-Ride service to qualifying San Joaquin County residents. This service is available to Mountain House residents. Passengers can be taken directly to the Tracy Wal-Mart and the West Valley Mall. Fares are $0.75 for the Elderly and Disabled Dial-A-Ride service. For travel within Tracy or to outlying cities or areas, passengers must transfer to Tracy’s Dial-A-Ride, the Tracer, or SJRTD’s “Hopper” service. Fares are $1.50 each way on SJRTD’s Hopper. Transfers are not provided to County Area Transit General Public Dial-A-Ride passengers.

Tri Delta Transit offers Mountain House residents convenient commuter bus service to the Dublin/Pleasanton BART station. Bus service pick-up is located in front of Wicklund Elementary School on East Legacy Drive Monday through Friday. A one-way trip is $9, or for $95 one can purchase tickets for 20 trips. A monthly pass is available for $110.

In May 1997, the San Joaquin Regional Rail Commission (SJRRC), the Alameda Congestion Management Agency (ACCMA), and the Santa Clara Valley Transportation Authority (VTA) executed an agreement to create the Altamont Commuter Express (ACE) Joint Powers Authority (JPA). The ACE rail service became operational on October 19, 1998. The closest station to the west is Livermore with additional stations at Pleasanton, Fremont, Great America, Santa Clara, and San Jose.

The closest ACE station to Mountain House is located in Tracy at Tracy Boulevard near Linne Road. This station has 525 parking spaces. Parking for ACE riders is free and available on a first-come, first served basis. Monthly fares
Table 5.15-2  
SAN JOAQUIN COUNTY REGIONAL TRANSIT DISTRICT (SJRTD)  
INTERREGIONAL COMMUTER BUS SERVICE (AS OF JULY 2011)

<table>
<thead>
<tr>
<th>Routes</th>
<th>Trips Per Day</th>
<th>Communities Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes 151-154, 167 Livermore</td>
<td>7</td>
<td>Routes 151 and 152 from Stockton, Route 154 from Manteca, Route 153 from Manteca and Tracy, Route 167 from Ripon.</td>
</tr>
<tr>
<td>Route 160 – Dublin-Pleasanton (Hacienda Business Park)</td>
<td>1</td>
<td>Stockton, Lathrop, Tracy, Dublin/Pleasanton BART Station.</td>
</tr>
<tr>
<td>Route 164 – Lockheed 1 &amp; 2</td>
<td>2</td>
<td>Tracy to Lockheed Martin in Sunnyvale; Manteca to Lockheed Martin in Sunnyvale.</td>
</tr>
<tr>
<td>Route 166, 172 – Lockheed 3, 4</td>
<td>2</td>
<td>Stockton, Manteca, and Tracy via Highway 99 to Lockheed Martin in Sunnyvale.</td>
</tr>
<tr>
<td>Route 163 – Sacramento via Highway 99</td>
<td>1</td>
<td>Downtown Sacramento via Highway 99; subscription bus serves commuters traveling from east Stockton and Lodi via Highway 99 to downtown Sacramento.</td>
</tr>
<tr>
<td>Route 165 – Sacramento via I-5</td>
<td>1</td>
<td>Downtown Sacramento via I-5; subscription bus serves commuters traveling from west Stockton via I-5 to downtown Sacramento.</td>
</tr>
<tr>
<td>Route 177 – San Jose</td>
<td>1</td>
<td>Stockton, Manteca, and Tracy. This bus services multiple locations in the San Jose area.</td>
</tr>
<tr>
<td>Route 171 – Dublin/Pleasanton BART 2</td>
<td>1</td>
<td>The Dublin/Pleasanton BART 2 subscription bus serves commuters from west Stockton, Lathrop, and Tracy who work in the Bay Area.</td>
</tr>
<tr>
<td>Route 173 – Northrop Grumman/Sunnyvale</td>
<td>1</td>
<td>The Northrop Grumman/Sunnyvale subscription bus serves commuters traveling from Stockton, Manteca, and Tracy to Northrop Grumman and National Semiconductor in Sunnyvale.</td>
</tr>
<tr>
<td>Route 174 – Mountain View/Palo Alto</td>
<td>1</td>
<td>The Mountain View/Palo Alto subscription bus serves commuters traveling from Stockton, Manteca, and Tracy to multiple employer locations in the Mountain View and Palo Alto areas.</td>
</tr>
</tbody>
</table>

Source: TJKM, 2011.

Vary ($65 to $259) depending on the number of zones traveled. Three ACE trains and two buses provide service to the Tri-Valley and Bay areas.

**Airports**

There are two municipal airports within a 10-mile radius of the Mountain House community. The Stockton Metropolitan Airport is located on the southern boundary of the City of Stockton. This airport is located between two major north-south thoroughfares: I-5 (located 1.5 miles to the west of the airport) and State Highway 99 (which borders the airport on the east side).

The Tracy Municipal Airport, located at the southern end of Tracy, includes 166 acres used for aircraft parking, taxiways, and runway space. There are two active runways at the airport. The Byron Airport is about 4 miles northwest of the project site but this is not a municipal airport.
Neither of the airports mentioned above is a major airport that serves interstate travel or international travel. International travel is through Oakland International Airport or San Francisco International Airport, which are approximately 44 and 55 miles, respectively, to the west of the Mountain House community.

**Intersection Level of Service Methodology**

Level of service (LOS) is a qualitative measure describing traffic conditions at a road or intersection, including driver perceptions of these conditions (see Table 5.15-3). The level of service generally describes these conditions based on such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility (i.e., roadway or intersection) that is analyzed. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst.

Peak-hour intersection conditions are reported as delay in seconds per vehicle with corresponding levels of service. In the traffic analysis presented in this section, operating conditions at all study intersections were evaluated using SYNCHRO 7.0 software emulating the Highway Capacity Manual (HCM) 2000 methodology (Transportation Research Board, 2000). This method provides an overall intersection level of service.

At one-way and all-way stop-controlled intersections, level of service was evaluated using the 2000 Highway Capacity Manual (HCM) Unsignalized Intersections analysis methodology. The method ranks level of service on an A through F scale similar to that used for signalized intersections, but uses control delay in seconds as its measure of effectiveness.

A total of 18 existing and future major intersections have been identified in the Master Plan for evaluation. TJKM collected the existing peak-hour turning movements for 11 of the existing study intersections as shown in Figure 5.15-1. Five of the 11 existing intersections are signal controlled. The results of the level of service analyses are shown in Table 5.15-4 below. All intersections currently operate at LOS B or better.

**Significant Impacts Identified in the 1994 Master Plan EIR (MEIR)**

The 1994 MEIR identified the following significant transportation impacts for buildout of the entire Mountain House project:

1) At buildout, the project trips would contribute significantly to projected traffic growth and level of service deficiencies on the road system. Some of these associated impacts would be unavoidable. The project would generate a need for transit services to, from, and within the site.
### Table 5.15-3  LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<table>
<thead>
<tr>
<th>LOS</th>
<th>Type of Flow</th>
<th>Delay</th>
<th>Maneuverability</th>
<th>Control Delay/ Vehicle (s/veh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stable Flow</td>
<td>Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase and not stopping at all.</td>
<td>Turning movements are easily made, and nearly all drivers find freedom of operation.</td>
<td>≤ 10.0</td>
</tr>
<tr>
<td>B</td>
<td>Stable Flow</td>
<td>Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.</td>
<td>Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.</td>
<td>&gt; 10-20</td>
</tr>
<tr>
<td>C</td>
<td>Stable Flow</td>
<td>Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.</td>
<td>Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.</td>
<td>&gt; 20-35</td>
</tr>
<tr>
<td>D</td>
<td>Approaching Unstable Flow</td>
<td>The influence of congestion becomes more noticeable. Longer delays may result in some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.</td>
<td>Maneuverability is severely limited during short periods due to temporary back-ups.</td>
<td>&gt; 35-55</td>
</tr>
<tr>
<td>E</td>
<td>Unstable Flow</td>
<td>Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.</td>
<td>There are typically long queues of vehicles waiting upstream of the intersection.</td>
<td>&gt; 55-80</td>
</tr>
<tr>
<td>F</td>
<td>Forced Flow</td>
<td>Generally considered to be unacceptable to most drivers. Often occurs with oversaturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.</td>
<td>Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.</td>
<td>&gt; 80</td>
</tr>
</tbody>
</table>

Notes: LOS = level of service. s/veh = seconds per vehicle. Source: TJKM, 2011.
EXISTING LANE CONFIGURATIONS AND PEAK HOUR VOLUMES

SOURCE: TJKM, 2011

LEGEND

- Existing Study Intersections
- XX AM Peak Hour Volume
- (XX) PM Peak Hour Volume
- Signalized Intersection
- Stop Controlled Intersection

Figure 5.15-1
Table 5.15-4  EXISTING LEVELS OF SERVICE

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour Delay (s/veh)</th>
<th>PM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain House Parkway/ Central Parkway</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Mountain House Parkway/ Neighborhood L Loop (w)</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Mountain House Parkway/ Neighborhood L Loop (e)</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Mountain House Parkway/ Bethany Road Extension</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Mountain House Parkway/ Byron Road</td>
<td>Signal</td>
<td>9.3 A</td>
<td>8.4 A</td>
<td></td>
</tr>
<tr>
<td>6 Mountain House Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>7.3 A</td>
<td>5.7 A</td>
<td></td>
</tr>
<tr>
<td>7 Mountain House Parkway/ Grant Line Road</td>
<td>Signal</td>
<td>5.6 A</td>
<td>7.0 A</td>
<td></td>
</tr>
<tr>
<td>8 Mountain House Parkway/ I-205 Westbound Ramps</td>
<td>Signal</td>
<td>4.7 A</td>
<td>5.5 A</td>
<td></td>
</tr>
<tr>
<td>9 Mountain House Parkway/ I-205 Eastbound Ramps</td>
<td>Signal</td>
<td>3.4 A</td>
<td>6.1 A</td>
<td></td>
</tr>
<tr>
<td>10 Grant Line Road/ Central Parkway</td>
<td>Stop</td>
<td>10.7 B</td>
<td>9.7 A</td>
<td></td>
</tr>
<tr>
<td>11 Grant Line Road/ Great Valley Parkway</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Great Valley Parkway/ Mascot Boulevard</td>
<td>Stop</td>
<td>7.7 A</td>
<td>7.5 A</td>
<td></td>
</tr>
<tr>
<td>13 Great Valley Parkway/ Main Street</td>
<td>Stop</td>
<td>9.0 A</td>
<td>8.9 A</td>
<td></td>
</tr>
<tr>
<td>14 Great Valley Parkway/ De Anza Boulevard</td>
<td>Stop</td>
<td>9.1 A</td>
<td>9.2 A</td>
<td></td>
</tr>
<tr>
<td>15 Great Valley Parkway/ Kelso Road</td>
<td>Stop</td>
<td>7.3 A</td>
<td>6.7 A</td>
<td></td>
</tr>
<tr>
<td>16 Great Valley Parkway/ Byron Road</td>
<td>Stop</td>
<td>9.5 A</td>
<td>11.7 B</td>
<td></td>
</tr>
<tr>
<td>17 Great Valley Parkway/ Central Parkway</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Great Valley Parkway/ Neighborhood K Loop Rd (w)</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:  
X = Intersection level of service.  
(X) = Level of service for the minor approach.  
(X,X) = Minor approach delay in seconds per vehicle  
s/veh = seconds per vehicle.  
LOS = level of service.  
Source: TJKM, 2011.

2) The Master Plan project traffic increases on I-205, I-580, and I-5 would range from 10,000 to 23,000 daily vehicles over levels projected without the project in 2010. Most of the projected increases would exacerbate highly deficient levels of service already projected at some locations in
2010 without the project. The traffic impacts on I-205 could potentially be mitigated with regional improvements, but the impacts on I-580 west of I-205 north of I-205 would be unavoidable.

3) Intersection improvements at Mountain House Parkway and Grant Line Road would be required to accommodate project traffic.

4) Improvements would be needed at several County and other roads, including portions of Grant Line Road, Mountain House Parkway, Byron Road, Altamont Pass Road, Eleventh Street, SR 4, and Tracy Boulevard leading to SR 4.

5) Adequately sized internal roadways would be required to accommodate a substantial amount of internal traffic.

6) The Master Plan project would generate a significant demand for parking. However, adequate parking supply would be provided based on the parking ordinance.

7) The Master Plan project would increase the demand for bicycle travel within the project site as well as between the site and adjacent developed areas.

8) The project would increase the number of vehicles crossing the existing Southern Pacific railroad tracks that run through the site.4

Findings Related to Significant Impacts Identified in 1994 MEIR

The following mitigation measures were adopted to mitigate the above impacts. However, the 1994 MEIR concluded that the level of service for regional roadways, including certain locations at I-205 and I-580, would remain unacceptable, resulting in a significant and unavoidable impact.

Mitigation Measure M4.12-1: This measure addressed the need for 1) a Transportation Systems Management (TSM) program, 2) a Transportation Management Association (TMA), 3) local transit service, 4) increased proximity of residential and commercial uses as a Master Plan policy, 5) flexible work programs/hours to reduce peak hour travel, 6) Transit Oriented Development (TOD) guidelines for neighborhood centers as Master Plan policy, 7) community contributions to an Altamont Station study and development for rail use, 8) an annual Transportation Monitoring Program to allow revisions to transportation mitigation measures, and 9) a new implementation measure for the Master Plan addressing need for a telecommuting center within Mountain House.

The findings for the 1994 MEIR did not address this specific mitigation measure. The Master Plan does address 1) a monitoring program, 2) contributions to the Altamont Station, 3) promotion of telecommuting, and 4) a Transportation Demand Management (TDM) program. A TDM program was prepared for Mountain House in 1997. The TDM program is to be

---

4 These railroad tracks are now owned by Union Pacific Railroad (UPRR).
administered by the MHCSD until a Transportation Management Association is formed. The TDM program is to be updated every five years. As of November 2009, the monitoring report included traffic counts and level of service analysis on all community gateways and other affected County roads. Future reports will be expanded to include more detailed analysis of the adequacy of the near-term trigger points and reports on the progress toward implementation of the required transportation improvements.

Mitigation Measure M4.12-2: The Master Plan was amended to address reducing freeway traffic congestion by 1) contributions to widening of I-205 or contributions to a parallel east-west roadway north of I-205, or 2) widening of Altamont Pass Road if consistent with Alameda County policy, and 3) Public Financing Plan adjustments.

Mitigation Measure M4.12-3: Table 9.1 of the Master Plan was adjusted to address freeway and rail improvements needed for buildout of the community.

Mitigation Measure M4.12-4: Table 9.2 of the Master Plan was adjusted to address arterial road improvements. Text was added to the Master Plan to address arterial improvements.

Mitigation Measure M4.12-5: This mitigation measure addressed internal roads. Amendments to the Master Plan were made to show improvements/widening of local roads within the community.

Mitigation Measure M4.12-6: This mitigation measure addressed shared parking opportunities. Only a portion of the recommended text changes were made to the Master Plan.

Mitigation Measure M4.12-7: The Master Plan was amended to address regional bicycle facilities and the project’s fair share cost to implementing connections to such facilities.

Mitigation Measure M4.12-8: The Master Plan was amended to address safe rail crossings for vehicles, pedestrians, and bicyclists.

Mitigation Measure M4.12-9: The current plan shows closing of the rail crossings at Wicklund Road and Henderson Road. This would eliminate current limited weaving and merging sections. The new crossing would be located at Mountain House Parkway when it is extended to the north of Byron Road.5

5 The crossing of Byron Road was changed to be on Central Parkway and this crossing has been constructed.
Discussion Regarding Neighborhoods K and L

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

As discussed in the Setting section, the following four scenarios were evaluated:

- Existing Conditions;
- Existing plus Project;
- 2035 Cumulative plus Previously Approved Neighborhoods K and L Project plus Mountain House Buildout Conditions; and
- 2035 Cumulative plus Currently Proposed Neighborhoods K and L Project plus Mountain House Buildout Conditions.

This impact assessment addresses each of the scenarios except “Existing Conditions,” which were discussed in the Setting section. The 2035 cumulative scenarios address the modification of Neighborhoods K and L as compared to the approved Specific Plan II (SPII) provisions for Neighborhoods K and L.

Funding for Transportation Mitigation Measures. The MHCSD has established the Mountain House Transportation Improvement Fee (MHTIF) to fund community road improvements and improvements on regional (gateway) roadways serving the community. In addition, development within the MHCSD boundaries will pay Transportation Impact Mitigation Fees (TIMF) as part of the countywide program that funds regional transportation improvements. These fee programs have been established to provide a simple and equitable method for funding transportation improvements.

The MHTIF has been designed to fund all mitigation required within the Master Plan area. Each phase of development within the community will pay fees based on the number of dwelling units and commercial square footage created. Construction of phased improvements will be required such that traffic levels of service are maintained within the adopted standards (i.e., LOS D on regional gateways and LOS C on community roadways) throughout the development of the community.

The MHTIF anticipates funding for the community’s share of traffic mitigation both within and outside of San Joaquin County. The Offset Program included within the MHTIF recognizes that trips from other counties will also affect roads within the MHTIF and provides a mechanism through which this shared responsibility can be satisfied. It permits funding of roadway improvements beyond the project’s fair share within San Joaquin County as one way to satisfy the community’s overall shared funding responsibility. This requires similar over-funding of improvements by Contra Costa and Alameda Counties on
improvements within their respective jurisdictions, thus eliminating the need for complicated funding agreements between the affected counties.

In summary, development within the Mountain House community is expected to meet its transportation mitigation responsibilities through a combination of the following:

- Paying MHTIF fees for construction of improvements on regional gateways to the community and roadways within the community, or building roadway infrastructure within the community as required to maintain levels of service within the adopted standard; and
- Paying TIMF fees for construction of improvements elsewhere in the county.

Scenario 1: Existing Plus Project. To assess the potential traffic impact of the proposed project, the projected traffic volumes generated by the proposed project were added to the existing traffic.

The trip generation results are shown in Table 5.15-5. Trips from outside zones into Neighborhoods K and L zones were computed as inbound trips and the converse as outbound trips. The projected existing-plus-project traffic is shown in Figure 5.15-2. The assumed intersection lane configuration and traffic control are also shown in the figure.

<table>
<thead>
<tr>
<th>Inbound</th>
<th>Outbound</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>881</td>
<td>1,216</td>
</tr>
<tr>
<td>Percent</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>PM</td>
<td>1,569</td>
<td>1,242</td>
</tr>
<tr>
<td>Percent</td>
<td>56%</td>
<td>44%</td>
</tr>
</tbody>
</table>

Source: TJKM, 2011.

Assumed Roadway Improvements. Based on consultation with Mountain House Community Services District (MHCSD) staff, it was assumed that the Central Parkway overpass would be constructed and Mountain House Parkway would be extended from Byron Road to the north to serve both of the neighborhoods.

Level of Service Analysis. The level of service analysis was performed based on the assumed future roadways as described above and on existing lane configurations as shown in Figure 5.15-2. The results of the level of service analysis are shown in Table 5.15-6. The results show that, under Scenario 1, all intersections for gateway roadways would operate at LOS D or better and the remaining study intersections would operate at LOS C or better.
**Figure 5.15-2**

**EXISTING PLUS PROPOSED PROJECT**

**TURNING MOVEMENT VOLUMES**

**LEGEND**
- Existing Study Intersections
- XX AM Peak Hour Volume
- XXX PM Peak Hour Volume
- Signalized Intersection
- Stop Controlled Intersection

**SOURCE:** TJKM, 2011
### Table 5.15-6  
**EXISTING PLUS PROPOSED PROJECT (NEIGHBORHOODS K AND L) LEVEL OF SERVICE CONDITIONS**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
<th>PM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mountain House Parkway/ Central Parkway</td>
<td>Signal</td>
<td>8.7</td>
<td>A</td>
<td>5.0</td>
<td>A</td>
</tr>
<tr>
<td>2 Mountain House Parkway/ Neighborhood L Loop (w)</td>
<td>Signal</td>
<td>6.7</td>
<td>A</td>
<td>7.0</td>
<td>A</td>
</tr>
<tr>
<td>3 Mountain House Parkway/ Neighborhood L Loop (e)</td>
<td>Signal</td>
<td>7.0</td>
<td>A</td>
<td>5.7</td>
<td>A</td>
</tr>
<tr>
<td>4 Mountain House Parkway/ Bethany Road extension</td>
<td>Signal</td>
<td>4.7</td>
<td>A</td>
<td>6.3</td>
<td>A</td>
</tr>
<tr>
<td>5 Mountain House Parkway/ Byron Road</td>
<td>Signal</td>
<td>28.1</td>
<td>C</td>
<td>45.0</td>
<td>D</td>
</tr>
<tr>
<td>6 Mountain House Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>8.2</td>
<td>A</td>
<td>5.8</td>
<td>A</td>
</tr>
<tr>
<td>7 Mountain House Parkway/ Grant Line Road</td>
<td>Signal</td>
<td>5.7</td>
<td>A</td>
<td>7.2</td>
<td>A</td>
</tr>
<tr>
<td>8 Mountain House Parkway/ I-205 Westbound Ramps</td>
<td>Signal</td>
<td>5.9</td>
<td>A</td>
<td>6.7</td>
<td>A</td>
</tr>
<tr>
<td>9 Mountain House Parkway/ I-205 Eastbound Ramps</td>
<td>Signal</td>
<td>5.2</td>
<td>A</td>
<td>6.6</td>
<td>A</td>
</tr>
<tr>
<td>10 Grant Line Road/ Central Parkway</td>
<td>Stop</td>
<td>12.9</td>
<td>B</td>
<td>9.7</td>
<td>A</td>
</tr>
<tr>
<td>11 Grant Line Road/ Great Valley Parkway</td>
<td>Stop</td>
<td></td>
<td>Future Intersection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Great Valley Parkway/ Mascot Boulevard</td>
<td>Stop</td>
<td>7.7</td>
<td>A</td>
<td>6.4</td>
<td>A</td>
</tr>
<tr>
<td>13 Great Valley Parkway/ Main Street</td>
<td>Stop</td>
<td>9.0</td>
<td>A</td>
<td>8.9</td>
<td>A</td>
</tr>
<tr>
<td>14 Great Valley Parkway/ De Anza Boulevard</td>
<td>Stop</td>
<td>9.2</td>
<td>A</td>
<td>9.3</td>
<td>A</td>
</tr>
<tr>
<td>15 Great Valley Parkway/ Kelso Road</td>
<td>Stop</td>
<td>8.1</td>
<td>A</td>
<td>8.9</td>
<td>A</td>
</tr>
<tr>
<td>16 Great Valley Parkway/ Byron Road</td>
<td>Stop</td>
<td>11.7</td>
<td>B</td>
<td>30.1</td>
<td>D</td>
</tr>
<tr>
<td>17 Great Valley Parkway/ Central Parkway</td>
<td>Stop</td>
<td>12.1</td>
<td>A</td>
<td>0.3</td>
<td>A</td>
</tr>
<tr>
<td>18 Great Valley Parkway/ Neighborhood K Loop Rd (w)</td>
<td>Stop</td>
<td>5.9</td>
<td>A</td>
<td>5.7</td>
<td>A</td>
</tr>
</tbody>
</table>

Notes: LOS = level of service.  
s/veh = seconds per vehicle.  
Source: TJKM, 2011.

---

**Scenario 2: 2035 Cumulative Plus Previously Approved Neighborhoods K and L Project plus Mountain House Buildout Conditions.** This scenario considers the buildout of the cumulative 2035 land use including all the neighborhoods in the Mountain House Master Plan, Delta College and the addition of traffic from the previously approved buildout of Neighborhoods K and L, as assumed at the time of approval of SPII.
Per the SPII approval, Neighborhoods K and L would consist of 1,176 units and 1,240 units, respectively. In addition, the two neighborhoods were to include approximately 20 acres of community and neighborhood commercial and 14 acres of mixed use. The two neighborhoods were estimated to support approximately 1,500 jobs.

The trip generation results are shown in Table 5.15-7. Trips from outside zones into Neighborhoods K and L zones were computed as inbound trips and the converse as outbound trips. The projected 2035 cumulative volumes with the previously approved Neighborhoods K and L traffic are shown in Figure 5.15-3.

<table>
<thead>
<tr>
<th></th>
<th>Inbound</th>
<th>Outbound</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AM</strong></td>
<td>812</td>
<td>1,194</td>
<td>2,006</td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td>40%</td>
<td>60%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td>1,536</td>
<td>1,164</td>
<td>2,700</td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td>57%</td>
<td>43%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: TJKM, 2011.*

**Assumed Roadway Improvements.** All on-site study roadways are assumed to be built to accommodate projected traffic. It is anticipated that Great Valley Parkway, Central Parkway, Mascot Boulevard and Main Street would be constructed to four lanes (two lanes per direction).

It is assumed that Mountain House Parkway from south of Mascot Boulevard to Von Sosten Road and Byron Road from south of Central Parkway to Henderson Road would be constructed to six lanes (three per direction).

Mountain House Parkway from south of Von Sosten Road to the freeway is assumed to be improved to an eight-lane section. The previously approved lane configurations for all the study intersections are shown in Figure 5.15-3. The previously approved improvements are consistent with the 1994 MEIR.

Table 5.15-8 is a summary of adopted transportation improvements differentiated as follows: improvements included as part of the current Mountain House project, those initially identified in the 1994 MEIR; and those required for 2035 cumulative buildout conditions based on the July 2005 analysis which included the previously approved Neighborhoods K and L project. The following roadways would be widened to six lanes: Mountain House Parkway from south of Mascot Boulevard to Von Sosten Road and Byron Road from south of Central Parkway to Henderson Road. Other measures include widening other portions of Mountain House Parkway to eight lanes, contributing to a new east-west corridor parallel to I-205, and contributing to additional road improvements and off-site
Figure 5.15-3

2035 CUMULATIVE PLUS APPROVED NEIGHBORHOODS K & L BUILDING LANE CONFIGURATIONS AND TURNING MOMENT VOLUMES

SOURCE: TJKM, 2011
Table 5.15-8  2035 CUMULATIVE MOUNTAIN HOUSE BUILDOUT TRANSPORTATION IMPROVEMENTS

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Improvements</th>
<th>Required Initially Identified in 1994 MEIR</th>
<th>Required by MHTIF/County TIMF</th>
<th>Required Under Adopted 2035 Buildout Conditions</th>
<th>Part of Current Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mountain House Parkway (south of Mascot Boulevard to Von Sosten Road)</td>
<td>Widen to six lanes</td>
<td>Trigger: Approximately 14,000 units of Mountain House</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: Mountain House Community Developers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Byron Road from south of Central Parkway to Mountain House Parkway</td>
<td>Widen to four lanes</td>
<td>Trigger: Approximately 7,000 to 8,000 units of Mountain House</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: Mountain House Community Developers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Byron Road from south of Central Parkway to Henderson Road</td>
<td>Widen to six lanes</td>
<td>Trigger: Approximately 14,000 units of Mountain House</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: Mountain House Community Developers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Mountain House Parkway from south of Von Sosten Road to the I-205 freeway</td>
<td>Widen to six lanes</td>
<td>Trigger: Approximately 9,000 units of Mountain House</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: Mountain House Community Developers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Mountain House Parkway from south of Von Sosten Road to the I-205 freeway</td>
<td>Widen to eight lanes</td>
<td>Trigger: Approximately 12,000 units Mountain House</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: Mountain House Community Developers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Widening of I-205</td>
<td>Mitigation Measure M4.12-2 (1994 MEIR)</td>
<td>(1) Contribute fair share of I-205 widening from four lanes to six lanes (funded), and from six lanes to eight lanes between I-580 and I-5, either as high-occupancy vehicle (HOV) lanes or mixed flow lanes.</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) As an alternative, the project sponsor shall contribute a fair share to safety and operational improvements and/or to the widening of Altamont Pass Road west of Grant Line Road to four lanes (as HOV or truck lanes), if determined to be consistent with Alameda County policy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Contribute fair share to the development of a parallel east-west roadway system north of I-205, extending between Mountain House and the City of Lathrop, including the necessary multi-jurisdictional alternative/feasibility studies.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Trigger: As warranted
Responsibility: Defined by MHTIF/County TIMF/Offset Program per terms of Mountain House Master Plan Development Agreement
Table 5.15-8  2035 CUMULATIVE MOUNTAIN HOUSE BUILDOUT TRANSPORTATION IMPROVEMENTS (continued)

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Improvements</th>
<th>Initially Identified in 1994 MEIR</th>
<th>Required by MHTIF/County TIMF</th>
<th>Required Under Adopted 2035 Buildout Conditions</th>
<th>Part of Current Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Project Study Report (PSR) for Grant Line Road/I-580 interchange improvements</td>
<td>Mitigation Measure M4.12-3 (1994 MEIR) (1) Conduct Grant Line Road PSR, (2) Provide for ramp metering with HOV bypass lanes. Trigger: As warranted. Responsibility: Beyond fair share of project as defined in MHTIF/County TIMF/Offset Program per terms of Mountain House Master Plan Development Agreement</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. Several roadways in other jurisdictions</td>
<td>Mitigation Measure M4.12-4 (1994 MEIR) Fair share participation in traffic studies and improvement measures to include Eleventh Street and Grant Line Road (east of Patterson Road) (City of Tracy), Altamont Pass Road (Alameda County), and Byron Highway (Alameda and Contra Costa counties). Where roadway widening for additional capacity is not feasible or acceptable, safety and operational improvements should be considered in order to better accommodate increased traffic. Trigger: As warranted by Mountain House Community Services District (MHSD). Responsibility: Defined by MHTIF/County TIMF/Offset Program per terms of Mountain House Master Plan Development Agreement</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9. Connection to off-site bicycle facilities</td>
<td>Mitigation Measure M4.12-7 (1994 MEIR) Contribute fair share in the planning and implementation of off-site bicycle facilities on and connecting with regional bike routes designated on the County Regional Bicycle Plan within five miles of the project, including those along Grant Line Road, Patterson Pass Road, Byron Road, Schulte Road, and the Edmund G. Brown Aqueduct. Trigger: As warranted by MHSD. Responsibility: Defined by MHTIF/County TIMF/Offset Program per terms of Mountain House Master Plan Development Agreement</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Note: These roadway improvement triggers are part of the prior conditions of approval for Neighborhoods E and G. The exact timing of the improvements will be supplemented by the results of the Annual Traffic Monitoring program. The Mountain House Master Plan required that Mountain House development mitigate its fair share of transportation impacts through participation in i) payment of a Mountain House Transportation Improvement Fee (MHTIF), and ii) participation in the County’s Transportation Impact Mitigation Fee (TIMF) program which includes a fee component for regional roadway improvements, alternative modes of travel and Council of Government (COG) fee.

"Fair share" means the community’s obligation to participate in the planning, construction and/or funding for an infrastructure facility improvement that will be shared by other jurisdictions, to the extent of the community’s proportional impact. The community’s obligation shall be as presented in the adopted MHTIF/County TIMF/Offset Program and Master Plan Development Agreement. All the above improvements may be triggered by any of the developments in Mountain House.

Source: TJKM, 2011.
bicycle facilities. All improvements are similar to what was identified in the 1994 MEIR.

As shown in Table 5.15-8, cumulative 2035 conditions would require a number of improvements that were identified in the 1994 MEIR and that would be required for ultimate buildout of the new community under Scenario 2.

**Level of Service Analysis.** The level of service analysis was performed based on the previously adopted and approved lane configurations as shown in Figure 5.15-3. The results of the analysis are shown in Table 5.15-9. The results show that, under Scenario 2, all intersections for gateway roadways would operate at LOS D or better and the remaining study intersections would operate at LOS C or better.

Based on previously adopted mitigation measures, it is anticipated that Great Valley Parkway, Central Parkway, Mascot Boulevard, and Main Street ultimately would be constructed to four lanes. All study intersections would operate at LOS D or better for gateway intersections and LOS C or better for others.

**Scenario 3: 2035 Cumulative Mountain plus Currently Proposed Neighborhoods K and L Project plus Mountain House Buildout Conditions.** This scenario considers the buildout of the cumulative 2035 land uses including all the neighborhoods in the Mountain House Master Plan and the addition of traffic from the currently proposed Neighborhoods K and L Tentative Subdivision Map traffic.

The purpose of this analysis is to determine the traffic impacts due to the proposed land use and circulation changes as proposed in the Neighborhoods K and L Tentative Subdivision Map application.

The proposed Neighborhoods K and L project would contain 2,416 units, similar to the previously approved SPII project for these two neighborhoods. In addition, the two neighborhoods would include approximately 22 acres of community and neighborhood commercial uses, and 17 acres of mixed-use. The two neighborhoods are estimated to support approximately 1,564 jobs. That is, compared to the previously approved project, the proposed project is estimated to add approximately 190 additional jobs.6

**Assumed Roadway and Circulation Improvements.** All on-site study roadways are assumed to be built to accommodate projected traffic. It is anticipated that Great Valley Parkway, Central Parkway, Mascot Boulevard and Main Street would be constructed to four lanes (two lanes per direction).

---

6 The number of jobs considered in the traffic analysis was 120 more than projected, a conservative approach.
### Table 5.15-9  2035 Cumulative Plus Previously Approved Neighborhoods K and L Plus Mountain House Buildout Level of Service Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
<th>PM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mountain House Parkway/ Central Parkway</td>
<td>Signal</td>
<td>12.8</td>
<td>B</td>
<td>7.3</td>
<td>A</td>
</tr>
<tr>
<td>2 Mountain House Parkway/ Neighborhood L Loop (w)</td>
<td>Signal</td>
<td>9.1</td>
<td>A</td>
<td>6.6</td>
<td>A</td>
</tr>
<tr>
<td>3 Mountain House Parkway/ Neighborhood L Loop (e)</td>
<td>Signal</td>
<td>7.8</td>
<td>A</td>
<td>4.4</td>
<td>A</td>
</tr>
<tr>
<td>4 Mountain House Parkway/ Bethany Road extension</td>
<td>Signal</td>
<td>6.0</td>
<td>A</td>
<td>10.3</td>
<td>B</td>
</tr>
<tr>
<td>5 Mountain House Parkway/ Byron Road</td>
<td>Signal</td>
<td>36.6</td>
<td>D</td>
<td>53.9</td>
<td>D</td>
</tr>
<tr>
<td>6 Mountain House Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>10.6</td>
<td>B</td>
<td>6.2</td>
<td>A</td>
</tr>
<tr>
<td>7 Mountain House Parkway/ Grant Line Road</td>
<td>Signal</td>
<td>29.2</td>
<td>C</td>
<td>43.2</td>
<td>D</td>
</tr>
<tr>
<td>8 Mountain House Parkway/ I-205 Westbound Ramps</td>
<td>Signal</td>
<td>12.1</td>
<td>B</td>
<td>48.7</td>
<td>D</td>
</tr>
<tr>
<td>9 Mountain House Parkway/ I-205 Eastbound Ramps</td>
<td>Signal</td>
<td>9.8</td>
<td>A</td>
<td>20.4</td>
<td>C</td>
</tr>
<tr>
<td>10 Grant Line Road/ Central Parkway</td>
<td>Signal</td>
<td>9.5</td>
<td>A</td>
<td>9.1</td>
<td>A</td>
</tr>
<tr>
<td>11 Grant Line Road/ Great Valley Parkway</td>
<td>Signal</td>
<td>11.2</td>
<td>B</td>
<td>12.9</td>
<td>B</td>
</tr>
<tr>
<td>12 Great Valley Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>4.9</td>
<td>A</td>
<td>4.2</td>
<td>A</td>
</tr>
<tr>
<td>13 Great Valley Parkway/ Main Street</td>
<td>Signal</td>
<td>5.6</td>
<td>A</td>
<td>2.4</td>
<td>A</td>
</tr>
<tr>
<td>14 Great Valley Parkway/ De Anza Boulevard</td>
<td>Signal</td>
<td>7.5</td>
<td>A</td>
<td>5.3</td>
<td>A</td>
</tr>
<tr>
<td>15 Great Valley Parkway/ Kelso Road</td>
<td>Signal</td>
<td>12.7</td>
<td>B</td>
<td>13.1</td>
<td>B</td>
</tr>
<tr>
<td>16 Great Valley Parkway/ Byron Road</td>
<td>Signal</td>
<td>8.5</td>
<td>A</td>
<td>27.4</td>
<td>C</td>
</tr>
<tr>
<td>17 Great Valley Parkway/ Central Parkway</td>
<td>Signal</td>
<td>5.9</td>
<td>A</td>
<td>5.7</td>
<td>A</td>
</tr>
<tr>
<td>18 Great Valley Parkway/ Neighborhood K Loop Rd (w)</td>
<td>Signal</td>
<td>4.6</td>
<td>A</td>
<td>3.6</td>
<td>A</td>
</tr>
</tbody>
</table>

Notes: *X = Intersection level of service.  
* = Gateway roadways.  
s/veh = seconds per vehicle.  
Source: TJKM, 2011.

It is assumed that Mountain House Parkway from south of Mascot Boulevard to Von Sosten Road and Byron Road from south of Central Parkway to Henderson Road would be constructed to six lanes (three per direction).

**Trip Generation.** Trip generation for Neighborhoods K and L was estimated and distributed onto the nearby street network based on the traffic model. The trip
generation results are shown in Table 5.15-10. Compared to the previously approved project, it is estimated that the proposed project would generate approximately 91 and 111 more trips, respectively, during the AM and PM peak hours. The result of the trip distribution is shown in Figure 5.15-4. The projected 2035-plus-proposed-project peak-hour volumes are shown in Figure 5.15-5.

Table 5.15-10  TRIP GENERATION FOR PROPOSED NEIGHBORHOODS K AND L PROJECT

<table>
<thead>
<tr>
<th></th>
<th>Inbound</th>
<th>Outbound</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>881</td>
<td>1,216</td>
<td>2,097</td>
</tr>
<tr>
<td>Percent</td>
<td>42%</td>
<td>58%</td>
<td>100%</td>
</tr>
<tr>
<td>PM</td>
<td>1,569</td>
<td>1,242</td>
<td>2,811</td>
</tr>
<tr>
<td>Percent</td>
<td>56%</td>
<td>44%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: TJKM, 2011.

Level of Service Analysis. The level of service analysis was performed based on the lane configurations previously adopted in the 2005 study and as shown in Figure 5.15-5. The results of the level of service analysis are shown in Table 5.15-11. Similar to the approved Neighborhoods K and L scenario, all intersections for gateway roadways would operate at LOS D or better and the remaining study intersections would operate at LOS C or better. Table 5.15-12 shows the changes in intersection delays caused by the proposed project, compared to the approved project.

The traffic impacts of the currently proposed Neighborhoods K and L project would not be significant. The previously adopted mitigation measures associated with the approved Neighborhoods K and L traffic and 2035 cumulative buildout traffic would be able to accommodate the projected traffic. Thus, the project would not conflict with an applicable ordinance or policy establishing measures of effectiveness for the performance of the circulation system. The project would not significantly affect the 18 studied intersections. However, as identified in the 1994 MEIR, the level of service for regional roadways, including segments of I-205 and I-580, would remain unacceptable with buildout of the entire Mountain House community. This impact was found significant and unavoidable in the 1994 MEIR and the required findings were made.

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

With construction of all programmed transportation improvements and the project’s fair share contribution to the costs of off-site improvements, the
Figure 5.15-4

TRIP DISTRIBUTION

SOURCE: TJKM, 2011
Figure 5.15-5
2035 CUMULATIVE PLUS PROPOSED NEIGHBORHOODS K & L
PROJECT TURNING MOMENT VOLUMES

SOURCE: TJKM, 2011

AMY SKEWES-COX
ENVIRONMENTAL PLANNING
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour Delay (s/veh)</th>
<th>PM Peak Hour Delay (s/veh)</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mountain House Parkway/ Central Parkway</td>
<td>Signal</td>
<td>6.8</td>
<td>7.5</td>
<td>A</td>
</tr>
<tr>
<td>2 Mountain House Parkway/ Neighborhood L Loop (w)</td>
<td>Signal</td>
<td>5.9</td>
<td>6.1</td>
<td>A</td>
</tr>
<tr>
<td>3 Mountain House Parkway/ Neighborhood L Loop (e)</td>
<td>Signal</td>
<td>5.3</td>
<td>8.1</td>
<td>A</td>
</tr>
<tr>
<td>4 Mountain House Parkway/ Bethany Road extension</td>
<td>Signal</td>
<td>5.0</td>
<td>17.9</td>
<td>B</td>
</tr>
<tr>
<td>5 Mountain House Parkway/ Byron Road</td>
<td>Signal</td>
<td>48.8</td>
<td>49.8</td>
<td>D</td>
</tr>
<tr>
<td>6 Mountain House Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>10.2</td>
<td>6.7</td>
<td>A</td>
</tr>
<tr>
<td>7 Mountain House Parkway/ Grant Line Road</td>
<td>Signal</td>
<td>27.3</td>
<td>52.0</td>
<td>D</td>
</tr>
<tr>
<td>8 Mountain House Parkway/ I-205 Westbound Ramps</td>
<td>Signal</td>
<td>12.7</td>
<td>49.3</td>
<td>D</td>
</tr>
<tr>
<td>9 Mountain House Parkway/ I-205 Eastbound Ramps</td>
<td>Signal</td>
<td>6.8</td>
<td>31.5</td>
<td>C</td>
</tr>
<tr>
<td>10 Grant Line Road/ Central Parkway</td>
<td>Signal</td>
<td>9.5</td>
<td>9.4</td>
<td>A</td>
</tr>
<tr>
<td>11 Grant Line Road/ Great Valley Parkway</td>
<td>Signal</td>
<td>11.3</td>
<td>8.4</td>
<td>A</td>
</tr>
<tr>
<td>12 Great Valley Parkway/ Mascot Boulevard</td>
<td>Signal</td>
<td>4.1</td>
<td>4.5</td>
<td>A</td>
</tr>
<tr>
<td>13 Great Valley Parkway/ Main Street</td>
<td>Signal</td>
<td>5.6</td>
<td>2.5</td>
<td>A</td>
</tr>
<tr>
<td>14 Great Valley Parkway/ De Anza Boulevard</td>
<td>Signal</td>
<td>8.7</td>
<td>5.7</td>
<td>A</td>
</tr>
<tr>
<td>15 Great Valley Parkway/ Kelso Road</td>
<td>Signal</td>
<td>12.4</td>
<td>15.8</td>
<td>B</td>
</tr>
<tr>
<td>16 Great Valley Parkway/ Byron Road</td>
<td>Signal</td>
<td>9.7</td>
<td>26.1</td>
<td>C</td>
</tr>
<tr>
<td>17 Great Valley Parkway/ Central Parkway</td>
<td>Signal</td>
<td>8.2</td>
<td>7.3</td>
<td>A</td>
</tr>
<tr>
<td>18 Great Valley Parkway/ Neighborhood K Loop Rd (w)</td>
<td>Signal</td>
<td>6.5</td>
<td>3.7</td>
<td>A</td>
</tr>
</tbody>
</table>

Notes: X = Intersection level of service. * = Gateway roadways. s/veh = seconds per vehicle. Source: TJKM, 2011.

proposed project impacts would be less than significant. No additional mitigation measures would be needed beyond those identified in the 1994 MEIR or previously approved with the approval of SPII.
Table 5.15-12 Changes in Intersection Delays – Proposed Neighborhoods K and L Project Compared to Approved Neighborhoods K and L Project

<table>
<thead>
<tr>
<th>Intersections</th>
<th>AM Changes in Peak Hour Delay (seconds)</th>
<th>PM Changes in Peak Hour Delay (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mountain House Parkway/Central Parkway</td>
<td>-6.0</td>
<td>0.2</td>
</tr>
<tr>
<td>2 Mountain House Parkway/Neighborhood L Loop (w)</td>
<td>-3.2</td>
<td>-0.5</td>
</tr>
<tr>
<td>3 Mountain House Parkway/Neighborhood L Loop (e)</td>
<td>-2.5</td>
<td>3.7</td>
</tr>
<tr>
<td>4 Mountain House Parkway/Bethany Road extension</td>
<td>-1.0</td>
<td>7.6</td>
</tr>
<tr>
<td>5 Mountain House Parkway/Byron Road</td>
<td>12.2</td>
<td>-4.1</td>
</tr>
<tr>
<td>6 Mountain House Parkway/Mascot Boulevard</td>
<td>-0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>7 Mountain House Parkway/Grant Line Road</td>
<td>-1.9</td>
<td>8.8</td>
</tr>
<tr>
<td>8 Mountain House Parkway/I-205 Westbound Ramps</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>9 Mountain House Parkway/I-205 Eastbound Ramps</td>
<td>-3.0</td>
<td>11.1</td>
</tr>
<tr>
<td>10 Grant Line Road/Central Parkway</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>11 Grant Line Road/Great Valley Parkway</td>
<td>0.1</td>
<td>-4.5</td>
</tr>
<tr>
<td>12 Great Valley Parkway/Mascot Boulevard</td>
<td>-0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>13 Great Valley Parkway/Main Street</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>14 Great Valley Parkway/De Anza Boulevard</td>
<td>1.2</td>
<td>0.4</td>
</tr>
<tr>
<td>15 Great Valley Parkway/Kelso Road</td>
<td>-0.3</td>
<td>2.7</td>
</tr>
<tr>
<td>16 Great Valley Parkway/Byron Road</td>
<td>1.2</td>
<td>-1.3</td>
</tr>
<tr>
<td>17 Great Valley Parkway/Central Parkway</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td>18 Great Valley Parkway/Neighborhood K Loop Rd (w)</td>
<td>1.9</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: TJKM, 2011.

As already provided by adopted Mitigation Measure M4.12-1, countywide TSM and TDM programs are to be designed and implemented to promote and facilitate the use of non-auto modes of travel in the county (see further discussion of TDM under Item (f) below).

Currently, a TDM coordinator operates on-site at the MHCSD office. An annual Transportation Monitoring Program has been conducted for the past few years. The report includes traffic counts and level of service analysis on all community gateways and other affected County roads. The report also includes analysis of the adequacy of the near-term trigger points and reports on the progress toward implementation of the required transportation improvements. Due to the
economic downturn in the past few years, it has been observed that traffic volumes have been much lower than anticipated.

As stated in the 1994 MEIR, traffic congestion on I-205 and I-580 would remain an unavoidable adverse impact. I-205 was recently widened from four to six lanes. The Mountain House Parkway/I-205 interchange includes a six-lane overpass and loop on-ramp from the southbound to eastbound on I-205.

The Grant Line Road/I-580 interchange is located in the Alameda County jurisdiction. According to the San Joaquin County and MHCSD adopted Improvement Programs, the MHTIF will fund the improvements to Grant Line Road between the Alameda County line and the road’s intersection with I-580. No other significant impacts would result and no mitigation measures would be necessary.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The Neighborhoods K and L Tentative Subdivision Map project and the buildout of the Mountain House community would not have an impact on air traffic patterns.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The project would not substantially increase hazards due to design features or incompatible uses. The Master Plan for the Mountain House community stresses design guidelines that require an extensive network of pedestrian and bicycle facilities. The Lammersville Unified School District is currently a part of a “Safe Walk to School” program with the County Office of Education. This program will promote safe walking and biking to school. Bike routes are proposed throughout Neighborhoods K and L. No further mitigation measures would be necessary.

e) Would the project result in inadequate emergency access?

The traffic in Neighborhoods K and L and the remainder of Mountain House would have access to multiple routes in the event of an emergency. Based on the proposed Tentative Subdivision Maps, all neighborhoods would be connected to several major arterial and collector streets. Consequently, adequate emergency access would be available. No mitigation measures would be necessary.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?
The proposed project supports the integrated land use and circulation plan concept in the Master Plan, as follows.

**Bicycle and Pedestrian Facilities.** As originally envisioned in the Master Plan, Class I, II, and III bike routes are proposed throughout Mountain House. The proposed bike routes provide direct connectivity within Mountain House and externally to off-site locations.

Sidewalks are proposed on all residential streets. In addition, direct pedestrian access connections would be provided at strategic locations. These pedestrian access points would promote a walkable environment by providing a more direct connection to major streets and collectors.

**Transportation Demand Management.** TDM, also known as Mobility Management, is a general term for various strategies that increase transportation system efficiency. There are many different TDM strategies with a variety of transportation impacts. Although most individual TDM strategies only affect a small portion of total travel, the cumulative impacts of a comprehensive TDM program can be significant. A set of TDM measures has been adopted as documented in the Mountain House Community – TDM Program and Transit Plan (The Hoyt Company, 1997). Table 5.15-13 is a summary table of TDM measures and action items of the plan. To date, the TDM measures that have been implemented include bike storage, bus stops, taxi, and or dial-a-ride service.

As already noted in the Setting section, the San Joaquin Regional Transit District (SJRTD) provides public transit services in the Stockton metropolitan area, as well as intercity and interregional commuter services. The SJRTD provides bus services between the San Joaquin County region and other Bay Area cities and Sacramento. The SJRTD operates nearly 11 bus trips per day between San Joaquin County (Stockton, Tracy, Lodi, Escalon, Ripon, and Manteca) and the South Bay, East Bay, Sacramento, and Napa regions. According to the draft MHCSD TDM program, the MHCSD should work with SJRTD to commence service to the Mountain House Parkway/Central Parkway park-and-ride lot once more than 1,000 homes have been occupied. The MHCSD currently has a bus stop location for Tri-Delta Transit (TDT), Contra Costa County's bus system. From this location, TDT provides two lines of service totaling three round trips daily. The service includes stops at Lawrence Livermore Labs, Sandia Labs, Hacienda Business Park, and the Dublin/Pleasanton BART station. This service meets the Master Plan requirement for in-community transit to a major public transportation system.

Table 5.15-14 summarizes some of the transit service triggers. Market forces will influence the land use buildout patterns in the 12 neighborhoods of the Mountain House community and will determine the level of transit demand. However, a local transit plan with a good headway that serves all major employment centers will go a long way to promote transit use. No mitigation measures are necessary for the proposed project.
5. ENVIRONMENTAL CHECKLIST
15. TRANSPORTATION/TRAFFIC

MOUNTAIN HOUSE NEIGHBORHOODS K AND L INITIAL STUDY

Table 5.15-13 SUMMARY OF MOUNTAIN HOUSE TRANSPORTATION DEMAND MANAGEMENT (TDM) MEASURES

<table>
<thead>
<tr>
<th>TDM Measures</th>
<th>Action Items and Trigger Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDM coordinator</td>
<td>A TDM coordinator operates on-site at the MHCSD office.</td>
</tr>
<tr>
<td>Annual TDM meeting</td>
<td>First meeting to be held when a minimum of 1,000 residents and/or 500 employees are on-site.</td>
</tr>
<tr>
<td>Bicycle storage</td>
<td>To meet County Development Title requirement (5 spaces per building complex, plus one bicycle storage space for every 15 car parking spaces).</td>
</tr>
<tr>
<td>Shower and clothing locker facilities</td>
<td>To be added in all developments with 50,000 net rentable square feet or more.</td>
</tr>
<tr>
<td>Bus stops</td>
<td>Located every ¼- to ½-mile depending on the land use density, the best location for the land use they are serving, etc.</td>
</tr>
<tr>
<td>Altamont Pass platform</td>
<td>Mountain House was required to make a “fair share” contribution to this facility once 4,100 homes were built. The facility has been built.</td>
</tr>
<tr>
<td>Three joint-use park-and-ride lots</td>
<td>To be provided throughout the community in the village centers.</td>
</tr>
</tbody>
</table>

Note: MHCSD = Mountain House Community Services District.

Table 5.15-14 SUMMARY OF MOUNTAIN HOUSE TRANSIT MEASURES

<table>
<thead>
<tr>
<th>Transit Measures</th>
<th>Action Items and Trigger Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express bus service to jobs in Tracy</td>
<td>Prior to 44,000 residents in Mountain House, service frequency should be at least 30 minutes in the peak periods.</td>
</tr>
<tr>
<td>External bike racks</td>
<td>All transit vehicles to provide bike racks.</td>
</tr>
<tr>
<td>San Joaquin Regional Transit District service</td>
<td>When more than 1,000 homes have been occupied.</td>
</tr>
<tr>
<td>Taxi service</td>
<td>To be provided as an option once the first 25 residential units are occupied.</td>
</tr>
<tr>
<td>Fixed route intracity service</td>
<td>This is transit service that would serve the 12 neighborhoods and the Town Center. Fixed route service should be considered once there is extensive demand for demand-responsive service (taxi). Service frequency for intracity service should be determined by the length of the peak period as the project builds out. Frequency will likely be at least 30 minutes in the peak period and every 60 minutes in the off-peak periods. If the demand warrants increased frequency, then 15- to 20-minute frequencies should be considered at that time. Independent operator should be solicited.</td>
</tr>
</tbody>
</table>


Sources of Information


Institute of Transportation Engineers (ITE), 2008. *Trip Generation Handbook*. 

(07/11) 5-190


San Joaquin County Community Development Department, 2005. Mountain House Specific Plan II.


5.16 Utilities and Service Systems.
Would the project:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g) Comply with federal, State, and local statutes and regulations related to solid waste?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Setting
Most utility services for the Mountain House community are provided by the Mountain House Community Services District (MHCSD) as required under the Mountain House Master Plan. The utility infrastructure, consisting of a water distribution system, a sanitary sewer system, and a storm drain system, has been constructed for the development of Neighborhoods E, F, and G (all part of Specific Plan I [SPI]) and Neighborhood H (part of Specific Plan II [SPII]). These utilities would be extended north to serve Neighborhoods K and L.

Water
Water Supply
The Byron Bethany Irrigation District (BBID), under contractual relations with the MHCSD, is providing raw water supply to the MHCSD. Historically, BBID has diverted water for agricultural irrigation in the area to be occupied by Mountain
House south of Byron Road. Between 1976 and 1991, this supply averaged 9,413 acre-feet per year (afy). BBID has agreed to continue to divert that much water to supply the Mountain House development. Historically, BBID diverted water only during the irrigation months of April through September, but BBID and the State Department of Water Resources (DWR) reached a trade agreement whereby BBID can divert the same quantity of water year-round to supply Mountain House. As a result, the MHCSD has a water services agreement with BBID for 9,413 afy of water to supply the Mountain House community. BBID has pre-1914 appropriative water rights based on historical use; thus, the MHCSD water supply is secure under California water law. Under the water services agreement, BBID can supply more than 9,413 afy if excess water is available.

Sometimes, during droughts, there is not enough water in the state’s water supply system to satisfy all municipal, agricultural, and environmental demands throughout the state. During these situations, the DWR must allocate what water is available to the various demands, which sometimes means that municipalities do not receive the amount of water to which they are normally entitled. However, BBID is in a unique position to avoid supply curtailments during droughts.

Section 9 of the 2003 agreement between the DWR and BBID allows BBID to divert up to 50,000 afy from the Harvey O. Banks Pumping Plant intake channel (part of the California Aqueduct). Section 4 of the agreement “provides that regulatory restrictions imposed by State or federal agencies for environmental, drought or other purposes that affect the ability of DWR to make water diversions from the Delta shall only be applied to BBID if they are imposed directly upon BBID by law.” In addition, “as a holder of pre-1914 water rights, the BBID’s water supply from this source (the intake channel) is not affected by hydrologic conditions. The BBID has never experienced a reduction in water right due to a hydrologic condition” (CH2M Hill, 2004). Therefore, there appears to be very little chance that the MHCSD supply from BBID would ever be reduced in times of drought.

**Water Facilities at Mountain House**

Water facilities have been constructed to serve Mountain House as it is developed. These facilities include the following:

- A raw water intake pump station on the California Aqueduct with two 5-million-gallon-per-day (mgd) pumps and space for two more pumps in the future;
- A 30-inch diameter raw water pipeline from the intake to a water treatment plant (WTP) located on the north side of Byron Road in the southern part of Neighborhood I;
- A WTP with a capacity of 15 mgd, a 5.5-million-gallon treated water storage tank, all located at the WTP site; and an additional 7.4 million gallons of treated water storage located in the southern portion of the community; and
- Treated water distribution systems consisting of pumps and pipelines to serve Neighborhoods E, F, G, and H, as well as the Delta Community College South Campus south of Grant Line Road (Groover, 2011).
A WTP should have enough capacity to supply its service area on the day of maximum demand for water, which usually occurs on a hot summer day. A 20-mgd WTP would be necessary to supply the maximum-day demand of the Mountain House community at buildout. To comply with the California Environmental Quality Act (CEQA), an Initial Study was prepared for the 20-mgd WTP that addresses all potential environmental impacts associated with construction of the WTP to full capacity (SJCCDD, 1997). In 1997, San Joaquin County issued a Use Permit for the WTP. Expansion to 15 mgd took place in 2007.

The WTP is operated under a license from the California Department of Health Services (DHS), and the treated water meets all the primary and secondary water quality requirements issued by DHS as well as the United States Environmental Protection Agency. The treated water consistently has turbidity less than maximum regulatory limit.

Any sludge generated from the WTP is to be disposed at Forward, Inc., a Class II landfill within San Joaquin County, or transported outside the County for disposal (Karam, 2006).

**Water Service in Project Area**

The areas of the Mountain House community north of Byron Road, including the Neighborhoods K and L project site, were previously annexed into BBID and would be served by the MHCSD. Information regarding farm irrigation is included in the SPII Farm Irrigation and Drainage Reports and is also addressed in Section 5.8, Hydrology and Water Quality.

**Wastewater**

Wastewater collection, treatment, and disposal facilities have been constructed to serve Mountain House as it is developed. These facilities include the following:

- A 0.45-mgd wastewater treatment plant (WWTP) located near the northeast corner of Mountain House just east of Neighborhood L. The WWTP was expanded and improved to provide treatment for 3.0-mgd average dry weather flow (Karam, 2006).
- Two temporary 60-million-gallon treated effluent storage basins used primarily to hold effluent during wet weather.
- A 200-acre temporary effluent disposal area located north of Byron Road within the Mountain House community (in Neighborhood K) with piping to allow flooding of the area.\(^1\)

---

\(^1\) This effluent disposal area is no longer used by the MHCSD since a permit was granted to dispose of all treated wastewater to Old River. No land application of treated wastewater is required.
Sanitary sewer systems to serve Neighborhoods E, F, G, H, and the Delta Community College South Campus area south of Grant Line Road (Groover, 2011).

A 5.4-mgd average annual flow WWTP would be necessary to treat the sewage generated by the Mountain House community at buildout. An Initial Study was prepared for the 5.4-mgd WWTP to address all the potential environmental impacts associated with construction of the WWTP at full capacity (SJCCDD, 1998). In 1998, San Joaquin County issued a Use Permit for the WWTP.

The WWTP is currently operated under waste discharge requirements issued by the Central Valley Regional Water Quality Control Board (RWQCB). Treated effluent from the WWTP was previously disposed by means of flooding on approximately 200 acres of land located north of Byron Road within the project site between the months of April and November. The land, owned by Shea Mountain House LLC, included an easement for the MHCSD to use this area for land disposal. Land disposal was prohibited during the rainy season from November to March; thus, two 60-million-gallon treated effluent storage ponds were constructed between the WWTP and the land disposal area to hold the effluent until land disposal can recommence. These ponds still exist but are empty and no longer used since the MHCSD received approval to dispose of all treated wastewater via an outfall to Old River at the northern end of Neighborhood L.

Any sludge generated from the WWTP was originally to be disposed at Forward, Inc., a Class II landfill within San Joaquin County, or transported outside the county for disposal (Karam, 2006). Recently, however, sludge has been sold to cotton farmers to use as fertilizer (Groover, 2011).

**Storm Drainage**

The sites for Neighborhoods K and L were formerly used almost entirely for agriculture, so an urban storm drain system did not exist in these areas. Mountain House Creek traverses the boundary between Neighborhoods K and L. Mountain House Creek flows in natural and man-made earthen channels. Existing drainage of lands on both sides of the creek consists of ditches and agricultural drains that discharge into the creek. Refer to Section 5.8, Hydrology and Water Quality, for more discussion of drainage and water quality control features.

**Solid Waste**

Very little solid waste was generated at the Neighborhoods K and L project site, which was formerly agricultural land. There was no urban solid waste (garbage).

---

2 Flooding refers to allowing treated effluent to flow out onto the surface of the ground through valves on pipelines as opposed to spraying the effluent into the air through turf spray or sprinkler systems.
collection and disposal service in the area prior to development of the Mountain House community.

The MHCSD has issued a permit for the collection, transportation, and disposal of solid waste, including collection of recyclable materials as required by the Master Plan, generated by all existing development in Mountain House. This permit was issued to Tracy Delta Solid Waste Management, Inc., which also does business as West Valley Disposal (MHCSD, 2002). Solid waste is placed in color-coded, curbside containers: green for non-recyclable garbage, brown for yard and garden clippings, and blue for recyclable materials such as newspapers, cardboard, glass bottles, plastic bottles and containers, and metal cans. This curbside program satisfies Master Plan Implementation Measure 6.7.f. The non-recyclable garbage is transferred by truck to the Foothill Landfill, a Class III landfill permitted to receive non-hazardous waste, located in eastern San Joaquin County about 50 miles from the Mountain House community.

The MHCSD posts information regarding household hazardous waste disposal on its web site in compliance with Master Plan Implementation Measure 6.7.h (Karam, 2004). Disposal of hazardous waste is managed by the San Joaquin County Solid Waste Division of the Public Works Department, which has a regional program in place. Household hazardous wastes from Mountain House can be dropped off at the Household Hazardous Waste Consolidation Facility in Stockton. In addition, used motor oil and oil filters can be dropped off at several automobile parts and service stores in Tracy as well as the Tracy Materials Recovery and Transfer Facility. Hazardous wastes generated in San Joaquin County are either disposed at Forward, Inc., a Class II landfill within the county, or are transported outside the county for disposal.

**Significant Impacts Identified in 1994 MEIR**

The 1994 MEIR identified significant utility and service system impacts of the Master Plan related to the following:

**Water**

1) Inadequate raw water storage in case of restrictions of water diversions imposed by State or federal agencies.

2) Adverse impacts on continuing agricultural operations in the area resulting from conversion from agricultural to municipal/industrial water use.

3) Inadequate water supply for Master Plan buildout.

4) Lack of sufficient water treatment capacity for initial or subsequent development within the Master Plan area.

6) Adverse water quality impacts and/or reduction of available landfill capacity due to production of water treatment sludge.

7) Uncontrolled release of hazardous materials associated with water treatment.
Wastewater

1) Adverse water quality and public health impacts due to inadequate wastewater treatment or lack of enough reclamation sites.
2) Illegal waste discharges through agricultural drains if the drains are not abandoned.
3) Adverse water quality and public health impacts and/or reduction of available landfill capacity due to production, treatment and disposal of wastewater treatment sludge.
5) Flooding resulting from failures of levees around wastewater treatment facilities and effluent holding ponds.

Storm Drainage

1) Nuisance conditions resulting from debris and petroleum residue in detention ponds.

Solid Waste

1) Reduction of available landfill capacity due to generation of solid and hazardous wastes.

Findings Related to Significant Impacts Identified in 1994 MEIR

For all the above potential utility and service system impacts, the Master Plan was amended as recommended in the 1994 MEIR mitigation measures, except for the following:

- Policies and implementation measures to provide adequate raw water storage were not incorporated into the Master Plan. Instead, each specific plan is expected to reevaluate the adequacy of the confirmed water supply in case of restrictions of water diversions. If supply is inadequate, additional water conservation/reuse measures shall be implemented.
- Calculations to determine if sufficient land was available for water treatment and storage were not required for the water treatment plant development permit. The findings determined that the 18.5-acre site was adequate.
- Measures mandating construction of a reclaimed water distribution system were not incorporated.

Discussion Regarding Neighborhoods K and L

Utility infrastructure for Neighborhoods K and L would be constructed by the developer prior to obtaining building permits for construction of houses and buildings in each neighborhood. After construction, these infrastructure capital
improvements would be turned over to the MHCSD, which would operate and maintain the utility systems. The MHCSD would issue a letter prior to recording the Tentative Subdivision Map for each neighborhood stating that the MHCSD would serve each neighborhood when the infrastructure is in place and operational.

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the SPII Initial Study. The currently proposed development does not include any significant changes in wastewater facilities serving Neighborhoods K and L.

The MHCSD would provide wastewater service to the project. To serve the proposed project site, additional pipeline extensions from the existing backbone line located north of Byron Road, including some lift stations, would be installed and extended. Smaller sewer lines would be constructed under roadways to serve individual homes and businesses.

Year-round discharge to Old River for all of the treated wastewater pursuant to the existing permit from the Central Valley Regional Water Quality Control Board (RWQCB) would continue. The MHCSD has the necessary financial resources to improve, operate, and maintain its WWTP such that discharge permit violations are not expected to occur. Therefore, this impact is considered less than significant, and no mitigation measures are necessary.

b) Would the project 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?

The currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the SPII Initial Study. The Initial Study found that construction of new facilities or expansion of existing water or wastewater facilities would not cause potentially significant impacts that were not adequately addressed in the 1994 MEIR or SPII. The currently proposed development does not include any significant changes in water or wastewater facilities serving Neighborhoods K and L; therefore, the proposed project would not create a need for new or expanded water or wastewater facilities beyond those previously evaluated, and no significant impacts would occur.

Water Facilities. The MHCSD would provide domestic water to Neighborhoods K and L. The applicant would construct all required water facilities. Facilities anticipated to be constructed by the applicant to provide water service to Neighborhoods K and L include the balance of backbone water facilities on the applicant’s lands, consistent with the MHCSD adopted Water Service Master Plan. However, specific requirements would be determined by the MHCSD as part of subsequent engineering design and approvals.
Water distribution pipelines to serve Neighborhoods K and L would be installed along the neighborhood streets and easements prior to building any houses. Neighborhoods K and L would be served by extending distribution pipelines from the existing treated water main on Byron Road. Water distribution system improvements would be constructed in conjunction with the grading for the street system and before streets are paved. Construction impacts would include noise and dust from construction equipment and traffic impacts associated with removal of spoils and delivery of pipe, valves, and fire hydrants. These impacts would be temporary, extending only through the period of construction. Construction impacts were discussed in the 1994 MEIR. No additional construction-related mitigation measures are necessary.

Demand for Water Service. As already noted, the currently proposed development would allow a similar number of dwelling units and about 190 more jobs than anticipated with SPII. The proposal would not create substantial new water demand beyond that evaluated in the SPII Initial Study. The water demand projected for all of SPII was 5,462 acre-feet per year (afy). The demand for the project would not create a need for new or expanded water facilities beyond those previously evaluated.

An SB 610 CEQA analysis and an SB 221 Subdivision Analysis for Water Supply have both been completed and certified by the San Joaquin County Board of Supervisors for the entire SPII area. These analyses confirmed that an adequate water supply was available for all of SPII.

Wastewater Facilities. The MHCSD would provide wastewater service to the project. To serve the proposed project site, additional pipeline extensions from the existing backbone line located north of Byron Road, including some lift stations, would be installed and extended. Smaller sewer lines would be constructed under roadways to serve individual homes and businesses.

Local sanitary sewers to serve Neighborhoods K and L would be installed along the streets and easements prior to building any houses. Due to elevation variations, local sewers may convey wastewater by gravity flow to a set of three pump stations. These stations would operate in series to lift or pump the wastewater through force mains to sewers at higher elevations. Eventually, the wastewater would be pumped up to the existing 30-inch main trunk sewer north of the WWTP.

Construction of the sewers would be done in conjunction with the grading for the street system and before the streets are paved. Construction impacts would include noise and dust from construction equipment and traffic impacts associated with removal of spoils and delivery of pipe and pre-cast concrete manholes. These impacts would be temporary, extending only through the period of construction. Construction impacts were discussed in the 1994 MEIR and the SPII Initial Study. No additional sewer construction-related mitigation measures are necessary.
As discussed in the SPII Initial Study, the wastewater treatment plant (WWTP) will need to be expanded before it can serve all of SPI and SPII. The SPII Initial Study noted, however, that a substantial portion of SPII development can proceed before the WWTP must be expanded. The WWTP must also be designed to accommodate peak wet-weather flows that include infiltration and inflow caused by rainfall. The MHCSD must issue a “will serve” letter indicating that sufficient capacity will be available for each neighborhood before each neighborhood Tentative Subdivision Map is approved. The Neighborhoods K and L applicant, Shea Mountain House, LLC, would contribute its fair share of the cost to build additional WWTP capacity. Environmental impacts of full buildout of the WWTP, including construction impacts, were evaluated in a separate Initial Study (SJCCDD, 1998). As noted in the Setting section above, the WWTP was expanded and improved to provide treatment for 3.0-mgd average dry weather flow. The expansion is likely to be adequate to serve development proposed for Neighborhoods K and L should this occur prior to development of Neighborhoods I and J.

Demand for Wastewater Service. As already noted, the currently proposed development would allow a similar number of dwelling units as that identified in SPII, and only about 190 more jobs than projected under SPII. The proposal would not create substantial new demand for wastewater service beyond that evaluated in the SPII Initial Study. Planned land uses for Neighborhoods K and L would generate an estimated 740,000 gallons per day (gpd) of wastewater.

Conclusion. The above discussion reveals that construction of new water or wastewater treatment facilities or expansion of existing facilities would not cause potential significant impacts that were not adequately addressed in the 1994 MEIR or the SPII Initial Study.

c) Would the project 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?

Construction of new storm drains with catch basins (a.k.a. drop inlets) would be required for Neighborhoods K and L. The storm drain system would consist of gravity-flow pipelines, constructed under neighborhood streets and easements, with lateral pipes to catch basins installed along the curbs and gutters. These storm drains would collect surface runoff and ultimately convey it to Mountain House Creek. Local storm drains along most side streets would convey storm runoff to large storm drains (trunks) along major arterial streets.

The storm drain system would be designed to accommodate runoff flows from the 10-year storm event unless a 100-year storm event would cause excessive street flooding that could prevent access for emergency vehicles. If this situation would occur, that portion of the system would be designed to accommodate a 100-year storm event. Mountain House creek has already been constructed to accommodate 100-year storm flows and no further modifications are needed. A 10-year storm has a 10-percent statistical chance of occurring every year, and a
100-year storm has a one-percent chance of occurring every year. Installation of these storm drain systems was subject to earlier environmental review in the 1994 MEIR. No additional mitigation measures are necessary.

Storm drainage is also addressed in Section 5.8, Hydrology and Water Quality, of this Initial Study.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the SPII Initial Study. Prior to approval of any Tentative Subdivision Maps, the MHCSD must issue a “will-serve” letter to confirm that adequate water treatment plant capacity is or will be available.

For SPII (which includes Neighborhoods K and L), the MHCSD completed a Water Supply Assessment (WSA) as required by Senate Bill 610 and the California Water Code (West Yost, 2004). The MHCSD also completed a “Written Verification” of sufficient water supply in accordance with Senate Bill 221 (West Yost, 2006). These water analyses are required for any residential development larger than 500 dwelling units. They include projections of water demand at five-year increments and assess the availability and reliability of the local water supply for the development in normal, single dry, and multiple dry years. Although the analyses were specifically written to address SPII, they also consider water demands for SPI and SPIII to present a complete analysis for the entire Mountain House community. Their conclusions are generally as follows:

1) The MHCSD has a firm water supply of 9,413 afy from BBID to serve the Mountain House community.

2) The total average demand for all of the Mountain House community at buildout would be 9,867 afy assuming water conservation and no reclamation. This demand exceeds the contracted supply from BBID by 454 afy. However, water supplies for the year 2025 should be available to meet the demands of SPI and SPII. The 2006 Written Verification concludes that sufficient water supplies are available to meet SPII water demands in normal, single dry, and multiple dry years.

---

3 A water assessment was also recently prepared for SPIII and the Mountain House Business Park (MHBP) in accordance with Senate Bill 221 (West Yost & Associates, Senate Bill 221 Written Verification for Mountain House Specific Plan III and Mountain House Business Park). This assessment (page 28) found that “water supplies for the year 2030 are not sufficient to meet the demands of SPIII.” The assessment contained information on SPII, but indicated that “this SB 221 Written Verification is only for SPIII and the MHBP…A separate Written Verification was prepared for SPII…any specific water supply and demand information for SPII should be taken from the Written Verification for SPII.” This Initial Study therefore relies on the 2004 Water Supply Assessment and 2006 Written Verification prepared for Specific Plan II, of which Neighborhoods K and L (the currently proposed project site) are a part.
3) The agreement between the MHCSD and BBID allows BBID to supply more than 9,413 afy to the MHCSD if BBID has excess water available. Projections of all the future demands for BBID are presented in Table 1 of both the WSA and the Written Verification. The projections indicate that BBID would have 5,896 afy of excess water in the year 2025. Any additional long-term supplies that the MHCSD may require from BBID in excess of the contracted 9,413 afy would need to be secured under a separate or amended agreement with BBID.

4) In addition to BBID-supplied water, portions of the lands included in SPII have a riparian right to use water from Old River. (The Master Plan states that land between the El Pescado Grant Line and Old River [i.e., generally north of Byron Road] has riparian water rights amounting to 2,600 afy that could be used on these lands.)

5) Chapter 2 of MHCSD Ordinance 4056 establishes five stages of water allocations (i.e., rationing) that could be enacted to reduce demand during water shortage emergencies.

If the actual water demand for SPII is greater than projected in the WSA or the Written Verification, BBID may not be able to provide enough water at buildout. If actual water consumption proves that this is the case, a supplemental source of supply could be developed. Shea Mountain House LLC owns riparian water rights that are tied to the land based on its prior use for agriculture. One possibility that could increase the water supply for Mountain House would be for Shea to transfer its riparian water rights to the MHCSD. The water that could be withdrawn from Old River under these rights would be allowed to flow downstream and join the waters in the greater San Joaquin Delta system. The same quantity of water could then be withdrawn by BBID from the California Aqueduct (which conveys water from the Delta) to supplement the Mountain House community supply by “wheeling” the water back to the MHCSD WTP. This plan could supplement the BBID supply by an estimated 2,600 afy. It should be noted that these riparian rights could be curtailed by DWR during a water shortage in dry years.

Master Plan Implementation Measure 12.3.2.a requires that each specific plan subsequent to SPI include a comparison of actual water demand for the community with projected water demand used in the Master Plan. Land uses, the number of dwelling units, and water demands have changed since the last publication of the Master Plan. Nevertheless, SPII does not include the water demand comparison required by the Master Plan because the MHCSD does not yet have sufficient data to make a valid comparison. The MHCSD was to start monitoring water demand when Neighborhoods E and G were completed and occupied. To be meaningful, the study sample must be large and the meter readings should cover at least one full year to reflect the effects of the different seasons on water consumption (Karam, 2006). As of July 2011, the monitoring by MHCSD was not determined.
SPII Implementation Measure 12.2.2 states that if in the future there is insufficient water for buildout of the community, then measures shall be taken to obtain an additional water supply, to implement more extensive conservation measures, or to revise the Master Plan. Presumably, revising the Master Plan means reducing the mix or number of future dwelling units in order to reduce water demand. Combinations of these three corrective measures could be implemented.

**Mitigation Measures**

**Mitigation Measure UTILITIES-1:** Prior to site development, the applicant shall verify that adequate water supplies would be available to serve the project. If necessary, a reduction in units may be necessary to ensure that adequate water is available. Documentation of this verification shall be provided to the County prior to the issuance of any building permits for Neighborhoods K and L.

e) Would the project 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?

The MHCSD is the wastewater treatment provider for the Mountain House community and does not have a commitment to provide wastewater treatment for any other community or area. The MHCSD may provide wastewater treatment to existing houses on the south side of Grant Line Road and the south bank of Old River if those property owners choose to annex to the MHCSD, but the amount of wastewater generated by these houses would be small. Expansion of the WWTP is discussed in Item (b) above. Since this expansion must occur prior to occupancy of houses or buildings in SPI, SPII, or SPIII that would increase wastewater generation to more than the capacity of the WWTP, the MHCSD would always have adequate wastewater treatment capacity. This potential significant impact was adequately addressed in the 1994 MEIR and no additional mitigation measures are required.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?

Section 6.7 of the Master Plan states that solid waste generated by the new community will be managed in accordance with the goals of the California Integrated Waste Management Act of 1989. The act calls for a 50-percent reduction in the solid waste stream going to landfills by the year 2000. Conformance with the act is the responsibility of the San Joaquin County Solid Waste Division. Since there was no solid waste going to a landfill from Mountain House in the year 2000, the Master Plan assumes that the amount of solid waste generated at buildout will be reduced by 50 percent from what would have been generated before initiation of state-mandated waste reduction management.

Solid waste from Neighborhoods K and L would be collected by West Valley Disposal and brought to the Tracy Materials Recovery and Transfer Facility in a
manner similar to solid waste from Neighborhoods E, F, and G. Non-recyclable garbage would then be trucked to the Foothill Landfill in eastern San Joaquin County. The Foothill Landfill has a total remaining disposal volume of 76 million cubic yards. The San Joaquin County Solid Waste Division estimates that the Foothill Landfill will be able to provide solid waste disposal for all of San Joaquin County south of Stockton until the year 2044 (Johnson, 2006).

As shown on Figure 13.3 of the Master Plan, a 10-acre site in Old River Industrial Park of the Mountain House community will be reserved for a materials recovery facility and solid waste transfer station in case the Tracy facility is not expanded. If the Tracy facility is expanded, the Mountain House site could be made available for other public uses.

Master Plan Implementation Measure 6.7.f requires that a 1-acre minimum area within the Mountain House Materials Recovery Facility site be set aside and made available for community recycling of green waste (yard and garden clippings). Part of this site could be used for on-site composting of green waste for re-use within the community. There are no plans for establishing a composting facility at the present time, and the MHCSD has not yet provided any equipment, such as a front-end loader and chipper, for composting.

San Joaquin County provides three types of recycling services for the southwestern portion of the County: curbside pickup, buy-back centers, and drop-off centers. Hazardous waste generated in San Joaquin County is either disposed of at Forward Inc., a Class II landfill within the county, or is transported outside the county for disposal. Disposal of household hazardous waste generated by the Mountain House community would be managed by the San Joaquin County Solid Waste Division, which has a regional program in place.

The currently proposed development within Neighborhoods K and L would not be substantially different from that evaluated in the 1994 MEIR or the SPII Initial Study. According to the SPII Initial Study, development in the SPII area, which includes Neighborhoods K and L, would generate 80.5 tons of solid waste per day, or 29,400 tons per year. This waste would occupy approximately 551,300 cubic yards of compacted landfill over 50 years and represent about 0.7 percent of the remaining disposal capacity of the Foothill Landfill. The SPII Initial Study concluded that the impact on available landfill capacity would be less than significant. The currently proposed plans would not substantially change the amount of development allowed in Neighborhoods K and L and therefore would not alter this conclusion.

Also as described in the SPII Initial Study, construction of the neighborhoods would generate considerable amounts of waste wood, metal, and other materials that could be recycled into useful products or help reduce the demand for new construction materials. Master Plan Implementation Measure 6.7d) states “recyclable construction waste shall be separated [from non-recyclable construction waste], and arrangement shall be made with the County, or on-site recycling services, for collection. Recycling of construction wastes shall be made
part of the construction specifications for contractors.” Assuming this implementation measure is implemented, the volume of construction wastes would be reduced significantly, and the impacts of construction wastes would be less than significant.

g) Would the project comply with federal, State, and local statutes and regulations related to solid waste?

Non-hazardous solid waste from Neighborhoods K and L would be collected and transported to the Foothill Landfill for disposal. Hazardous wastes would be transported to Class I or II landfills for disposal. These landfills are licensed and operated in compliance with applicable federal, state, and local statutes and regulations. Therefore, there would be no significant impact associated with the proposed project.

Sources of Information


Groover, Morgan, Community Services Director, Mountain House Community Services District, 2011. Personal communication, July 20.

Johnson, Dan, Engineer II, San Joaquin County Solid Waste Division, 2006. Personal communication, November 28.

Karam, Gabriel, Mountain House Community Services District, 2004. E-mail communication, May 3, and personal communication, October 18.

Karam, Gabriel, Mountain House Community Services District, 2006. Fax communication to Natalie Macris, November 22.


San Joaquin County Community Development Department (SJCCDD), 1998. Initial Study and Negative Declaration for Wastewater Treatment Plant at Mountain House. January (Use Permit 98-16).
San Joaquin County Community Development Department (SJCCDD), 1997. Initial Study and Negative Declaration for Mountain House New Community Water Treatment Plant Use Permit. January 5 (Use Permit 97-13).


### Chapter 6

**Mandatory Findings of Significance**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### Environmental Checklist Explanations

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

The project does have the potential to substantially reduce the habitat of a fish or wildlife species. As discussed in the Section 5.4, Biological Resources, habitat for Swainson’s hawk and other species of concern would be affected by new development. However, mitigation measures have been recommended in the original 1994 Master EIR (MEIR) and are being implemented through the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.
(SJMSCP) to reduce this impact to less than significant. This impact is also adequately mitigated by implementation measures included in Specific Plan II of which Neighborhoods K and L are a part. For clarification, this Initial Study includes a new mitigation measure for the project related to waters of the U.S.

b) Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

The cumulative impacts of the project have been addressed in the 1994 MEIR. The MEIR addressed full buildout of Mountain House. Cumulative development in the general area and the overall region was also addressed in the MEIR. While some of the cumulative projects listed in the MEIR have been built or removed from application, other projects have been proposed. To address the most recent conditions related to cumulative traffic, this Initial Study included runs of the new countywide transportation model that addresses growth to the year 2035. (The MEIR traffic model addressed growth to the year 2010.) More detailed information about this model can be found in the Section 5.15, Transportation/Traffic, of the Initial Study. Other topics related to cumulative growth are adequately covered in the MEIR.

Based on the results of the new cumulative analysis related to traffic, no new impacts have been identified. The MEIR did identify significant unavoidable impacts along freeway segments. The required findings and a Statement of Overriding Considerations were made for the MEIR and the adoption of the Master Plan related to this issue and other impacts that were found to be significant and unavoidable.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The project would not create substantial adverse effects on human beings either directly or indirectly for the reasons discussed in more detail in Chapter 5 of this Initial Study.
CHAPTER 7
BIBLIOGRAPHY

5.1 Aesthetics
Mountain House Community Services District (MHCSD), 1999. *Mountain House Community Services District Design Manual*.

5.2 Agriculture and Forestry Resources
Alameda County, General Ordinance Code, Title 17, Zoning.


California Resources Agency (Department of Conservation), 2002. Alameda and San Joaquin County Important Farmland (map).


San Joaquin County, 1994a. *Findings Regarding Impacts Identified in Final Environmental Impact Report as Potentially Significant Environmental Impacts, County of San Joaquin, California, Mountain House/Adoption of Master Plan, Specific Plan; Conforming Amendments of General Plan and Development Title; Development Agreement*.


5.3 Air Quality and Greenhouse Gas Emissions

California Air Pollution Control Officers Association (CAPCOA), 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.


San Joaquin Valley Air Pollution Control District, 2008. 2008 PM2.5 Plan, April 30, 2008.


### 5.4 Biological Resources


California Department of Fish and Game, CDFG, 1994. *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (Buteo swainsoni) in the Central Valley of California*. November 1.

California Department of Fish and Game, 2011. California Natural Diversity Database (CNDDB), Record Search, Biogeographic Data Branch, Sacramento, California.


Moore Biological Consultants, 2004b. *Biological Resources Inventory for the 14+-Acre Silva-Vosti Site, Alameda County, California*. Prepared for Trimark Communities, April 19.


San Joaquin Council of Governments (COG), 2001. *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).*


San Joaquin County Community Development Department (SJCCDD), 1994a. *Final Environmental Impact Report: Mountain House Master Plan and Specific Plan I.*


San Joaquin County Community Development Department (SJCCDD), 2004. *Mountain House Specific Plan II; Initial Study, San Joaquin County, California.* December.


U.S. Army Corps of Engineers (USACOE), 1987. *Technical Report Y87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MI.*


United States Fish and Wildlife Service (USFWS), 1997b. *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance.* April.


### 5.5 Cultural Resources


San Joaquin County, 1992, *San Joaquin County Development Title.* Adopted July 29, as amended.

### 5.6 Geology and Soils


### 5.7 Hazards

California Department of Health Services, 1999. “Short Fact Sheet on EMFs.”


Regional Water Quality Control Board, Central Valley Region (RWQCB), 2008. Fact Sheet, Proposed No Further Action Required, Mountain House Site #1, Historical Crude Oil Pipelines, West Byron Road, San Joaquin County. August 1.

Regional Water Quality Control Board, Central Valley Region (RWQCB), 2008. Fact Sheet, Proposed No Further Action Required, Mountain House Site #2, Historical Crude Oil Pipelines, West Byron Road, San Joaquin County. August 1.

Regional Water Quality Control Board, Central Valley Region (RWQCB), 2011. No Further Action Required and Consideration of Request for No
Further Action Required Determination, Mountain House Development Site #3, West Byron Road, San Joaquin County. May 6.


San Joaquin County Community Development Department (SJCCDD), 2000. Initial Study and Negative Declaration for Mountain House New Community Water Treatment Plant Use Permit. January 5 (Use Permit 97-13).

5.8 Hydrology and Water Quality


Jacobs Carter Burgess (Jacobs), 2008. Storm Water Master Plan, Mountain House Community Services District. August.


5.9 Land Use and Planning

San Joaquin County, 1994. Findings Regarding Impacts Identified in Final Environmental Impact Report as Potentially Significant Environmental Impacts, County of San Joaquin, California, Mountain House/Adoption of Master Plan, Specific Plan; Conforming Amendments of General Plan and Development Title; Development Agreement.


5.10 Mineral Resources


5.11 Noise


San Joaquin County, 1992. San Joaquin County Development Title, adopted July 29, as amended.

5.12 Population and Housing

5.13 Public Services
Buffleben, Kathleen, Branch Librarian, Mountain House, 2010. Personal communication, July 19.

Groover, Morgan, Community Services Director, Mountain House Community Services District, 2011. Personal communication, June 15.


5.14 Recreation
5.15 Transportation/Traffic


Institute of Transportation Engineers (ITE), 2008. *Trip Generation Handbook*.


San Joaquin County Community Development Department, 2005. *Mountain House Specific Plan II*.


5.16 Utilities and Service Systems


Groover, Morgan, Community Services Director, Mountain House Community Services District, 2011. Personal communication, July 20.

Johnson, Dan, Engineer II, San Joaquin County Solid Waste Division, 2006. Personal communication, November 28.

Karam, Gabriel, Mountain House Community Services District, 2004. E-mail communication, May 3, and personal communication, October 18.
Karam, Gabriel, Mountain House Community Services District, 2006. Fax communication to Natalie Macris, November 22.


San Joaquin County Community Development Department (SJCCDD), 1998. Initial Study and Negative Declaration for Wastewater Treatment Plant at Mountain House. January (Use Permit 98-16).

San Joaquin County Community Development Department (SJCCDD), 1997. Initial Study and Negative Declaration for Mountain House New Community Water Treatment Plant Use Permit. January 5 (Use Permit 97-13).


CHAPTER 8
PREPARERS OF THE INITIAL STUDY

The prime consultant for preparation of this Initial Study was Amy Skewes-Cox, AICP, Environmental Planner. She was assisted by other specialists for specific sections of the Initial Study, as listed below.

Amy Skewes-Cox, AICP                Project Management, Agriculture and Forestry
P.O. Box 422                            Resources, Mineral Resources, Cultural Resources,
Ross, CA 94957                      Land Use and Planning, Aesthetics, Population and Housing,
                                        Public Services, Recreation, Utilities, and Service Systems

Natalie Macris                          Report Editing
1620 Montgomery St., Suite 330
San Francisco, CA 94111

ESA                                     Noise, Air Quality and Greenhouse Gas Emissions,
225 Bush Street, Suite 1700             Hydrology and Water Quality, Hazards
San Francisco, CA 94101

Environmental Collaborative            Biological Resources
Jim Martin
1268 64th Street
Emeryville, CA 94608

TJKM Transportation Consultants        Transportation/Traffic
Christopher Thnay
5960 Inglewood Drive, Suite 100
Pleasanton, CA 94588-8535

The Initial Study consulting team was assisted by Ms. Corinne King of the San Joaquin County Community Development Department.
APPENDIX A

1994 MEIR MITIGATION MONITORING PROGRAM
### MOUNTAIN HOUSE MASTER PLAN AND SPECIFIC PLAN I
#### SAN JOAQUIN COUNTY MITIGATION MONITORING PROGRAM

<table>
<thead>
<tr>
<th>Impacta</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsibleb</th>
<th>Timing or Frequency of Monitoringc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many of the mitigation measures from the Final Environmental Impact Report have been incorporated into the Master Plan, Master Plan Appendices, Specific Plan I, and Public Financing Plan. Some mitigation measures have been included as Amendments to the San Joaquin County General Plan and/or the Mountain House Development Title. Compliance with these mitigation measures will occur as a function of the implementation of these various plans.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### WATER SUPPLY

**M4.4.1-1**
Inadequate raw water storage facilities may result in interruption of water service, especially if restrictions on water diversion were imposed by State or Federal agencies.

- a) If potential or proposed restrictions on diversion would cause the confirmed water supply to be insufficient to serve the project as proposed in the Master Plan, then the specific plans shall identify additional water conservation/reuse measures to be incorporated into the project to ensure that the demand would not exceed the confirmed supply.

**Mitigation Measure**

- Review of Subsequent Specific Plans.

**Person/Agency Responsible**

- SJCDPW

**Timing or Frequency of Monitoring**

- SP

---

**M4.4.1-5**
Water treatment sludge disposal could adversely impact local water quality or unnecessarily occupy scarce landfill space.

- a) Industrial reuse of water treatment sludge shall be practiced to the maximum extent possible. The Community Service District shall consider other disposal options only if industrial reuse were infeasible.

**Mitigation Measure**

- Plan review.

**Person/Agency Responsible**

- MHCSD, SJCDPW

**Timing or Frequency of Monitoring**

- DP for water treatment plant

---

**M4.4.1-6**
An uncontrolled release of hazardous materials associated with water treatment practices could potentially occur and impact water resources and public health.

- a) Chemical Selection and Facilities. Prior to the plants, chemicals associated with water treatment operations shall be carefully selected to minimize the hazard. Chemical handling and storage facilities shall be designed to minimize and effectively mitigate the potential for accidental releases, including such features as secondary containment, alarms, remote sensing instruments, and other safety features.

**Mitigation Measure**

- Review Plan/Engineers Report

**Person/Agency Responsible**

- MHCSD, SJCDPW

**Timing or Frequency of Monitoring**

- DPs for water and waste-water treatment plants

---

#### WASTEWATER

**M4.4.2-1**
Inadequately treated reclaimed wastewater could impact local surface and groundwaters and public health. Insufficient reclamation sites could result in illegal and inappropriate discharge of treated wastewater.

- a) Additional wastewater treatment processes shall be provided if unrestricted use reclamation, including irrigation on-site, industrial/commercial reuse, or surface water discharge were implemented.

**Mitigation Measure**

- Plan review.

**Person/Agency Responsible**

- SJCDPW

**Timing or Frequency of Monitoring**

- SP

---

**b) The permit application for the wastewater treatment plant shall include a schedule for design, construction, and permitting for the plant to ensure that the wastewater treatment and reclamation facilities would be operational prior to the approval of the first final subdivision map.**

**Mitigation Measure**

- Review Development Permit application.

**Person/Agency Responsible**

- SJCDPW

**Timing or Frequency of Monitoring**

- DP for treatment plant

---

**c) Each Development Permit for the wastewater treatment plant shall describe the mechanism by which the construction of additional facilities for incremental expansion in treatment capacity shall be completed before the existing capacity is exceeded.**

**Mitigation Measure**

- Review Development Permit application.

**Person/Agency Responsible**

- SJCDPW

**Timing or Frequency of Monitoring**

- DP for treatment plant
<table>
<thead>
<tr>
<th>Impact</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsible</th>
<th>Timing or Frequency of Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>d)</td>
<td>Specific plans subsequent to Specific Plan I shall include a comparison of the actual wastewater generation rates for the project with that calculated in the Master Plan. If wastewater flow rates were higher than those predicted in the Master Plan assuming implementation of water conservation measures, then the next specific plan shall specify actions that would be implemented in the next specific plan to reduce the wastewater generation rates. Approval of the specific plan(s) shall be contingent on the adequacy of the proposed actions to reduce wastewater generation rates to those calculated in the Master Plan, if appropriate.</td>
<td>Plan Review.</td>
<td>SJCDPW</td>
<td>SP</td>
</tr>
<tr>
<td>e)</td>
<td>If sufficient off-site land cannot be secured for off-site reclamation, then on-site reclamation shall be practiced to the maximum extent possible. Other disposal options, including discharge to Old River and piping the effluent to non-contiguous lands for irrigation, shall be considered, if necessary. If future specific plans propose an interim or permanent wastewater reclamation at a site other than the sites identified in the Master Plan, all the policies in the Master Plan and all the adopted mitigation measures, shall be applicable to the proposed alternative reclamation site(s). Any alternative wastewater reclamation site shall also be subject to the permitting requirements of the Central Valley Regional Water Quality Control Board and the Department of Health Services. Prior to the approval of any specific plan utilizing an alternative wastewater reclamation site not specifically identified in the Master Plan/Specific Plan I EIR, site-specific environmental review shall be performed (including but not limited with respect to human contact, biological impact, crop types, etc.) and additional mitigation measures will be adopted to mitigate any site-specific environmental impacts not previously addressed.</td>
<td>Plan Review/SP.</td>
<td>SJCCDD, SJCDPW</td>
<td>DP/SP</td>
</tr>
<tr>
<td>f)</td>
<td>A detailed Salt and Trace Metal Management Plan shall be submitted as part of the reclamation plan to ensure that irrigation with reclaimed water is a viable long-term disposal option and to ensure minimization of salts and trace metals that are discharged to surface waters via the agricultural drains.</td>
<td>Review reclamation plan.</td>
<td>SJCDPW</td>
<td>DP for wastewater treatment plant</td>
</tr>
<tr>
<td>g)</td>
<td>The location and design specifications for the wastewater storage ponds shall be provided in the Reclamation Plan. The location of agricultural drains within a one-half mile radius of the storage ponds and the sources and characteristics of soil that would be used to construct the ponds shall be identified. The design specifications shall address levee and pond bottom permeability, levee stability, and flood protection.</td>
<td>Review reclamation plan.</td>
<td>SJCDPW</td>
<td>DP for wastewater treatment plant</td>
</tr>
</tbody>
</table>
Impact\(^a\) | Mitigation Measure | Monitoring Requirements | Person/Agency Responsible\(^b\) | Timing or Frequency of Monitoring\(^c\)
---|---|---|---|---

h) An estimate shall be made of the wastewater volume that may seep from the wastewater storage ponds, and an assessment of potential flow paths from pond seepage shall be determined for the interim and potential permanent reclamation sites. The result of the assessment shall be submitted to the CVRWQCB for determination of whether agricultural drain discharge from land irrigated with reclaimed water would be regulated as a point-source discharge under the NPDES program. The determination by the CVRWQCB shall be provided in the reclamation plan. If it appears likely that the CVRWQCB would regulate the agricultural drain discharge, then assurance that the discharge would be allowed must be documented prior to approval of the reclamation plan.

Documentation from CVRWQCB. | CVRWQCB, SJCDPW | DP for wastewater treatment plant

M4.4.2-3
An inadequate wastewater sludge treatment and disposal system could adversely impede water resources and public health. Scarce municipal landfill space may be occupied by sludge if alternative disposal/reuse options were not aggressively pursued.

a) Beneficial reuse of sewage sludge shall be implemented to the maximum extent possible to minimize sludge disposal at a landfill or at a dedicated site.

Review of plan. | SJCDPW, MHCSD | SP

b) Interim Disposal. If the sludge meets acceptance criteria of a specific landfill, the sludge shall be initially disposed of at an appropriately permitted landfill. Sludge shall meet nonhazardous classification and shall be dried to a minimum of 50 percent solids prior to disposal at a landfill. The duration of landfill disposal shall not exceed two years from the startup of the activated sludge treatment process, unless the sludge disposal program described in Implementation e) concludes that landfill disposal of wastewater sludge is the only viable option.

Review documentation of sludge disposal. | SJCDPW | SP

c) If landfill disposal of the wastewater sludge were proposed, an agreement or “will serve” letter with a landfill that would accept the sludge for at least the next five years shall be provided with the initial Wastewater Sludge Disposal Plan or subsequent specific plan. If land spreading or dedicated landfill disposal were proposed, then guarantees of adequate acres for sludge disposal for at least the next five years must be provided. Provisions for sludge disposal shall be updated annually so that there are always firm provisions for disposal for at least five years into the future.

Review documentation from disposal site. | SJCCDD, SJCDPW | SP

M4.4.2-4
Failure of the levees around wastewater treatment and storage ponds could cause flooding in the surrounding areas.

a) The wastewater treatment and storage pond levees shall be capable of withstanding a maximum credible earthquake; ponds located within the 100-year floodplain shall prevent inundation due to levee failure along Old River or other nearby waterways, be capable of withstanding the effects of flooding, and shall not impair the structural integrity of existing flood control levees.

Review pond design. | MHCSD | DP

b) The detailed design of the wastewater treatment and storage pond levees shall be included in the Reclamation Plan and initial Development Permit for the Wastewater Treatment Plant, and in all subsequent reclamation plans where additional ponds are proposed. The pond levees within the 100-year floodplain shall meet, as a minimum, the requirements of Section 65.10 Mapping of Areas Protected By Levee Systems, 44 CFR Ch. 1 and the design standards specified herein.

Review pond design. | SJCB | DP
<table>
<thead>
<tr>
<th>Impact</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsible</th>
<th>Timing or Frequency of Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>c)</td>
<td>The wastewater treatment and storage ponds located within the 100-year floodplain shall be set back from existing flood control levees to not interfere with inspection, maintenance, or repair of the flood control levees, if applicable.</td>
<td>Review pond design.</td>
<td>SJCBD</td>
<td>DP</td>
</tr>
<tr>
<td>d)</td>
<td>The wastewater treatment and storage pond levees shall be set back an appropriate distance from existing flood control levees to ensure that there will be no loss of integrity of the flood control levees.</td>
<td>Review pond design.</td>
<td>SJCBD</td>
<td>DP</td>
</tr>
<tr>
<td></td>
<td>a) No sewage treatment facilities for Mountain House, including storage ponds, and no areas for disposal of sewage effluent or sewage sludge shall be located in the Delta Primary Zone, as defined by Public Resources Code 29728.</td>
<td>Review of plan.</td>
<td>SJCDD</td>
<td>SP</td>
</tr>
</tbody>
</table>

**STORM DRAINAGE**

| M4.4.3-1 | The accumulation of floating debris and petroleum residual in detention ponds could create a nuisance condition (e.g., odors, mosquito infestation, and excessive algae growth) and cause adverse aesthetic effects. | Any proposed plans for construction or grading which include a detention basin shall include a proposed schedule and description of necessary routine maintenance activities for such detention basin(s) (including access roads). The maintenance plans may be in the form of a general operations and maintenance manual or may be specific to the detention basin(s) for which construction/grading plans are being submitted. | Review Operations and Maintenance Manual. | SJCBD | DP |

**GAS AND ELECTRICITY**

| 4.4.1    | The Master Plan does not provide specifications for moving existing utilities and establishing easements. | Construction plans shall be submitted to PG&E and other easement owners for review prior to construction in applicable specific plan areas. In particular, the construction plans should identify proposed land uses in utility easements, and procedures for movement of heavy machinery over pipelines installed in non-roadway areas which may not be designed to withstand forces exerted by heavy loads. | Documentation from PG&E | SJCCDD | C in applicable areas |
## Impact Mitigation Measure

<table>
<thead>
<tr>
<th>HYDROLOGY AND WATER QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M4.7-1</strong> Increased sedimentation within Old River would be caused by runoff from Mountain House Creek and operation of the proposed marina.</td>
</tr>
<tr>
<td>Mitigation Measure: The Specific Plan for Neighborhood K should include the following Objective, Policy, and Implementations under Parks and Recreation as mitigation measures for reduction of sedimentation impacts related to construction and operation of the proposed marina:</td>
</tr>
<tr>
<td><strong>Objective:</strong> To ensure that the design and operation of private recreation areas do not adversely affect water resources.</td>
</tr>
<tr>
<td><strong>Policy:</strong> The marina on Old River shall be designed, constructed, operated, and maintained to minimize the accumulation of sediment within the marina and the Old River Channel.</td>
</tr>
<tr>
<td><strong>Implementation:</strong></td>
</tr>
<tr>
<td>a) A dredging plan shall be developed at the specific plan stage for the Marina portion of Neighborhood K along Old River for removal of accumulated sediment from the Old River channel in the area of the proposed marina outlet. This plan shall comply with the requirements of dredging permits issued by the U.S. Army Corps of Engineers and shall have provisions for controlling turbidity during dredging.</td>
</tr>
<tr>
<td>b) Prior to obtaining a dredging permit, a disposal area for the dredged sediments shall be established by the applicant and approved by the Central Valley Regional Water Quality Control Board. The disposal area shall be identified in the recommended dredging plan. The characteristics and design of the dredge disposal area shall minimize the potential discharge of sediments to surface water and potential discharge of contaminants to the surface water or groundwater. A sampling plan to evaluate the potential levels of contaminants within the sediments shall be incorporated in the recommended dredging plan. The collected samples shall, as a minimum, be analyzed for trace metals, salts, pesticides, and herbicides.</td>
</tr>
<tr>
<td>Monitoring Requirements: SP for Neighborhood K.</td>
</tr>
<tr>
<td>Person/Agency Responsible: SJCDPW.</td>
</tr>
<tr>
<td>Timing or Frequency of Monitoring: SP for Neighborhood K.</td>
</tr>
<tr>
<td><strong>M4.7-4</strong> Shallow groundwater at the project site could present adverse conditions for construction of foundations and detention/retention basins. Ultimate development of the project site could cause a rise in shallow groundwater levels as a result of removal of subsurface drains.</td>
</tr>
<tr>
<td>Mitigation Measure: a) Preliminary Soils Report. The soils report required for each subdivision shall identify the seasonal high groundwater level at the site of any detention/retention basins proposed as part of the stormwater management system. The report shall provide recommendations for appropriate design elevations for the detention/retention basins that would avoid saturation or partial filling by groundwater. The report shall specifically address the potential for increased groundwater levels caused by removal or disruption of existing subsurface drains. The report will provide recommendations for subsurface drains for all newly constructed structures or facilities. These recommendations all include provisions for routing and disposal of drain discharges that will not result in adverse flooding or saturation hazards within other areas of the project site.</td>
</tr>
<tr>
<td>Person/Agency Responsible: SJCDPW.</td>
</tr>
<tr>
<td>Timing or Frequency of Monitoring: DP.</td>
</tr>
</tbody>
</table>
## APPENDIX A MOUNTAIN HOUSE NEIGHBORHOODS K AND L INITIAL STUDY

<table>
<thead>
<tr>
<th>Impacta</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsibleb</th>
<th>Timing or Frequency of Monitoringc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VISUAL QUALITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M4.8-1</strong></td>
<td>The proposed project would significantly alter the existing rural visual quality of the site as seen from local roads, regional freeways, and proposed public pathways.</td>
<td>a) Additional trees shall be provided along Old River where necessary to screen the project from boaters, while still affording views of the water for people using the regional park. Along Old River, the landscaped area shall be planted with species of trees and shrubs compatible with existing riparian vegetation. Species shall also be chosen to provide effective screening so that the public using the levees for walking or bicycling would have a limited view of development on site. Provisions to accomplish this shall be included in the Park and Open Space Plan.</td>
<td>Specific Plan for neighborhoods adjacent to Old River, and Final Park Plan (CSD) for Old River Regional Park</td>
<td>Prior to approval of Specific Plan adjacent to Old River, and at Final and Construction Plans.</td>
</tr>
<tr>
<td><strong>PUBLIC HEALTH AND SAFETY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M4.10-2</strong></td>
<td>Potential health impacts may result from public exposure to PCBs associated with transformers or electromagnetic fields associated with overhead electrical lines.</td>
<td>a) An information packet shall be prepared by the developer; the packet shall include a summary of major studies regarding EMF effects and a list of reference studies, with copies available to residents upon request. The information packet shall be updated annually.</td>
<td>Review of first SP w/Transmission line easements through residential land uses.</td>
<td>SJCCDD/MHCSD First SP w/Transmission lines easements through residential land uses. Annually thereafter.</td>
</tr>
<tr>
<td><strong>M4.10-7</strong></td>
<td>Increased development along the natural gas pipelines traversing the site could increase the risk of pipeline rupture and fire or explosion which could result in death and injury or property damage.</td>
<td>a) Vapor barriers and/or vents shall be included in designs for utility trenches that are not under the jurisdiction of the PUC crossing or within 100 feet of the high pressure gas pipelines to reduce the potential for the migration and accumulation of gas, leaked from a pipeline, in utility trenches. The design of the utility trenches shall be reviewed and evaluated by the Department of Public works prior to final map approval.</td>
<td>Review vapor barrier designs.</td>
<td>SJCDPW Final Map</td>
</tr>
<tr>
<td><strong>BIOLOGICAL RESOURCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M4.11-4</strong></td>
<td>In addition to San Joaquin kit fox and Swainson's hawk, proposed development would affect a number of other special-status taxa.</td>
<td>a) A habitat protection plan for Mason’s iliaeopsis and other special-status taxa which may be encountered during further detailed surveys, shall be prepared prior to approval of any specific plan along Old River. Other special-status taxa of concern include delta smelt, Sacramento splittail, winter-run chinook salmon, and California hibiscus. The habitat protection plan shall be prepared by a qualified plant ecologist in consultation with and meeting the approval, to the extent legally required, of representatives of the USFWS and CDFG. The plan shall provide for the protection of identified populations, addressing potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat.</td>
<td>Review of Habitat Protection Plan.</td>
<td>SJCCDD SP’s for areas along Old River</td>
</tr>
</tbody>
</table>

(9/7/11)
<table>
<thead>
<tr>
<th>Impact</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsible</th>
<th>Timing or Frequency of Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>b)</td>
<td>A survey shall be conducted along the banks of Old River to confirm the presence or absence of the California hibiscus on the site, prior to approval of any specific plan which could affect Old River. The survey shall preferably be conducted by a qualified botanist during the blooming period of this species, in August and September. If populations of this species are encountered, a habitat protection plan shall be prepared by a qualified plant ecologist in consultation with representatives of the USFWS and CDFG. The plan shall provide for the protection of identified populations, addressing potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat.</td>
<td>Review of survey and documentation from USFWS and CDFG.</td>
<td>SJCCDD</td>
<td>SPs for areas along Old River</td>
</tr>
<tr>
<td>c)</td>
<td>A survey shall be conducted to confirm the presence or absence of delta smelt, winter-run chinook salmon, and Sacramento splittail along the river segment bordering the site, prior to approval of any specific plan which could affect Old River. The survey shall be conducted by a qualified fishery biologist using an otter trawl at intervals along the river segment during the spring spawning season and during migration periods. If any of the species is detected, a habitat protection plan should be prepared by a qualified fisheries biologist in consultation with and which meets with the approval of representatives of the USFWS and CDFG. The plan shall provide for the protection and enhancement of existing habitat conditions, addressing potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat.</td>
<td>Review of survey and documentation from USFWS and CDFG.</td>
<td>SJCCDD</td>
<td>SPs for areas along Old River</td>
</tr>
</tbody>
</table>

**M4.11-5**

The project would block the movement of most terrestrial species between the eastern base of the Altamont Hills and the Delta-farmland region to the east.

a) The Mountain House Creek Planting and Restoration Measures contained in Appendix 7-A to the Master Plan, referred to in Implementations l), n), dd), ee), and ff) for Objectives 3 and 4 of Parks and Recreation section (Appendix C), should be expanded to include provisions for monitoring, replacement plantings, and re-evaluation of the restoration plan, similar to the provisions contained on pages 27-33 of the “Mountain House Creek Phase One Habitat Restoration Plan” (Zentner & Zentner, 1993c).

Review of Final Creek Park Plan. | SJCCDD | SPs along Creek Plan, periodic monitoring per Appendix 7-A |

**M4.11-7**

Construction and operation of the proposed 60-acre marina would impact the productive inshore zone and riparian edge habitat of Old River.

a) Unless detailed study demonstrates that the potential impacts of the proposed marina on biotic resources could be mitigated to a less-than-significant level, elimination of the proposed 60-acre marina shall be considered in favor of a boat launch ramp and day use parking lot for the private use of the residents of the new community.

Review of specific plan Neighborhood K. | SJCCDD | SP for marina |

b) Provisions should be included to minimize disturbance to fish and wildlife habitat of Old River, prevent water quality degradation, and conduct further detailed surveys for special-status taxa as recommended in Mitigation Measures 4.11-4a, b), and c).

Review specific plan land use map for Marina (Neighborhood K.) | SJCCDD | SP for marina |

c) To minimize disturbance to wildlife and riparian habitat along Old River, signs shall be posted along the length of the site fronting Old River, limiting boat speeds to 5 mph to prevent disturbance to wildlife and riparian habitat.

On-site inspection. | SJCCDD | O |
<table>
<thead>
<tr>
<th>Impact</th>
<th>Mitigation Measure</th>
<th>Monitoring Requirements</th>
<th>Person/Agency Responsible</th>
<th>Timing or Frequency of Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSPORTATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4.12-3</td>
<td>The project would increase traffic volumes on freeway interchanges near the site and would require interchange improvements at Grant Line Road/I-580, Patterson Pass Road/I-205 and Patterson Pass Road/I-580.</td>
<td>a) Interchange improvements on I-205 and on I-580 (west of I-205 junction) should provide for ramp metering with HOV bypass lanes.</td>
<td>Preparation of Project Study Reports.</td>
<td>SJCCDD, PSR's for I-205 and I-580 Interchanges</td>
</tr>
<tr>
<td><strong>GROWTH-INDUCING IMPACTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The project could result in unavoidable growth-inducing impacts due to the large number of surrounding agricultural parcels.</td>
<td>Buffer zones on the east and west sides of the project should contain deed restrictions to prevent development. I-205 and Old River would minimize growth-inducing impacts for land to the north and south of the project site. The on-site water and wastewater plants should be sized to serve no more than the proposed project to minimize growth inducement.</td>
<td>Review design of buffers, review treatment plan designs.</td>
<td>SJCCDD, SJCDPW, Prior to approval of DP for water &amp; wastewater treatment Plants, C</td>
</tr>
<tr>
<td><strong>CUMULATIVE IMPACTS AND MITIGATION MEASURES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land use and Agricultural Issues</td>
<td>San Joaquin County should consider imposing impact fees which can be used to purchase development rights or support land trusts. A policy regarding such fees is included in the County's General Plan 2010. Counties within the Central Valley should increase the densities of planned future urban development on agricultural lands to preserve more agricultural and open space lands. Counties within the Central Valley should expand areas zoned for agricultural use. LAFCO findings should be expanded to include the following discussion: the likelihood for removal of additional lands from agricultural production; consistency of projected population with General Plan projections; and consistency with planning policies and zoning.</td>
<td>County to consider adoption of a farmland mitigation ordinance. It is outside the jurisdiction of the County to monitor other governmental agencies.</td>
<td>SJCCDD, O</td>
<td></td>
</tr>
<tr>
<td>Public Services/Parks and Recreation</td>
<td>A regional recreational task force should be formed to develop funding mechanisms to expand and maintain regional recreational facilities. San Joaquin County should participate in park planning efforts conducted by the East Bay Regional Park District. San Joaquin County, in conjunction with the cities in San Joaquin County, should develop a fee structure to finance regional parks. As stated in the San Joaquin County General Plan 2010, dedication of parkland or in-lieu fees for local parks will continue to be required. This policy should be expanded to address regional parks.</td>
<td>Form regional task force.</td>
<td>San Joaquin County Parks &amp; Recreation and East Bay Regional Park District, ---</td>
<td></td>
</tr>
<tr>
<td>Public Services/Fire Protection Service</td>
<td>The County's Development Title proposes development impact fees to be charged for new developments to finance construction of fire protection facilities. Community Service Districts and Community Facilities Districts should be established for new communities to fund added fire protection service.</td>
<td>This mitigation measure has been fully addressed in the Public Financing Plan. Conditions of CSD formation will also insure compliance.</td>
<td>MHCS, LAFCO, Formation of CSD</td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>Mitigation Measure</td>
<td>Monitoring Requirements</td>
<td>Person/Agency Responsibleb</td>
<td>Timing or Frequency of Monitoringc</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Public Services/Police Protection Service</td>
<td>A Community Services District (CSD) should be formed to offset the financial burden of increased costs. In establishing a CSD, residents can choose the level of law enforcement based on assessment costs. Fees collected from the CSD should also be used to increase marine patrol services in the Delta during the summer months. Development fees similar to those assessed for fire protection service should be implemented for police protection service.</td>
<td>MHCSD, LAFCO</td>
<td>Formation of CSD</td>
<td></td>
</tr>
<tr>
<td>Public Utilities/Water Demand</td>
<td>The policy implications of changing irrigation districts, which have historically served only agricultural water users, into multi-purpose water supply agencies should be addressed by the County, and the City of Tracy. Analysis of the fiscal impact should be undertaken, especially regarding the potential pressure to equalize water rates which could affect preservation of farmland in San Joaquin County. The City of Tracy should adopt a similar policy to the County’s Water Policy to ensure that urban growth within the City does not cause an increase in overdrafting of the groundwater basin.</td>
<td>LAFCO</td>
<td>District Annexation/De-annexation</td>
<td></td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td>Hydrology and water quality levee stability impacts could be mitigated by appropriate design and maintenance of the South Delta levees as recommended by the DWR’s Delta Flood Hazard Mitigation Plan. County policies and regulations, including Section 9-1135 of the County Development Title, which require appropriate control of storm drainage in new developments should be applied to all future projects. The potential impact of increased boating could be mitigated to an insignificant level by establishing and enforcing appropriate boat speed limits, which reduce wake production.</td>
<td>SJCCDD, MHCSD, SJCSD</td>
<td>SPs and DPs adjacent to Old River</td>
<td></td>
</tr>
<tr>
<td>Visual Quality</td>
<td>Mitigation measures to reduce the associated visual impacts of growth along I-580 and I-205 would be similar to those recommended for the proposed project which include: extensive setbacks of development from the freeway; significant landscaping to screen development from view; and, continuation of agricultural operations adjacent to the freeway to maintain the existing rural ambience. Permanently-protected open space at the edges of new development would also mitigate potential visual quality impacts.</td>
<td>SJCCDD</td>
<td>SP, C</td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>Mitigation Measure</td>
<td>Monitoring Requirements</td>
<td>Person/Agency Responsible</td>
<td>Timing or Frequency of Monitoring</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>The County should participate in the preparation and implementation of a Countywide Habitat Conservation plan for Swainson’s hawk, San Joaquin kit fox and other species of concern. Federal and/or State incidental take permits for endangered or threatened taxa should be obtained for the MH and other projects, as required by the wildlife agencies. Copies of the take permits should be submitted to the County prior to issuance of any construction or site improvements to ensure that any off-site replacement habitat is provided before destruction of existing habitat. Stringent zoning controls should be imposed in areas of biological significance as identified by federal and state wildlife agencies. County is currently participating in the preparation of a Countywide Multi-Species HCP. A separate Swainson’s hawk HMP is included in the Master Plan if the Multi-Species HCP is not adopted.</td>
<td>SJ County Council of Governments, SJCCDD</td>
<td>Adoption of a Multi-Species HCP</td>
<td></td>
</tr>
<tr>
<td>Air Quality</td>
<td>Similar mitigation measures prepared for the project (i.e., land use mixes to promote non-vehicular travel) should be implemented for all cumulative growth. The County should develop a fee system for all new development, with funds to be used to mitigate air quality impacts. Compliance with the requirements of the SJVUAPCD is included in the MP.</td>
<td>SJCCDD, SJVUAPCD</td>
<td>C, O</td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>The County should use noise policies contained in the Noise Element of the General Plan to evaluate potential noise impacts associated with proposed projects. Projects to be located in areas showing large noise increases should require noise studies to quantify the project contribution to the future noise environment. If the noise impacts associated with a specific project are found to be significant, mitigation measures should be proposed to reduce the impact. New, more restrictive noise and land use compatibility criteria for all proposed land uses should be adopted by the County to match criteria of the State of California. Mitigation is included in the Master Plan. Future SPs will provide site specific noise studies/mitigation.</td>
<td>SJCCDD</td>
<td>SPs, C</td>
<td></td>
</tr>
</tbody>
</table>

Impact: Impact description is taken from the Final EIR (Sept 1994).

Monitoring Agencies:
- CDFG = California Department of Fish and Game
- COE = U.S. Army Corps of Engineers
- CVRWQCB = Central Valley Regional Water Quality Control Board
- MHCSDD = Mountain House Community Services District
- SJCB = San Joaquin County Building Division
- SJCC = San Joaquin County Counsel
- SJCCDD = San Joaquin County Community Development Department
- SJCDPW = San Joaquin County Department of Public Works
- SJCEHD = San Joaquin County Environmental Health Department
- SJCMAD = San Joaquin County Mosquito Abatement District
- SJCD = San Joaquin County Sheriff’s Department
- TRFPD = Tracy Rural Fire Protection District
- USFWS = United States Fish and Wildlife Service
- SJVUAPCD = San Joaquin Valley Unified Air Pollution Control District

Timing of Monitoring:
- C = At construction stage (prior to building permit issuance)
- DP = Prior to submittal of first Development Permit
- O = Ongoing monitoring
- SP = Prior to specific plan approval; this may be one or more specific plans
- SPP = Prior to approval of Special Purpose Plan
- TDM = Prior to approval of Transit Demand Management Plan
- PSR = Prior to approval of Project Study Reports

Mitigation Reference: The letter and number reference as used in the Final EIR.

Adopted 11-10-94 (amended 10-97, 5-98) mountain/mitmon/mitmon
APPENDIX B

APPLICANT SIGNATURE FOR APPROVED MITIGATION MEASURES
AIR-1: The applicant shall implement the following measures to control exposure of sensitive receptors within the project site to odors generated by the nearby wastewater treatment plant:

- Prior to approval of the Tentative Subdivision Map, the project applicant shall relocate the 54 residential lots that are closest to the wastewater treatment plant and project boundary of Neighborhood L so that an increased buffer (e.g., on-site lake area) could be created between residential units and the wastewater treatment plant operations.

- The deeds to all project properties within Neighborhood L shall be accompanied by a written disclosure from the transferor, in a form approved by the County, advising any transferee of the potential adverse odor impacts from nearby wastewater treatment operations.

- If any odor complaints are received, the applicant shall work with the MHCSD to implement new technologies or handling procedures to minimize odors to the maximum extent possible.

AIR-2: The applicant shall incorporate the following Best Performance Standards (BPS) into the project design:

- **Minimization of Pedestrian Barriers.** Site design and building placement shall minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation shall be avoided whenever possible. Barriers to pedestrian access of neighboring facilities and sites shall be minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, etc. (Credit: 1.0 percent reduction over baseline)

- **Neighborhood Electric Vehicle Access.** Physical development shall be consistent with requirements for neighborhood electric vehicles (NEV). Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For 1.0 percent reduction, a neighborhood shall have internal and external connections to surrounding neighborhoods. (Credit: 1.0 percent reduction over baseline)

- **Bike Parking.** Non-residential portions of the project shall provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand. Short-term facilities shall be provided at a minimum ratio of one bike rack space per 20 vehicle spaces. Long-term facilities shall provide a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces. (Credit: 0.625 percent reduction over baseline)

AIR-3: Implement Mitigation Measure AIR-2.
BIO-1: The following measures shall be implemented to ensure appropriate authorizations are secured as part of any modifications to jurisdictional waters, including the possible future boat ramp in Neighborhood K:

- Where verified waters of the United States are present and cannot be avoided, authorization for modifications to these features shall be obtained from the United States Army Corps of Engineers (USACOE) through the Section 404 permitting process. Similarly, a Section 401 Certification shall be obtained from the Regional Water Quality Control Board (RWQCB) where waters of the United States are directly affected. All conditions required as part of the authorizations by the USACOE and RWQCB shall be implemented as part of the project.

- A California Department of Fish and Game (CDFG) Stream Bed Alteration Agreement shall also be required where proposed project activities would affect the bed or banks of Mountain House Creek or Old River and any other regulated drainages on the site. The applicant shall submit a notification form to the CDFG, shall obtain all legally required agreements, and shall implement any conditions contained within that agreement.

- Consultation or incidental take permitting may be required under the California and federal Endangered Species Acts. The applicant shall obtain all legally required permits or other authorizations from the United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and CDFG for the potential “take” of protected species under the Endangered Species Acts.

- Orange construction fencing shall be installed around the boundary of all wetland areas to be preserved so that they are not disturbed during construction. The fencing shall be placed a minimum of 25 feet out from the boundary of the wetland but may need to be adjusted if restoration activities are to be conducted within this area. Grading, trail construction, and restoration work within the wetland buffer zones shall be conducted in a way that avoids or minimizes disturbance of existing wetlands. In some cases, this may mean use of smaller equipment such as a Bobcat.

- A biologist/restoration specialist shall be available during construction to provide situation-specific wetland avoidance measures or planting recommendations, as needed.

HAZARDS-1: Protocols for Petroleum Hydrocarbons in Soil. If indications of petroleum hydrocarbon contamination in site soil, such as staining and odors, are observed during excavation or grading activities adjacent to Byron Road, the contractor shall stop work and notify the Chevron Environmental Management Company and the RWQCB in accordance with the procedures specified in the Soil and Groundwater Management Plans for Chevron Mountain House Sites Nos. 1, 2, and 3. The contractor shall ensure that any contaminated soil and groundwater encountered during project construction is handled in a safe and lawful manner.

NOISE-1: The applicant shall conduct noise monitoring at homes within Neighborhood L that are adjacent to the MHCSD wastewater treatment plant. If
measured noise levels are higher than the adopted standards, the applicant shall work with the MHCS&D to incorporate mitigation (sound walls or housings) that would result in noise levels within Master Plan requirements.

This mitigation measure would reduce the impact to a less-than-significant level.

**UTILITIES-1**: Prior to site development, the applicant shall verify that adequate water supplies would be available to serve the project. If necessary, a reduction in units may be necessary to ensure that adequate water is available. Documentation of this verification shall be provided to the County prior to the issuance of any building permits for Neighborhoods K and L.

Shea Mountain House, LLC, agrees to implementation of the above recommended mitigation measures for Neighborhoods K and L as part of the approval of the Tentative Subdivision Maps.

[Signature]

Name: David Sergeant

Shea Mountain House LLC

[Signature]

Date: 9/7/11
APPENDIX C

ENVIRON AIR STUDY
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>1 Introduction</td>
<td>5</td>
</tr>
<tr>
<td>2 Regulatory Environment for the GHG Inventory</td>
<td>6</td>
</tr>
<tr>
<td>3 GHG Emissions Inventory</td>
<td>7</td>
</tr>
<tr>
<td>3.1 Overall Calculation Methodology</td>
<td>7</td>
</tr>
<tr>
<td>3.2 Impact of Regulatory Developments on the Project’s GHG Inventory</td>
<td>8</td>
</tr>
<tr>
<td>3.2.1 Renewable Power Requirements</td>
<td>9</td>
</tr>
<tr>
<td>3.2.2 Vehicle Emissions Standards/Improved Fuel Economy</td>
<td>9</td>
</tr>
<tr>
<td>3.3 Operational Emissions</td>
<td>10</td>
</tr>
<tr>
<td>3.3.1 Mobile Source Emissions</td>
<td>10</td>
</tr>
<tr>
<td>3.3.2 Buildings Energy Use</td>
<td>10</td>
</tr>
<tr>
<td>3.3.3 Non-Residential Buildings Energy Use</td>
<td>12</td>
</tr>
<tr>
<td>3.3.4 Recreational Facilities Energy Use</td>
<td>12</td>
</tr>
<tr>
<td>3.3.5 Water Supply, Treatment and Distribution</td>
<td>12</td>
</tr>
<tr>
<td>3.3.6 Area Sources (Landscaping Equipment)</td>
<td>13</td>
</tr>
<tr>
<td>3.3.7 Solid Waste</td>
<td>13</td>
</tr>
<tr>
<td>3.4 One-Time Emissions</td>
<td>14</td>
</tr>
<tr>
<td>3.4.1 Vegetation</td>
<td>14</td>
</tr>
<tr>
<td>3.5 Emission Reduction Measures</td>
<td>14</td>
</tr>
<tr>
<td>4 Comparison to SJVAPCD CEQA Significance Threshold</td>
<td>15</td>
</tr>
<tr>
<td>5 Conclusion</td>
<td>16</td>
</tr>
</tbody>
</table>
List of Tables

Table ES-1 Summary of GHG Emissions
Table 1 Summary of GHG Emissions
Table 2 CalEEMod Inputs – Land-uses
Table 3 GHG Emissions from Electricity
Table 4 Emission Factors for Different Energy Sources
Table 5 CalEEMod Inputs – Residential Appliance Survey Saturation Data
Table 6 Energy Use from Swimming Pools
Table 7 GHG Emissions from Swimming Pools – Project
Table 8 GHG Emissions from Swimming Pools – Baseline

List of Appendices

Appendix A CalEEMod Output Summary Report for Project
Appendix B CalEEMod Output Summary Report for Baseline
List of Acronyms

AB 32  Assembly Bill 32
BPS  Best Performance Standards
CalEEMod  California Emission Estimator Model
CARB  California Air Resources Board
CCAR  California Climate Action Registry
CEC  California Energy Commission
CEQA  California Environmental Quality Act
CEUS  Commercial End-Use Survey
CH₄  methane
CO₂  carbon dioxide
CO₂e  CO₂ equivalents
DU  dwelling unit
EIR  Environmental Impact Report
ft  feet
GHG  greenhouse gas
GWP  global warming potential
lb  pound
LCFS  Low Carbon Fuel Standard
LDA  light duty automobiles
LDT1/2  light duty trucks
MDV  medium duty trucks
MID  Modesto Irrigation District
MT  metric tonnes
MWh  megawatt hour
N₂O  nitrous oxide
NAT  no actions are taken
PG&E  Pacific Gas and Electric
RASS  Residential Appliance Saturation Survey
RPS  Renewable Portfolio Standards
SB  Senate Bill
SJVAPCD  San Joaquin Valley Air Pollution Control District
USEPA  United States Environmental Protection Agency
VMT  vehicle miles travelled
yr  year
Executive Summary

Mountain House is a mixed-use development in San Joaquin County, California. The focus of this analysis is the proposed development of select subdivisions (neighborhoods K & L, the Project) at Mountain House. The Project will result in both one-time and annual greenhouse gas (GHG) emissions. This report provides an inventory of emissions that would result from approving the Project. Because the San Joaquin Valley Air Pollution Control District (SJVAPCD, the District) is the primary agency responsible for comprehensive air pollution control in the San Joaquin Valley, where this Project will be located, this report follows SJVAPCD GHG emissions calculation guidance.

The Project inventory considers eight categories of GHG emissions: energy use associated with residential buildings and non-residential buildings, mobile sources, area sources, solid waste, water and waste water, swimming pools at recreational facilities, and vegetation. The electrical power for the Project will be supplied by Modesto Irrigation District (MID). Accordingly, indirect GHG emissions from electricity usage associated with the Project are calculated using the MID carbon-intensity factors adjusted for future mandated renewable energy requirements. Natural gas will be supplied by Pacific Gas and Electric (PG&E).

To assist interested parties in assessing the significance of GHG emissions from land-use development projects under the California Environmental Quality Act (CEQA), SJVAPCD has developed guidance.1,2 SJVAPCD guidance relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS), for assessing the significance of GHG emissions under CEQA. According to SJVAPCD guidance, projects implementing BPS would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. However, projects not implementing BPS are required to demonstrate a 29% reduction in GHG emissions, compared to business-as-usual, to have a less than significant impact.3 The 29% reduction target is consistent with GHG emission reduction targets established in the California Air Resources Board’s (CARB) AB 32 Scoping Plan.4,5

---

2 “Final Staff Report – Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202009.pdf
3 The SJVAPCD documents define business-as-usual as the total baseline emission for all emissions sources within the development type, projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period, 2002-2004. Based on conversations with SJVAPCD, ENVIRON understands that emissions reduction percentages associated with BPS can be applied to an emission inventory that has been independently calculated.
4 Page 7 of “SJVAPCD Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202009.pdf
Table ES-1 presents Project and Baseline GHG emissions and compares the percentage reduction between Project and Baseline to the SJVAPCD CEQA significance threshold. The Project’s GHG emissions, after incorporation of BPS, would be 42,951 metric tonnes of carbon dioxide equivalent per year (MT CO$_2$e/yr) and the Baseline GHG emissions would be 61,019 MT CO$_2$e/yr. Therefore, the Project’s GHG emissions are approximately 29.6% below Baseline emissions, which is below the CEQA significance threshold developed by SJVAPCD.

---

6 Baseline emissions here represent the Project if it were built out in a business-as-usual manner.
### Table ES - 1
Summary of GHG Emissions

<table>
<thead>
<tr>
<th>Operational Category</th>
<th>Baseline (MT CO2e/yr)¹</th>
<th>Project (MT CO2e/yr)²</th>
<th>Percent Reduction over Baseline³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Sources</td>
<td>31.3</td>
<td>30.9</td>
<td>1.3%</td>
</tr>
<tr>
<td>Energy Usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>7,108</td>
<td>3,333</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>7,355</td>
<td>5,015</td>
<td>32%</td>
</tr>
<tr>
<td>Non-Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>382</td>
<td>179</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>1,320</td>
<td>928</td>
<td>30%</td>
</tr>
<tr>
<td>Mobile Sources</td>
<td>42,657</td>
<td>33,175</td>
<td>22%</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>1,027</td>
<td>1,027</td>
<td>0%</td>
</tr>
<tr>
<td>Water</td>
<td>910</td>
<td>827</td>
<td>9.1%</td>
</tr>
<tr>
<td>Swimming Pools</td>
<td>229</td>
<td>38</td>
<td>83%</td>
</tr>
<tr>
<td>Total Before BPS Reduction⁴</td>
<td>61,019</td>
<td>44,552</td>
<td>27.0%</td>
</tr>
<tr>
<td>BPS % Reduction⁴</td>
<td>--</td>
<td>--</td>
<td>2.6%</td>
</tr>
<tr>
<td>Total After BPS Reduction⁴</td>
<td>61,019</td>
<td>42,951</td>
<td>29.6%</td>
</tr>
<tr>
<td>Vegetation (amortized)⁵</td>
<td>-136</td>
<td>-136</td>
<td>0%</td>
</tr>
<tr>
<td>Total with Vegetation</td>
<td>60,883</td>
<td>42,814</td>
<td>29.7%</td>
</tr>
</tbody>
</table>

**Notes:**

1. Baseline emissions for area sources, mobile sources, waste, and water are calculated by CalEEMod using 2005 as the modeled year. Baseline energy emissions for residential land-use types are calculated using SJVAPCD's baseline metrics for energy use, which are 2.88 MT CO2e/DU/yr for natural gas and 2.98 MT CO2e/DU/yr for electricity use. The reduction achieved between this baseline metric and the Project emissions is applied to non-residential land-uses after removing the benefit for EnergyStar appliances from residential land-uses.

2. Project scenario represents emissions from the Project in 2020 as described in the report.

3. Consistent with SJVAPCD guidance, the percentage reduction was calculated as the difference between the Baseline and Project emissions divided by the Baseline emissions.

4. Shea Homes has committed to incorporating the following BPS measures into the Project. The percentage reduction associated with these BPS measures was taken from SJVAPCD’s Final Staff Report – Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf.

(continued)
<table>
<thead>
<tr>
<th>BPS</th>
<th>BPS Description</th>
<th>Percent Reduction Over Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Barriers Minimized</td>
<td>Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated. Barriers to pedestrian access of neighboring facilities and sites are minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, etc.</td>
<td>1.0%</td>
</tr>
<tr>
<td>Neighborhood Electric Vehicle Access</td>
<td>Make physical development consistent with requirements for neighborhood electric vehicles (NEV). Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For 1.0% reduction, a neighborhood shall have internal and external connections to surrounding neighborhoods.</td>
<td>1.0%</td>
</tr>
<tr>
<td>Bike Parking</td>
<td>Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand. Short term facilities are provided at a minimum ratio of one bike rack space per 20 vehicle spaces. Long-term facilities provide a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces.</td>
<td>0.625%</td>
</tr>
</tbody>
</table>

5. Vegetation sequestration numbers presented here have been amortized over 40 years. The Project results in a net increase in vegetation and sequestered CO₂. This sequestration was not included in the 29% comparison, but is listed here for informational purposes only.
1 Introduction

Mountain House is a mixed-use development in San Joaquin County, California. The focus of this analysis is the proposed development of select subdivisions (neighborhoods K & L, the Project) at Mountain House. The Project will result in both one-time and annual greenhouse gas (GHG) emissions. This report provides an inventory of emissions that would result from approving the Project. GHGs are emitted directly due to the Project and include emissions associated with the one-time land-use change. The Project entitlement will also result in indirect emissions associated with the Project, such as those associated with electricity use. This report discusses the regulatory developments related to GHG emissions and provides an estimate of emissions that would result from the Project.

The estimated number and types of dwelling units and the sizes and types of non-residential land-uses is shown in Table 2. Occupants of mixed-use developments use electricity, heat their buildings and water (typically with natural gas), and are commonly transported in motor vehicles, all of which directly or indirectly emit GHGs. The principal GHGs resulting from such activities are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). CO₂ is considered the most important GHG, due primarily to the large quantity of emissions produced by fossil fuel combustion, especially during the generation of electricity and powering of motor vehicles. CH₄ and N₂O are also emitted by fossil fuel combustion, though their emissions are much smaller than CO₂.

The effect that each of these gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates the predicted contribution of a gas to global warming relative to the predicted contribution by the same mass of CO₂. CH₄ and N₂O are substantially more potent GHGs than CO₂. GHG emissions are typically reported in terms of tonnes (i.e., 1000’s of kilograms) of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in significantly higher quantities such that it accounts for the majority of GHG emissions in CO₂e, both from mixed-use developments and human activity in general.
2 Regulatory Environment for the GHG Inventory

The Project is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD) jurisdiction. To assist interested parties in assessing the significance of GHG emissions from land-use development projects under the California Environmental Quality Act (CEQA), SJVAPCD has developed several guidance documents, including “Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA”7 and “SJVAPCD Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act”8.

SJVAPCD guidance relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS), for assessing the significance of GHG emissions under CEQA. According to SJVAPCD guidance, projects implementing BPS would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. To simplify the evaluation process, the District has developed a point system and tools (e.g., interim GHG emission reductions calculator) for use by lead agencies to score the effectiveness of the achieved BPS. However, projects not implementing BPS are required to demonstrate a 29% reduction in GHG emissions, compared to business-as-usual, to have a less than significant impact.9 The 29% reduction target is consistent with GHG emission reduction targets established in the California Air Resources Board’s (CARB) Assembly Bill (AB) 32 Scoping Plan.10,11

Legislation and rules regarding climate change, as well as the scientific understanding of the extent to which different activities emit GHGs, continue to evolve; as such, the inventory in this report is a reflection of the guidance and knowledge currently available.

---

7 Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%202017%202009.pdf
8 Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf
9 The SJVAPCD documents define business-as-usual as the total baseline emission for all emissions sources within the development type, projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period, 2002-2004.
10 Page 7 of “SJVAPCD Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf
3 GHG Emissions Inventory

This section describes the methodology that was used to develop the GHG emissions inventory associated with the Project. Because SJVAPCD is the primary agency responsible for comprehensive air pollution control in the San Joaquin Valley, this report follows SJVAPCD emissions calculation guidance. The Project inventory considers eight categories of GHG emissions: energy use associated with residential buildings and non-residential buildings, mobile sources, area sources, solid waste, water and waste water, swimming pools, and vegetation. The electrical power for the Project will be supplied by Modesto Irrigation District (MID). Accordingly, indirect GHG emissions from electricity usage are calculated using the MID carbon-intensity factors adjusted for future mandated renewable energy requirements. Natural gas will be supplied by Pacific Gas and Electric (PG&E). The GHG emissions inventory is summarized in Table 1.

3.1 Overall Calculation Methodology

Consistent with the SJVAPCD guidelines discussed in the regulatory section above and with GHG emission reduction targets established in CARB’s AB 32 Scoping Plan12, ENVIRON quantified GHG emissions to show that the Project has reduced or mitigated GHG emissions by 29% compared to Baseline. This section further outlines these methodologies used to calculate the percent reduction.

To calculate the percent reduction from the Baseline, ENVIRON calculated emissions for a Project scenario and a Baseline scenario and then calculated the percent difference between the two. The year 2020 was chosen for the Project scenario to be consistent with the AB 32 goal of achieving 1990 emission levels by 2020. These Project emissions are compared to emissions if the Project were constructed consistent with the assumptions in the CARB’s Scoping Plan (“Scoping Plan”) projections for 2020 if ‘no actions are taken’ (CARB 2020 NAT) compared to a baseline year between 2002 and 2004.

To calculate emissions for the Baseline scenario, ENVIRON used baseline metrics developed by SJVAPCD, when available. When baseline metrics were not available, ENVIRON developed a baseline scenario based on assumptions consistent with SJVAPCD guidance. According to SJVAPCD guidance, the baseline is the average of 2002-2004: “The California Air Resources Board (CARB) used its emission inventory to establish the Baseline upon which changes in GHG emissions would be evaluated. The Baseline consists of a three-year average for GHG emissions occurring by sector during the baseline period of 2002-2004. The Baseline Period GHG emissions include emissions from all sources in CARB’s emissions inventory, including both, old and new, large and small GHG emission sources”13.

---

13 Page 28 of “SJVAPCD Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202009.pdf
For residential energy use Baseline GHG emissions, ENVIRON relied upon metrics developed by SJVAPCD. Specifically, ENVIRON used a baseline emission rate of 2.98 metric tonnes CO₂e/year/DU (DU = dwelling unit) for electricity and 2.88 metric tonnes CO₂e/year/DU for natural gas. For some other components of the inventory, for example the CalEEMod input ‘operational year’, ENVIRON chose 2005 as the closest year to the CARB Baseline.

ENVIRON used the California Emission Estimator Model (CalEEMod) version 2011.1.1 to calculate Project and Baseline emissions, where Baseline emissions were not otherwise supplied by the SJVAPCD. CalEEMod calculates annual GHG emissions which can be used in support of analyses in environmental documents such as Environmental Impact Reports (EIRs) and Negative Declarations used to support a CEQA evaluation. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors, California Air Resources Board (CARB) onroad and offroad equipment emission models such as the EMission FACtor model (EMFAC) and the Offroad Emissions Inventory Program model (OFFROAD), and studies commissioned by California agencies such as the California Energy Commission (CEC) and Calrecycle.

ENVIRON used San Joaquin County CalEEMod defaults in the model runs unless otherwise noted in the methodology descriptions below. The CalEEMod output files for Project and Baseline are provided for reference in Appendices A and B, respectively.

For components of the inventory that are not included in CalEEMod (i.e., energy usage at recreational facilities such as swimming pools), ENVIRON estimated GHG emissions outside of CalEEMod. These emissions were then combined with the components of the GHG inventory estimated using CalEEMod.

For the Project, ENVIRON incorporated additional GHG emissions reductions associated with BPS, which are outlined in Section 3.5.

### 3.2 Impact of Regulatory Developments on the Project’s GHG Inventory

Promulgated regulations that will affect the Project’s emissions are accounted for in this inventory. In particular, the Pavley Standards and the Renewable Portfolio Standards (RPS) will be in effect at the anticipated time of buildout of the Project, and therefore are accounted for in the Project emission calculations. This section provides an overview of the impact of these two rules (RPS and Pavley) on the Project’s GHG inventory.

---


15 The emissions estimation model (CalEEMod) used by ENVIRON has options to choose 2000 or 2005, but not years in between. Therefore, ENVIRON chose the closest year (2005), which is expected to be a conservative measure because it generally results in a smaller baseline emission estimate and therefore a lower percentage reduction in emissions.

16 Available at: [http://www.caleemod.com/](http://www.caleemod.com/)
3.2.1 Renewable Power Requirements

A major component of California’s Renewable Energy Program is the RPS established under Senate Bills (SBs) 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity are required to increase the amount of renewable energy each year by at least 1% in order to reach at least 20% by December 31, 2010. CARB has now approved an even higher goal of 33% by 2020. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from the Project because electricity production from renewable sources is generally considered “carbon neutral.” For purposes of this analysis, ENVIRON assumes that the production of electricity from these renewable sources does not produce any net emissions of CO₂ or other GHGs.

As noted above, indirect GHG emissions are associated with electricity use, as the electricity used in a building is typically generated offsite at the power plant. As stated previously, the Project would be supplied electricity by Modesto Irrigation District (MID). The 2007 MID carbon-intensity factor is presented in Table 3 in pounds (lbs) of CO₂e per megawatt hour (MWh). This emission factor (833.46 lb/MWh), which is used for the Baseline scenario, is the CalEEMod default emission factor for MID. This emission factor takes into account the mix of energy sources used to generate electricity for MID, and the relative carbon intensities of these sources. As shown in Table 3, MID’s 2007 mix of energy sources contains some portion of renewable sources. The RPS requires that utilities increase this mix to 20% by 2010. Table 3 shows ENVIRON’s adjustments of the 2007 emission factor to this 20% goal. The resultant carbon intensity factor of 752.3 lb/MWh was used for the Project scenario. ENVIRON also scaled the CalEEMod default N₂O and CH₄ emissions according to this same factor.

If the 33% renewable sources target for 2020 were used, the CO₂ emission factor would decrease even further. This 33% renewable sources goal was conservatively not accounted for in this analysis.

3.2.2 Vehicle Emissions Standards/Improved Fuel Economy

The two regulatory measures considered in this section are the vehicle GHG emission standards enacted under AB 1493 (Pavley I) and the Low Carbon Fuel Standard (LCFS). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light duty auto – medium duty vehicle [LDA-MDV]) from 2009 through 2016. The LCFS requires a reduction of 2.5% in the carbon intensity of California’s transportation fuels by 2015 and a reduction of at least 10% by 2020.²¹

---

¹⁷ California Climate Action Registry (CCAR) Database. MID PUP Report. 2007.
¹⁸ Note that for certain baseline emissions calculations, such as building energy use, ENVIRON relied upon SJVAPCD emissions per dwelling unit that used California-wide emission factors.
¹⁹ Natural gas, nuclear, coal, wind, solar, biogas, biomass, hydropower, and geothermal.
²⁰ 2002 Senate Bill 1078 and 2006 Senate Bill 107.
For all CO₂ emissions (running, startup, and idling), CalEEMod applies Pavley I emission reductions to LDA, LDT1, LDT2, and MDV for each vehicle model year, and sums them to arrive at the total CO₂ emissions for each scenario year. CalEEMod further applies LCFS reductions to CO₂ emission factors after adjustments from Pavley I for scenario years 2011 and after.  

3.3 Operational Emissions  
Emissions from mobile and area sources and indirect emissions from energy use would occur every year after buildout. This section outlines the operational GHG emissions. There are no anticipated stationary sources at the Project, i.e., those with an identified emission point such as a stack, which would require an operational permit from SJVAPCD.

3.3.1 Mobile Source Emissions  
This section addresses GHG emissions from mobile sources associated with the Project. The mobile source emissions considered for this Project will be from the typical daily operation of motor vehicles by residents and visitors. Since SJVAPCD’s baseline GHG emission metrics only include energy usage and do not include emissions associated with traffic, ENVIRON estimated both Baseline and Project traffic emissions using CalEEMod land-use inputs as shown in Table 2 and trip information as shown in Appendices A and B Section 4 and explained below.

ENVIRON used Project-specific land-uses as inputs to CalEEMod. CalEEMod uses these inputs to calculate the vehicle miles traveled (VMT) and the associated GHG emissions. ENVIRON used urban trip lengths in the model, as the development will be located near an urban area (i.e., Tracy).

For mobile sources, all CalEEMod inputs were the same for the Project and the Baseline runs except for the year of operation. The Baseline run used an operational year of 2005 and the Project run used an operational year of 2020. This change adjusts the fleet mix and fleet emission factor as described above in the vehicle emissions standards section.

The resultant Project and Baseline mobile source GHG emissions are shown in Table 1 with supporting information provided in Appendices A and B, Section 4.

3.3.2 Buildings Energy Use  
GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO₂ and other GHGs directly into the atmosphere; when this occurs in a building, this is a direct emission source associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. As discussed earlier, Table 3 lists the emission factors for electricity used in this analysis. The emission factor for natural gas is a CalEEMod default that is based on California Climate Action Registry (CCAR) emission factors (see Table 4). The land-use types used with CalEEMod are the same as for the mobile source emissions above (see Table 2). Both Project and Baseline

---

22 Adapted from page 14 of the CalEEMod User’s Guide, Appendix A. “Calculation Details”. Available at: www.caleemod.com
calculation methodologies are described below. Unless otherwise noted, CalEEMod default parameters were used. For both residential and non-residential land-uses, climate zone 2 was selected based on the CalEEMod forecast climate zone map.

### 3.3.2.1 Residential Buildings Energy Use

To estimate residential building energy GHG emissions for the Project, ENVIRON used the most recent Residential Appliance Saturation Study (RASS). Project emissions also reflect the developer’s commitment to install EnergyStar appliances in residential dwelling units. Project emissions have been calculated using a MID emission factor that accounts for the 20% RPS required by 2010, as discussed earlier. In contrast to the previous (2004) RASS survey, which did not include energy usage associated with natural gas fireplaces, the most recent (2009) RASS survey used in this analysis includes energy usage associated with natural gas fireplaces. In an effort to avoid double counting, since fireplaces are commonly associated with “area sources”, ENVIRON set hearth-related area source emissions in CalEEMod to zero.

To calculate the residential energy input parameters shown in Table 5 (e.g., Title 24 electricity, non-Title 24 natural gas), ENVIRON calculated energy use outside of CalEEMod using the same methodology as currently employed by CalEEMod and explained in CalEEMod Appendix E, but relied upon the newer RASS data that has not yet been incorporated into CalEEMod. The new RASS data are based on 2009 consumption data (as compared to CalEEMod that uses 2002 consumption data). Because older buildings tend to be less energy efficient, and the majority of the buildings in the survey were constructed before 2001, the RASS data likely overestimate energy use for a 2001 Title 24-compliant building. Therefore, to account for updates since the 2001 Title 24 standards, percentage reductions for each end use category taken directly from the CEC’s “Impact Analysis for 2005 Energy Efficiency Standards” and “Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings” reports were applied to the RASS dataset for improvements from 2001 to 2005, and 2005 to 2008, respectively. The resulting 2008 numbers were then used as Project energy intensities. Table 5 summarizes the CalEEMod input parameters.

As described earlier, ENVIRON estimated Baseline energy usage GHG emissions using draft baseline metrics developed by SJVAPCD. For residential projects, SJVAPCD has developed a baseline metric of 2.98 tonnes CO₂e/yr/DU (DU=dwelling unit) for electricity and 2.88 tonnes CO₂e/yr/DU for natural gas.

---

23 All RASS data can be downloaded online: http://websafe.kemainc.com/rass2009/
The resultant Project and Baseline residential energy GHG emissions are shown in Table 1 with supporting information provided in Appendix A, Section 5.

3.3.3 Non-Residential Buildings Energy Use

To estimate GHG emissions for the Project, ENVIRON used CalEEMod, which relies upon the most recent Commercial End Use Survey (CEUS) conducted by the California Energy Commission (CEC). Project emissions have been calculated using a MID emission factor that accounts for the 20% RPS required by 2010, as discussed earlier.

ENVIRON understands that SJVAPCD is still in the process of developing baseline GHG metrics for commercial projects. In the absence of reliable baseline commercial GHG metrics from SJVAPCD, ENVIRON applied the same percentage reduction to the non-residential Baseline energy usage as was estimated for the residential energy usage using SJVAPCD baseline energy metrics. Based upon the Project’s residential GHG savings over the Baseline, ENVIRON estimated a reduction of emissions of approximately 53% for natural gas and 30% for electricity for non-residential energy use compared to Baseline.

The resultant Project and Baseline GHG emissions associated with non-residential energy usage are shown in Table 1 with supporting information in Table 2 and Appendix A, Section 5.

3.3.4 Recreational Facilities Energy Use

Recreational facilities at the Project will include a 3,750 square foot outdoor swimming pool. To estimate the energy usage with the swimming pool, ENVIRON obtained average energy consumption of filter pumps and water heaters from a study conducted in Oakland, California, and then scaled the energy consumption to reflect the pool size at the Project. The energy usage was also scaled to account for the higher average ambient temperature in Tracy compared to the study area and an assumed greater efficiency of new pool heaters. Shea Homes has committed to heat the pool using solar heating; thus, for the Project scenario, natural gas usage is replaced by solar heating.

The resultant Project and Baseline pool energy GHG emissions are shown in Table 1 with supporting calculations and references in Tables 6, 7, and 8.

3.3.5 Water Supply, Treatment and Distribution

This section describes the calculation of indirect emissions from the production of electricity to convey, treat and distribute water and wastewater. The amount of electricity required to treat and supply water depends on the volume of water involved as well as the sources of the water.

---

29 The percentage reduction between Baseline and Project residential energy usage was decreased slightly to conservatively remove any credit obtained from installing EnergyStar appliances, which may not be included in commercial spaces.
Shea Homes provided water demand and wastewater generation estimates for the Project, which are shown in Appendices A and B, Section 7.\(^{30}\)

Project and Baseline emissions were calculated using the same assumptions, including the assumption that the wastewater treatment plant uses an aerobic sequential batch reactor that does not generate any methane. However, Project emissions were calculated using a lower carbon-intensity electricity emission factor to reflect the 20% RPS mentioned above.

The resultant Project and Baseline water GHG emissions are shown in Table 1 with supporting information in Appendices A and B, Section 7.

### 3.3.6 Area Sources (Landscaping Equipment)

This section discusses GHG emissions from area sources at the Project. The area source emissions considered for this analysis are from landscaping fuel combustion sources such as lawn mowers. GHG emissions due to natural gas combustion are excluded from this section since they are covered in residential emissions, as discussed earlier.

Project and Baseline emissions were calculated using the same CalEEMod defaults based upon the land-uses that will be part of the Project. Note that in 2020, the CalEEMod defaults reflect more fuel-efficient landscaping equipment.

The resultant Project and Baseline area GHG emissions are shown in Table 1 with supporting information in Appendices A and B, Section 6.

### 3.3.7 Solid Waste

The residents at the development will generate solid waste. A large percentage of this waste will be diverted from landfills by waste generation reduction, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. Landfills emit GHG emissions associated with the anaerobic breakdown of material. CalEEMod’s solid waste module determines the GHG emissions associated with disposal of solid waste into landfills based upon the land-use types at the development.

Project and Baseline emissions were calculated using the same assumptions, as shown in Appendices A and B, Section 8.

The resultant Project and Baseline solid waste GHG emissions are shown in Table 1 with supporting information in Appendices A and B, Section 8.

---

\(^{30}\) All water use was attributed to low rise apartments because an actual water demand breakout by building type was unavailable at the time of this analysis, and therefore ENVIRON did not attempt to match the water-use to specific housing types. This is neither believed to over or underestimate the emissions associated with water use.
3.4 One-Time Emissions

3.4.1 Vegetation

This category evaluates the one-time change in carbon sequestration capacity of a vegetation land-use type. Overall, the vegetation change results in a net increase in carbon sequestration capacity because the trees that will be planted at the Project have a greater sequestration capacity than the cropland that will be removed in order to build the Project. Consequently, the vegetation change results in a GHG emissions offset.

Project and Baseline emissions were calculated using the same assumptions: that 13,500 new trees will be planted at the development and 662 acres of cropland will be permanently disturbed. The CalEEMod input parameters are summarized in Appendices A and B, Section 9.

ENVIRON amortized the one time emissions over 40 years. As a result, the annual emissions are very small (<1%, on an absolute basis) compared to the overall inventory. The resultant Project and Baseline vegetation GHG emissions are shown in Table 1 with supporting information in Appendices A and B, Section 9. The Project results in a net increase in vegetation and sequestered CO₂. As a conservative measure, this sequestration was not included in the 29% comparison, but is reported for informational purposes only.

3.5 Emission Reduction Measures

Shea Homes has committed to several measures to reduce GHG emissions from the Project. Four measures that have been incorporated into this analysis include: EnergyStar residential appliances, minimization of pedestrian barriers, access to neighborhood electric vehicles, and bicycle parking. Emission reductions from EnergyStar appliances are calculated in CalEEMod and are reflected in the emissions from electricity in Table 1. Emission reductions associated with BPS—including minimization of pedestrian barriers, access to neighborhood electric vehicles, and bicycle parking—are quantified following SJVAPCD CEQA guidance and are summarized in Table 1.31

31 SJVAPCD Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.” Available at: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf
4 Comparison to SJVAPCD CEQA Significance Threshold

This section evaluates Project emissions reductions against the SJVAPCD CEQA significance threshold. Table 1 outlines Project and Baseline emissions. The Project's GHG emissions, after incorporation of BPS, are estimated to be 42,951 MT CO$_2$e per year. The Baseline GHG emissions, which represent if the Project were constructed consistent with the assumptions in the CARB Scoping Plan projections for 2020 if 'no actions are taken' (CARB 2020 NAT), are estimated to be 61,019 MT CO$_2$e per year. The GHG emission reduction between the two scenarios, accounting for BPS measures, is approximately 29.6%. Thus, the Project achieves a greater reduction in GHG emissions than is required by SJVAPCD to have a less than significant impact. As a result, the Project is expected to have a less than significant individual and cumulative impact on global climate change.
5 Conclusion

This report provides an inventory of the GHG emissions that would result from approving the Project. The Project will result in both one-time and annual GHG emissions. Because the SJVAPCD is the primary agency responsible for comprehensive air pollution control in the San Joaquin Valley, ENVIRON followed SJVAPCD emissions calculation guidance.

The SJVAPCD CEQA significance threshold used in this report is a metric based on a percent reduction from a baseline. This threshold is a 29% reduction from the baseline. The Project's operational GHG emissions will be more than 29% lower than this Baseline. The Project's design features, including incorporation of BPS, along with improved vehicle fuel efficiency and cleaner electricity generation, enable the Project to meet SJVAPCD's 29% reduction threshold. As a result, the Project is expected to have a less than significant individual and cumulative impact on global climate change.
Tables
### Table 1

**Summary of GHG Emissions**

Mountain House Mixed-Use Development - Neighborhoods K & L  
Shea Homes  
San Joaquin County, California

<table>
<thead>
<tr>
<th>Operational Category</th>
<th>Baseline (MT CO2e/yr)</th>
<th>Project (MT CO2e/yr)</th>
<th>Percent Reduction over Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Sources</td>
<td>31.3</td>
<td>30.9</td>
<td>1.3%</td>
</tr>
<tr>
<td>Energy Usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>7,108</td>
<td>3,333</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>7,355</td>
<td>5,015</td>
<td>32%</td>
</tr>
<tr>
<td>Non-Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>382</td>
<td>179</td>
<td>53%</td>
</tr>
<tr>
<td>Electricity</td>
<td>1,320</td>
<td>928</td>
<td>30%</td>
</tr>
<tr>
<td>Mobile Sources</td>
<td>42,657</td>
<td>33,175</td>
<td>22%</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>1,027</td>
<td>1,027</td>
<td>0%</td>
</tr>
<tr>
<td>Water</td>
<td>910</td>
<td>827</td>
<td>9.1%</td>
</tr>
<tr>
<td>Swimming Pools</td>
<td>229</td>
<td>38</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Total Before BPS Reduction</strong></td>
<td>61,019</td>
<td>44,552</td>
<td>27.0%</td>
</tr>
<tr>
<td><strong>BPS % Reduction</strong></td>
<td>--</td>
<td>--</td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Total After BPS Reduction</strong></td>
<td>61,019</td>
<td>42,951</td>
<td>29.6%</td>
</tr>
<tr>
<td>Vegetation (amortized)</td>
<td>-136</td>
<td>-136</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total with Vegetation</strong></td>
<td>60,883</td>
<td>42,814</td>
<td>29.7%</td>
</tr>
</tbody>
</table>

**Notes:**
1. Baseline emissions for area sources, mobile sources, solid waste, and water are calculated by CalEEMod using 2005 as the modeled year. Baseline energy usage emissions for residential land-use types are calculated using SJVAPCD’s baseline metrics for energy use, which are 2.88 MT CO2e/DU/yr for natural gas and 2.98 MT CO2e/DU/yr for electricity use. The reduction achieved between this baseline metric and the Project emissions is applied to non-residential land-uses after removing the benefit for EnergyStar appliances from residential land-uses.
2. Project scenario represents emissions from the Project in 2020 as described in the report.
3. Consistent with SJVAPCD guidance, the percentage reduction was calculated as the difference between the Baseline and Project emissions divided by the Baseline emissions.
4. Shea Homes has committed to incorporating the following BPS measures into the Project. The percentage reduction associated with these BPS measures was taken from SJVAPCD’s Final Staff Report – Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act. Available at: [http://www.valleyair.org/programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf](http://www.valleyair.org/programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%202017%202009.pdf).

<table>
<thead>
<tr>
<th>BPS Description</th>
<th>Percent Reduction Over Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Barriers Minimized</td>
<td>1.0%</td>
</tr>
<tr>
<td>Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated. Barriers to pedestrian access of neighboring facilities and sites are minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, etc.</td>
<td></td>
</tr>
</tbody>
</table>

| Neighborhood Electric Vehicle Access | 1.0% |
| Make physical development consistent with requirements for neighborhood electric vehicles (NEV). Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For 1.0% reduction, a neighborhood shall have internal and external connections to surrounding neighborhoods. |

| Bike Parking | 0.625% |
| Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand. Short term facilities are provided at a minimum ratio of one bike rack space per 20 vehicle spaces. Long-term facilities provide a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces. |

5. Vegetation sequestration numbers presented here have been amortized over 40 years.

**Abbreviations:**

BPS - Best Performance Standards  
CO2e: carbon dioxide equivalents  
DU: dwelling units  
MT: metric tons  
yr: year
<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Land Use Subtype</th>
<th>Quantity</th>
<th>Size Metric</th>
<th>Lot Acreage</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>Government Office Building</td>
<td>8</td>
<td>1000 sq ft</td>
<td>0.18</td>
<td>0</td>
</tr>
<tr>
<td>Educational</td>
<td>Elementary School</td>
<td>180</td>
<td>1000 sq ft</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Educational</td>
<td>Place of Worship</td>
<td>6</td>
<td>1000 sq ft</td>
<td>0.14</td>
<td>0</td>
</tr>
<tr>
<td>Recreational</td>
<td>City Park</td>
<td>149.12</td>
<td>Acre</td>
<td>149.12</td>
<td>0</td>
</tr>
<tr>
<td>Residential</td>
<td>Apartments Low Rise</td>
<td>686</td>
<td>Dwelling Unit</td>
<td>52.82</td>
<td>1,751</td>
</tr>
<tr>
<td>Residential</td>
<td>Apartments Mid Rise</td>
<td>204</td>
<td>Dwelling Unit</td>
<td>7.55</td>
<td>521</td>
</tr>
<tr>
<td>Residential</td>
<td>Single Family Housing</td>
<td>1,578</td>
<td>Dwelling Unit</td>
<td>300</td>
<td>4,029</td>
</tr>
<tr>
<td>Retail</td>
<td>Strip Mall</td>
<td>105</td>
<td>1000 sq ft</td>
<td>2.41</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes:
1. ENVIRON assumed CalEEMod default square footage for residential land-uses and default lot acreage for Government Office Building, Place of Worship, City Park, and Strip Mall. All other data was obtained from Shea Homes.

Abbreviations:
sq ft - square feet
### Table 3
GHG Emissions from Electricity
Mountain House Mixed-Use Development - Neighborhoods K & L
Shea Homes
San Joaquin County, California

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Energy Delivery&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2,659,631</td>
<td>MWh</td>
</tr>
<tr>
<td>from renewables&lt;sup&gt;2&lt;/sup&gt;</td>
<td>302,273</td>
<td>MWh</td>
</tr>
<tr>
<td>from non-renewables</td>
<td>2,357,358</td>
<td>MWh</td>
</tr>
<tr>
<td>% of Total Energy From Renewables&lt;sup&gt;2&lt;/sup&gt;</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Total CO₂ Emissions&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1,005,481</td>
<td>metric tonnes CO₂</td>
</tr>
<tr>
<td>CO₂ Emissions per Total Energy Delivered</td>
<td>833.46</td>
<td>lbs CO₂/MWh delivered</td>
</tr>
<tr>
<td>CO₂ Emissions per Total Non-Renewable Energy&lt;sup&gt;3&lt;/sup&gt;</td>
<td>940.33</td>
<td>lbs CO₂/MWh delivered</td>
</tr>
<tr>
<td>Estimated Emission Factors for Total Energy Delivered&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010 RPS (20%)</td>
<td>752.3</td>
<td>lbs CO₂/MWh delivered</td>
</tr>
<tr>
<td>2020 RPS (33%)</td>
<td>630.0</td>
<td>lbs CO₂/MWh delivered</td>
</tr>
</tbody>
</table>

**Notes:**
2. Renewable energy delivered is the sum of biogenic, geothermal and other renewable generations in PUP reports.
3. The emissions metric presented here is calculated based on the total CO₂ emissions divided by the energy delivered from non-renewable sources.
4. The emission factors for total energy delivered are estimated by multiplying the percentage of energy delivered from non-renewable energy by the CO₂ emissions per total non-renewable energy metric calculated above. Two emission factors are presented here: the current 20% RPS goal for 2010 and the 33% RPS for 2020. The 20% reduction is used for Project emissions in this report. The estimate provided here and the PUP reports issued by MID assume that renewable energy sources do not result in any CO₂ emissions. This is not necessarily true for biogas- and biomass-sourced energy but some consider these sources to be "carbon neutral."

**Abbreviations:**
CO₂ - carbon dioxide
GHG - Greenhouse gas
kWh - kilowatt-hour
lbs - pounds
MID - Modesto Irrigation District
MWh - Megawatt-hour
PUP - Power/Utility Protocol
RPS - Renewables Portfolio Standard

**Sources:**
Table 4
Emission Factors for Different Energy Sources
Mountain House Mixed-Use Development - Neighborhoods K & L
Shea Homes
San Joaquin County, California

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Scenario</th>
<th>Source Units</th>
<th>lb CO₂/source unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity - Baseline¹</td>
<td>2008</td>
<td>(kW-hr)</td>
<td>0.833</td>
</tr>
<tr>
<td>Electricity - Project²</td>
<td>2010 RPS</td>
<td>(kW-hr)</td>
<td>0.752</td>
</tr>
<tr>
<td>Natural Gas³</td>
<td></td>
<td>(MBTU)</td>
<td>117.0</td>
</tr>
</tbody>
</table>

**Notes:**
1. Emission factor for Baseline electricity is obtained from CalEEMod defaults for Modesto Irrigation District in 2007.
2. Emission factor for Project electricity is obtained from the California Climate Action Registry Database. The electricity generation emission factor was adjusted to reflect 20% of power provided by renewables (2010 RPS).
3. From CCAR General Reporting Protocol (GRP), Table C7.

**Abbreviations:**
kWh - kilowatt-hour
lb - pound
MBTU - million british thermal units
MID - Modesto Irrigation District
RPS - renewables portfolio standard

**Sources:**
<table>
<thead>
<tr>
<th>Land Use</th>
<th>Title 24 Electricity Use [kWh/DU/year]</th>
<th>Non Title 24 Electricity Use [kWh/DU/year]</th>
<th>Lighting Energy Use [kWh/DU/year]</th>
<th>Title 24 Natural Gas Use [kBTU/DU/year]</th>
<th>Non Title 24 Natural Gas Use [kBTU/DU/year]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Homes</td>
<td>730</td>
<td>5,099</td>
<td>1,609</td>
<td>26,218</td>
<td>5,934</td>
</tr>
<tr>
<td>Apartments Low Rise</td>
<td>348</td>
<td>2,632</td>
<td>810</td>
<td>11,068</td>
<td>2,498</td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>322</td>
<td>2,554</td>
<td>741</td>
<td>8,261</td>
<td>1,716</td>
</tr>
</tbody>
</table>

**Notes:**
1. ENVIRON obtained energy usage from 2009 RASS data for climate zone 2. Title 24 energy use is adjusted to be consistent with 2008 Title 24 Standards as described in the report.

**Abbreviations:**
- kBTU - thousand British Thermal Units
- kWh - kilowatt hour
- DU - dwelling unit
- RASS - Residential Appliance Survey Saturation

**Sources:**
## Table 6
Energy Use from Swimming Pools
Mountain House Mixed-Use Development - Neighborhoods K & L
Shea Homes
San Joaquin County, California

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Pool Volume</th>
<th>Number of Heaters</th>
<th>Heater Rating</th>
<th>Operation Schedule</th>
<th>Annual Natural Gas Usage</th>
<th>Average Annual Natural Gas Usage</th>
<th>Annual Electricity Usage</th>
<th>Average Annual Electricity Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(gal)</td>
<td></td>
<td>(BTU/hr)</td>
<td>(hrs / day)</td>
<td>(days / yr)</td>
<td>(MMBTU / yr)</td>
<td>(MMBTU / gal / yr)</td>
<td>(kWh / yr)</td>
</tr>
<tr>
<td>Fremont Pool</td>
<td>215,000</td>
<td>4</td>
<td>350,000</td>
<td>12</td>
<td>243</td>
<td>4,088</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeFremery Pool</td>
<td>226,659</td>
<td>1</td>
<td>1,738,800</td>
<td>10</td>
<td>243</td>
<td>4,231</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live Oak Pool</td>
<td>260,000</td>
<td>4</td>
<td>350,000</td>
<td>12</td>
<td>365</td>
<td>6,132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lyons Pool</td>
<td>240,000</td>
<td>4</td>
<td>350,000</td>
<td>12</td>
<td>365</td>
<td>6,132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temescal Pool</td>
<td>227,605</td>
<td>4</td>
<td>350,000</td>
<td>12</td>
<td>365</td>
<td>6,132</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1. To estimate the baseline electricity and natural gas energy usage factors for the pools, ENVIRON calculated the energy consumption of filter pumps and water heaters of 5 pools in Oakland, California and scaled them to present energy consumption per year per volume of the pool. Oakland pools data including pool volume, number of heaters, heater rating, operation schedule, and annual electricity usage are provided in the City of Oakland Energy Efficient Commercial Pool Program Preliminary Facility Reports.

2. Annual natural gas usage calculated by multiplying the following factors: (Number of hrs/day) x (Number of days/yr) x (Number of Heaters) x (Heater Rating). Each of these factors were taken from the City of Oakland Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool.

3. Average annual natural gas usage calculated from the annual natural gas usage of all 5 pools divided by the total pool volume of all 5 pools.

4. Annual electricity usage for each pool is shown as reported in the City of Oakland Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool.

5. Average annual electricity usage calculated from the annual electricity usage of all 5 pools divided by the total pool volume of all 5 pools.

### Abbreviations:
- kWh - kilowatt-hour
- MMBTU - Million British Thermal Units
- hr - hour
- yr - year

### Source:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>0.496 (kWh / gal / yr)</td>
<td>Electricity</td>
<td>0.496 (kWh / gal / yr)</td>
<td>224,416</td>
<td>111,268 (kWh / yr)</td>
<td>0.752 (kWh)</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0.023 (MMBTU / gal / yr)</td>
<td>Natural Gas</td>
<td>0.016 (MMBTU / gal / yr)</td>
<td>3,527</td>
<td>117 (MMBTU)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Only CO₂ emissions are estimated and are assumed to be equivalent to total GHG emissions since the contributions from methane (CH₄) and nitrous oxide (N₂O) are negligible compared to total GHG for emissions associated with electricity generation and natural gas combustion. The emission factors in the California Climate Action Registry General Reporting Protocol show that CH₄ and N₂O emissions (in CO₂e) are less than 1% of CO₂ emissions for these processes.

2. The weighted energy consumption of 5 Oakland pools is used to calculate the baseline energy use of an average sized pool within the project site.

3. ENVIRON adjusted the natural gas usage to account for savings from high-efficiency heaters. ENVIRON conservatively assumed that the Oakland pools used 78% efficient heaters, which is the minimum efficiency legally required (see 10 CFR Part 431). According to the U.S. Department of Energy, newer pools are likely to use heaters with 89-95% efficiency (see http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13170). ENVIRON conservatively assumed 90% efficiency for Mountain House pool heaters, resulting in a 12% savings over the Oakland pools.

4. ENVIRON adjusted the natural gas usage to account for the difference in average ambient temperature in Tracy and Oakland. The natural gas usage was multiplied by the following adjustment factor: (typical pool temperature - Oakland average ambient temperature) / (typical pool temperature - San Francisco-Richmond average ambient temperature) = (80 deg F - 60.9 deg F) / (80 deg F - 55.5 deg F). Typical pool temperature based on information from the Department of Energy, available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13300. Average ambient temperatures for Tracy and San Francisco-Richmond were obtained from the Western Regional Climate Center: http://www.wrcc.dri.edu/.

5. ENVIRON used the surface area of the swimming pool in North Community Park provided by Shea Homes and conservatively assumed an averaged depth of 8 ft.

6. Emission factor for electricity is obtained from the California Climate Action Registry Database. The electricity generation emission factor was adjusted to reflect 20% of power provided by renewables (2010 RPS). See Table 3 for calculations. Emission factor for natural gas is obtained from California Climate Action Registry Reporting Protocol, Table C7.

7. Emissions for a single pool, assuming no solar heating.

8. Emissions for a single pool, assuming solar heating replaces all natural gas heating. This value now includes electricity from pumping only.

**Abbreviations:**

RPS - Renewables Portfolio Standard
CO₂ - carbon dioxide
CH₄ - methane
ft - foot
kWh - kilowatt-hour
lb - pound
MMBTU - Million British Thermal Units
N₂O - nitrous oxide
yr - year

**Sources:**

<table>
<thead>
<tr>
<th>Energy Use Factors (Oakland pools)</th>
<th>Energy Use Factors (adjusted for Mountain House pools)</th>
<th>Pool Volume</th>
<th>Annual Energy Use</th>
<th>Emission Factors</th>
<th>Total Emissions per Pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity: 0.496 (kWh / gal / yr)</td>
<td>Electricity: 0.496 (kWh / gal / yr)</td>
<td>224,416 (gal)</td>
<td>111,268 (kWh)</td>
<td>0.833 (kWh)</td>
<td>229 (MMBTU)</td>
</tr>
<tr>
<td>Natural Gas: 0.023 (MMBTU / gal / yr)</td>
<td>Natural Gas: 0.016 (MMBTU / gal / yr)</td>
<td>3,527 (MMBTU)</td>
<td>117 (MMBTU)</td>
<td>529 (MMBTU)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Only CO₂ emissions are estimated and are assumed to be equivalent to total GHG emissions since the contributions from methane (CH₄) and nitrous oxide (N₂O) are negligible compared to total GHG for emissions associated with electricity generation and natural gas combustion. The emission factors in the California Climate Action Registry General Reporting Protocol show that CH₄ and N₂O emissions (in CO₂e) are less than 1% of CO₂ emissions for these processes.

2. The weighted energy consumption of 5 Oakland pools is used to calculate the baseline energy use of an average sized pool within the project site.

3. ENVIRON adjusted the natural gas usage to account for savings from high-efficiency heaters. ENVIRON conservatively assumed that the Oakland pools used 78% efficient heaters, which is the minimum efficiency legally required (see 10 CFR Part 431). According to the U.S. Department of Energy, newer pools are likely to use heaters with 89-95% efficiency (see http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13170). ENVIRON conservatively assumed 90% efficiency for Mountain House pool heaters, resulting in a 12% savings over the Oakland pools.

4. ENVIRON adjusted the natural gas usage to account for the difference in average ambient temperature in Tracy and Oakland. The natural gas usage was multiplied by the following adjustment factor: (typical pool temperature - Tracy average ambient temperature) / (typical pool temperature - San Francisco-Richmond average ambient temperature) = (80 deg F - 60.9 deg F) / (80 deg F - 55.5 deg F).

5. Typical pool temperatures based on information from the Department of Energy, available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13300. Average ambient temperatures for Tracy and San Francisco-Richmond were obtained from the Western Regional Climate Center: http://www.wrcc.dri.edu.

6. ENVIRON used the surface area of the swimming pool in North Community Park provided by Shea Homes and conservatively assumed an averaged depth of 8 ft.

7. Emissions factor for electricity is CalEEMod default for Modesto Irrigation District. Emission factor for natural gas is obtained from California Climate Action Registry Reporting Protocol, Table C7.

Abbreviations:
- CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken
- CO₂ - carbon dioxide
- CH₄ - methane
- ft - foot
- kWh - kilowatt-hour
- lb - pound
- MMBTU - Million British Thermal Units
- N₂O - nitrous oxide
- yr - year

Sources:
Appendix A
CalEEMod Output Summary Report for Project
Shea 2020 Project  
San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

<table>
<thead>
<tr>
<th>Land Uses</th>
<th>Size</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Office Building</td>
<td>8</td>
<td>1000 sqft</td>
</tr>
<tr>
<td>Elementary School</td>
<td>180</td>
<td>1000 sqft</td>
</tr>
<tr>
<td>Place of Worship</td>
<td>6</td>
<td>1000 sqft</td>
</tr>
<tr>
<td>City Park</td>
<td>14.12</td>
<td>Acre</td>
</tr>
<tr>
<td>Apartment Low Rise</td>
<td>696</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Apartment Mid Rise</td>
<td>204</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>151</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Strip Mall</td>
<td>188</td>
<td>Hectare</td>
</tr>
</tbody>
</table>

1.2 Other Project Characteristics

<table>
<thead>
<tr>
<th>Urbanization</th>
<th>Wind Speed (m/s)</th>
<th>Utility Company</th>
<th>Service Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>2.7</td>
<td>Modesto Irrigation District</td>
<td></td>
</tr>
</tbody>
</table>

Precipitation Freq (Day) 51
### 2.0 Emissions Summary

#### 2.2 Overall Operational

**Unmitigated Operational**

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>0.00</td>
<td>6.27</td>
<td>40.71</td>
<td>0.00</td>
<td>0.00</td>
<td>31.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>0.00</td>
<td>9.404.40</td>
<td>9.404.40</td>
<td>0.27</td>
<td>0.14</td>
<td>0.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>0.00</td>
<td>30.1</td>
<td>30.1</td>
<td>1.19</td>
<td>0.00</td>
<td>31.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>458.47</td>
<td>500</td>
<td>488.47</td>
<td>27.09</td>
<td>0.00</td>
<td>489.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>458.47</td>
<td>43,891.87</td>
<td>43,956.28</td>
<td>28.62</td>
<td>0.35</td>
<td>44,668.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mitigated Operational**

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>0.00</td>
<td>6.27</td>
<td>40.71</td>
<td>0.00</td>
<td>0.00</td>
<td>31.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>0.00</td>
<td>9.404.40</td>
<td>9.404.40</td>
<td>0.27</td>
<td>0.14</td>
<td>0.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>0.00</td>
<td>30.1</td>
<td>30.1</td>
<td>1.19</td>
<td>0.00</td>
<td>31.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>458.47</td>
<td>500</td>
<td>488.47</td>
<td>27.09</td>
<td>0.00</td>
<td>489.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>458.47</td>
<td>43,891.87</td>
<td>43,956.28</td>
<td>28.62</td>
<td>0.35</td>
<td>44,668.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2.3 Vegetation

**Vegetation**

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Trees</td>
<td>0.00</td>
<td>6.27</td>
<td>40.71</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Vegetation Land Change</td>
<td>4.104.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.405.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 of 9
### 4.0 Mobile Detail

#### 4.1 Mitigation Measures Mobile

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Annual VMT</th>
<th>Annual VMT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H-W or C-W</td>
<td>H-S or C-C</td>
<td>H-O or C-NW</td>
<td>H-W or C-W</td>
<td>H-S or C-C</td>
</tr>
<tr>
<td>Strip Mall</td>
<td></td>
<td>1.19</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Single Family Housing</td>
<td></td>
<td>1.19</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Place of Worship</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>86,252.96</td>
<td>86,252.96</td>
</tr>
<tr>
<td>Government Office Building</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Apartment Low Rise</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Apartment Mid Rise</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>City Park</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Elementary School</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.19</td>
<td>0.00</td>
<td>0.00</td>
<td>92,299.28</td>
<td>92,299.28</td>
</tr>
</tbody>
</table>

#### 4.3 Trip Type Information

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Miles</th>
<th>Trip %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip Mall</td>
<td>9.90</td>
<td>7.30</td>
</tr>
<tr>
<td>Apartment Low Rise</td>
<td>10.80</td>
<td>7.50</td>
</tr>
<tr>
<td>Apartment Mid Rise</td>
<td>10.80</td>
<td>7.50</td>
</tr>
<tr>
<td>City Park</td>
<td>9.00</td>
<td>7.30</td>
</tr>
<tr>
<td>Elementary School</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Government Office Building</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>10.80</td>
<td>7.50</td>
</tr>
<tr>
<td>Total</td>
<td>33,149.64</td>
<td>33,149.64</td>
</tr>
</tbody>
</table>
### 5.0 Energy Detail

#### 5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

#### 5.2 Energy by Land Use - Natural Gas

<table>
<thead>
<tr>
<th>Land Use</th>
<th>NaturalGas Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SOx</th>
<th>Fugitive PM10</th>
<th>Direct PM10</th>
<th>EN Total</th>
<th>Fugitive PM2.5</th>
<th>Direct PM2.5</th>
<th>EN Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low Rise</td>
<td>9.3063e+006</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Elementary Schools</td>
<td>2.0354e+006</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>City Parks</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Government Offices</td>
<td>1.29045e+06</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>NaturalGas Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SOx</th>
<th>Fugitive PM10</th>
<th>Direct PM10</th>
<th>EN Total</th>
<th>Fugitive PM2.5</th>
<th>Direct PM2.5</th>
<th>EN Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low Rise</td>
<td>9.3063e+006</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Elementary Schools</td>
<td>2.0354e+006</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>City Parks</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Government Offices</td>
<td>1.29045e+06</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.27</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
## 5.3 Energy by Land Use - Electricity

### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Electricity Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low</td>
<td>2.0000e+006</td>
<td>251.87</td>
<td>0.01</td>
<td>0.00</td>
<td>254.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Midrise</td>
<td>7.36152</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>1.1566e+006</td>
<td>284.32</td>
<td>0.01</td>
<td>0.00</td>
<td>284.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Office</td>
<td>8.0380</td>
<td>30.49</td>
<td>0.00</td>
<td>0.00</td>
<td>30.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>5.0380</td>
<td>18.90</td>
<td>0.00</td>
<td>0.00</td>
<td>18.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family</td>
<td>1.17361e+007</td>
<td>30.49</td>
<td>0.00</td>
<td>0.00</td>
<td>30.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6,067.15</td>
<td>0.21</td>
<td>0.08</td>
<td>6,096.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Electricity Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low</td>
<td>2.01435e+006</td>
<td>243.73</td>
<td>0.01</td>
<td>0.00</td>
<td>244.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Midrise</td>
<td>7.14292</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>1.15506e+006</td>
<td>284.32</td>
<td>0.01</td>
<td>0.00</td>
<td>284.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Office</td>
<td>8.0380</td>
<td>30.49</td>
<td>0.00</td>
<td>0.00</td>
<td>30.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>5.0380</td>
<td>18.90</td>
<td>0.00</td>
<td>0.00</td>
<td>18.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family</td>
<td>1.17361e+007</td>
<td>30.49</td>
<td>0.00</td>
<td>0.00</td>
<td>30.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5,951.17</td>
<td>0.20</td>
<td>0.08</td>
<td>5,992.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
</tr>
<tr>
<td>Unmitigated</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.03</td>
</tr>
<tr>
<td>Total</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

#### 6.2 Area by SubCategory

##### Unmitigated

<table>
<thead>
<tr>
<th>SubCategory</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Coating</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Consumer Products</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Hearth</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Landscaping</td>
<td>0.00</td>
<td>30.27</td>
<td>30.27</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>30.27</td>
<td>30.27</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

##### Mitigated

<table>
<thead>
<tr>
<th>SubCategory</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Coating</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Consumer Products</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Hearth</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Landscaping</td>
<td>0.00</td>
<td>30.27</td>
<td>30.27</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>30.27</td>
<td>30.27</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### 7.0 Water Detail

#### 7.1 Mitigation Measures Water

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmitigated</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.2 Water by Land Use

##### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low Rise</td>
<td>270 / 219</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

##### Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low Rise</td>
<td>270 / 219</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office</td>
<td>0 / 0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>760.06</td>
<td>0.00</td>
<td>0.21</td>
<td>827.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 8.0 Waste Detail

#### 8.1 Mitigation Measures Waste

<table>
<thead>
<tr>
<th>Category/Year</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tons</td>
<td>tons/yr</td>
<td>MT/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitigated</td>
<td>458.47</td>
<td>27.10</td>
<td>0.00</td>
<td>1,027.44</td>
<td>22.38</td>
<td>1.32</td>
<td>0.00</td>
<td>50.15</td>
</tr>
<tr>
<td>Unmitigated</td>
<td>458.47</td>
<td>27.10</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

#### 8.2 Waste by Land Use

##### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tons</td>
<td>tons/yr</td>
<td>MT/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartment Low Rise</td>
<td>315.56</td>
<td>64.66</td>
<td>3.79</td>
<td>0.00</td>
<td>145.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartment High Rise</td>
<td>93.8</td>
<td>19.03</td>
<td>1.13</td>
<td>0.00</td>
<td>47.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>12.82</td>
<td>2.40</td>
<td>0.15</td>
<td>0.00</td>
<td>5.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community School</td>
<td>172</td>
<td>27.05</td>
<td>2.61</td>
<td>0.00</td>
<td>14.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office Building</td>
<td>7.44</td>
<td>1.19</td>
<td>0.09</td>
<td>0.00</td>
<td>3.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Housing</td>
<td>34.2</td>
<td>6.9</td>
<td>0.41</td>
<td>0.00</td>
<td>10.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>140.44</td>
<td>254.43</td>
<td>7.40</td>
<td>0.00</td>
<td>159.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strip Mall</td>
<td>110.25</td>
<td>23.38</td>
<td>1.32</td>
<td>0.00</td>
<td>45.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>458.47</td>
<td>27.10</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

##### Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tons</td>
<td>tons/yr</td>
<td>MT/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartment Low Rise</td>
<td>315.56</td>
<td>64.66</td>
<td>3.79</td>
<td>0.00</td>
<td>145.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartment High Rise</td>
<td>93.8</td>
<td>19.03</td>
<td>1.13</td>
<td>0.00</td>
<td>47.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>12.82</td>
<td>2.40</td>
<td>0.15</td>
<td>0.00</td>
<td>5.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community School</td>
<td>172</td>
<td>27.05</td>
<td>2.61</td>
<td>0.00</td>
<td>14.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Office Building</td>
<td>7.44</td>
<td>1.19</td>
<td>0.09</td>
<td>0.00</td>
<td>3.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Housing</td>
<td>34.2</td>
<td>6.9</td>
<td>0.41</td>
<td>0.00</td>
<td>10.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>140.44</td>
<td>254.43</td>
<td>7.40</td>
<td>0.00</td>
<td>159.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strip Mall</td>
<td>110.25</td>
<td>23.38</td>
<td>1.32</td>
<td>0.00</td>
<td>45.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>458.47</td>
<td>27.10</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 9.0 Vegetation

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmitigated</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Total CO2 CH4 N2O CO2e**

<table>
<thead>
<tr>
<th>Number of Trees</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesquite 1000</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### 9.1 Vegetation Land Change

#### Vegetation Type

<table>
<thead>
<tr>
<th>Initial/Final</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropland</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### 9.1 Net New Trees

#### Species Class

<table>
<thead>
<tr>
<th>Number of Trees</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesquite 1000</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Appendix B
CalEEMod Output Summary Report for Baseline
**Shea 2005 Project**  
San Joaquin County, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Office Building</td>
<td>8</td>
<td>120sqft</td>
</tr>
<tr>
<td>Elementary School</td>
<td>180</td>
<td>1000sqft</td>
</tr>
<tr>
<td>Place of Worship</td>
<td>6</td>
<td>1000sqft</td>
</tr>
<tr>
<td>City Park</td>
<td>148.12</td>
<td>Acre</td>
</tr>
<tr>
<td>Apartments Low Rise</td>
<td>696</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>254</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>1978</td>
<td>Dwelling Unit</td>
</tr>
<tr>
<td>Strip Mall</td>
<td>100</td>
<td>1000sqft</td>
</tr>
</tbody>
</table>

#### 1.2 Other Project Characteristics

<table>
<thead>
<tr>
<th>Urbanization</th>
<th>Urban</th>
<th>Wind Speed (m/s)</th>
<th>Utility Company</th>
<th>Modesto Irrigation District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Zone</td>
<td>2</td>
<td>2.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Precipitation Freq (Days) 51
## 2.0 Emissions Summary

### 2.2 Overall Operational

#### Unmitigated Operational

<table>
<thead>
<tr>
<th>Category</th>
<th>NOx</th>
<th>NOy</th>
<th>SOx</th>
<th>CO</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM10</th>
<th>Exhaust PM2.5</th>
<th>Excess PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>ROG</th>
<th>NOx</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td></td>
<td>0.00</td>
<td></td>
<td>6.27</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>31.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td>0.00</td>
<td>4251.80</td>
<td>4251.80</td>
<td>3.98</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>42.695</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>408.47</td>
<td>0.00</td>
<td>408.47</td>
<td>27.09</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1,027.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>0.00</td>
<td>842.10</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>669.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mitigated Operational

<table>
<thead>
<tr>
<th>Category</th>
<th>NOx</th>
<th>NOy</th>
<th>SOx</th>
<th>CO</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM10</th>
<th>Exhaust PM2.5</th>
<th>Excess PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>ROG</th>
<th>NOx</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td></td>
<td>0.00</td>
<td></td>
<td>6.27</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>31.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td>0.00</td>
<td>4251.80</td>
<td>4251.80</td>
<td>3.98</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>42.695</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>408.47</td>
<td>0.00</td>
<td>408.47</td>
<td>27.09</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1,027.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>0.00</td>
<td>842.10</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>669.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.3 Vegetation

#### Vegetation

<table>
<thead>
<tr>
<th>Category</th>
<th>NOx</th>
<th>NOy</th>
<th>SOx</th>
<th>CO</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM10</th>
<th>Exhaust PM2.5</th>
<th>Excess PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>ROG</th>
<th>NOx</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>New trees</td>
<td>0.00</td>
<td>4251.80</td>
<td>4251.80</td>
<td>3.98</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>42.695</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation and Ooze</td>
<td>4,114.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,254.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4,114.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,254.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 4.0 Mobile Detail

#### 4.1 Mitigation Measures Mobile

| Land Use               | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Apartments Low Rise    | 10.80       | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| Apartments Mid Rise    | 10.80       | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| City Park              | 9.50        | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Elementary School      | 9.50        | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Government Office Building | 9.50 | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Place of Worship       | 9.50        | 7.30        | 7.30        | 0.00        | 99.00       | 0.00        |
| Single Family Housing  | 10.80       | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| Strip Mall             | 9.50        | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |

### 4.2 Trip Summary Information

#### 4.3 Trip Type Information

| Land Use                | Miles | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W | H-W or G-W |
|-------------------------|-------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Apartments Low Rise     | 10.80 | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| Apartments Mid Rise     | 10.80 | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| City Park               | 9.50  | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Elementary School       | 9.50  | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Government Office Building | 9.50 | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |
| Place of Worship        | 9.50  | 7.30        | 7.30        | 0.00        | 99.00       | 0.00        |
| Single Family Housing   | 10.80 | 7.30        | 7.50        | 46.60       | 19.00       | 33.40       |
| Strip Mall              | 9.50  | 7.30        | 7.30        | 33.00       | 48.00       | 19.00       |

### 4.4 Mobile Detail

#### 4.1 Mitigation Measures Mobile

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Voluntary</th>
<th>Mandated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low Rise</td>
<td>10.80</td>
<td>7.30</td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>10.80</td>
<td>7.30</td>
</tr>
<tr>
<td>City Park</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Elementary School</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Government Office Building</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Place of Worship</td>
<td>9.50</td>
<td>7.30</td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>10.80</td>
<td>7.30</td>
</tr>
<tr>
<td>Strip Mall</td>
<td>9.50</td>
<td>7.30</td>
</tr>
</tbody>
</table>

---

3 of 7
### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

<table>
<thead>
<tr>
<th>SubCategory</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>Total NOx</th>
<th>Total CO</th>
<th>Total SO2</th>
<th>Total PM10</th>
<th>Total PM2.5</th>
<th>Fugitive PM2.5</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 6.2 Area by SubCategory

**Unmitigated**

<table>
<thead>
<tr>
<th>SubCategory</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>Total NOx</th>
<th>Total CO</th>
<th>Total SO2</th>
<th>Total PM10</th>
<th>Total PM2.5</th>
<th>Fugitive PM2.5</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mitigated**

<table>
<thead>
<tr>
<th>SubCategory</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>Total NOx</th>
<th>Total CO</th>
<th>Total SO2</th>
<th>Total PM10</th>
<th>Total PM2.5</th>
<th>Fugitive PM2.5</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 7.0 Water Detail

### 7.1 Mitigation Measures Water

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>N2O</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip Mall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Low</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>909.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>270 / 219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 7.2 Water by Land Use

#### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>N2O</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low</td>
<td>Indoor</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>909.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>Outdoor</td>
<td>270 / 219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Indoor</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>909.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Outdoor</td>
<td>270 / 219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>N2O</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Low</td>
<td>Indoor</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>909.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments Mid Rise</td>
<td>Outdoor</td>
<td>270 / 219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Park</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>Indoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>Outdoor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Indoor</td>
<td>842.10</td>
<td>0.03</td>
<td>0.22</td>
<td>909.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Outdoor</td>
<td>270 / 219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>Total CO2</th>
<th>Total CH4</th>
<th>Total N2O</th>
<th>Total CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strip Mall</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Unmitigated**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>Total CO2</th>
<th>Total CH4</th>
<th>Total N2O</th>
<th>Total CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip Mall</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Waste by Land Use

#### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>Total CO2</th>
<th>Total CH4</th>
<th>Total N2O</th>
<th>Total CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip Mall</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Total ROG</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>Total CO2</th>
<th>Total CH4</th>
<th>Total N2O</th>
<th>Total CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip Mall</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Housing</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of Worship</td>
<td>84.4</td>
<td>27.00</td>
<td>0.00</td>
<td>1,027.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 9.0 Vegetation

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>N2O</th>
<th>CO</th>
<th>CH4</th>
<th>Total CO2</th>
<th>CH4e</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>13500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total CO2, CH4, N2O, CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,558.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Trees</th>
<th>ROG</th>
<th>N2O</th>
<th>CO</th>
<th>CH4</th>
<th>Total CO2</th>
<th>CH4e</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.1 Net New Trees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 9.1 Vegetation Land Change

<table>
<thead>
<tr>
<th>Vegetation Type</th>
<th>Initial/Total</th>
<th>ROG</th>
<th>N2O</th>
<th>CO</th>
<th>CH4</th>
<th>Total CO2</th>
<th>CH4e</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-4,104.40</td>
<td>0.00</td>
<td>0.00</td>
<td>-4,104.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>-4,104.40</td>
<td>0.00</td>
<td>0.00</td>
<td>-4,104.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 9.1 Net New Trees

<table>
<thead>
<tr>
<th>Species Class</th>
<th>Number of Trees</th>
<th>ROG</th>
<th>N2O</th>
<th>CO</th>
<th>CH4</th>
<th>Total CO2</th>
<th>CH4e</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| NA            | NA             | NA  | NA  | NA | NA  | NA        | NA   | NA  | NA   |
APPENDIX D

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES EVALUATED FOR POTENTIAL TO OCCUR IN NEIGHBORHOODS K AND L
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>CNPS List</th>
<th>Habitat</th>
<th>Potential for Occurrence in Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big tarplant</td>
<td>Blepharizonia plumosa ssp. plumosa</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Valley and foothill grassland.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of big tarplant is located approximately 3 miles south of the project area.</td>
</tr>
<tr>
<td>Caper-fruited tropidocarpum</td>
<td>Tropidocarpum capparideum</td>
<td>None</td>
<td>None</td>
<td>1A</td>
<td>Valley and foothill grassland, alkaline soils.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of caper-fruited tropidocarpum is located approximately 1 mile west of the project area.</td>
</tr>
<tr>
<td>Round-leaved filaree</td>
<td>Erodium macrophyllum</td>
<td>None</td>
<td>None</td>
<td>2</td>
<td>Cismontane woodland and valley and foothill grassland.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of round-leaved filaree is located approximately 1 mile west of the project area.</td>
</tr>
<tr>
<td>Lemmon’s jewelflower</td>
<td>Caulanthus lemmonii</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Valley and foothill grassland and pinyon-juniper woodland.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of Lemmon’s jewelflower is located more than 7 miles south of the project area.</td>
</tr>
<tr>
<td>San Joaquin saltbush</td>
<td>Atriplex joaquiniana</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Chenopod scrub, alkali meadow, valley and foothill grassland.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of San Joaquin saltbush is located approximately 4 miles west of the project area.</td>
</tr>
<tr>
<td>Diamond-petaled California poppy</td>
<td>Eschscholzia rhombipetala</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Valley and foothill grasslands, alkaline, clay slopes and flats.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. This species was not observed during field surveys of SP II area. Nearest occurrence of diamond-petaled poppy is located approximately 3 miles south of the project area.</td>
</tr>
<tr>
<td>Alkali milk-vetch</td>
<td>Astragalus tener var. tener</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Alkaline vernal pools.</td>
<td>Very low to none. No alkali vernal pools in the project area. Nearest occurrence of this species is located approximately 4 miles west of the project area.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Federal Status</td>
<td>State Status</td>
<td>CNPS List</td>
<td>Habitat</td>
<td>Potential for Occurrence in Project Area</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-----------</td>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Showy madia</td>
<td>Madia radiata</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Valley and foothill grassland, cismontane woodland, chenopod scrub.</td>
<td>Very low to none. Suitable habitat limited for this species. Nearest occurrence of showy madia is located approximately 9 miles south of the project area.</td>
</tr>
<tr>
<td>Rayless ragwort</td>
<td>Senecio aphanactis</td>
<td>None</td>
<td>None</td>
<td>2</td>
<td>Cismontane woodland, coastal scrub.</td>
<td>Very low to none. No woodland or coastal scrub present in project area. Nearest occurrence of rayless ragwort is located approximately 4 miles northwest of the project area.</td>
</tr>
<tr>
<td>Large-flowered fiddleneck</td>
<td>Amsinckia grandiflora</td>
<td>E</td>
<td>E</td>
<td>1B</td>
<td>Cismontane woodland, valley and foothill grassland.</td>
<td>Very low to none. Due to intensive farming practices, the project area provides no suitable habitat for this species. Nearest occurrence of large-flowered fiddleneck is located approximately 7.5 miles south of the project area.</td>
</tr>
<tr>
<td>Recurved larkspur</td>
<td>Delphinium recurvatum</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Chenopod scrub, valley and foothill grassland on alkaline soil.</td>
<td>Very low to none. No suitable habitat present. Not observed during field surveys of SP II area. Nearest occurrence of recurved larkspur is located approximately 2.5 miles west of the project area.</td>
</tr>
<tr>
<td>Rose-mallow</td>
<td>Hibiscus lasiocarpus var. occidentalis</td>
<td>None</td>
<td>None</td>
<td>1B</td>
<td>Freshwater marshes and swamps in the Delta watershed.</td>
<td>Low. Directed surveys conducted in 2003 did not find this species in the project area. Nearest occurrence of this species is located approximately 0.5 mile north of the project area at the junction of Old River and Grant Line Canal.</td>
</tr>
<tr>
<td>Mason’s lilaeopsis</td>
<td>Lilaeopsis masonii</td>
<td>None</td>
<td>Rare</td>
<td>1B</td>
<td>Freshwater and brackish marshes and swamps.</td>
<td>Moderate to high. Suitable habitat is located along Old River and several occurrences of this species have been documented along Old River. Reported along Old River in 1994, but not observed since.</td>
</tr>
<tr>
<td>Mt. Diablo buckwheat</td>
<td>Eriogonum truncatum</td>
<td>None</td>
<td>None</td>
<td>1A</td>
<td>Chaparral, coastal scrub, valley and foothill grassland.</td>
<td>Very low to none. Only marginal habitat present. This species was not observed during field surveys for SP II area. Nearest occurrence of this species is located approximately 8 miles south of the project area.</td>
</tr>
<tr>
<td>Delta mudwort</td>
<td>Limosella subulata</td>
<td>None</td>
<td>None</td>
<td>2</td>
<td>Freshwater and brackish marshes and swamps.</td>
<td>Low. Suitable habitat is located along Old River but this species was not observed during surveys for SP II area. Nearest occurrence of this species is located approximately 3 miles north of the project area.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Federal Status</td>
<td>State Status</td>
<td>CNPS List</td>
<td>Habitat</td>
<td>Potential for Occurrence in Project Area</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-----------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>MAMMALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Joaquin kit fox</td>
<td>Vulpes macrotis mutica</td>
<td>E</td>
<td>T</td>
<td>N/A</td>
<td>Inhabits open, dry annual or perennial grasslands and scrublands with loose textured soils for denning.</td>
<td>Low. This species could cross through project area but no dens have been observed. Signs of kit fox observed approximately 1 mile west of the project area.</td>
</tr>
<tr>
<td>Riparian woodrat</td>
<td>Neotoma fuscipes riparia</td>
<td>E</td>
<td>SCS</td>
<td>N/A</td>
<td>Riparian areas along the San Joaquin, Stanislaus and Tuolumne Rivers.</td>
<td>Very low to none. Riparian habitats in the project area are not suitable for this species. Further, this species is known from the Tuolumne and Stanislaus River riparian areas. Nearest occurrence is located approximately 9 miles southeast of the project area.</td>
</tr>
<tr>
<td>San Joaquin pocket mouse</td>
<td>Perognathus inornatus</td>
<td>None</td>
<td>None</td>
<td>N/A</td>
<td>Grasslands and blue oak savannas.</td>
<td>Very low. Habitats in the project area are marginally suitable for this species, as the fields are cultivated and flood irrigated throughout the year. Nearest occurrence of this species is located approximately 2 miles south of the SPII area.</td>
</tr>
<tr>
<td>Western mastiff bat</td>
<td>Eumops perotis californicus</td>
<td>None</td>
<td>SCS</td>
<td>N/A</td>
<td>Roosts in crevices in cliff faces, high buildings, trees and caves.</td>
<td>Very low. This species could use trees in the project area for roosting but not for natal roosts. The nearest occurrence of this species is located approximately 9 miles south of the project area.</td>
</tr>
<tr>
<td><strong>BIRDS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swainson's hawk</td>
<td>Buteo swainsoni</td>
<td>None</td>
<td>T</td>
<td>N/A</td>
<td>Breeds in stands of tall trees in open areas. Requires adjacent suitable foraging habitats such as grasslands or alfalfa fields supporting rodent populations.</td>
<td>High. There are several suitable nest trees within the project area and nesting Swainson’s hawks were reported along Old River in 2007 and nearby along Kelso Road in 2002.</td>
</tr>
<tr>
<td>Burrowing owl</td>
<td>Athene cunicularia</td>
<td>SC</td>
<td>SCS</td>
<td>N/A</td>
<td>Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation, subterranean nester, dependent upon burrowing mammals.</td>
<td>High. Burrowing owls have been observed in the grasslands nearby, and suitable foraging and potential nesting habitat is present in the project area.</td>
</tr>
<tr>
<td>Tricolored blackbird</td>
<td>Agelaius tricolor</td>
<td>SC</td>
<td>None</td>
<td>N/A</td>
<td>Requires open water and protected nesting substrata, usually cattails, and surrounding foraging habitat of annual grassland.</td>
<td>Low. There is marginally suitable breeding habitat in the form of a narrow strip of rose and blackberries along the southern bank of Old River. This species was not observed during past surveys although it may occasionally by over or forage in the project area.</td>
</tr>
<tr>
<td>White-tailed kite</td>
<td>Elanus leucurus</td>
<td>SC</td>
<td>SCS</td>
<td>N/A</td>
<td>Nests in dense-topped trees associated with bottomlands or areas with scattered oaks.</td>
<td>Moderate to high. There is suitable nesting habitat within the project area although no nests have been recorded.</td>
</tr>
</tbody>
</table>
Table D-1 continued

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>CNPS List</th>
<th>Habitat</th>
<th>Potential for Occurrence in Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>California horned lark</td>
<td>Eremophila alpestris actica</td>
<td>None</td>
<td>SCS</td>
<td>N/A</td>
<td>Nests in grasslands and other similar habitats with short vegetation.</td>
<td>Moderate to low. Marginal nesting habitat is available in cultivated lands, but no nests have been recorded.</td>
</tr>
<tr>
<td>REPTILES AND AMPHIBIANS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California red-legged frog</td>
<td>Rana aurora draytonii</td>
<td>T</td>
<td>SCS</td>
<td>N/A</td>
<td>Lowland and foothills in or near permanent sources of deep water with</td>
<td>Very low. There is no suitable habitat for this species within the project area. However, red-legged frogs are known to be extinct on the floor of the Central Valley. The nearest occurrence is documented in the CNDDB in the foothills, approximately 1 mile west of the project area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of permanent water for larval development.</td>
<td></td>
</tr>
<tr>
<td>California tiger salamander</td>
<td>Ambystoma californiense</td>
<td>T</td>
<td>T, SCS</td>
<td>N/A</td>
<td>Seasonal water bodies without fish (i.e., vernal pools and stock ponds)</td>
<td>Very low to none. There is no suitable breeding habitat in the project area. The nearest occurrence is documented in the CNDDB approximately 1 mile west of the project area. There are at least two significant physical barriers (i.e., the California Aqueduct and the Delta Mendota Canal) between this occurrence and the project area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>with surrounding grassland/woodland habitats containing summer refugia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(i.e., burrows).</td>
<td></td>
</tr>
<tr>
<td>Western pond turtle</td>
<td>Emyx marmorata</td>
<td>None</td>
<td>SCS</td>
<td>N/A</td>
<td>Thoroughly aquatic, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying.</td>
<td>High. Old River and Mountain House Creek are suitable habitat for western pond turtle. The closest occurrence is documented by the CNDDB as just west of the project area in Old River.</td>
</tr>
<tr>
<td>Coast horned lizard</td>
<td>Phrynosoma coronatum</td>
<td>SC</td>
<td>SCS</td>
<td>N/A</td>
<td>Lowlands associated with washes and low-lying bushes.</td>
<td>Low. Habitat is very marginal, as a majority of the project area is cultivated.</td>
</tr>
<tr>
<td>Silvery legless lizard</td>
<td>Anniella pulchra pulchra</td>
<td>None</td>
<td>SCS</td>
<td>N/A</td>
<td>Moist sandy or loose soils beneath sparse vegetation.</td>
<td>Low. Habitat is very marginal due to cultivation and clay soils.</td>
</tr>
<tr>
<td>Western spadefoot</td>
<td>Spea hammondii</td>
<td>SC</td>
<td>SCS</td>
<td>N/A</td>
<td>Vernal pools and other seasonal water bodies are essential habitats for</td>
<td>Very low to none. No vernal pools are present in project area and Mountain House Creek is not suitable habitat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>breeding.</td>
<td></td>
</tr>
<tr>
<td>San Joaquin whipsnake</td>
<td>Masticophis lateralis ruddocki</td>
<td>SC</td>
<td>SCS</td>
<td>N/A</td>
<td>Open habitats such as grasslands and saltbush scrub. Small mammal</td>
<td>Very low to none. No suitable habitat is present due to intense cultivation of fields in project area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>burrows are required for oviposition sites.</td>
<td></td>
</tr>
</tbody>
</table>
Table D-1 continued

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status&lt;sup&gt;a&lt;/sup&gt;</th>
<th>State Status&lt;sup&gt;b&lt;/sup&gt;</th>
<th>CNPS List&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Habitat</th>
<th>Potential for Occurrence in Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FISH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall-run Chinook salmon</td>
<td><em>Oncorhynchus tshawytscha</em></td>
<td>None</td>
<td>SCS</td>
<td>N/A</td>
<td>Central Valley river systems where access to the ocean is possible; water temperatures must be less than 27°C.</td>
<td>Low. Fall-run Chinook salmon are present in the San Joaquin River system each year, generally starting in October. No spawning habitat is located within the project area, but fish may pass through Old River on the way to and from spawning areas farther upstream.</td>
</tr>
<tr>
<td>Central Valley steelhead</td>
<td><em>Oncorhynchus mykiss</em></td>
<td>T</td>
<td>SCS</td>
<td>N/A</td>
<td>Central Valley river systems where access to the ocean is possible; water temperatures must be less than 27°C.</td>
<td>Low. Central Valley steelhead are present in the San Joaquin River system starting in November. No spawning habitat is located within project area, but fish may pass through Old River on the way to and from spawning areas farther upstream.</td>
</tr>
<tr>
<td><strong>INVERTEBRATES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vernal pool fairy shrimp</td>
<td><em>Branchinecta lynchi</em></td>
<td>T</td>
<td>None</td>
<td>N/A</td>
<td>Vernal pools.</td>
<td>None. There are no vernal pools or seasonal ponds in the project area.</td>
</tr>
<tr>
<td>Curved-foot hygrotrus diving beetle</td>
<td><em>Hygrotus curvipes</em></td>
<td>None</td>
<td>None</td>
<td>N/A</td>
<td>Seasonally aquatic alkaline habitats such as roadside ditches and vernal pools.</td>
<td>None. There is no suitable habitat for this species in the project area.</td>
</tr>
<tr>
<td>Valley elderberry longhorn beetle</td>
<td><em>Desmocerus californicus dimorphus</em></td>
<td>T</td>
<td>None</td>
<td>N/A</td>
<td>Elderberry shrubs in the Central Valley and Sierra Nevada foothills up to 3,000 feet elevation.</td>
<td>None. No elderberry shrubs are present in the project area.</td>
</tr>
</tbody>
</table>

Note:  
- SPII = Specific Plan II  
- CNPS = California Native Plant Society  
- NA = Not applicable  
- CNDDB = California Natural Diversity Database  
- *T* = Threatened; *E* = Endangered; *C* = Candidate Species.  
- *T* = Threatened; *E* = Endangered; *SCS* = State of California Special Concern Species.  
- CNPS List 1A includes species presumed extinct in California, List 1B includes species that are rare, threatened, or endangered in California and elsewhere; List 2 includes species that are rare, threatened, or endangered in California but more common elsewhere.