

RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

FERRINI RANCH SUBDIVISION

SCH# 2005091055
PLN040758

VOLUME I OF II

PREPARED FOR:

**COUNTY OF MONTEREY RESOURCE MANAGEMENT AGENCY
PLANNING DEPARTMENT
168 W. Alisal Street, 2nd Floor
Salinas, CA 93901**

PREPARED BY:



JUNE 2014

RECIRCULATED DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR THE

FERRINI RANCH SUBDIVISION

SCH# 2005091055
PLN040758

Prepared for:

COUNTY OF MONTEREY
RESOURCE MANAGEMENT AGENCY
PLANNING DEPARTMENT
168 W. ALISAL STREET, 2ND FLOOR
SALINAS, CA 93901
Contact: John Ford, Senior Planner
(831) 755-5158

Prepared by:

PMC
60 Garden Court, Suite 230
Monterey, California 93940
Contact: Tad Stearn
(831) 644-9174

JUNE 2014

TABLE OF CONTENTS

1.0	Introduction.....	1-1
3.2	Air Quality	3.2-1
3.3	Biological Resources.....	3.3-1
3.13	Greenhouse Gas Emissions and Climate Change.....	3.13-1
4.0	Alternatives.....	4.0-1

1.0 INTRODUCTION

This Recirculated Draft Environmental Impact Report (RDEIR) has been prepared by the County of Monterey Resource Management Agency - Planning Department (hereinafter "County of Monterey"), as lead agency, pursuant to applicable provisions of the California Environmental Quality Act (CEQA) and its implementing guidelines (*CEQA Guidelines*). This RDEIR discloses revisions made to the Draft Environmental Impact Report (DEIR) prepared for the Ferrini Ranch Subdivision (hereinafter "proposed project") pursuant to Section 15088.5 of the *CEQA Guidelines*. A lead agency is required to recirculate an EIR when significant new information is added to the DEIR after public notice is given of the availability of the DEIR but before certification of the document. This RDEIR specifically reflects changes made to the following sections: **3.2, Air Quality**; **3.3, Biological Resources**; **3.13 Greenhouse Gas Emissions**; and **4.0, Alternatives**.

In preparing this RDEIR, the County of Monterey worked collaboratively with the EIR consultant and the project applicant to prepare the revised and recirculated material. To that end, the County allowed the applicant to provide a first draft of the revised EIR sections and supporting data to respond to public comments. All material was then peer reviewed and revised as necessary by the County's EIR consultant and ultimately reviewed by the County. The peer review of each section was designed to confirm factual information, analysis methods, feasibility of mitigation, and consistency with current regulatory requirements.

This approach was particularly useful for revisions to the Alternatives section of the EIR, which relied on the applicant's team to prepare an alternative site plan and associated analysis for Alternative 5. For the Biological Resources section, the County and EIR consultant retained the primary role of developing effective mitigation measures.

Key participants in the preparation of the RDEIR included the following:

- Lead Agency: (County of Monterey - John Ford, David Mack, Raul Martinez)
- EIR Consultant: (PMC – Tad Stearn, Joyce Hunting, Seth Myers, Ambient Air Quality and Noise Consulting)
- Applicant: (Denise Duffy Associates, Whitson Engineers, WRA Environmental Consultants, Wood Rodgers, Jack Freytag)

1.1 BACKGROUND AND PURPOSE

The application for the proposed project was deemed complete by the Planning Department in April 2005. The County of Monterey prepared and distributed a DEIR for the proposed project in August 2012. Upon completion of the DEIR, the County filed a Notice of Completion (NOC) with the State Office of Planning and Research, in accordance with Section 155085 of the CEQA Guidelines. This began a 57-day public review period (Public resources Code, Section 21161) for the DEIR, which ended on October 22, 2012.

Following the end of the public review period for the DEIR and review of the comment letters received, the County of Monterey determined that significant new information and/or issues were raised with respect to air quality, biological resources, greenhouse gas emissions and project alternatives. Monterey County is addressing the issues raised by recirculating relevant portions of the DEIR pursuant to Section 15088.5 of the CEQA Guidelines.

These changes are specifically limited to the following sections: **3.2, Air Quality**; **3.3, Biological Resources**; **3.13 Greenhouse Gas Emissions**; and **4.0, Alternatives**. Therefore, only these technical sections (and supporting analysis) are included in the RDEIR.

1.0 INTRODUCTION

Specifically, the air quality and greenhouse gas analysis and associated modeling have been updated to reflect more current and accepted methodology, updated regulations, and analysis tools. The revised biology section incorporates additional mitigation strategies to address the presence of California tiger salamander and other resources. Finally, the updated alternatives section includes a new alternative (Alternative 5) designed to further reduce the significant impacts of the project and more clearly documents the potential secondary effects of widening a portion of State Route 68 near the project.

1.2 ENVIRONMENTAL REVIEW PROCESS

This RDEIR, together with the previously circulated DEIR and responses to all public comments, will constitute the Final EIR (FEIR) for the project. The California Environmental Quality Act (CEQA) and the County of Monterey encourage public participation in the planning and environmental review process. Through this process, additional opportunities will be provided for the public to submit comments and communicate concerns regarding the project and its environmental consequences. These opportunities include the public review and comment period and public hearings before the County of Monterey Planning Commission. The review and certification process for the FEIR will involve the following procedural steps:

PUBLIC NOTICE/PUBLIC REVIEW

Upon completion of the RDEIR, the County of Monterey will file a Notice of Availability (NOA) with the State Office of Planning and Research at the same time it sends a notice of completion (NOC), in accordance with Section 15086 of the CEQA Guidelines. In addition, the County of Monterey will provide the NOA of the RDEIR for public review in accordance with CEQA Guidelines Sections 15087(a), and circulate the document to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the RDEIR in accordance with Public Resources Code 21092(b) and 21092.1. During the 45-day public review period, the RDEIR is available for review at the County of Monterey Resource Management Agency - Planning Department located at 168 West Alisal, 2nd Floor, Salinas, CA, 93901.

All written comments should be limited to the recirculated material and revised sections included in the RDEIR only. Comments should be submitted to:

John Ford, RMA Services Manager
David J. R. Mack, Associate Planner
County of Monterey Resource Management Agency - Planning Department
168 West Alisal, 2nd Floor
Salinas, CA 93901
Tel: (831) 755-5158

Email comments to: ceqacomments@co.monterey.ca.us.
Fax comments to: (831) 757- 9516

Comments pertaining to the revised sections are welcome during the 45-day public review period. Comments previously submitted on sections other than those being recirculated do not need to be resubmitted. Comments may be submitted in hard copy to the name and address above. The Planning Department also accepts comments via e-mail or facsimile but requests that you follow these instructions to ensure that the Department has received your comments.

An e-mailed document should contain the name of the person or entity submitting the comments and contact information such as phone number, mailing address and/or e-mail address and include any and all attachments referenced in the e-mail. To ensure a complete and accurate record, we request that you also provide a follow-up hard copy to the name and address listed above. If you do not wish to send a follow-up hard copy, then please send a second e-mail requesting confirmation of receipt of comments with enough information to confirm that the entire document was received. If you do not receive e-mail confirmation of receipt of comments, then please submit a hard copy of your comments to ensure inclusion in the environmental record or contact the Monterey County Resource Management Agency - Planning Department to ensure they have received your comments.

Facsimile (fax) copies will be accepted with a cover page describing the extent (e.g. number of pages) being transmitted. A faxed document must contain a signature and all attachments referenced therein. Faxed document should be sent to the contact noted above. To ensure a complete and accurate record, we request that you also provide a follow-up hard copy to the name and address listed above. If you do not wish to send a follow-up hard copy, then please contact the Monterey County Planning Department to confirm that the entire document was received.

RESPONSE TO COMMENTS/FINAL EIR

Upon completion of the 45-day public review period of this RDEIR, written responses to all significant environmental issues raised will be addressed in the FEIR. The FEIR will be made available for review at least 10 days prior to the public hearing before the final decision-making body, at which time the certification of the FEIR will be considered. The FEIR will consist of the DEIR, RDEIR, comments received, responses to comments on both the DEIR and RDEIR, and any resulting text changes.

The RDEIR consists primarily of revised Air Quality, Biological Resources, Greenhouse Gas Emissions and Alternatives sections. Comments on the revised sections are welcome and will be responded to. As these revised sections replace the applicable sections in the DEIR in their entirety, please note that previous comments received on the DEIR related to these sections will not be addressed.

CERTIFICATION OF THE EIR

If the County of Monterey finds that the FEIR is "adequate and complete," the County may certify the FEIR. The rule of adequacy generally holds that the EIR can be certified if: 1) it shows a good faith effort at full disclosure of environmental information, and 2) provides sufficient analysis to allow decisions to be made regarding the project in contemplation of environmental considerations.

PROJECT CONSIDERATION

Upon review and consideration of the FEIR, the County of Monterey may act upon the proposed project. A decision to approve the proposed project would be accompanied by written Findings in accordance with CEQA Guidelines Section 15091 and, if applicable, Section 15093 (Statement of Overriding Considerations).

3.2 AIR QUALITY

The air quality section of the EIR summarizes the existing topography, meteorology, climate, and air quality conditions at the project site; identifies potential air quality impacts related to the implementation of the proposed project; and presents mitigation measures to reduce or eliminate significant air quality impacts. This section is based on an Air Quality Impact Assessment prepared by Ambient Air Quality & Noise Consulting in February 2009, which is incorporated herein, and updated construction emission modeling by DD&A (April 2013). This section was prepared using information from the Monterey Bay Unified Air Pollution Control District (MBUAPCD), their respective air quality management plans and CEQA guidance documents. The Air Quality Impact Assessment prepared by Ambient Air Quality & Noise Consulting as well as the updated modeling print outs prepared by DD&A are incorporated as **Appendix B**. The reader is referred to Section 3.13, Greenhouse Gases and Climate Change, for a discussion of project impacts associated with greenhouse gas emissions.

3.2.1 ENVIRONMENTAL SETTING

The proposed project is located in the North Central Coast Air Basin (NCCAB), which is under the jurisdiction of the MBUAPCD. Dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability. The factors affecting the dispersion of air pollution with respect to the NCCAB are discussed below.

TOPOGRAPHY

The NCCAB encompasses Santa Cruz, San Benito, and Monterey counties. The NCCAB is generally bounded by the Diablo Range to the northeast, which together with the southern portion of the Santa Cruz Mountains forms the Santa Clara Valley that extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley transitions into the San Benito Valley, which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley that extends from Salinas at the northwest end to King City at the southeast end. The northwest portion of the NCCAB is dominated by the Santa Cruz Mountains.

METEOROLOGY AND CLIMATE

The climate of the NCCAB is dominated by a semi-permanent high pressure cell over the Pacific Ocean. In the summer, the dominant high pressure cell results in persistent west and northwest winds across the majority of coastal California. As air descends in the Pacific high pressure cell, a stable temperature inversion is formed. As temperatures increase, the warmer air aloft expands, forcing the coastal layer of air to move onshore producing a moderate sea breeze over the coastal plains and valleys. Temperature inversions inhibit vertical air movement and often result in increased transport of air pollutants to inland receptor areas.

In the winter, when the high pressure cell is weakest and farthest south, the inversion associated with the Pacific high pressure cell is typically absent in the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito valleys in the NCCAB. The predominant offshore flow during this time of year tends to aid in pollutant dispersal producing relatively healthful to moderate air quality throughout the majority of the region. Conditions during this time are often characterized by afternoon and evening land breezes and occasional rain storms. However, local inversions caused by the cooling of air close to the ground can form in some areas during the evening and early morning hours.

3.2 AIR QUALITY

Winter daytime temperatures in the NCCAB typically average in the mid 50s during the day, with nighttime temperatures averaging in the low 40s. Summer daytime temperatures typically average in the 60s during the day, with nighttime temperatures averaging in the 50s. Precipitation varies within the region, but in general, annual rainfall is lowest in the coastal plain and inland valley, higher in the foothills, and highest in the mountains.

SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics.

Sensitive land uses located near the project site consist primarily of residential dwellings. The nearest residential dwellings are located approximately 80 feet from the western property line, across San Benancio Road. Residential dwellings are also located approximately 190 feet north of the project site, across State Route 68. Additional sensitive land uses located in the vicinity of the project site include: San Benancio Middle School, which is located adjacent to the western boundary of the project site; and Toro Park Elementary School, which is located approximately 600 feet north of the project site, across State Route 68. In addition, the proposed project includes construction of residential dwellings, which would also be considered sensitive receptors.

Criteria Pollutants and Human Health

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The FCAA allows states to adopt additional or more health-protective standards. Common air pollutants, emission sources, and associated health and welfare effects are summarized in **Table 3.2-1**, Common Pollutant Sources and Adverse Effects. Within the NCCAB, the air pollutants of primary concern, with regard to human health, include ozone, carbon monoxide (CO), and particulate matter (PM). As depicted in **Table 3.2-1**, exposure to increased pollutant concentrations of ozone, PM, and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

**TABLE 3.2-1
COMMON POLLUTANT SOURCES AND ADVERSE EFFECTS**

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Particulate Matter (PM ₁₀ and PM _{2.5})	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O ₃)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NO _x) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Sulfur Dioxide (SO ₂)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO ₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Motor vehicles; electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: Ambient 2009

AMBIENT AIR QUALITY

Existing air quality concerns within the NCCAB are primarily related to increases of regional criteria air pollutants (i.e., ozone and particulate matter); and exposure of sensitive receptors to toxic air contaminants and odors. Existing air quality conditions and applicable regulatory background associated with these emissions of primary concern are discussed separately, as follows:

Localized Criteria Air Pollutants

Ambient air quality in the vicinity of the project site can be inferred from ambient air quality measurements conducted by the MBUAPCD at its Salinas #3 air quality monitoring station. **Table 3.2-2**, Summary of Ambient Air Quality Data summarizes the last three years of published data from the Salinas monitoring station.

3.2 AIR QUALITY

**TABLE 3.2-2
SUMMARY OF AMBIENT AIR QUALITY DATA**

Pollutant Standards	2009	2010	2011
Salinas #3 Air Monitoring Station			
Ozone (O ₃)			
Maximum concentration, 1-hr/8-hr period (ppm)	0.077/0.067	0.073/0.062	0.065/0/0.057
Number of days state standard exceeded	0	0	0
Number of days federal standard (1-hr/8-hr) exceeded	0/0	0/0	0/0
Carbon Monoxide (CO)			
Maximum concentration, 1-hr/8-hr period (ppm)	1.6/0.90	1.3/0.76	1.4/0.99
Number of days state (1-hr/8-hr) standard exceeded	0/0	0/0	0/0
Number of days federal (1-hr/8-hr) standard exceeded	0/0	0/0	0/ 0
Nitrogen Dioxide (NO ₂)			
Maximum 1-hour concentration (ppm)	0.040	0.036	0..040
Number of days state standard exceeded	0	0	0
Annual arithmetic mean (AAM)	0.006	0.006	0.006
AAM exceed federal standard?	0	0	0
Respirable Particulate Matter (PM ₁₀)			
Maximum 24-hour concentration (µg/m ³)	41.0	39.0	19.0
Number of days state standard exceeded (measured/estimated)	0/0	1/5.8	Not Available
Number of days federal standard exceeded	0	0	Not Available
Fine Particulate Matter (PM _{2.5})			
Maximum 24-hour concentration (µg/m ³)	18.7	16.2	15.1
Number of days federal standard exceeded *	0	0	0

Notes:

AAM = Annual Arithmetic Mean; µg/m³ = Micrograms per Cubic Meter; ppm = Parts per Million.

Source: California Air Resources Board 3/26/2013 (<http://www.arb.ca.gov/adam/index.html>)

As shown in **Table 3.2-2**, Summary of Ambient Air Quality Data, ambient air quality has exceeded the state PM₁₀ standard at the Salinas monitoring station during the past three years of available data. No other exceedances of state or federal ambient air quality standards (AAQS) for other pollutants have been measured at the Salinas monitoring station over the past three years. Ozone concentrations within the basin are generally decreasing. In the past, most ozone within the basin was the result of pollutant transport from the San Francisco Bay Area. With local growth, ozone air pollution from local sources is increasing.

Attainment Status for Criteria Air Pollutants

The attainment status of the NCCAB is summarized in **Table 3.2-3**, NCCAB Attainment Status Designations. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation(s) was caused by an exceptional event, as defined in the criteria. Unclassified designations indicate insufficient data is available to determine attainment status.

**TABLE 3.2-3
NCCAB ATTAINMENT STATUS DESIGNATIONS**

Pollutant	State Standards ¹	National Standards
Ozone (O ₃)	Nonattainment ²	Attainment/Unclassified ³
Inhalable Particulates (PM ₁₀)	Nonattainment	Attainment
Fine Particulates (PM _{2.5})	Attainment	Attainment/Unclassified ⁴
Carbon Monoxide (CO)	Monterey Co. – Attainment San Benito Co. – Unclassified Santa Cruz Co. - Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO ₂)	Attainment	Attainment/Unclassified ⁵
Sulfur Dioxide (SO ₂)	Attainment	Attainment ⁶
Lead	Attainment	Attainment/Unclassified ⁷

1) State designations based on 2009 to 2011 air monitoring data.

2) Effective July 26, 2007, the ARB designated the NCCAB a nonattainment area for the State ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.

3) On March 12, 2008, EPA adopted a new 8-hour ozone standard of 0.075 ppm. In April 2012, EPA designated the NCCAB attainment/unclassified based on 2009-2011 data, with a design value of 0.070 ppm.

4) In 2006, EPA revised the 24-hour standard for PM_{2.5} from 65 to 35 µg/m³. In 2009, EPA designated the NCCAB as attainment/unclassified.

5) In 2011, EPA indicated it plans to designate the entire state as attainment/unclassified for the 2010 NO₂ standard. Final designations have yet to be made by EPA.

6) In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 primary SO₂ standard. Final designations have yet to be made by EPA.

7) On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m³ to 0.15 µg/m³. Final designations were made by EPA in November 2011.

8) Nonattainment pollutants are highlighted in **Bold**.

Source: MBUAPCD 2013

Toxic Air Contaminants

Toxic air contaminants (TACs) are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of National or State Ambient Air Quality Standards. Instead, the U.S. EPA and California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In general, the terms HAPs and TACs are used interchangeably to describe essentially the same set of air pollutants. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), as required by the federal Clean Air Act Amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

At the state level, the ARB has authority for the regulation of emissions, including TACs, from motor vehicles, fuels, and consumer products. Within California, TACs are regulated primarily

3.2 AIR QUALITY

through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC.

At the local level, air districts have the authority over stationary or industrial sources. Projects that require air quality permits from the MBUAPCD are evaluated for TAC emissions. The MBUAPCD limits emissions and public exposure to TACs through a number of programs. The MBUAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The MBUAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

California Diesel-Risk Reduction Plan

In September 2000, the ARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with diesel-exhaust particulate matter (diesel-PM or DPM) and achieve a goal of 75 percent PM reduction by 2010 and 85 percent by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. Ongoing efforts of the ARB to reduce diesel-exhaust emissions from these sources includes the development of specific statewide regulations, which are designed to further reduce diesel PM emissions from these sources. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

Since the initial adoption of the DRRP in September of 2000, the ARB has adopted numerous rules and emissions standards related to the reduction of diesel-PM from mobile sources, as well as, the use of cleaner burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment. In July 2007, the ARB adopted regulation aimed at reducing diesel-PM generated by offroad equipment. This regulation requires the installation of diesel-PM control devices, such as particulate filters, for new equipment and encourages the replacement of older engines with newer emission controlled models. By 2020, diesel-PM from off-road equipment subject to this rule is anticipated to be reduced by approximately 74 percent (Ambient Air Quality and Noise Consultants 2009). See also more recent information about these rules at: http://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf.

Land Use Compatibility with TAC Emission Sources

The ARB published an informational guide entitled: "Air Quality and Land Use Handbook: A Community Health Perspective" (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. The ARB's Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined "buffer zones". It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies (ARB 2005). Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located within the distances identified. ARB-recommended separation distances for various TAC-emission sources are summarized in **Table 3.2-4**, ARB's Recommendations on Siting New Sensitive Land Uses Near Air Pollutant Sources.

TABLE 3.2-4
ARB'S RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES NEAR AIR POLLUTANT SOURCES

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	<ul style="list-style-type: none"> - Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perc. Dry cleaning operations.
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> - Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Notes: Recommendations are advisory, are not site specific, and may not fully account for future reductions in emissions, including those resulting from compliance with existing/future regulatory requirements, such as reductions in diesel-exhaust emissions anticipated to occur with continued implementation of the ARB's Diesel Risk Reduction Plan.

Source: Ambient 2009

Odors

Typically odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known

3.2 AIR QUALITY

as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and the MBUAPCD. The MBUAPCD has determined some common types of facilities that have been known to produce odors, including wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air quality regulations, the MBUAPCD has no rules or standards related to odor emissions other than its nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the MBUAPCD. No major stationary sources of odors have been identified in the vicinity of the project site.

3.2.2 REGULATORY SETTING

Air quality within the NCCAB is regulated by several jurisdictions including the United States Environmental Protection Agency (U.S. EPA), California Air Resources Board (ARB), and the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent. The following is a summary of applicable federal, state, and local regulations:

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish National AAQS (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. National AAQS are summarized in **Table 3.2-5**.

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

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California AAQS (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

**TABLE 3.2-5
SUMMARY OF NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards	National Standards	
			Primary ^(a)	Secondary ^(b)
Ozone (O ₃)	1-hour	0.09 ppm	–	Same as Primary
	8-hour	0.070 ppm	0.075 ppm	
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	–	
	24-hour	50 µg/m ³	150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	15 µg/m ³	
	24-hour	No Standard	35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	None
	8-hour	9 ppm	9 ppm	
	8-hour (Lake Tahoe)	6 ppm	–	

3.2 AIR QUALITY

Pollutant	Averaging Time	California Standards	National Standards	
			Primary ^(a)	Secondary ^(b)
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	0.053 ppm	Same as Primary
	1-hour	0.18 ppm	100 ppb	–
Sulfur Dioxide (SO ₂)	AAM	–	0.03 ppm	–
	24-hour	0.04 ppm	0.14 ppm	–
	3-hour	–	–	0.5 ppm
	1-hour	0.25 ppm	75 ppb	–
Lead	30-day Average	1.5 µg/m ³	–	–
	Calendar Quarter	–	1.5 µg/m ³	Same as Primary
	Rolling 3-Month Average	–	0.15 µg/m ³	Same as Primary
Sulfates	24-hour	25 µg/m ³	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm		
Vinyl Chloride	24-hour	0.01 ppm		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

Notes: AAM = Annual Arithmetic Mean; µg/m³ = Micrograms per Cubic Meter; ppm = Parts per Million.

Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr.

a. Levels necessary to protect the public health.

b. Levels necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: California Air Resource Control Board 6/7/2012

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, Sulfur Dioxide, and Nitrogen Dioxide by the earliest practical date. Plans for attaining CAAQS were initially submitted to ARB in June 1991. The CAAQS have undergone various amendments over the years. The current CAAQS are summarized in **Table 3.2-5**.

The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5-percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-

attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

California Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. These standards are codified in Title 24, Part 6, of the California Code of Regulations and are generally referred to as "Title 24 Standards." The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. These Standards address newly constructed buildings and additions and alterations to existing buildings. The Standards have, in combination with appliance efficiency standards and utility-sponsored incentive programs, strongly contributed to California's per capita electricity consumption levels remaining relatively flat since the mid-1970s. First adopted in 1977, the Standards have been periodically updated approximately on a three-year cycle. The most recent update, the 2008 Building Energy Efficiency Standards, went into effect on January 1, 2010. By reducing the heating and cooling demands of buildings, California's Energy Efficiency Standards result in decreased emissions associated with the use of natural gas fired appliances and electricity production. Reduction in energy consumption reduces the amount of air pollutants emitted by energy purveyors.

The Energy Commission is now updating the 2008 Standards. The upgraded Standards are planned to go into effect in conjunction with the triennial upgrade of the other parts of the California Building Standards Code, and be published as the 2013 California Energy Code. The Energy Commission's proposed 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The Standards, which take effect on January 1, 2014, offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.

Assembly Bills 1807 & 2588 - Air Toxics

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

LOCAL

Monterey Bay Unified Air Pollution Control District

The MBUAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the NCCAB, within which the project is located. Responsibilities of the MBUAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring

3.2 AIR QUALITY

ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The most recent *Air Quality Management Plan for the Monterey Bay Region* (AQMP) was adopted in August 2008, the sixth revision to the 1991 plan (MBUAPCD 2008b). In an attempt to achieve NAAQS and CAAQS and maintain air quality, the MBUAPCD has most recently completed the *2008 AQAP* for achieving the state ozone standards and the *2007 Federal Maintenance Plan* for maintaining federal ozone standards. The MBUAPCD has also adopted the *SB 656 Plan* for meeting state standards related to airborne particulate matter (MBUAPCD 2009).

To achieve and maintain ambient air quality standards, the MBUAPCD has adopted various rules and regulations for the control of airborne pollutants. The MBUAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- **Rule 424 (National Emissions Standards for Hazardous Air Pollutants).** This rule may apply to projects in which portions of an existing building would be renovated, partially demolished or removed. Prior to demolition activity, an asbestos survey of the existing structure may be required to identify the presence of any asbestos containing building materials (ACBM). Removal of identified ACBM must be removed by a certified asbestos contractor in accordance with CAL-OSHA requirements.
- **Rule 402 (Nuisances).** The purpose of this rule is to prohibit emissions that may create a public nuisance. Applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 438 (Open Outdoor Fires).** This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.2 of this rule applies to the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes. Individuals conducted burning associated with land development are required to obtain a written permit from the air district.
- **Rule 426 (Architectural Coatings).** The purpose of this rule is to limit emissions of volatile organic compounds from architectural coatings.
- **Rule 425 (Use of Cutback Asphalt).** The purposed of this rule is to limit emissions of vapors of organic compounds from the use of cutback and emulsified asphalt. This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- **Rule 439 (Building Removals).** The purpose of this rule is to limit particulate emissions associated with the removal and demolition of buildings.
- **Rule 207 (Review of New or Modified Sources).** The purpose of this rule is to provide a review of new or modified stationary air pollution sources to meet federal and state clean air act requirements. This rule provides mechanisms by which Authorities to Construct may be granted for stationary emissions sources without interfering with the attainment or maintenance of ambient air quality standards.

Monterey County General Plan

Policies

- 20.2.3 The County shall continue to support air quality monitoring and air pollution control strategies and enforcement by the Monterey Bay Unified Air Pollution Control District.
- 20.2.4 The County should operate in accordance with current regional, state, and federal air quality standards.
- 20.2.5 The County shall encourage the use of the best available control technology as defined in the most current Monterey Bay Unified Air Pollution Control District rules and regulations in reducing air pollution emissions.

3.2.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Criteria for determining the significance of air quality impacts were developed based on information contained in the California Environmental Quality Act Guidelines (CEQA Guidelines, Appendix G). According to those guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

- 1) Conflict with or obstruct implementation of any applicable air quality plan.
- 2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 3) 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).
- 4) Expose sensitive receptors to substantial pollutant concentrations.
- 5) Create objectionable odors affecting a substantial number of people.

To assist local jurisdictions in the evaluation of air quality impacts, the MBUAPCD has published the *CEQA Air Quality Guidelines* (MBUAPCD 2008a). This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the MBUAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed project would result in a significant air quality impact:

- **Short-term Emissions of Regional Criteria Air Pollutants.** Construction impacts would be significant if the proposed project would emit greater than 82 pounds per day (lbs/day) of PM10, or will cause a violation of PM10 National or State AAQS at nearby receptors. Construction projects using typical construction equipment that temporarily emit precursors of ozone (i.e., ROG or NOX), are accommodated in the emission inventories of State and federally-required air plans and would not have a significant impact on the attainment or

3.2 AIR QUALITY

maintenance of ozone AAQS. For this reason, the MBUAPCD has not established significance criteria for construction-generated precursors of ozone.

- **Long-Term Emissions of Regional Criteria Air Pollutants.** Regional (operational) impacts would be significant if the project generates direct and indirect emissions of ROG or NO_x that exceed 137 lbs/day. Emissions of PM₁₀ would be significant if the project would exceed 82 lbs/day or if the project would contribute to local PM₁₀ concentrations that exceed Ambient Air Quality Standards. Emissions of SO_x would be significant if the project generates direct emissions of greater than 150 lbs/day;
- **Local Mobile-Source CO Concentrations.** Local mobile-source impacts would be significant if the project generates direct emissions of greater than 550 lbs/day of CO or if the project would contribute to local CO concentrations that exceed the State Ambient Air Quality Standard of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Indirect emissions are typically considered to include mobile sources that access the project site but generally emit off-site; direct emissions typically include sources that are emitted on-site (e.g., stationary sources, on-site mobile equipment).
- **Toxic Air Contaminants.** TAC impacts would be significant if the project would expose the public to substantial levels of TACs so that the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million and/or so that ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the Maximally-Exposed Individual.
- **Odorous Emissions.** Odor impacts would be significant if the project has the potential to frequently expose members of the public to objectionable odors.
- **Cumulative impacts.** Cumulative impacts refer to the incremental effect of several projects that may have an individually minor, but collectively significant, impact on air quality. CEQA Guidelines Section 15355(b) defines cumulative impact as:
 - Two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts, and
 - The change in the environment which results from the incremental impact of the project when added to other closely related past, present, or reasonably foreseeable future projects, and can result from individually minor, but collectively significant, projects taking place over a period of time.

The MBUAPCD has provided guidance on the subject of cumulative impacts. In accordance with MBUAPCD CEQA Air Quality Guidelines (2008), project emissions which are not consistent with the AQMP would be considered to have a cumulative regional air quality impact. Consistency of population-related projects with the AQMP is assessed by comparing the projected population growth associated with the project to population forecasts adopted by the Association of Monterey Bay Area Governments (AMBAG). In addition, projects that would result in a significant regional air quality impact at the project level would also be considered to have a cumulative air quality impact.

Methodology

Methodologies employed for the analysis of short-term and long-term air quality impacts associated with the proposed project are discussed in more detail, as follows:

Short-term Regional Air Quality Impacts

The MBUAPCD recommends that construction-generated emissions of PM₁₀ be quantified and presented as part of the analysis of project-generated emissions. Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone (i.e., VOCs or NO_x) are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS. As a result, the MBUAPCD has not adopted a significance threshold for construction-generated emissions of ozone precursors. Emissions of PM_{2.5} are a subset of PM₁₀ emissions. The MBUAPCD has not adopted a separate significance threshold for construction-generated emissions of PM_{2.5} (MBUAPCD 2008).

In accordance with MBUAPCD recommendations, estimated construction-generated emissions of PM₁₀ were calculated using the ARB-approved URBEMIS2007 computer program based on default assumptions contained in the model and construction information provided by Whitson Engineers (April 2013). For informational purposes, emissions of ROG, NO_x, and PM_{2.5} were also quantified. The URBEMIS2007 program is designed to model construction emissions for land use development projects and allows for the input of project-specific information. Construction schedules used in the modeling were based on the proposed project phasing schedules, as summarized under Project Phasing in **Section 2.3** of this document. Each project phase was assumed to be constructed over an approximate 1-year period (i.e., Phase 1 in 2014, Phase 2 in 2015, Phase 3 in 2016 and Phase 4 in 2017).

Compressing the construction schedule in this way, maintaining the overall five-year construction period, and overlapping the phase types (demolition, grading, building construction, paving and coatings) results in a conservative methodology to ensure that the worst-case daily, annual and overall emission impacts are adequately disclosed. Grading activities were based on an analysis of proposed residential lot sizes and on information obtained from the proposed site plans prepared for this project (Whitson Engineers 2005 and April 2013).

Emissions associated with the demolition of existing structures were calculated using the URBEMIS computer program based on the size of the existing structures and assuming an average of two haul truck trips/hour for the transport of demolition material from the project site. All remaining construction-related information, including the duration of construction activities, equipment usage requirements, construction-related vehicle trips, usage rates, and emission factors were based on the default parameters contained in the URBEMIS computer model for Monterey County.

Long-term Regional Air Quality Impacts

Regional area- and mobile-source emissions were estimated using the URBEMIS2007 (Version 9.2.4) computer program for buildout conditions. Emissions were calculated for annual operational conditions based on the default parameters contained in the model for Monterey County. Default trip-generation rates contained in the model were revised to correspond with the trip-generation rates identified in the traffic analysis prepared for this project.

Local Air Quality Impacts

Localized concentrations of mobile-source carbon monoxide (CO) concentrations were quantitatively assessed for roadway intersections projected to operate at unacceptable levels of service (i.e., LOS E or worse) based on data obtained from the traffic analysis prepared for this

3.2 AIR QUALITY

project. Predicted 1-hour and 8-hour CO concentrations were assessed utilizing Caline4 screening methodology developed by the Bay Area Air Quality Management District and approved for use by the MBUAPCD. Background CO concentrations were based on the highest measured 1-hour and 8-hour CO concentrations (i.e., 2.5 and 1.2 ppm, respectively) obtained from the nearest air quality monitoring station for the last three years of available data (i.e., 2006-2008) for both near-term and future cumulative conditions¹. Traffic volumes were derived from the traffic analysis prepared for this project (Hatch Mott MacDonald 2010). Eight-hour concentrations were calculated based on predicted 1-hour concentrations and assuming a persistence factor of 0.7.

Exposure to localized concentrations of odors and TACs were qualitatively assessed based on the project's potential to result in increased exposure of sensitive receptors, including the nearby Toro Elementary School, to new or existing TAC emission sources.

Exposure of proposed sensitive receptors to mobile-source concentrations of diesel-exhaust PM were assessed utilizing land-use compatibility criteria recommended by the ARB (**Table 3.2-4**).

PROJECT IMPACTS AND MITIGATION MEASURES

Short-Term Exposure of Sensitive Receptors to Construction Emissions

Impact 3.2-1 Construction activities associated with implementation of the proposed project would generate temporary emission of criteria pollutants that could exceed MBUAPCD significance thresholds. This would be considered a **potentially significant short-term impact**.

Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. The construction of the proposed land uses and related improvements would result in the temporary generation of emissions resulting from site grading and excavation, road paving, the application of architectural coatings, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. According to the MBUAPCD, construction activities that involve minimal earth moving over an area of 8.1 acres, or more, could result in potentially significant temporary air quality impacts, if not mitigated. Construction activities that require more extensive site preparation (e.g., grading and excavation) may result in significant unmitigated impacts if the area of disturbance were to exceed 2.2 acres per day.

¹ Although the background CO concentrations used by the modeling effort were based on 2006-2008 air quality data, concentrations of CO have decreased with time due to reduced air pollutant emissions from automobiles. In addition, the project vicinity has seen no increased congestion or vehicle miles traveled since 2008 (Hatch Mott McDonald, 2013). The use of an earlier baseline results in a conservatively high CO concentration with project traffic and therefore, updating the model inputs would only further reduce an already less-than-significant impact due to CO concentrations at sensitive receptor locations near the roadways and intersections affected by the project.

Daily construction-generated emissions of ROG, NO_x, PM₁₀, and PM_{2.5} are summarized in **Table 3.2-6**. It is important to note, however, that ozone precursor pollutants (i.e., ROG and NO_x) from typical construction equipment are accommodated in the emission inventories of State- and federally-required air plans. For this reason, the MBUAPCD has determined that emissions of ozone-precursor pollutants from this project that would use only typical construction equipment would not have a significant impact on the attainment and maintenance of ozone AAQS. Therefore, MBUAPCD has not adopted a significance threshold for construction-generated emissions of ozone precursors. Emissions of PM_{2.5} are a subset of PM₁₀ emissions. The MBUAPCD has not adopted a separate significance threshold for construction-generated emissions of PM_{2.5}. However, for informational purposes, emissions of ozone precursor pollutants and PM_{2.5} were quantified in **Table 3.2-6**.

**TABLE 3.2-6
SHORT-TERM CONSTRUCTION GENERATED EMISSIONS (UNMITIGATED)**

Project Year	Maximum Daily Emissions (lbs/day) ¹			
	ROG	NO _x	PM ₁₀	PM _{2.5}
2014 (represents Phase 1)	75	20	146	31
2015 (represents Phase 2)	13	25	110	24
2016 (represents Phase 3)	11	23	75	16
2018 (represents Phase 4)	11	20	131	28
MBUAPCD Significance Threshold:	None	None	82	None

Notes: Based on URBEMIS2007 computer modeling for the Monterey County region and proposed project phasing schedules, construction information provided by applicant, and URBEMIS2007 default assumptions (DD&A, Urbemis2007 modeling, April 2013).

As depicted in **Table 3.2-6**, development of the proposed project would result in maximum uncontrolled emissions of approximately 146 lbs/day of PM₁₀. Maximum daily PM₁₀ emissions would occur during initial site preparation/grading of the project site and would vary, by project phase, depending on the overall area to be graded. Predicted daily emissions of PM₁₀ occurring during site preparation/grading would exceed the MBUAPCD's emissions threshold of 82 lbs/day without mitigation. Other phases of construction-related activities, such as asphalt paving, building construction, and application of architectural coatings, would generate daily emissions of PM₁₀ in excess of the MBUAPCD's recommended significance threshold. Since the predicted maximum daily emissions of PM₁₀ occurring during Phase 1, Phase 2, and Phase 4 would exceed MBUAPCD's emissions threshold of 82 lbs/day, this impact would be considered a **potentially significant impact**.

Mitigation Measure

- MM 3.2-1** Prior to issuance of any construction permits for on-site and off-site improvements, the project applicant shall prepare and submit a construction emissions reduction plan (CERP) for review and approval by the RMA Planning Department and MBUAPCD. The CERP will be incorporated into the improvement plans approved for all construction activity associated with the installation of infrastructure and development of the individual lots. The CERP will be deemed adequate based upon its ability to reduce construction-generated fugitive dust as shown in **Table 3.2-7**. The MBUAPCD shall be consulted to identify the specific measures to be implemented to minimize impacts to nearby sensitive receptors. Measures to be included in the CERP

3.2 AIR QUALITY

prepared for this project, as currently recommended by the MBUAPCD, include but are not limited to the following:

- Water all active construction areas at least twice daily depending on weather and soil moisture conditions. Frequency should be based on the type of operation, soil and wind exposure;
- Prohibit all grading activities during periods of high wind (sustained winds over 15 mph);
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days);
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed areas;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Replant vegetation in disturbed areas as quickly as possible.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles, such as dirt, sand, etc.
- Sweep daily, with water sweepers, all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily, with water sweepers, if visible soil materials are carried onto adjacent public streets.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Construction equipment shall not be left idling for periods longer than 5 minutes when not in use in accordance with current regulations.
- Post a publicly visible sign which specifies the telephone number and person to contact regarding emissions-related complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402 (Nuisance).

As shown in **Table 3.2-7**, the maximum construction-generated emissions associated with individual activities (i.e., demolition, grading, building construction) would be reduced to a maximum of approximately 66 lbs/day of PM₁₀ with the implementation of mitigation measure **MM 3.2-1**, specially the requirement to apply water on all disturbed areas and haul roads twice daily (DD&A, URBEMIS2007 modeling results, April 2013), and therefore mitigated construction-generated emissions of PM₁₀ would not exceed the MBUAPCD's significance threshold of 82 lbs/day. In addition, implementation of mitigation measure **MM 3.2-1** ensures that nearby

receptors, including the adjacent San Benancio Middle School and nearby Toro Elementary School, would also not be exposed to air pollutants that exceed applicable standards.

TABLE 3.2-7
SHORT-TERM CONSTRUCTION GENERATED PM₁₀ EMISSIONS
(MITIGATED WITH WATERING EXPOSED AREAS AND HAUL ROADS TWICE DAILY)

Project Phase	Maximum Daily Mitigated Emissions (lbs/day)
Phase 1	66
Phase 2	50
Phase 3	34
Phase 4	59
MBUAPCD Significance Threshold:	82
Exceeds Threshold After Mitigation?	No

Notes: Based on URBEMIS2007 computer modeling. Refer to detailed spreadsheets for modeling assumptions and results.

Source: DD&A, 2013

Short-term construction generated emissions would be reduced to a **less than significant level** with the implementation of the above mitigation, which reduces fugitive dust emissions associated with the project's construction activities, sufficiently reduces short-term construction-generated emissions to within acceptable levels, and ensures that on-site ground-disturbing activities do not exceed the MBUAPCD significance thresholds.

Long-term Emissions of Criteria Air Pollutants

Impact 3.2-2 Operational emissions associated with buildout of the proposed project would result in emission of criteria air pollutants that may exceed MBUAPCD's thresholds of significance. However, the predicted long-term direct and indirect operational emissions of ROG, NOX, PM10, SOX, and CO would not exceed MBUAPCD significance thresholds. Therefore, this would be considered a less than significant impact.

The proposed project's long-term operational emissions would be generated from regional area-sources and mobile-sources associated with the proposed land uses. Regional area-source and mobile-source emissions were estimated using the ARB-approved CalEEMod computer program, which includes options for the estimation of operational emissions for land use development projects. Vehicle trip generation rates for proposed land uses were based on data obtained from the transportation analysis prepared for this project (Hatch Mott MacDonald 2010). (The proposed winery-related land use would not result in emissions affecting the results in the table below.) In accordance with MBUAPCD recommendations, long-term operational emissions attributable to the proposed project were quantified assuming full buildout for both summer and winter conditions. To be conservative, emissions were modeled assuming a buildout year of 2019. Operational emissions are summarized in **Table 3.2-8**.

3.2 AIR QUALITY

**TABLE 3.2-8
LONG-TERM OPERATIONAL EMISSIONS (MAXIMUM DAILY EMISSIONS)**

Source	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO ⁽¹⁾	SO _x	PM ₁₀	PM _{2.5}
Area (Direct) Sources: Natural Gas	0.23	1.95	0.93	0.01	0.16	0.16
Hearth	0.74	0.00	0.04	0.00	0.51	0.51
Landscaping	0.54	0.21	17.79	0.00	0.10	0.10
Consumer Products	12.75	0.00	0.00	0.00	0.00	0.00
Architectural Coatings	3.16	0.00	0.00	0.00	0.00	0.00
Subtotal (Direct Sources):	17.42	2.16	18.76	0.01	0.77	0.77
Mobile (Indirect) Sources:	17.63	41.26	174.49	0.31	35.44	2.10
Total (Direct & Indirect):	35.05	43.42	193.25	0.32	36.21	2.87
MBUAPCD Significance Thresholds:	137	137	550(2)	150(2)	82	None
Exceeds Threshold? :	No	No	No	No	No	--

Notes: Emissions were estimated using the CalEEMod computer program, based on default model settings, and trip generation rates obtained from the traffic analysis prepared for this project (Hatch Mott MacDonald 2010).

1. Area source emissions of CO are based on winter operating conditions.

2. Applies to Direct Source Emissions Only.

Source: DD&A April 2013

As shown in **Table 3.2-8**, the predicted total operational emissions attributable to the proposed project during the summer months would be approximately 35 lbs/day of ROG, 43 lbs/day NO_x, 193 lbs/day of CO, 0.3 lbs/day of SO_x, 36 lbs/day of PM₁₀, and 3 lbs/day of PM_{2.5}. (During the winter months, the predicted operational emissions would total approximately 36 lbs/day of ROG, 45 lbs/day NO_x, 194 lbs/day of CO, 0.3 lbs/day SO_x, 36 lbs/day of PM₁₀, and 3 lbs/day of PM_{2.5}.) Based on the modeling conducted, predicted long-term direct and indirect operational emissions of ROG and NO_x would not exceed the MBUAPCD's significance thresholds of 137 lbs/day/pollutant. The maximum daily operational emissions of PM₁₀ would not exceed MBUAPCD significance threshold of 82 lbs/day. Likewise, operational emissions of SO_x and CO from direct sources would not exceed MBUAPCD significance thresholds of 150 and 550 lbs/day. Because project-generated emissions would not exceed the MBUAPCD's significance thresholds, this would be considered a **less than significant impact**.

Contribution to Local Mobile-Source CO Concentrations

Impact 3.2-3 The proposed project will increase traffic in the area where unacceptable levels of service exist at nearby signalized intersections along State Route 68, which could contribute CO emissions that may exceed applicable air quality standards. However, based on the modeling conducted, predicted maximum 1-hour and 8-hour CO concentrations would not exceed the more stringent CAAQS. Therefore, this would be considered a **less than significant impact**.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific

meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels. For this reason, modeling of CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F) (MBUAPCD 2008a). Unsignalized intersections projected to operate at unacceptable levels of service do not typically have sufficient traffic volumes, such that projected unacceptable levels of service at these intersections would typically result in localized concentrations of CO that would exceed applicable standards.

Implementation of the proposed project would result in unacceptable levels of service at existing nearby intersections during both the AM-peak and PM-peak commute hours. Predicted 1-hour and 8-hour CO concentrations at these intersections were modeled for both AM and PM peak hours. Localized CO concentrations were evaluated for both near-term (i.e., background plus project) and future (i.e., cumulative plus project) conditions. The predicted CO concentrations for background plus project and cumulative plus project traffic conditions are summarized in **Table 3.2-9** and **Table 3.2-10**, respectively.

**TABLE 3.2-9
PREDICTED LOCAL MOBILE SOURCE CARBON MONOXIDE CONCENTRATIONS BACKGROUND PLUS PROJECT**

Intersection	Predicted CO Concentrations (ppm)			
	AM-Peak Hour		PM-Peak Hour	
	1-Hour	8-Hour	1-Hour	8-Hour
State Route 68 and Josselyn Canyon Road	6.4	2.7	6.3	2.6
State Route 68 and Olmsted Road	6.7	2.8	6.9	2.9
State Route 68 and York Road	6.8	2.8	7.1	2.9
State Route 68 and Laureles Grade Road	6.9	2.9	7.3	3.0
State Route 68 and Corral de Tierra Road	6.8	2.8	7.3	3.0
State Route 68 and San Benancio Road	6.8	2.8	7.4	3.0
State Route 68 and Blanco Road	8.5	3.6	9.2	3.8
Blanco Road and Davis Road	7.7	3.3	8.7	3.7
CAAQS:	20.0	9.0	20.0	9.0
Predicted Concentrations exceed CAAQS? :	No	No	No	No

Notes Predicted concentrations were calculated based on Caline4 screening methodology developed by the BAAQMD and approved for use by the MBUAPCD. To ensure a conservative analysis, background concentrations were based on the highest measured value obtained from the nearest ambient air quality monitoring station for the last three years of available data (i.e., 2.5 and 1.2 ppm, respectively). 8-hour concentrations assume a persistence factor of 0.7.

Source: Ambient 2009

3.2 AIR QUALITY

**TABLE 3.2-10
PREDICTED LOCAL MOBILE SOURCE CARBON MONOXIDE CONCENTRATIONS CUMULATIVE PLUS PROJECT**

Intersection	Predicted CO Concentrations (ppm)			
	AM-Peak Hour		PM-Peak Hour	
	1-Hour	8-Hour	1-Hour	8-Hour
State Route 68 and Josselyn Canyon Road	8.0	3.2	7.8	3.2
State Route 68 and Olmsted Road	8.4	3.4	8.6	3.5
State Route 68 and York Road	8.4	3.5	8.7	3.5
State Route 68 and Laureles Grade Road	8.4	3.5	8.8	3.6
State Route 68 and Corral de Tierra Road	8.5	3.5	9.1	3.7
State Route 68 and San Benancio Road	8.4	3.4	8.9	3.6
State Route 68 and Blanco Road	8.6	3.6	9.7	4.0
Blanco Road and Davis Road	8.7	3.7	9.1	3.8
CAAQS:	20.0	9.0	20.0	9.0
Predicted Concentrations exceed CAAQS?:	No	No	No	No

Notes: Predicted concentrations were calculated based on Caline4 screening methodology developed by the BAAQMD and approved for use by the MBUAPCD. To ensure a conservative analysis, background concentrations were based on the highest measured value obtained from the nearest ambient air quality monitoring station for the last three years of available data (i.e., 2.5 and 1.2 ppm, respectively). 8-hour concentrations assume a persistence factor of 0.7.

Source: Ambient 2009

As shown in **Table 3.2-9**, under background plus project traffic conditions, the proposed project would contribute to maximum 1-hour and 8-hour CO concentrations at nearby intersections of approximately 9.2 and 3.8 ppm, respectively, or less. As shown in **Table 3.2-10**, under cumulative plus project traffic conditions, the proposed project would contribute to maximum 1-hour and 8-hour CO concentrations at nearby intersections of approximately 9.7 and 4.0 ppm, respectively. It is important to note that these estimates are based on conservative screening assumptions, and may not fully account for future reductions in mobile-source CO concentrations due to anticipated improvements in vehicle emissions standards. Based on the modeling conducted, predicted maximum 1-hour and 8-hour CO concentrations would not exceed the more stringent CAAQS. Since the traffic volumes and traffic flow conditions at other affected intersections and during other periods of the day would be anticipated to be less than the intersections included in this analysis, the predicted CO concentrations at other locations would, likewise, not be anticipated to exceed applicable air quality standards. Therefore, the proposed project's contribution to localized concentrations of mobile-source CO would be considered a **less than significant impact**.

Exposure of Sensitive Receptors to Odorous Emissions

Impact 3.2-4 The proposed project could result in the increased exposure of sensitive receptors to odor sources. However, the proposed project would not result in the installation of any major odor emission sources and no major sources of odors have been identified in the project vicinity. Therefore, this would be considered a **less than significant impact**.

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

The proposed project would not result in the installation of any major odor emission sources that would result in a potentially significant impact to the occupants of the proposed on-site or existing off-site land uses, including nearby Toro Elementary and San Benancio Middle schools. The proposed commercial land uses would consist of a wine-tasting and retail sales facility and would not involve on-site processing or manufacturing facilities or other processes that would be anticipated to emit odors. In addition, no major sources of odors have been identified in the project vicinity. As a result, this would be considered a **less than significant impact**.

Exposure of Sensitive Receptors to Toxic Air Contaminants (TAC)

Impact 3.2-5 Project-related, diesel particulate matter generated during construction would not be expected to create conditions where the probability of contracting cancer increases by greater than 10 in one million for nearby sensitive receptors, nor would acute health effects be anticipated. The proposed project would increase traffic along State Route 68, which may result in the generation of TACs, including diesel-exhaust PM emissions. Exposure to TACs, particularly mobile source TACs, may exceed MBUAPCD significance thresholds. However, the proposed project would not result in the installation of any major stationary sources of TACs and no major sources of TACs have been identified in the project vicinity. Therefore, this would be considered a **less than significant impact**.

The exposure of sensitive receptors to TACs associated with proposed development projects could potentially occur during both the construction and operational phases of the proposed project.

Short-Term Construction Emissions

Construction of the proposed project would result in temporary emissions of diesel-particulate matter (DPM) associated with the operation of on-road haul trucks and off-road construction equipment. As discussed previously, DPM is identified by ARB as a TAC. Health-related risks associated with emissions of DPM are primarily associated with long-term exposure and the associated risk of contracting cancer. For residential land uses, calculations of the cancer risk associated with exposure to TACs are typically made based on a 70-year period of exposure. However, the use of diesel-powered construction equipment associated with the proposed project would be temporary and episodic (especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations), and would occur over a relatively large area. Assuming an overall construction period of approximately five years, short-term construction activities would account for less than one percent of the 70-year exposure period typically used for the calculation of DPM cancer risk. Concentrations of mobile source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005).

3.2 AIR QUALITY

Furthermore, in July 2007 the ARB adopted regulation aimed at reducing DPM generated by off-road equipment. This regulation limits idling for no more than 5 minutes and will, in the future, require the installation of DPM control devices, such as particulate filters, for new equipment and encourages the replacement of older engines with newer emission controlled models. DPM reductions have been estimated to be reduced by approximately 74 percent with new regulations. For these reasons, diesel PM generated by project construction, would not be expected to create conditions where the increased probability of contracting cancer is greater than 10 in one million for nearby sensitive receptors, including for students, faculty and staff at Toro Elementary and San Benancio Middle schools. In addition, based upon the distance from the intensive construction activities to the sensitive receptors, DPM concentrations are anticipated to be substantially lower than the MBUAPCD thresholds for acute effects of DPM. Therefore, adverse non-cancer health effects from construction-related DPM emissions are not expected, and according to the MBUAPCD significance criteria for non-cancer health effects this impact would be less than significant. Therefore, short-term exposure to TACs would be considered a **less than significant impact**.

Long-Term Operational Emissions

Long-term increases in health risks can result from either the operation of new stationary sources of TACs in the vicinity of existing sensitive receptors, or by introducing new sensitive receptors to existing sources of TACs. Major stationary sources of TACs have not been identified within the vicinity of the project site. In addition, no major stationary sources of TACs would be developed as part of the proposed project. San Benancio Middle and Toro Elementary schools are greater than 500 feet from State Route 68. While some proposed residential parcels would be located within approximately 500 feet of State Route 68, predicted traffic volumes along this segment of State Route 68 average approximately 26,400 vehicles per day, which is substantially less than the minimum criterion established by the ARB for evaluation of TACs along major roadways (i.e., 50,000 vehicles per day). Therefore, further analysis of mobile-source TACs would not be required for the proposed project according to ARB and long-term exposure to TACs would be considered a **less than significant impact**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Regional Air Quality Impacts

Impact 3.2-6 Development of the proposed project combined with other reasonably foreseeable projects in the project vicinity, would contribute to increased air quality emission within NCCAB, which may result in the generation of emissions that would be inconsistent with the Monterey Bay Region Air Quality Management Plan. However, the Association of Monterey Bay Area Governments (AMBAG) made an evaluation of emission forecasts based on population projection and determined that the proposed project is consistent with the Monterey Bay Region Air Quality Management Plan. Therefore, this would be considered a **less than significant cumulative impact**.

In accordance with MBUAPCD *CEQA Air Quality Guidelines*, project emissions which are not consistent with the AQMP would be considered to have a cumulative regional air quality impact. As discussed previously, consistency of population-related projects with the AQMP is assessed by comparing the projected population growth associated with the project to population forecasts adopted by AMBAG. These population projections are used to generate emission forecasts upon which the AQMP is based.

A consistency evaluation of the proposed project was conducted by AMBAG on November 16, 2006 (AMBAG 2006) and reconfirmed on August 20, 2009 (AMBAG 2009). Based on the evaluation conducted by AMBAG, the proposed project was deemed consistent with the 2008 regional forecasts and the AQMP. In addition, as noted in **Impact 3.2-2**, long-term operational emissions associated with the proposed project would not exceed MBUAPCD significance thresholds. For these reasons, this would be considered a **less than significant cumulative impact**.

Cumulative Local Air Quality Impacts

Impact 3.2-7 Development of the proposed project, combined with other reasonably foreseeable projects in the project vicinity, would contribute to increased local air quality emissions. However, implementation of the proposed project would not result in the long-term operation of any major stationary sources of odors or TACs, and no major existing sources of emissions were identified in the project vicinity. In addition, increases in mobile-source emissions would not result in a significant contribution to either near-term or future cumulative localized concentrations of CO that would exceed applicable standards. Therefore, this would be considered a **less than significant cumulative impact**.

As discussed in **Impacts 3.2-4** and **3.2-5**, implementation of the proposed project would not result in the long-term operation of any major stationary sources of odors or TACs, and no major existing sources of emissions were identified in the project vicinity. In addition, as discussed in **Impact 3.2-3**, increases in mobile-source emissions would not result in a significant contribution to either near-term or future cumulative localized concentrations of CO that would exceed applicable standards. Therefore, the proposed project's cumulative contribution to local air quality impacts would be considered a **less than significant cumulative impact**.

3.2 AIR QUALITY

REFERENCES/DOCUMENTATION

Ambient Air Quality and Noise Consultants. (Ambient) 2009a. *Air Quality Impact Assessment for Ferrini Ranch Subdivision*. February 6, 2009.

Association of Monterey Bay Area Governments (AMBAG).

2006. *Letter from Todd Muck, AICP, Senior Planner, AMBAG to Pamela Lapham, Planner, PMC*. November 16, 2006.

2009. *Letter from Steph Nelson, Planner, AMBAG, to Pamela Lapham, Planner, PMC*. August 20, 2009.

California Air Resources Board (ARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective (Handbook)*.

DD&A, *Air Pollutant and Greenhouse Gas Modeling Results for Ferrini Ranch Subdivision*, April 2013.

Hatch Mott MacDonald. (HMM) 2010. *Ferrini Ranch Traffic Impact Analysis*. October 2010.

Monterey Bay Unified Air Pollution Control District (MBUAPCD).

2008a. *CEQA Air Quality Guidelines*. Adopted October 1996, Revision February 2008.

2008b. *2008 Air Quality Management Plan for the Monterey Bay Region. Sixth Revision to the 1991 Air Quality Management Plan*. August 2008. url: <http://www.mbuapcd.org>.

2009. *NCCAB Area Designations and Attainment Status*. January 2009. http://www.mbuapcd.org/mbuapcd/pdf/Attainment_Status_January_2009.pdf

Monterey, County of. (Monterey County). 1982. *Monterey County General Plan*. August 1982, as amended through November 5, 1996.

Staub Forestry and Environmental Consulting (Staub). 2006 *Forest Management Plan for Ferrini Ranch*. September 27, 2006.

U.S. Environmental Protection Agency (USEPA). 2005. url: <http://www.epa.gov/ebtpages/airairquality.html>

Whitson Engineers (Whitson). 2005. *Vesting Tentative Map Ferrini Ranch (Sheets 1 through 5)*. March 15, 2005.

3.3 BIOLOGICAL RESOURCES

3.3 BIOLOGICAL RESOURCES

This section of the Draft EIR evaluates individual resource and cumulative impacts to biological resources that could occur with implementation of the proposed project. The baseline information presented in this section is based on several technical reports and peer reviews of those reports.

WRA Environmental Consultants (WRA) prepared Biological Assessments in October 2006 and December 2007, a Wetland Delineation in January 2007 (WRA 2007b), and a Technical Memorandum regarding the Ferrini Ranch wildlife corridor in December 2008 (WRA 2008). Results of genetic testing of California tiger salamander were prepared in January 2009 (WRA 2009a), and proposed biological resource impact and mitigation measures were submitted in January 2009 (WRA 2009b). Denise Duffy & Associates prepared protocol-level surveys for western burrowing owl in March 2008 (DDA 2008a), surveys for California tiger salamander in September 2008 (DDA 2008b), and surveys for California red-legged frog in September 2008 (DDA 2008c). Staub Forestry and Environmental Consulting (Staub) prepared a Forest Management Plan in September 2006, which was supplemented in March 2010 (Staub 2006, 2010).

In addition, the project applicant has submitted a Section 404 Nationwide Permit application to the US Army Corps of Engineers (USACE) for the construction and placement of a footbridge over Harper Creek, a tributary to El Toro Creek. The USACE initiated Section 7 consultation on the California tiger salamander (CTS) with the US Fish and Wildlife Service in February 2009. A Biological Assessment was prepared by the project applicant and submitted to the US Fish and Wildlife Service (USFWS) in June 2009. Subsequently in May 2010, the California Fish and Game Commission listed the California tiger salamander as a threatened species under the California Endangered Species Act. An application for an Incidental Take Permit (ITP) was submitted to the California Department of Fish and Game (CDFG) [known as the Department of Fish and Wildlife (CDFW) since January 1, 2013] in July 2010 and supplemental information submitted in September 2010 and October 2012; however, if it is determined that take does not occur based on mitigation as proposed, an ITP will not be needed. An additional CTS trapping effort was undertaken by the applicant, and the results were reported to the California Department of Fish and Wildlife (CDFW) by Denise Duffy & Associates in June 2013.

All reports were prepared for the project applicant and peer reviewed by PMC biological resources staff. All final reports and peer reviews are included in **Appendix C**.

3.3.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The project site is located in Monterey County, California, in the Toro Area Plan planning area. The county contains a wide range of plant communities and habitat types, including fresh- and saltwater marshes, riparian woodland, oak woodland and savanna, grassland, coastal scrub, chaparral, broadleaf evergreen, coniferous forest, and mixed conifer forest. Coastal strand, wetlands, riparian woodland, and maritime chaparral are all considered severely limited or threatened. Monterey County's wildlife communities are varied and abundant. Some of the dominating communities consist of mountain lion, bobcat, coyote, birds of prey, boar, and seabirds.

LOCAL SETTING

The project site consists primarily of grazing land on rolling terrain that ranges in elevation from about 65 to 550 feet above sea level. The majority of the site is characterized by oak woodland

3.3 BIOLOGICAL RESOURCES

and annual grassland with some areas of scrub present in the upper slopes of drainages and south-facing slopes.

BIOLOGICAL COMMUNITIES

Biological communities (or habitats) on the project site were mapped based on a review of the Soil Survey of Monterey County (USDA 1978) and site visits conducted. The biological communities identified on the project site were classified as sensitive or non-sensitive habitats as defined by the California Environmental Quality Act (CEQA) and other applicable laws and regulations. According to the Biological Assessments, biological communities on the project site are divided as follows: approximately 49 percent of the project site contains non-sensitive habitat, and approximately 51 percent of the project site contains sensitive habitat as shown in **Figures 3.3-1a** and **3.3-1b** (WRA 2006, 2007a). The majority of the sensitive habitat on the site is coast live oak woodland and savanna. This habitat type is not identified as sensitive in the Biological Assessments, but has been treated by Monterey County as sensitive habitat in the analysis of similar projects.

Non-Sensitive Habitats

Non-sensitive habitats are those communities that are not protected under CEQA or other applicable laws, regulations, and ordinances. However, these communities may provide suitable habitat for special-status plant or wildlife species. Non-sensitive habitats on the project site are annual grasslands, coastal scrub, and developed land.

Annual Grassland

According to the Biological Assessments, approximately 400 acres, or 45 percent, of the project site comprises annual grasslands, located primarily in open areas of valleys and foothills (WRA 2006, 2007a). Annual grasslands are characterized by a mixture of non-native annual grasses and forbs along with scattered native grasses and wildflowers growing in fine-textured clay or loam soils that are somewhat poorly drained. Plant species observed on the project site include wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian rye-grass (*Lolium multiflorum*), and rattail fescue (*Vulpia myuros*). A low percentage of needlegrass (*Nasella* sp.), a native perennial species, was also observed in the grassland.

Annual grasslands provide foraging habitat for small mammals, which in turn serve as prey for a variety of other animals, including snakes, raptors (birds of prey), and coyotes (*Canis latrans*). Numerous invertebrate species, many of which provide a food source for larger animals such as lizards, birds, and some small mammals, can also be found in annual grassland communities. The annual grassland at the project site has a long history of intensive disturbance from farming and grazing and is currently utilized for grazing.

Coastal Scrub

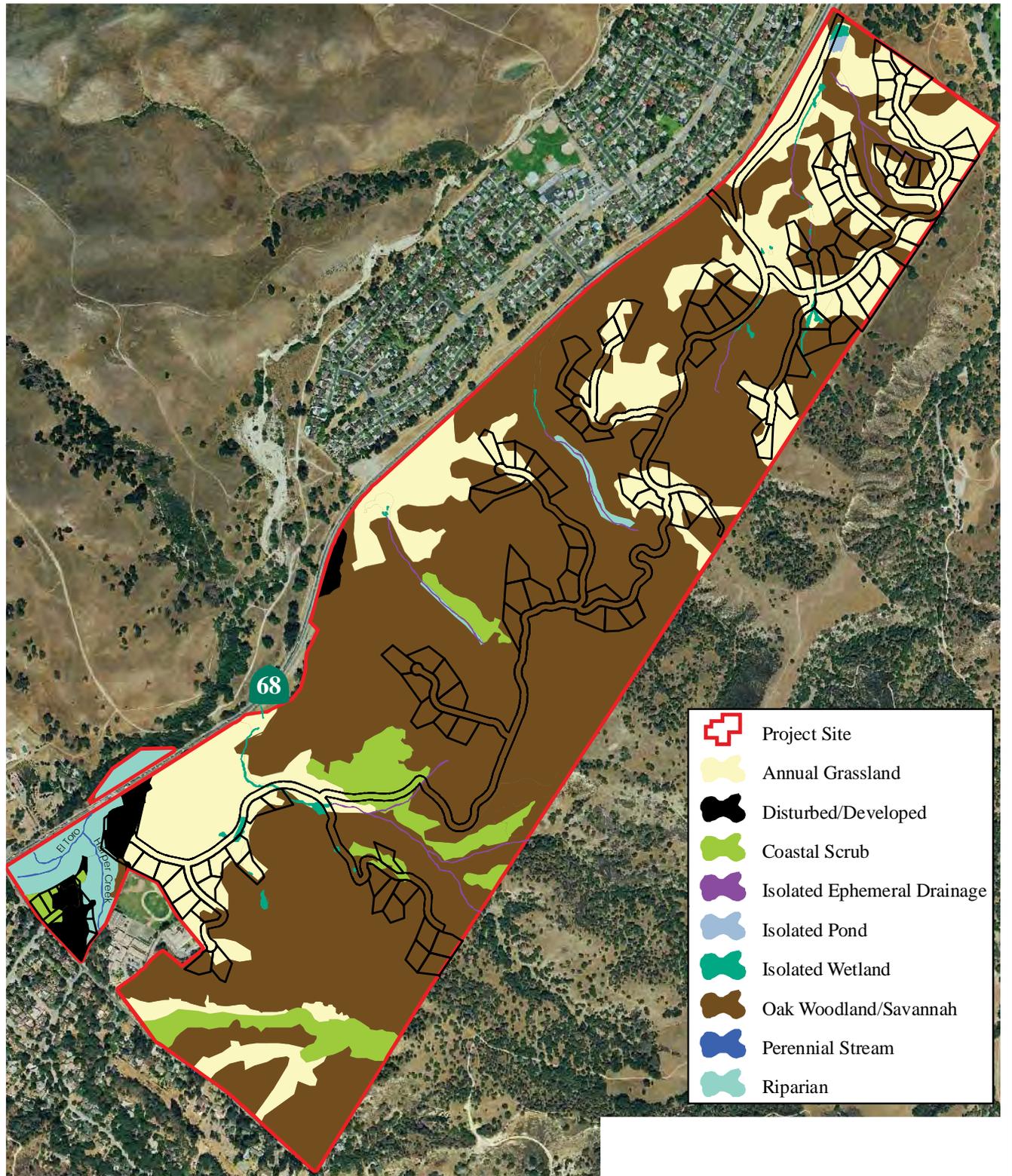
According to the Biological Assessments, approximately 3 percent, or 30 acres, of the project site comprises coastal scrub habitat, which is primarily located on the drier, steep south-facing slopes (WRA 2006, 2007a). Coastal scrub habitat is characterized by moderate to low growing evergreen and drought-tolerant shrubs that are adapted to shallow soils. Coastal scrub habitat on the project site is dominated by California black sage (*Salvia mellifera*) or coyote brush (*Baccharis pilularis*). Other species observed included sticky monkey flower (*Mimulus aurantiacus*) and California sagebrush (*Artemisia californica*).

Developed Land

According to the Biological Assessments, approximately 1 percent, or 9 acres, of the project site comprises developed land (WRA 2006, 2007a). The developed areas are associated with those structures within the Ferrini Ranch complex and ranching operations, as well as a small area south of Parcel E near Portola Drive.

3.3 BIOLOGICAL RESOURCES

This page is intentionally left blank.



Source: Denise Duffy & Associates, Inc.



FIGURE 3.3-1A
BIOLOGICAL COMMUNITIES - WESTERN PARCEL

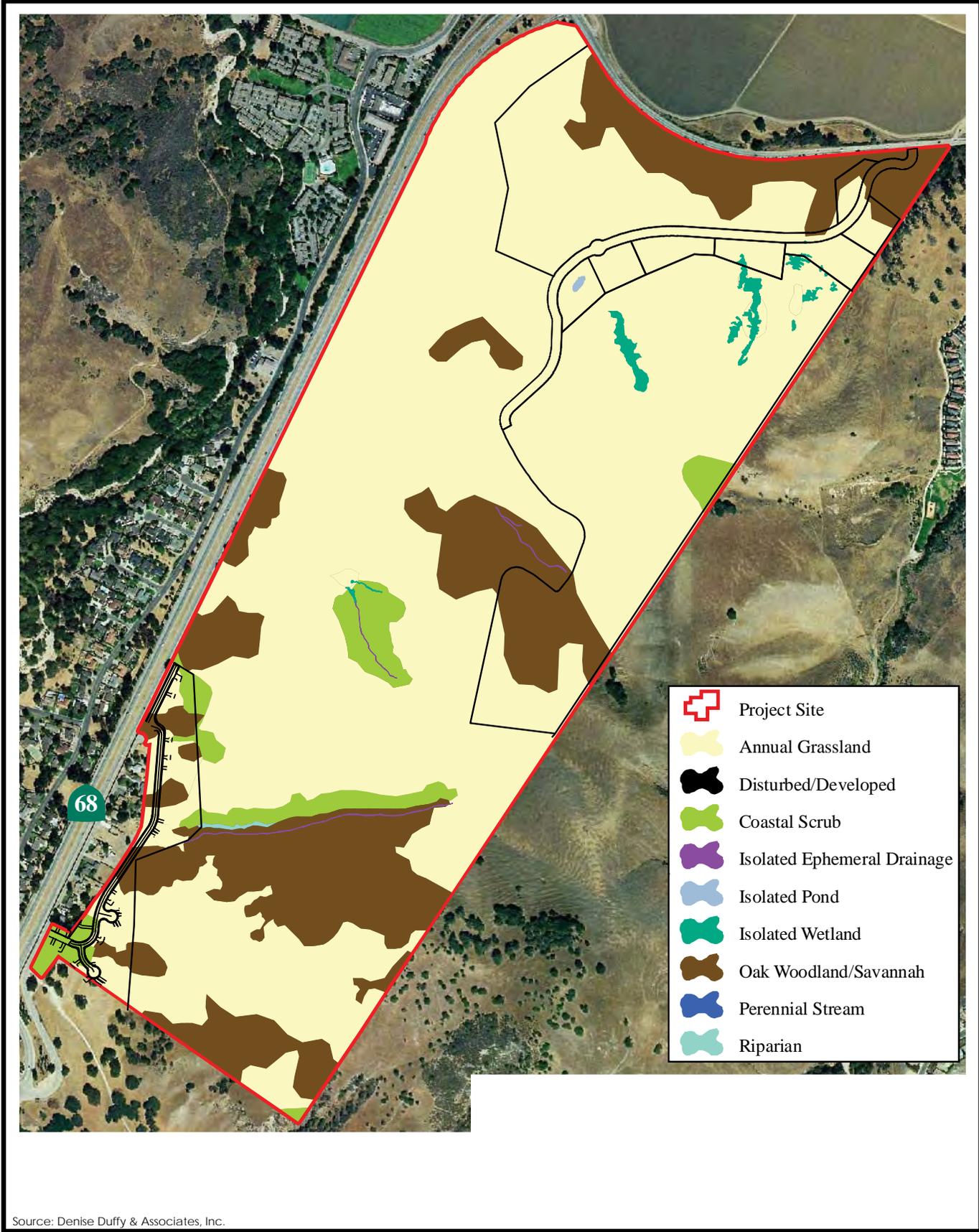


FIGURE 3.3-1B
BIOLOGICAL COMMUNITIES - EASTERN PARCEL

Sensitive Habitats

Sensitive habitats are those biological communities that are provided special protection under CEQA and other applicable laws, regulations, and ordinances. Sensitive habitats identified on the project site include oak woodland, riparian, and wetland.

Oak Woodland

According to the Biological Assessments, approximately 49 percent of the project site contains oak woodlands, which are dominated by open to nearly closed canopies of coast live oak (*Quercus agrifolia*) trees (WRA 2006, 2007a). According to the Forest Management Plan, approximately 24 acres are classified as having dense canopies and approximately 412 acres are classified as having moderate canopies. The 24 acres of dense canopies are primarily located on the mesic, north-facing slopes and the bottom of canyons. The 412 acres of moderate canopies (cover less than 25 percent) are primarily located on the drier, east-facing slopes and along the ridgelines.

The understory species of oak woodlands varies depending on local conditions, such as moisture availability and soil type. Common oak woodland understory species observed on the project site include oak leaf duff and sparse herbaceous vegetation. In the transitional areas between the dense woodlands and the grasslands, the understory consists of species common to the annual grassland habitat but may include additional wildflower species.

Oak woodlands are complex ecosystems that not only provide habitat for a variety of wildlife but also provide an array of additional benefits such as protection of water quality and quantity, erosion prevention and soil quality, and efficient carbon sequestration. In terms of habitat, the oak trees provide suitable nesting sites and cover for birds and many mammals. Woody debris and duff in the woodland understory provide foraging areas for small mammals and microclimates suitable for amphibians and reptiles. Acorns are a valuable food source for many animal species. Other representative animal species of oak-dominated woodlands include the arboreal salamander (*Aneides lugubris*), western screech owl (*Otus kennicottii*), scrub jay (*Aphelocoma corulescens*), and Virginia opossum (*Didelphis virginianus*).

Riparian

According to the Biological Assessments, approximately 1 percent, or approximately 12 acres, of the project site comprises riparian habitat (WRA 2006, 2007a). In the northwest corner of the project site at the confluence of El Toro Creek and Harper Creek, there is a riparian corridor, as shown in **Figure 3.3-2**. Riparian habitat identified on the project site consists of riparian woodland habitat located in the northwest corner of the project site near proposed Lots #1 through #15. This riparian woodland habitat is currently degraded in some locations due to the presence of debris and trash, soil compaction related to the use of dirt bikes, and the presence of invasive plant species in the understory. Within the riparian corridor, dominant plant species include California buckeye (*Aesculus californica*), willow (*Salix* spp.), California blackberry (*Rubus ursinus*), mugwort (*Artemisia douglasiana*), and poison oak (*Toxicodendron diversilobum*). In addition, ephemeral drainages transecting the project site from south to north provide marginal riparian habitat, supporting some California buckeye, but lack riparian species understory.

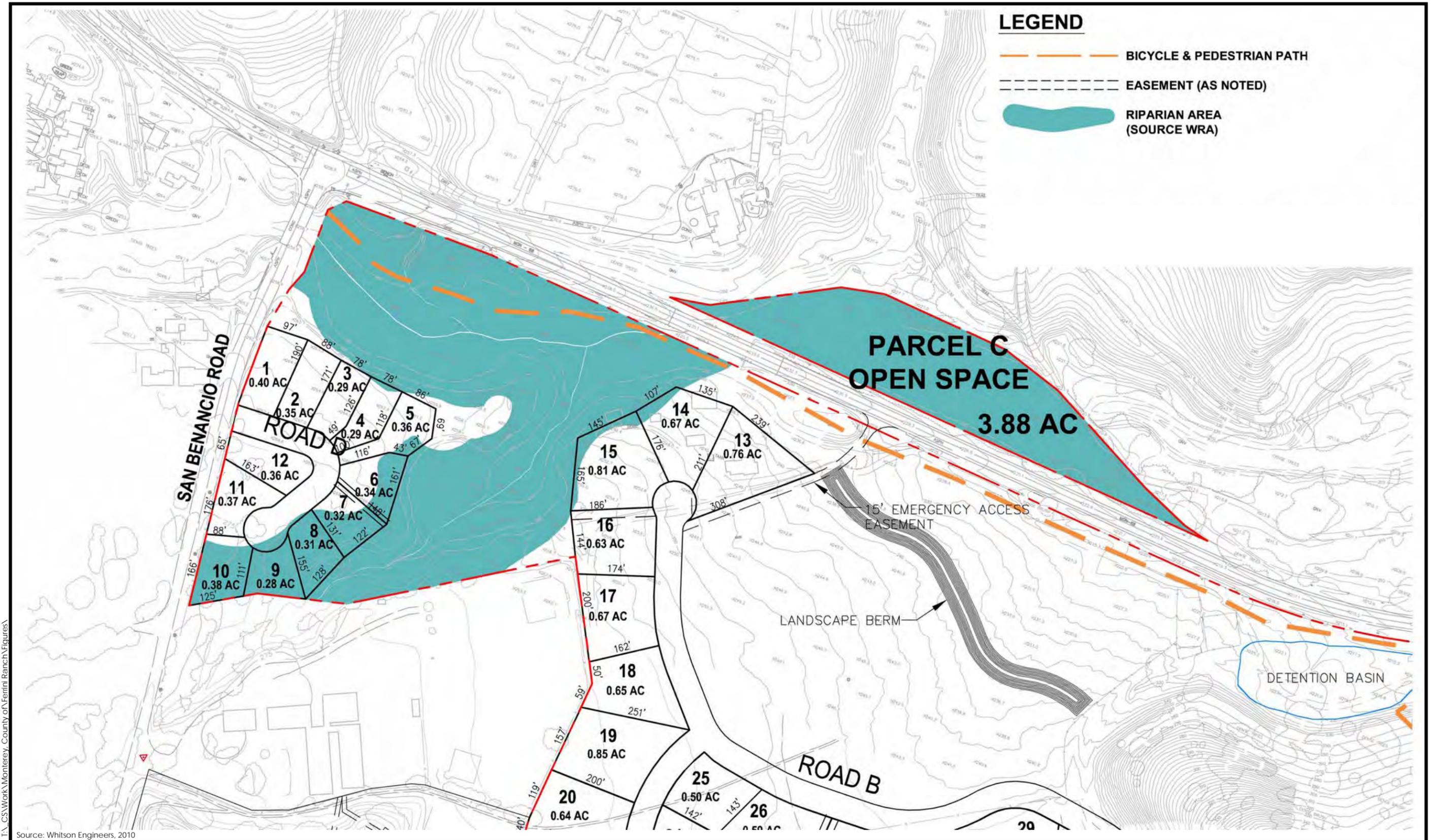
3.3 BIOLOGICAL RESOURCES

Wetlands and Other Waters

Figures 3.3-3a and **3.3-3b** identify the extent of jurisdictional waters on the project site based on a jurisdiction delineation (WRA 2007b). The USACE has reviewed the jurisdictional delineation and verified their jurisdiction under the Clean Water Act on December 18, 2007. The project applicant submitted a notification requesting authorization under a Section 404 Nationwide Permit in 2009, and the USACE has continued the jurisdictional determination while the authorization is being considered for the project (Christina Cavett-Cox, USACE, pers. comm., March 2013). In addition, the USACE has initiated Section 7 consultation with the US Fish and Wildlife Service and has requested a Biological Opinion from the USFWS related to the California tiger salamander.

Activities occurring in wetlands and other waters of the United States may be regulated by the USACE. Three criteria serve as a preliminary basis by the USACE to determine whether wetlands are within their jurisdiction. In accordance with Section 404 of the Clean Water Act, the feature must have (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the USACE, evidence of a minimum of one positive wetland indicator from each parameter (vegetation, hydrology, and soil) must be found in order to make a positive wetland determination. Other factors are employed to finalize the determination.

Areas that appear to lack a hydrological connection to navigable waters of the United States, one of its tributaries, or an adjacent jurisdictional wetland are considered to be exempt from Section 404 of the Clean Water Act. A hydrological connection is determined to be absent if (1) the wetland is located too far from another jurisdictional feature, and/or (2) the wetland does not have a discernable surface water connection that would allow surface water to be transported from the wetland into a jurisdictional feature. These wetland features are further described and categorized below.

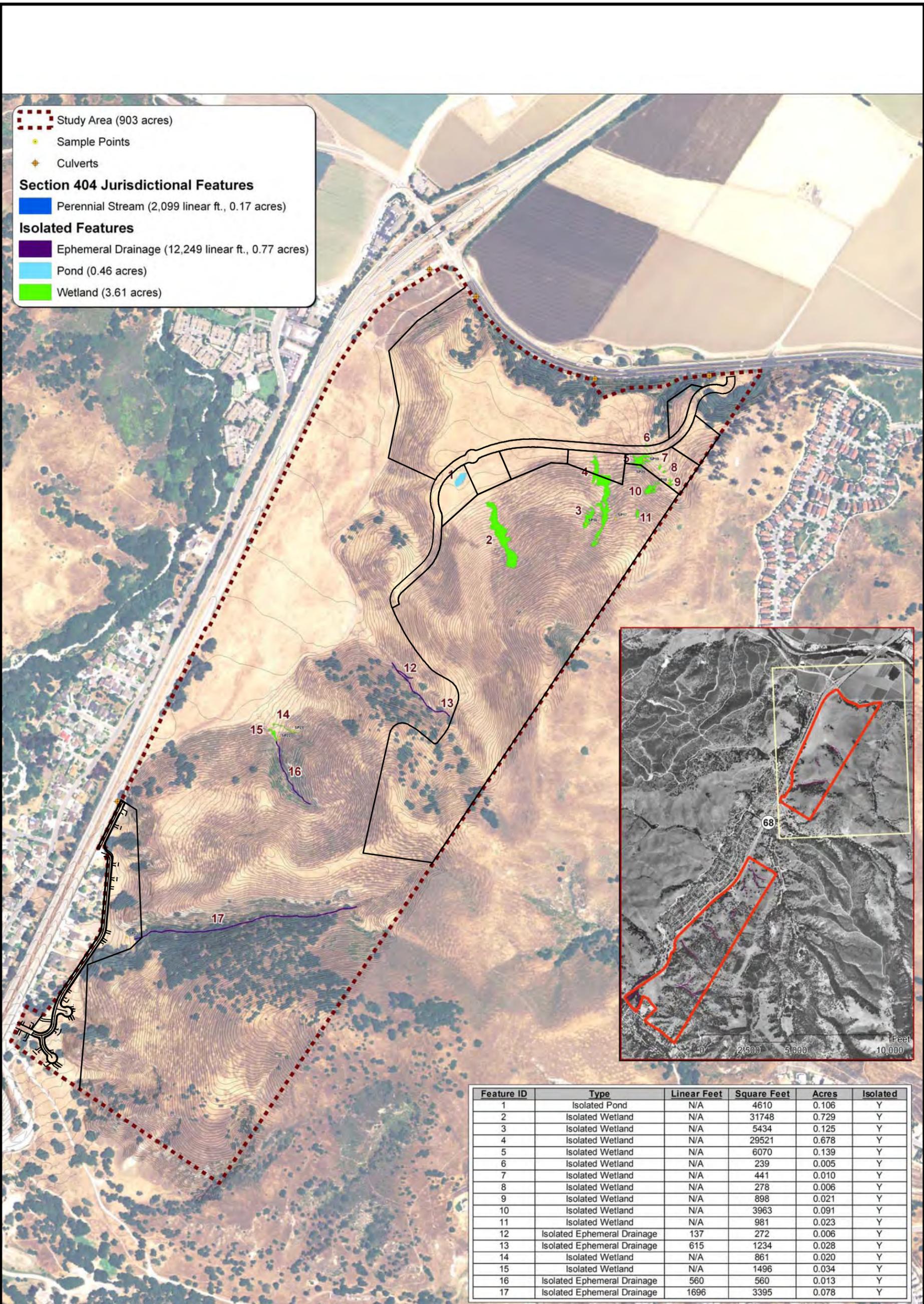


T:\CS\Work\Monterey County of Ferrini Ranch\Figures\

Source: Whitson Engineers, 2010

NOT TO SCALE

FIGURE 3.3-2
RIPARIAN AREA
PMC®



Feature ID	Type	Linear Feet	Square Feet	Acres	Isolated
1	Isolated Pond	N/A	4610	0.106	Y
2	Isolated Wetland	N/A	31748	0.729	Y
3	Isolated Wetland	N/A	5434	0.125	Y
4	Isolated Wetland	N/A	29521	0.678	Y
5	Isolated Wetland	N/A	6070	0.139	Y
6	Isolated Wetland	N/A	239	0.005	Y
7	Isolated Wetland	N/A	441	0.010	Y
8	Isolated Wetland	N/A	278	0.006	Y
9	Isolated Wetland	N/A	898	0.021	Y
10	Isolated Wetland	N/A	3963	0.091	Y
11	Isolated Wetland	N/A	981	0.023	Y
12	Isolated Ephemeral Drainage	137	272	0.006	Y
13	Isolated Ephemeral Drainage	615	1234	0.028	Y
14	Isolated Wetland	N/A	861	0.020	Y
15	Isolated Wetland	N/A	1496	0.034	Y
16	Isolated Ephemeral Drainage	560	560	0.013	Y
17	Isolated Ephemeral Drainage	1696	3395	0.078	Y

I:_CS\Work\Monterey County\Ferrini Ranch\Figures

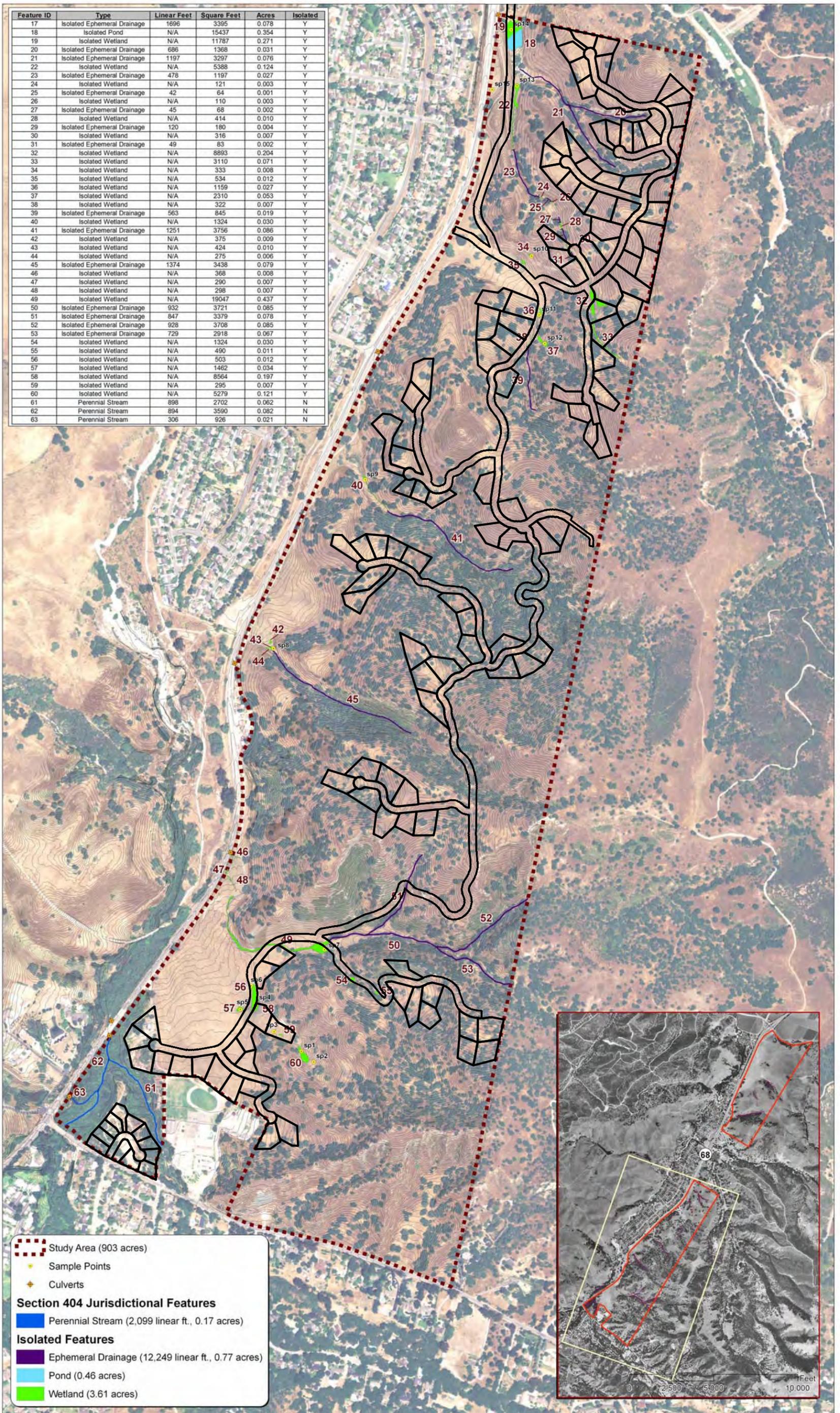
Source: WRA, 2007



FIGURE 3.3-3A
WETLANDS & OTHER WATERS - WESTERN PARCEL



Feature ID	Type	Linear Feet	Square Feet	Acres	Isolated
17	Isolated Ephemeral Drainage	1696	3395	0.078	Y
18	Isolated Pond	N/A	15437	0.354	Y
19	Isolated Wetland	N/A	11787	0.271	Y
20	Isolated Ephemeral Drainage	686	1368	0.031	Y
21	Isolated Ephemeral Drainage	1197	3297	0.076	Y
22	Isolated Wetland	N/A	5388	0.124	Y
23	Isolated Ephemeral Drainage	478	1197	0.027	Y
24	Isolated Wetland	N/A	121	0.003	Y
25	Isolated Ephemeral Drainage	42	64	0.001	Y
26	Isolated Wetland	N/A	110	0.003	Y
27	Isolated Ephemeral Drainage	45	68	0.002	Y
28	Isolated Wetland	N/A	414	0.010	Y
29	Isolated Ephemeral Drainage	120	180	0.004	Y
30	Isolated Wetland	N/A	316	0.007	Y
31	Isolated Ephemeral Drainage	49	83	0.002	Y
32	Isolated Wetland	N/A	8893	0.204	Y
33	Isolated Wetland	N/A	3110	0.071	Y
34	Isolated Wetland	N/A	333	0.008	Y
35	Isolated Wetland	N/A	534	0.012	Y
36	Isolated Wetland	N/A	1159	0.027	Y
37	Isolated Wetland	N/A	2310	0.053	Y
38	Isolated Wetland	N/A	322	0.007	Y
39	Isolated Ephemeral Drainage	563	845	0.019	Y
40	Isolated Wetland	N/A	1324	0.030	Y
41	Isolated Ephemeral Drainage	1251	3756	0.086	Y
42	Isolated Wetland	N/A	375	0.009	Y
43	Isolated Wetland	N/A	424	0.010	Y
44	Isolated Wetland	N/A	275	0.006	Y
45	Isolated Ephemeral Drainage	1374	3438	0.079	Y
46	Isolated Wetland	N/A	368	0.008	Y
47	Isolated Wetland	N/A	290	0.007	Y
48	Isolated Wetland	N/A	298	0.007	Y
49	Isolated Wetland	N/A	19047	0.437	Y
50	Isolated Ephemeral Drainage	932	3721	0.085	Y
51	Isolated Ephemeral Drainage	847	3379	0.078	Y
52	Isolated Ephemeral Drainage	928	3708	0.085	Y
53	Isolated Ephemeral Drainage	729	2918	0.067	Y
54	Isolated Wetland	N/A	1324	0.030	Y
55	Isolated Wetland	N/A	490	0.011	Y
56	Isolated Wetland	N/A	503	0.012	Y
57	Isolated Wetland	N/A	1462	0.034	Y
58	Isolated Wetland	N/A	8564	0.197	Y
59	Isolated Wetland	N/A	295	0.007	Y
60	Isolated Wetland	N/A	5279	0.121	Y
61	Perennial Stream	898	2702	0.062	N
62	Perennial Stream	894	3590	0.082	N
63	Perennial Stream	306	926	0.021	N



I:_CS\Work\Monterey County\Ferrini Ranch\Figures

Source: WRA, 2007

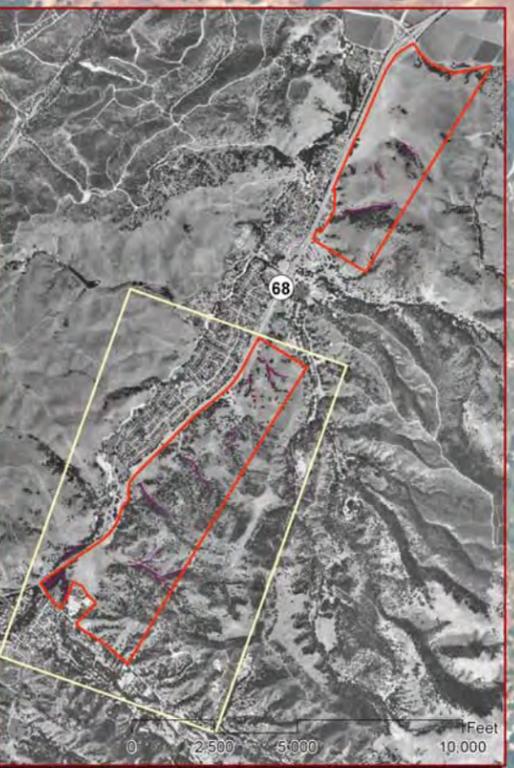
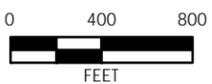


FIGURE 3.3-3B
WETLANDS & OTHER WATERS - EASTERN PARCEL

Seasonal and Seep Wetlands (3.61 acres)

Wetlands on the project site occur primarily as seasonal wetlands and seep wetlands. Seasonal wetlands are located in depressions or flat areas that are inundated with ephemeral water for a sufficient period of time to sustain a community of wetland-adapted plant species and hydric soil conditions. Seasonal wetlands on the project site are primarily located at the mouths of the ephemeral drainages. Seep wetlands occur on foot slopes and sand toe slopes where groundwater intersects with the soil surface. Seep wetlands on the project site occur at ephemeral drainages and perennial drainages. Both seasonal and seep wetland habitats on the project site are dominated by wetland plant species including iris-leaved rush (*Juncus xiphioides*), Mexican rush (*Juncus mexicanus*), cut-leaf plantain (*Plantago coronopus*), bermudagrass (*Cynodon dactylon*), and Hyssop's loosestrife (*Lythrum hyssopifolia*). None of these wetlands were determined to be jurisdictional under Section 404 of the Clean Water Act. However, they may be considered waters of the State by the Central Coast Regional Water Quality Control Board.

Seasonal Ponds (0.46 acres)

There are two seasonal ponds on the project site, one on the eastern parcel and another on the western parcel. The larger of the two, "Pond 18" as identified in the USACE-verified wetland delineation, is 0.35 acres in size and during normal and wet years holds water for several months. The smaller feature, Pond 1, is a shallow depression that holds water following rain events only and is heavily trampled by cattle. These ponds were determined not to be jurisdictional under Section 404 of the Clean Water Act; however, they are considered waters of the State by the Central Coast Regional Water Quality Control Board and subject to regulation under state law.

Ephemeral Drainages (0.77 acres)

There are approximately 12,249 linear feet (0.77 acres) of ephemeral drainages on the project site. According to the USACE, none of the ephemeral drainages were determined to be jurisdictional under Section 404 of the Clean Water Act (WRA 2007a). Ephemeral drainages occur in swales where water flow is restricted to peak rainfall events that create defined drainage channels with defined high water marks. Ephemeral drainages occur throughout the project site and primarily flow from east to west. These drainages were determined not to be jurisdictional under Section 404 of the Clean Water Act; however, they are considered waters of the State by the Central Coast Regional Water Quality Control Board.

Perennial Streams (0.17 acres)

Approximately 2,099 linear feet (0.17 acres) of perennial streams occur on the project site and are classified as potential jurisdictional area. This area includes the confluence of El Toro Creek and Harper Creek in the northwestern portion of the project site. This is where the riparian corridor is located. The perennial waters were determined to be waters of the United States under Section 404 of the Clean Water Act.

Readers are directed to Draft EIR **Appendix C** for additional detail regarding delineated on-site wetlands.

SPECIAL-STATUS SPECIES

In general, special-status species include plants and wildlife that are listed, proposed for listing, or candidates for listing as threatened or endangered or proposed or candidates for these

3.3 BIOLOGICAL RESOURCES

listings by the US Fish and Wildlife Service (USFWS); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW); plants occurring on Lists 1B or 2 of the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (1994); and animals designated as species of special concern by the CDFW. The USFWS, California Natural Diversity Database (CNDDDB), and California Native Plant Society (CNPS) inventory identify special-status species that may be affected by projects in Monterey County.

Plant Species

Based on literature review (e.g., CNPS Inventory of Rare and Endangered Plants), soil survey analysis, on-site survey observations, and species' range information, 38 special-status species of plants have been documented in the vicinity of the project site as shown in Appendix B of the Biological Assessment (WRA 2007a), which is included as **Appendix C** of this Draft EIR. Rare plant surveys conducted by Denise Duffy & Associates in April, May, and September 2007 identified three special-status plant species on the project site (included in WRA 2007a), which are discussed below.

Congdon's Tarplant (*Centromadia = Hemizonia parryi* ssp. *congdonii*)

The CNPS lists Congdon's tarplant as a rare, threatened, or endangered species in California and elsewhere (List 1b). This plant is a spring to fall blooming native annual herb commonly found in valley and foothill grassland habitats. The lower elevation grasslands in the project area host several populations of this species.

Pacific Grove Clover (*Trifolium tridentatum* var. *polyodon*, syn. *Trifolium polyodon*)

Pacific Grove clover is listed as "rare" by the CDFW and as California Rank 1B-B by the California Native Plant Society. This plant species is a variety of annual clover, a spring blooming native annual forb/herb commonly found within closed-cone coniferous forests, coastal prairie, meadows and seeps, broadleaved upland forest, and cismontane woodland habitats. This species was identified in wetland and mesic areas within grassland, coast live oak woodland/savanna, and riparian woodland habitats in the southern portion of the project site.

Mt. Diablo Cottonweed (*Mircropus amphibolus*)

Mt. Diablo cottonweed is listed as a plant about which more information is needed by the CNPS (List 3). Mt. Diablo cottonweed is an annual herb that occurs in broadleaved upland forests, chaparral, cismontane woodlands, and rocky grasslands at elevations from 150 to 2705 feet asl. It blooms between March and May. Mt. Diablo cottonweed is found in grassy areas of the oak savanna habitats on the project site.

Listed and Special-Status Wildlife

Seventy-five special-status wildlife species have been recorded in the vicinity of the project site, as shown in Appendix B of the Biological Assessment (WRA 2007a), which is included as **Appendix C** of this Draft EIR. The project site has moderate to high potential to support 27 of these special-status wildlife species, as shown in **Table 3.3-1**.

**TABLE 3.3-1
POTENTIAL SPECIAL-STATUS WILDLIFE SPECIES**

Common Name	Scientific Name	Status	
		Federal	State
Reptiles and Amphibians			
California tiger salamander	<i>Ambystoma californiense (potential hybrid)</i>	T	T
Coast Range newt	<i>Taricha torosa torosa</i>	None	CSC
Western spadefoot toad	<i>Spea hammondi</i>	None	CSC
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	None	CSC
Coast (California) horned lizard	<i>Phrynosoma coronatum frontale</i>	None	CSC
Two-striped garter snake	<i>Thamnophis hammondi</i>	None	CSC
Birds			
Cooper's hawk	<i>Accipiter cooperi (nesting)</i>	None	CSC
Sharp-shinned hawk	<i>Accipiter striatus (nesting)</i>	None	CSC
Golden eagle	<i>Aquila chrysaetos (nesting)</i>	None	CSC, CFP
Ferruginous hawk	<i>Buteo regalis</i>	None	CSC
Northern harrier	<i>Circus cyaneus</i>	None	CSC
White-tailed kite	<i>Elanus leucurus</i>	None	CFP
Merlin	<i>Falco columbarius</i>	None	CSC
Prairie falcon	<i>Falco mexicanus (nesting)</i>	None	CSC
American peregrine falcon	<i>Falco peregrinus anatum</i>	E	E, CFP
Long-eared owl	<i>Asio otus</i>	None	CSC
Lewis' woodpecker	<i>Melanerpes lewis</i>	FWS:BCC	None
Olive-sided flycatcher	<i>Contopus cooperi (nesting)</i>	FWS:BCC	None
Loggerhead shrike	<i>Lanius ludovicianus</i>	None	CSC
California horned lark	<i>Ermophila alpestris actia</i>	None	CSC
Yellow warbler	<i>Dendrocia petechia brewsteri</i>	None	CSC
Bell's sage sparrow	<i>Amphispiza belli belli</i>	None	CSC
Lawrence's goldfinch	<i>Carduelis lawrencei</i>	FWS:BCC	None
Mammals			
Pallid bat	<i>Antrozous pallidus</i>	None	CSC
Monterey dusky-footed woodrat	<i>Neotoma fuscipes luciana</i>	None	CSC
American badger	<i>Taxidea taxus</i>	None	CSC
Monterey (Salinas) ornate shrew	<i>Sorex ornatus salaries</i>	None	CSC

Notes: E = Endangered; T = Threatened; CSC = California Species of Concern; CFP = CDFG Fully Protected Animal; BCC = USFWS Birds of Conservation Concern

Source: WRA 2006

3.3 BIOLOGICAL RESOURCES

Raptors and other migratory birds protected under the Migratory Bird Treaty Act could nest and/or forage on the project site, primarily in the larger coast live oak trees. A loggerhead shrike (*Lanius ludovicianus*) was observed in the northern portion of the project site during the site assessment. Protocol-level surveys determined the presence of California tiger salamanders (*Ambystoma californiense*) in the western parcel of the project site. These observed species plus those species that have moderate to high potential to occur on the project site are discussed in more detail below.

California Tiger Salamander (*Ambystoma californiense*) (potential hybrid)

The California tiger salamander is a federally and state-listed threatened species. This amphibian species inhabits annual grasslands and open oak woodlands in the vicinity of ephemeral pools or other suitable breeding ponds. California tiger salamanders use burrows of ground squirrels or other rodents as aestivation sites. With the onset of the rainy season, adults migrate from their burrows to nearby ponds for breeding. Following breeding, adults disperse to upland areas and retreat into burrows where they remain for most of the year. California tiger salamanders have been reported to migrate as far as 1 mile between their underground retreats and breeding ponds, but aestivation sites are usually located within one-quarter mile of breeding ponds. According to the Biological Assessment (WRA 2007a), the northwest corner of the project site near El Toro Park is the only aquatic feature on the project site that may sustain the aquatic phase of the California tiger salamander. Protocol-level surveys were conducted by Denise Duffy & Associates, Inc. between October 2007 and March 2008 in this area to determine the presence of California tiger salamanders. The results of this survey identified that California tiger salamanders are present on the project site between State Route 68 and proposed Lot #134 in a detention basin referred to by the biologist as Pond 18. An additional seasonal wetland area referred to as Pond 1 on the project site is not suitable breeding habitat for CTS as it is shallow (less than 1 foot in depth) and, during years when ponded, dries by March. The lack of consistent and long-term water through the spring breeding season is because it is a shallow depression that does not have a sufficient water source other than direct precipitation. This wetland is consistently and heavily grazed by cattle each winter and spring, and vegetation does not get established. As a result, the USACE determined it was a non-wetland water of the United States.

The Salinas Valley California tiger salamander population is largely a hybrid population. The native population has interbred with an introduced non-native species. Most samples of DNA in the area contain a high frequency of introduced alleles in the genome. Hybridization is a concern in cases of listed species, including California tiger salamander (CTS). According to WRA, hybrid species are not explicitly addressed by the Endangered Species Act, and the US Fish and Wildlife Service does not have an official policy on the matter; therefore, hybrid species are treated on a case-by-case basis. WRA collected tissue samples and genetic testing was performed to determine if the CTS captures on the project site represented native CTS, non-native barred tiger salamanders, or a mixture of the two genotypes (hybrid) as part of the consultation process with the USFWS (was not listed as threatened by the State at the time of consultation).

Results of the genetic testing concluded that four individuals captured and sampled on the project site were hybrids based on a Hybrid Index Score (HIS) of 0 to 0.30 (0–30 percent non-native alleles) and 6 out the 10 captured and sampled could be described “pure native” (WRA 2009a). The observed low levels of non-native genotypes indicate that the project site may (1) have supported a purely native population that was invaded by a small number of hybrid salamanders; (2) consist of a native population currently receiving infrequent immigrants from

adjacent sites containing hybrid individuals; or (3) be the result of colonization by individuals whose lineages originated from sites containing low levels of non-native genes.

Additional investigations on potential off-site breeding ponds were conducted for the CDFG and reported by WRA (2012). The purpose of the report was to determine potential suitable breeding ponds within 1.24 miles of the project boundaries (**Figure 3.3-4**). Three ponds were identified within 1.24 miles of the existing known breeding pond within the project site. Of those, one was an artificially created fishing pond and is not likely to support CTS due to the presence of fish and bullfrogs. Two other ponds are on the northeast on Fort Ord lands and separated from the project site by a dense residential development and State Route 68, both of which are barriers to the movement of CTS according to the US Fish and Wildlife Service (2005). Roads, in particular, are a significant source of direct mortality to amphibians, including salamanders, traveling to and from breeding areas (see Andrews et al. 2008 for a literature review). Jackson (1996) stated that roads separating breeding and upland habitat can be the cause of significant population declines and even local extinctions for the spotted salamander (*Ambystoma maculatum*). CTS road-kill mortality in the vicinity of breeding sites has been reported to be 25–72 percent of the observed salamanders crossing roads (Twitty 1941; 1993; Launer and Fee 1996). Gibbs and Shriver (2005) found that population projections based on spotted salamander life tables imply road mortality can be a significant source of additive mortality for individual spotted salamanders in many parts of the species' range and that an annual risk of road mortality for adults of more than 10 percent can lead to the loss of the local population.

Other ponds are more than 1.24 miles from the existing on-site breeding pond; however, they are within 1.24 miles of the project boundary and were included in the analysis using the CDFW's Interim Guidance. Three of the ponds along Reservation Road and near the northern portion of the project site are water treatment ponds and are not suitable CTS habitat. Three others are associated with stormwater retention or irrigation uses for a golf course to the south of the site. Most are separated from the project site by residential development and/or State Route 68, reducing the potential for surface movement of CTS to the project site. It should be noted that there is a 10 acre conservation easement in the adjacent Toro Park specifically established for CTS through CDFW approval for impacts associated with an unrelated roadway project. This easement assumes the presence of quality upland CTS habitat.

One identified pond to the southeast of the project site is a small stock pond in an undeveloped area and although small, may have the potential to support CTS in some years and does not have potential migration barriers. To identify the potential presence of CTS in the southern portion of the property near this off-site pond and also in the vicinity of the State Route 68 bridge over El Toro Creek, USFWS- and CDFG-approved trap lines were established in the southern portion of the property in the winter of 2012–13. Denise Duffy & Associates (2013) reported one CTS trapped on the inside of the trapline (within the project site) in the vicinity of Harper Creek near the State Route 68 bridge over El Toro Creek. No other individuals were observed. This individual's association with any off-site breeding pond is unknown though the sighting is closest to Harper Creek, which flows within the project site near the location of the observation.

California Red-Legged Frog (*Rana aurora draytonii*)

California red-legged frog is a federally threatened species. The California red-legged frog is the largest native frog in California and historically has been widely distributed in the central and southern portions of the state. The species requires still or slow-moving water during the breeding season (typically between December and April) to deposit their large egg masses. California red-legged frogs can migrate up to 2 miles between non-breeding and breeding sites. Adults

3.3 BIOLOGICAL RESOURCES

inhabit aquatic habitats with riparian vegetation, overhanging banks, or plunge pools for cover, especially during the breeding season. They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity. During the non-breeding season, a wider variety of aquatic habitats are used, including small pools in coastal streams, springs, water traps, and other ephemeral water bodies. Appropriate habitat existing in the riparian and perennial stream habitat of the El Toro Creek and Harper Creek confluence located in the western parcel of the project site.

Protocol-level surveys were conducted by Denise Duffy & Associates between July 2007 and November 2007 in all portions of El Toro Creek and Harper Creek associated with the project site to determine the presence of California red-legged frogs. The results of the surveys identified no California red-legged frogs at any life stage detected or observed on the project site during the course of the surveys. The USFWS (pers. comm. 2013) has stated that the Bureau of Land Management has documented the presence of California red-legged frog breeding in a pond on Fort Ord across State Route 68 from the project area.

Coast Range Newt (*Taricha torosa torosa*)

The Coast Range newt is a California species of special concern. Coast Range newts frequent terrestrial habitats, but breed in ponds, reservoirs, and slow-moving streams from Mendocino County to San Diego County. The Coast Range newt is a conspicuous diurnal salamander that, if the behavior of the related red-bellied newt (*T. rivularis*) can be considered an appropriate indicator, probably engages in sometimes long-distance (greater than 1 kilometer) migrations to breeding sites. Adult newts eat a wide variety of aquatic and terrestrial invertebrates, as well as egg masses, larvae, and carrion. This species is highly likely to inhabit the wetland and water areas located on the project site.

Western Spadefoot Toad (*Spea hammondi*)

Western spadefoot toad is a California listed species of special concern. This amphibian species prefers open vegetation and short grasses where the soil is sandy or gravelly and is commonly found within grassland, scrub, chaparral, and woodland habitats. Western spadefoot toad species require temporary rain pools that last at least three weeks. This species may inhabit the coastal scrub, grassland, and oak woodland habitats and areas with sandy substrate located on the project site.

Silvery Legless Lizard (*Anniella pulchra pulchra*)

Silvery legless lizard is a California listed species of special concern. This reptile species burrows in loose, friable soils or sand. This species may be present in the areas of the project site that have sandy substrate.

Coast (California) Horned Lizard (*Phrynosoma coronatum frontale*)

The Coast horned lizard is a California listed species of special concern. This reptile species is distributed in the California coastal ranges extending from Sonoma County south to Mexico. Coast horned lizards inhabit open country, especially sandy areas, washes, floodplains, and wind-blown deposits in a wide variety of habitats, including shrublands, woodlands, riparian habitats, and annual grassland. Warm, sunny, open areas are a main habitat requirement, along with patches of loose soils where the lizard can bury itself. This species is highly likely to inhabit areas of the project site with a sandy substrate.



T:\CS\Work\Monterey County of Ferrini Ranch\Figures\Section 3.3

Source: WRA Environmental Consultants

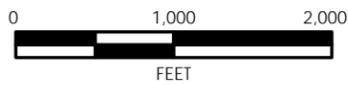


FIGURE 3.3-4
POTENTIAL CTS PONDS
PMC®

Two-Striped Garter Snake (*Thamnophis hammondi*)

Two-striped garter snake is a California listed species of special concern. The two-striped garter snake is a highly aquatic snake rarely found far from water, which it freely enters to forage or escape predators. It commonly inhabits perennial and intermittent streams having rocky beds bordered by willow thickets or other dense vegetation. This species also inhabits large sandy riverbeds with riparian vegetation along the stream course, or stock ponds and other artificially created aquatic habitats if a dense riparian border of emergent vegetation and amphibian and fish prey are present. Adult snakes display use of different areas and habitats in summer versus winter. During the summer, snakes utilize streamside sites and have home ranges that vary from approximately 80 square meters to over 5,000 square meters. During winter, they occupy coastal sage scrub and grassland locations in uplands adjacent to riparian areas, and they have home ranges that vary from approximately 50 square meters to nearly 9,000 square meters. This species may be present in the northwestern portion of the project site near Toro Creek.

Cooper's Hawk (*Accipiter cooperi*)

Cooper's hawk is a California species of special concern. This hawk is associated with woodland and forest habitats throughout California. Although nest sites are usually found in isolated areas, this species frequently occurs in urban habitats in winter and during migration. This species is highly likely to use the oak woodland and riparian corridor habitats on the project site as nesting and foraging habitat.

Golden Eagle (*Aquila chrysaetos*)

Golden eagles are a California fully protected species. Golden eagles occur in a variety of habitats throughout California. This large raptor typically nests in large isolated trees or cliffs. Golden eagles forage over large areas, feeding primarily on ground squirrels, rabbits, large birds, and carrion. The oak savanna and annual grassland habitats on the project site provide foraging habitat for this species.

Ferruginous Hawk (*Buteo regalis*)

The ferruginous hawk is a California species of special concern. The ferruginous hawk is a winter visitor to open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. The annual grassland of the project site may provide potential foraging habitat during the non-breeding season.

Sharp-Shinned Hawk (*Accipiter striatus*)

The sharp-shinned hawk is a California species of special concern. This species is a fairly common migrant and winter visitor throughout California and is found in a variety of habitats, especially woodlands. It usually nests in dense small-tree stands of conifers near water. Preferred roost sites are within intermediate to high-canopy forest areas. This species may forage in the project site during the non-breeding season.

Northern Harrier (*Circus cyaneus*)

The northern harrier is a California species of special concern. Northern harrier populations have decreased in recent decades but can be locally abundant where suitable habitat exists free of disturbance. Northern harriers frequent meadows, grasslands, open rangelands, desert sinks, and

3.3 BIOLOGICAL RESOURCES

fresh- and saltwater emergent wetlands. Open areas of tall, dense grasses, moist or dry shrubs, and edges are used for nesting, cover, and feeding. The grassland in the project site may provide suitable nesting and foraging habitat for this species.

White-Tailed Kite (*Elanus leucurus*)

The white-tailed kite is a California fully protected species. White-tailed kites are associated with annual grasslands, agricultural areas, scrub habitats, wet meadows, and emergent wetlands throughout the lower elevations of California. Nesting generally occurs in shrubs or small trees. Individuals are highly likely to forage over open areas of the project site throughout the year. The project site contains suitable nesting habitat in the oak savanna and suitable foraging habitat in the savanna and annual grasslands.

Merlin (*Falco columbarius*)

The merlin is a California species of special concern. Merlins prefer seacoasts, tidal estuaries, open woodlands, savannas, edges of grasslands and deserts, and farms and ranches. Stands of trees that provide windbreaks are required for roosting. The project site contains suitable foraging habitat.

Prairie Falcon (*Falco mexicanus*)

The prairie falcon is a California species of special concern. This species is an uncommon resident and migrant that ranges from southeastern deserts northwest along the Coast Ranges and Sierra Nevada. It occurs in many habitats, but typically is associated with grasslands, savannas, rangeland, agricultural areas, and desert scrub. This falcon typically nests on cliffs. This species may forage in the project site.

American Peregrine Falcon (*Falco peregrinus anatum*)

The American peregrine falcon is a federally delisted, State endangered, and California fully protected species. Historical dichloro-diphenyl-trichloroethane (DDT) contamination is the primary source of decline for this species. It winters throughout the Central Valley and occurs as a vagrant in a wide variety of habitats. This species may forage in the project site.

Long-Eared Owl (*Asio otus*)

The long-eared owl is a California species of special concern. Nesting long-eared owls range from coastal lowlands to interior deserts, but prefer riparian groves, planted woodlots, and belts of live oaks paralleling streams. Generally, this owl frequents dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats. The oak woodland and riparian habitats of the project site may provide suitable nesting and foraging habitat for this species.

Lewis's Woodpecker (*Melanerpes lewis*)

The Lewis's woodpecker is listed as a bird of conservation concern with the US Fish and Wildlife Service. This species is a resident or winter migrant in California, more commonly found in mountain ranchlands. Preferred habitats include open pine-oak woodlands, ponderosa pine woodland, and oak woodlands. This species is a cavity nester that forms loose colonies, often in a dead tree stump or limb. Suitable nesting and foraging habitat are available in the oak woodlands on the project site.

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is a California species of special concern. The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered trees, shrubs, posts, fences, utility lines, or other perches. Nests are usually built on a stable branch in a shrub or small tree with dense foliage and are usually well concealed. Suitable nesting and foraging habitat is available on the project site. This species was seen during the site visit.

California Horned Lark (*Eremophila alpestris actia*)

The California horned lark is a California species of special concern. In nonagricultural lands, this species typically inhabits areas of short vegetation or bare ground, including shortgrass prairie, deserts, brushy flats, and alpine habitat. The oak savanna and annual grassland habitats on the project site provide suitable breeding and foraging habitat for this species.

Yellow Warbler (*Dendroica petechia*)

The yellow warbler is a California species of special concern. Yellow warblers prefer dense riparian vegetation for breeding. Yellow warbler populations have declined due to brood parasitism by brown-headed cowbirds (*Molothrus ater*) and habitat destruction. This species' diet is primarily insects supplemented with berries. Toro Creek, which crosses the northwest corner of the project site, may provide suitable breeding and foraging habitat for this species.

Bell's Sage Sparrow (*Amphispiza belli belli*)

Bell's sage sparrow is a California species of special concern. Bell's sage sparrow is an uncommon to fairly common but localized resident breeder in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and the lower foothills of local mountains. Coastal scrub habitat on the project site may provide suitable breeding and foraging habitat.

Lawrence's Goldfinch (*Carduelis lawrencei*)

Lawrence's goldfinch is listed as a bird of conservation concern with the US Fish and Wildlife Service. Lawrence's goldfinch is endemic to the arid woodlands of California and northern Baja. It inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associates, and weedy water during the breeding season. The oak woodland, riparian, pond, and scrub habitats of the project site may provide suitable breeding and foraging habitat for this species.

Monterey Dusky-Footed Woodrat (*Neotoma fuscipes luciana*)

The Monterey dusky-footed woodrat is a California listed species of special concern. The Monterey dusky-footed woodrat is restricted to western and central Monterey County and northwestern San Luis Obispo County. This mammal species is typically found within dense chaparral or oak woodland habitats with moderately dense understory growth and abundant dead wood for nest construction. They feed on live woody plants such as oak, maple, coffeeberry, alder, and elderberry. This species is highly likely to occur in the oak woodland habitat located on the project site.

3.3 BIOLOGICAL RESOURCES

American Badger (*Taxidea taxus*)

The American badger is a California listed species of special concern. This mammal species inhabits drier portions of scrub, forest, and herbaceous habitats where friable soils and prey populations are present. This species is highly likely to inhabit the coastal scrub and oak woodland habitats located on the project site.

Salinas Ornate Shrew (*Sorex ornatus salaries*)

The Salinas ornate shrew is a California listed species of special concern. This mammal species typically occur in brackish water marshes, along streams, and in forests and brushy areas of valleys and foothills. This species is highly likely to inhabit the coastal scrub and oak woodland habitats located on the project site.

Western Burrowing Owl (*Athene cunicularia*)

Western burrowing owls are a California species of special concern. Burrowing owls are a year-round resident of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. In general, burrowing owls prefer open grasslands and desert shrub habitats where grass height is relative short, including areas that are actively grazed by livestock, particularly when perches (artificial or natural) are present.

Protocol-level surveys for burrowing owls were conducted by WRA in March 2008. Results of the surveys indicate that during that period of time, burrowing owls were not present on the project site (WRA 2008). However, there is appropriate habitat on the project site.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is a California species of special concern. The pallid bat is found in a variety of low elevation habitats throughout California. It selects a variety of day roosts including rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are usually found under bridges, but also in caves, mines, and buildings. Pallid bats are sensitive to roost disturbance. Hollow trees in the oak woodlands on the project site may provide potential roost habitat for this species.

Migratory Birds

Potential nesting sites and foraging area for birds of prey and other migratory birds exist in the oak woodland and grassland habitats located throughout the project site. Potential nesting and/or foraging habitat for special-status bird species such as the Cooper's hawk, sharp-shinned hawk, white-tailed kite, western burrowing owl, and California horned lark occurs within the oak woodland, coastal scrub, and grassland habitats found throughout the project site. Golden eagle would likely forage on the project site. Other special-status birds that may nest and/or forage on the project site include northern harrier, prairie falcon, American peregrine falcon, long-eared owl, Lewis' woodpecker yellow warbler, Bell's sage sparrow, and Lawrence's goldfinch. Special-status birds that may migrate through the project site include sharp-shinned hawk, ferruginous hawk, and olive-sided flycatcher (nesting) (*Contopus cooperi*). One special-status bird, the loggerhead shrike, was observed on the project site during the site assessment.

Sensitive Bat Species

Several species of bats considered sensitive in California could occur in the vicinity of the project site. Such species include the pallid bat and Townsend's big-eared bat (*Plecotus townsendii* ssp. *townsendii*). These bat species are California listed species of special concern by the CDFW. Each could potentially use the project site, especially the oak woodlands, as roosting habitat. Day roosts can be found in tree cavities, old buildings, caves, or rocky outcrops. Bats generally leave these day roosts at dusk to forage for invertebrates in a variety of habitats, including annual grasslands, shrublands, and woodlands.

WILDLIFE CORRIDORS

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one home range to another. A home range refers to the territories established by individuals for breeding and foraging. Corridors link home ranges and are present in a variety of habitats. Maintaining the continuity of established wildlife corridors is important to sustain species with specific foraging requirements, preserve a species' distribution potential, and retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource. In 2009, Connectivity for Wildlife (2009) prepared the Central Coast Connectivity Project Northern Monterey County Linkages: Report on the Mount Toro to Fort Ord Reserve Study for the Big Sur Land Trust. This study was funded by the Big Sur Land Trust to identify animal movement between the San Lucia Mountain range and the Bureau of Land Management and former Fort Ord property located north of State Route 68. This study was prepared as a follow-up to previous studies prepared for the Marks Ranch, which is located adjacent to the project site, and studies conducted within the former Fort Ord area. As part of the study, the undercrossing at the State Route 68 bridge that crosses El Toro Creek was monitored for animal movement. According to a technical memorandum prepared by WRA in December 2008, a wide range of terrestrial wildlife species are known to occur in the immediate vicinity of the project on both sides of State Route 68, including American badger, mountain lion, bobcat (*Lynx rufus*), black-tailed deer (*Odocoileus hemionus*), and coyote. Current corridors for wildlife to move between Fort Ord and the Sierra de Salinas or Santa Lucia ranges are limited to the Portola Drive overpass and the above-described undercrossing at El Toro Creek. The Portola Drive overpass is located just north of the Marks Ranch. The undercrossing at the State Route 68 bridge over El Toro Creek is located adjacent to the western parcel of the project site, near the intersection of San Benancio Road and State Route 68. A portion of the creek flows on the project site. State Route 68 is a major barrier to wildlife movement between the thousands of acres of open space on either side of the highway, and the Toro Park Estates development is an additional barrier.

A recent study by Diamond et al. (2013) confirms the importance of the undercrossing at El Toro Creek for wildlife crossing of State Route 68. Between October 2008 and October 2009, 404 individual animal detections were recorded via remote sensor cameras beneath State Route 68. The majority of detections were bobcat, deer, and wild pig. However, most of the observations were identified as the same individual using the underpass on numerous occasions. For example, a female bobcat was recorded making 97 trips over a 110-day monitoring period. According to Diamond et al. (2011), this female was using the eastern side of the crossing as its natal range, as she was documented traveling with her kittens, which were also recorded multiple times. The area beneath the bridge and on either side was being used as a home range by this individual bobcat as opposed to a wildlife corridor between home ranges. In addition, dusky-footed woodrats, a species of special concern, were also detected using the underpass and on either side of the underpass there are existing dusky footed woodrat nests. One mountain lion was detected.

3.3 BIOLOGICAL RESOURCES

Wildlife movement at the bridge may be facilitated by the protection and cover provided by riparian habitat along Harper Creek. All of the detections were made within the creek bottom, and it is not known if the species observed continue to use the Harper Creek riparian corridor and traverse underneath San Benancio Road farther upstream or leave the riparian corridor and move through the project site. Diamond et al. (2011) concluded that a portion of the project site southeast of State Route 68 is critical in facilitating movement of animals seeking access to and from the habitats within the Fort Ord Reserve. The undercrossing is in close proximity to the Ferrini Ranch House, associated outbuildings, and garden area, which, during the time of the survey and for most of its history, has been occupied by a family and several large dogs, suggesting that despite current human use, wildlife use this undercrossing.

The scientific literature shows a large range of recommended movement corridor widths, ranging from a few feet to thousands of feet, depending on species or guild. Small mammals and less sensitive songbirds seem to lean toward the narrow end of this range, whereas carnivores and other sensitive species or those requiring large home ranges tend to need wider corridors. Amphibian requirements are highly variable but often seem to fall somewhere in between, depending on whether these species' rather complex requirements are met—for example, interspersed wetlands and uplands, with relatively short distances between wetlands or other key habitat. Several studies and synthesis reports suggest corridors should be at least 328 feet (100 meters) wide to provide for most wildlife movement and habitat functions (Hennings and Soll 2010).

The proposed project design maintains an open space area between Harper Creek and San Benancio Road and will maintain the riparian corridor in this area. In addition, the current pasture area identified as a portion of the wildlife corridor by Diamond et al. (2011) will also be maintained as open space. An open corridor with a minimum width of 328 feet is met under the proposed project design (it is actually closer to 1,000 feet) along a small canyon that will maintain the potential for wildlife passage at this location. The only proposed development is an access road that will not inhibit wildlife movement, as it will only serve the development and the light traffic use is not a major barrier to wildlife movement.

3.3.2 REGULATORY SETTING

FEDERAL

Endangered Species Act

The federal Endangered Species Act (ESA) was enacted in 1973 to protect species that are endangered or threatened with extinction. The ESA prohibits the "take" of a listed (endangered or threatened) species and defines "take" as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1531 et seq.; 50 CFR 17.1 et seq.).

Section 7 of the ESA directs all federal agencies to conserve endangered and threatened species and, in consultation with the USFWS, to ensure that their actions (or actions under their jurisdiction) do not jeopardize listed species or adversely modify critical habitat. Section 10 of the ESA directs private landowners, corporations, state and local governments, or other non-federal landowners to develop a Habitat Conservation Plan (HCP) and obtain an incidental take permit from the USFWS before conducting any activity on their land that potentially may harm (or take) a listed species. Some ESA designations include:

- Federally listed endangered;

- Federally listed threatened;
- Federally proposed endangered; and
- Federally proposed threatened.

Fish and Wildlife Conservation Act (1988)

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973.” The Birds of Conservation Concern 2002 accurately identifies the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities in order to draw attention to species in need of conservation action.

While all of the bird species included in the Birds of Conservation Concern 2002 are priorities for conservation action, this list makes no finding with regard to whether they warrant consideration for ESA listing. The goal of the list is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservation actions. It is recommended that these lists be consulted in accordance with Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds.” This report is intended to stimulate coordinated and collaborative proactive conservation actions among federal, state, and private partners.

Clean Water Act

The Clean Water Act, as amended in 1977, established the basic structure for regulating discharges of pollutants into waters of the United States. Section 404 of the Clean Water Act requires USACE authorization for the discharge of dredged or fill material into all waters of the United States, including adjacent and isolated wetlands. Discharge of fill material includes, but is not limited to, placement of fill that is necessary for the construction of any other structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and subaqueous utility lines; fill associated with creation of ponds; dewatering of dredged material prior to final disposal; fills for access roadways, cofferdams, storage and work areas; and any other work involving the discharge of fill or dredged material (33 CFR 26). A USACE permit is required for both permanent and temporary discharges. Section 401 of the Clean Water Act requires any activity that may result in a discharge of a pollutant into waters of the United States to comply with applicable regulatory water quality standards. The State Water Board administers Section 401 permits for these activities.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703) prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, and their eggs and nests. Most native bird species on the project site are covered by this act. In practice, abiding by the Migratory Bird Treaty Act usually means to avoid removal of trees with active nests until such time as the young have fledged and the nest is abandoned.

3.3 BIOLOGICAL RESOURCES

STATE

California Endangered Species Act

The California Endangered Species Act (CESA) was enacted in 1984 to ensure that actions under state agency jurisdiction do not jeopardize the existence of state-listed endangered or threatened species. The CESA prohibits "take" of any listed species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The state definition is narrower than the federal ESA take definition in that it does not include "harassment" or "harm," which has generally been interpreted by the courts to include impacts to habitat. The CESA requires state agencies to consult with the CDFW when preparing California Environmental Quality Act (CEQA) documents for projects or actions potentially impacting listed species or special habitats. The CDFW determines whether jeopardy of a state-listed species may occur and offers reasonable project alternatives or guidance for mitigation planning. In regard to mitigation, the Fish and Game Code states that "the impacts of the authorized take shall be minimized and fully mitigated. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible."

California Department of Fish and Wildlife (CDFW)

The California Fish and Game Code (Section 3511) also provides for protection of certain species, including California tiger salamander. Section 3503.5 of the Fish and Game Code specifically protects the nests and eggs of birds of prey and essentially overlaps with the Migratory Bird Treaty Act.

Birds of Prey

Under Section 3503.5 of the California Fish and Game Code, it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

"Fully Protected" Species

California statutes also accord "fully protected" status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit.

Section 3505 of the California Fish and Game Code makes it unlawful to take "any egret or egret, osprey, bird of paradise, gaura, numidi, or any part of such a bird." Section 3511 protects from take the following fully protected birds: (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle; (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite; and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

Native Plant Protection Act

The Native Plant Protection Act (California Fish and Game Code Section 1900–1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by the CDFW). An exception to this prohibition in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give that state agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed by a proposed change in land use. Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

California Code of Regulations

In addition to formally listed species, many other species in California have regulatory protection under various sections of the California Code of Regulations enforced by the CDFW. Species that may be considered for listing, due to declining numbers or threatened habitat, are protected as rare or species of special concern. Certain species are also designated as fully protected, which prevents take of an individual or their habitat unless for scientific purposes. In addition, the California Code of Regulations protects avian species by making it unlawful to take or possess migratory non-game birds, raptors, or the nest or eggs of any bird species.

Natural areas to be protected are also designated in the California Code of Regulations, including significant wildlife habitat, refuges, natural sloughs, riparian areas, and vernal pools. Waterways in particular are protected, such that any project that may divert or obstruct the natural flow or substantially alter the bed, channel, or bank of any waterway is subject to regulatory review by the CDFW.

Senate Bill 1334 – Oak Woodlands Conservation Act

As of January 1, 2005, county governments statewide must comply with Senate Bill 1334 (SB 1334). Section 21083.4 of the Public Resources Code addresses the requirements of SB 1334. Under the provisions of the bill, projects with significant oak woodland impacts must conform both to the state’s mandated program that established habitat mitigation standards and to local conservation measures adopted by the county (in the case of the proposed project, Monterey County). The proposed project is subject to SB 1334 because it contains native species of oaks greater than 5 inches diameter at breast height (dbh), it is not subject to stocking regulations for timber harvest, and it consists of more than 100 units.

NON-GOVERNMENTAL ENTITIES

California Native Plant Society

The California Native Plant Society (CNPS) maintains and publishes an Inventory of Rare and Endangered Vascular Plants of California. The inventory presents information regarding native California plant species that show a declining population, limited distribution, or are considered by the scientific community to be threatened with extinction. Projects under CEQA review are required to address potential impact to CNPS-listed plants. CNPS definitions for listed plants are as follows:

- List 1A: Plants believed extinct

3.3 BIOLOGICAL RESOURCES

- List 1B: Plants rare, endangered, or threatened in California and elsewhere
- List 2: Plants rare, endangered, or threatened in California, but more numerous elsewhere
- List 3: Plants about which we need more information
- List 4: Plants of limited distribution

COUNTY OF MONTEREY

Monterey County General Plan

Policies

- 7.1.1 Development shall be carefully planned in, or adjacent to, areas containing limited or threatened plant communities, and shall provide for the conservation and maintenance of the plant communities.
- 7.1.2 The County shall encourage the protection of limited or threatened plant communities through dedications of permanent conservation easements and other appropriate means.
- 7.2.2 Native and native compatible species, especially drought resistant species, shall be utilized to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits.
- 9.1.1 Development shall be carefully planned in areas known to have particular value for wildlife and, where allowed, shall be located so that the reasonable value of the habitat for wildlife is maintained.

Toro Area Plan

There are no known rare or endangered wildlife species on the project site. The following policy is used to enforce protection of environmentally sensitive habitats:

Policy

- 7.2.3 The preservation of oak trees in Toro shall be promoted by discouraging removal of healthy trees with diameters in excess of eight inches.

Monterey County Zoning Code

Ordinance

- 21.64.260 No oak or Madrone tree six inches or more in diameter two feet above ground level shall be removed in the North County Area Plan or Toro Area Plan areas without approval of the permit(s) required in Subsection 21.64.260D. In addition under §21.64.260.C.5 no landmark oak tree shall be removed in any area except as may be approved by the Director of Planning Department pursuant to Subsection 21.64.260D. Landmark oak trees are those trees which are 24 inches or more in diameter when measured two feet above the ground, or trees which are visually significant, historically significant, or exemplary of their species.

Removal of more than three protected trees on a lot in a one-year period shall require a Forest Management Plan and approval of a Use Permit by the Monterey County Planning Commission per Section 21.64.260.D.3 of the Zoning Ordinance.

3.3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on the CEQA Guidelines and standards used by the County of Monterey. For the purposes of this EIR, impacts are considered significant if the following could result from implementation of the proposed project:

- 1) Result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, endangered, threatened, or other special-status in local or regional plans, policies, and regulations, or by the CDFW or USFWS.
- 2) Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFW or USFWS.
- 3) Result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, coastal, riverine, stream, marsh, vernal pool, etc.) through direct removal, filling, hydrological interruption, or other means.
- 4) 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.
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy.
- 6) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

An evaluation of the significance of potential impact on biological resources must consider both direct effects to the resource and indirect effects in a local or regional context. Potentially significant impacts would generally result in the loss of a biological resource or obviously conflict with local, state, or federal agency conservation plans, goals, policies, or regulations. Actions that would potentially result in a significant impact locally may not be considered significant under CEQA if the action would not substantially affect the resource on a population-wide or region-wide basis.

METHODOLOGY

The analysis of biological resources presented in this section is based on Biological Assessments prepared by WRA in October 2006 and December 2007, a technical memorandum regarding the Ferrini Ranch wildlife corridor prepared by WRA in December 2008, a study completed by Diamond et al. (2011) on wildlife use of the State Route 68 overcrossing of El Toro Creek, proposed biological resource impact and mitigation measures prepared by WRA in January

3.3 BIOLOGICAL RESOURCES

2009, an Incidental Take Permit application submitted to the CDFG (July 2010), a Forest Management Report prepared by Staub Forestry and Environmental Consulting in September 2006, and a Wetland Delineation prepared by WRA in January 2007. Protocol-level surveys for western burrowing owl were prepared in March 2008, and protocol-level surveys for California red-legged frog and California tiger salamander were prepared in September 2008, with a supplement prepared for CTS trapping in April 2013. Results of genetic testing of California tiger salamander were prepared in January 2009. All reports were prepared for the project applicant and peer reviewed by PMC. PMC Senior Biologist Joyce Hunting peer reviewed the 2006 Biological Assessment in February 2007, the Wetland Delineation in March 2007, and the results from the protocol-level surveys in January 2009. The Forest Management Plan was peer reviewed by Rochelle Amrhein, ISA Certified Arborist, for PMC in December 2006. Recommendations for the Biological Assessment and Forest Management Plan were provided to Monterey County RMA-Planning. The revised Biological Assessment was updated in December 2007 and peer reviewed again by PMC in March 2008, and only minor recommendations were made. Based on the results of the protocol-level surveys, PMC recommended and/or concurred with mitigation provided in this document. Staub Forestry and Environmental Consulting responded to the recommendations in February 2007. The Biological Assessments, Forest Management Plan, and results from the protocol-level surveys and peer reviews are included in **Appendix C**.

Protocol-Level Surveys

Protocol-level surveys for California tiger salamanders and California red-legged frogs were conducted by Denise Duffy & Associates (DDA). The results of these surveys are included in **Appendix C**.

California Tiger Salamander

Senior Project Manager Josh Harwayne, Dave Keegan, Brad Travers, Jami Davis, and Matt Johnson of DDA (Federal Permit #TE-091857-0) and Mark Allaback of BioSearch (Federal Permit #TE-768251-10) conducted the protocol-level surveys for California tiger salamanders in accordance with the "interim guidance on site assessment and field surveys for determining presence or a negative finding of the California tiger salamander" developed by the USFWS and CDFG in 2003.

Drift fences and pitfall traps were in place between October 10, 2007, and March 17, 2008. Pitfall traps (2-gallon plastic buckets) were arranged in pairs, one on either side of the fence, in order to capture animals migrating toward and away from the pond. On days when it was raining or forecast to rain, pitfall traps were opened before sunset and checked the following morning. Traps remained open until no rain had fallen and/or no California tiger salamanders were captured in the preceding 24 hours. Open traps were shaded with an elevated piece of plywood, and pieces of foam were used to keep the traps moist. When not in use, traps were closed with lids and the inverted shades were then weighted with bricks to prevent entry.

All captured California tiger salamanders were measured (snout-vent length and total length in millimeters, weight in grams), aged (postmetamorphic juvenile, sub-adult, adult), sexed, and inspected for malformations, injuries, and general health. All captured California tiger salamanders were digitally photographed for identification and to trace recaptures.

Tissue sampling was authorized by USFWS Ventura under Federal Permit #TE-091857-0 and conducted in accordance with the Tissue Collection Protocol for Genetic Research (WRA 2009a). Ten adult tissue samples were collected on January 26–30 and February 1 and 2, 2008.

All tissue samples were packed in a cooler with dry ice and sent to the Shaffer Lab at the University of California, Davis (UC Davis) for genetic analysis. The results of these tests have been discussed in detail under the subheading entitled "California Tiger Salamander (*Ambystoma californiense*) (potential hybrid)."

In response to a request from the CDFW, an additional trap line study was conducted in the southern development area in the winter of 2012 and 2013 using similar methodologies as the 2007–2008 study. The trap lines were set along State Route 68 adjacent to the flat field used for the cattle corral and grazing and in along the property boundary near the off-site Pond 1. A single individual was captured along the project side of the trap line adjacent to Harper Creek.

California Red-Legged Frog

Targeted, non-random surveys to detect adult, subadult, and/or larval California red-legged frogs were conducted in all portions of El Toro Creek and Harper Creek associated with the Ferrini Ranch property. Senior Wildlife Biologist David Keegan was the lead biologist for all surveys. Assistant Environmental Scientist Brad Travers assisted Mr. Keegan on three occasions.

Protocol-level surveys for California red-legged frogs consisted of one daytime and one nighttime survey during the non-breeding season (July 1–September 30), and two daytime and four nighttime surveys during the breeding season (October 1–June 30), for a total of eight site visits. Site visits during the day consisted of both passive surveying (listening for calls) and actively walking the El Toro Creek and Harper Creek alignments while looking for adult, subadult, and/or larval California red-legged frogs (and other sensitive herpetofauna including pond turtle). Nighttime site visits were generally conducted between one hour after true sunset and 3:00 A.M. Nighttime visits consisted of listening for frog calls periodically and walking the entire alignment of El Toro Creek and Harper Creek within and immediately adjacent to the Ferrini Ranch property; offsets from the Ferrini Ranch property were surveyed up to 400 feet from property boundaries. DDA biologists used USFWS-approved Maglites in search of eye-shine.

Data collected during California red-legged frog surveys included survey date, surveyors, time, visit number, water body depth (when possible), water temperature, precipitation, cloud cover, wind speed, weather, and other appropriate comments. All data was recorded in field notebooks and subsequently organized onto species-specific datasheets, which are included in **Appendix C**.

Burrowing Owl

Burrowing owl survey methodology followed the guidelines provided in "Burrowing Owl Surveying Protocol and Mitigation Guidelines" prepared by the California Burrowing Owl Consortium (CBOC) in 1993 (DDA 2008a). A record search was conducted of the CDFG California Natural Diversity Database for the San Juan Bautista quadrangle and the eight surrounding quadrangles (DDA 2008). Previous biological investigations were reviewed. Researchers with experience in the survey area were contacted for locality records.

The burrowing owl surveys focused primarily on grassland, oak savanna, and oak woodland portions of the site. Field surveys for non-breeding (overwintering) burrowing owls were performed on August 2 and 29, 2007, and January 17 and 31, 2008, by Senior Wildlife Biologist David Keegan and Assistant Environmental Scientist Brad Travers. Survey transects were arranged to provide 100 percent visual coverage of the site; individual transect width was less than 30 meters. Any observations of burrowing owls or burrowing owl sign would have been mapped in the field. Potential burrowing owl burrows, including American badger dens,

3.3 BIOLOGICAL RESOURCES

California ground squirrel burrows, and man-made features such as culverts, were noted. Ground squirrel burrow clusters were ranked by density (i.e., 1-5, 5-10, 10-20, 20-50, >50) and were mapped in the field. Active and abandoned badger dens, as well as "badger diggings," were also mapped. These data were subsequently converted into GIS files.

Visual surveys were conducted between approximately one hour prior to sunrise and two hours after sunrise. Weather and visibility conditions were recorded. All wildlife species identified were recorded. Any observation of burrowing owls or burrowing owl "sign" (whitewash, pellets, feathers) would likewise have been recorded. Burrow census surveys of all suitable burrowing owl habitats on the project site were completed over the course of three days: February 8, February 11, and February 15, 2008.

PROJECT IMPACTS AND MITIGATION MEASURES

Potential Disturbance of Special-Status Plant Species

Impact 3.3-1 Implementation of the proposed project would result in temporary disturbance and direct impact on two special-status plant species: Congdon's tarplant (*Centromadia = Hemizonia parryi ssp. congdonii*), and Pacific Grove clover (*Trifolium tridentatum var. polyodon, syn. Trifolium polyodon*) due to alteration of the project site in the area of Lots #29, #30, #65, #81, #82, #83, #105, #113, and #114 and in roadway development areas near Lots #29, #30, #65, #81, #82, and #83. This would be considered a **significant impact**.

The Biological Assessment prepared by WRA in December 2007 included focused rare plant surveys conducted by Denise Duffy & Associates in April, May, and September 2007. Three special-status plant species were identified on the project site: Congdon's tarplant, Pacific Grove clover, and Mt. Diablo cottonweed.

Pacific Grove clover is listed as rare by the State of California and is listed by the CNPS as Rank 1b. This species was identified in wetland and mesic areas within grassland, coast live oak woodland/savanna, and riparian woodland habitats. Significant portions of the population on-site are on drainages that will be protected within the open space areas. However, plants near Lots #29, #30, #65, #74, #71, #81-#83, #95, #105, #113, and #114 may be affected. Construction activities on Lots #65, #95, and #105 and roadway improvements near Lots #29, #30, #65, #81, #82, and #83 would directly impact this special-status plant species based on current population distributions. This would be considered a **significant impact**.

Congdon's tarplant is listed by the CNPS as Rank 1b; however, it is not listed at either the federal or state level as a rare, threatened, or endangered species. Congdon's tarplant was identified within the grassland habitat near Lots #29 and #134 and Parcels E and D. However, the only population of Congdon's tarplant that would be directly impacted by development would be near Lot #29. Construction of the roadway improvements in the vicinity of Lot #29 would impact this special-status plant species. This would be considered a **significant impact**.

Mt. Diablo cottonweed is listed by the California Native Plant Society (CNPS) as Rank 3. Mt. Diablo cottonweed occurs in dense, relatively isolated small patches. The distribution of this plant species was not mapped, as CNPS List 3 species are not typically provided management consideration during the CEQA process and have no specific legal protection. Therefore, the proposed project effect on Mt. Diablo cottonweed would be considered a **less than significant impact**. No mitigation is necessary.

Special-status plant species were found in the approximate location of the proposed development and roadway improvements, as proposed on the Vesting Tentative Map. Take of these species resulting from development of the proposed project would be considered a **potentially significant impact**. Implementation of the following mitigation measure would reduce this impact on special-status plant species to a **less than significant** level.

Mitigation Measures

MM 3.3-1a

Prior to grading activities on or near Lot #29, the grading area in this vicinity shall be surveyed by a qualified biologist to document the presence and distribution of Congdon's tarplant (*Centromadia = Hemizonia parryi ssp. congdonii*). If the plant is identified within or near these construction areas, the following mitigation and management steps shall be taken to reduce the loss of individual plants, avoid disturbance or removal of special-status plant species, and create additional habitat:

- 1) In locations where proposed improvements conflict with Congdon's tarplant, the improvements (including lots) shall be relocated to the extent feasible to avoid disturbance.
- 2) Disturbance of Congdon's tarplant during construction of the project shall be avoided by such means as rerouting the construction roads and/or prohibiting use of such areas as staging locations. Construction fencing shall be placed around any such locations to create a 50-foot no-disturbance buffer around this species.
- 3) Signs shall be posted that identify these buffer areas. These signs will inform construction personnel and open space users as to the presence of Congdon's tarplant so that inadvertent disturbance by individual persons traversing the project site will also be avoided.
- 4) For any impacts to Congdon's tarplant identified in the preconstruction survey that are not avoided through implementation of the above avoidance strategy, the project shall:
 - a. Allocate a portion of the southern quadrant of the eastern parcel as a Congdon's tarplant preserve;
 - b. Relocate any tarplant that could not be avoided to this preserve; and
 - c. Plant additional tarplants in the preserve at a ratio of 1:1 for every relocated tarplant.
 - d. The transplantation/creation/restoration action shall be described in a Rare Plant Restoration and Management Plan as part of the project's Open Space Management Plan. The plan shall detail location, methods, and plant success criteria that will be utilized to restore and maintain populations of Congdon's tarplant within the protected open space or additional preserve sites. The plan shall be subject to review by the Monterey County Resource Management Agency (RMA) as part of the project's condition compliance, and the CDFW, if necessary. Success will be assessed when 80 percent of the

3.3 BIOLOGICAL RESOURCES

restored/created population is viable for five consecutive years. Annual monitoring reports shall be submitted to the County of Monterey and the CDFW, if necessary.

- e. The applicant shall be responsible for obtaining approvals from the resource agencies as necessary to implement the above mitigation measures. The applicant shall be responsible for implementing any additional measures resulting from these approvals.

MM 3.3-1b

Prior to grading activities near Lots #30, #65, #81, #82, #83, #105, #113, and #114 and in roadway development areas near Lots #29, #30, #65, #81, #82, and #83 and scheduled to correspond to the time of year most appropriate for identification of individual Pacific Grove clover (*Trifolium tridentatum* var. *polyodon*, syn. *Trifolium polyodon*), a preconstruction survey will be conducted to determine the extent and distribution of plants in the vicinity of the project. The survey will follow the protocols for rare plant surveys as recommended by the CDFW.

- 1) In locations where proposed improvements conflict with Pacific Grove clover, the improvements (including lots) shall be relocated to the extent feasible to avoid disturbance.
- 2) , Disturbance of Pacific Grove clover plants during construction of the project shall be avoided by such means as rerouting the construction roads and/or prohibiting use of such areas as staging locations. Construction fencing shall be placed around any such locations to create a 50-foot no-disturbance buffer around this species.
- 3) Signs shall be posted that identify these buffer areas. These signs will inform construction personnel and recreationalists as to the presence of Pacific Grove clover so that inadvertent disturbance by individual persons traversing the project site will also be avoided.
- 4) For impacts to Pacific Grove clover identified in the preconstruction survey that cannot be avoided through implementation of the above mitigation measures, the project shall:
 - a. Restore or create suitable habitat where Pacific Grove clover can be established in an amount at least equal to the clover population area disturbed or impacted.
 - b. The creation/restoration action shall be described in a Rare Plant Restoration and Management Plan as part of the project's Open Space Management Plan. The plan shall detail location, methods, and plant success criteria that will be utilized to restore and maintain populations' within the protected opens or additional preserve sites. The plan shall be subject to review by the Monterey County Resource Management Agency (RMA) as part of the project's condition compliance and the CDFW, if necessary. Success will be assessed when 80 percent of the restored/created population is viable for five consecutive years. Annual monitoring reports shall be submitted to the County of Monterey and CDFW, if necessary.

CDFW currently does not have a permitting mechanism to authorize the “take” of rare plants, but is currently considering amendments of existing regulations. From a technical and scientific standpoint, the above mitigation provides a suitable approach to address the potential impact under CEQA. If additional permitting requirements are in place at the time of project commencement, the applicant shall be responsible for obtaining any such approvals from the CDFW.

Implementation of the above mitigation measures will reduce the project’s impacts to special-status plant species to a **less than significant** level through a combination of species avoidance, implementation of protective measures during construction, education, creation or restoration of habitat for direct impacts, and through implementation of a long-term management plan that will monitor the success of plant populations and take remedial action as necessary to propagate the plant populations.

Potential Disturbance and Take of California Tiger Salamander

Impact 3.3-2 Implementation of the proposed project would result in temporary disturbance and permanent alteration of the project site, which contains California tiger salamander (CTS), a federally and state-listed threatened species. Impacts to CTS and its habitat would be considered a **significant impact**.

The California tiger salamander is a federally and state-listed threatened species. One seasonal pond (Pond 18) on the western parcel of the project site is suitable breeding habitat and is occupied by the California tiger salamander. In addition, the surrounding upland habitat provides dispersal and aestivation habitat for the species. Under the proposed project, the Ferrini Ranch entrance road runs adjacent to Pond 18 and the shoulder will have a direct impact on the breeding pond. In addition, within approximately 2,200 feet of Pond 18, the proposed project would result in development of Lots #81 through #85 and Lots #92 through #136; Roads F, G, H, I, and J; two detention basins; an emergency access road to State Route 68; and a booster pump. Ferrini Ranch Road would directly affect the existing dimensions of Pond 18 and may result in fill to this breeding habitat. Proposed improvements and development would further disturb or impact approximately 43.6 acres of upland aestivation area within 2,200 feet of Pond 18. Additional potential off-site CTS breeding ponds and associated impacts are discussed further below.

Protocol-level surveys were conducted by Denise Duffy & Associates between October 2007 and March 2008 in the detention basin area referred to as Pond 18 to determine the presence of California tiger salamanders. During the protocol-level survey, 15 California tiger salamanders were captured; however, only 11 were unique individuals and 4 were recaptures. Of the 11 individuals, there were 10 adults and 1 juvenile. Of the 10 adults, 6 were determined to be female and 4 were determined to be male. The 11 individual California tiger salamanders were measured, aged, sexed, and inspected for malformations, injuries, and general health. Sizes ranges from 90 to 115 millimeters (mm) snout-vent length, 150 to 205 mm total length, and weighed from 27.2 to 63.2 grams. Tissue sampling of the ten adult species were forwarded to UC Davis for genetic testing. The results concluded that, of the 10 adult individuals captured and tested, 6 were considered pure native. The remainder of the individuals were found to have non-native, non-listed eastern tiger salamander hybrid genotypes, indicating that the project site may (a) have supported a purely native population that was invaded by a small number of hybrid salamanders, (b) consists of a native population currently receiving infrequent immigrants from adjacent sites containing hybrid individuals, or (c) be the result of colonization by individuals whose lineages originated from sites containing low levels of non-native genes. Since

3.3 BIOLOGICAL RESOURCES

the population of California tiger salamanders identified on the project site appears to have been exposed to non-native hybrid species, the level of protection afforded to these species is subject to review by the CDFW and the USFWS.

In addition to the on-site breeding pond, there are 13 pond features within 1.24 miles of the project site boundary (WRA 2012). Of those, one was an artificially created fishing pond and is not likely to support CTS due to the presence of fish and bullfrogs. Two other ponds are on the northeast on Fort Ord lands and separated from the project site by a dense residential development and State Route 68, both of which are barriers to the movement of CTS according to the US Fish and Wildlife Service (2005). Three ponds along Reservation Road and near the northern portion of the project site are water treatment ponds and are not suitable CTS habitat. Three others are associated with stormwater retention or irrigation uses for a golf course to the south of the site. Most are separated from the project site by residential development or State Route 68, reducing the potential for surface movement of CTS to the project site. One identified pond to the southeast of the project site is an abandoned stock pond in an undeveloped area and although small, has the potential to support CTS and does not have potential migration barriers. Based on this analysis, four off-site ponds were determined, in consultation with the CDFW, as having actual (Off-Site Pond 13) or potential habitat for CTS (Off-Site Ponds 1, 8, and 9) (**Figure 3-4**). These ponds were used to assess additional potential impacts to CTS suitable habitat.

Following approvals by the CDFW and the USFWS, DDA (2013) conducted an additional trapping study in 2012–2013 and reported one CTS within the project site in the vicinity of Harper Creek, a tributary to El Toro Creek where it flows under State Route 68. No other individuals were observed during this trapping effort.

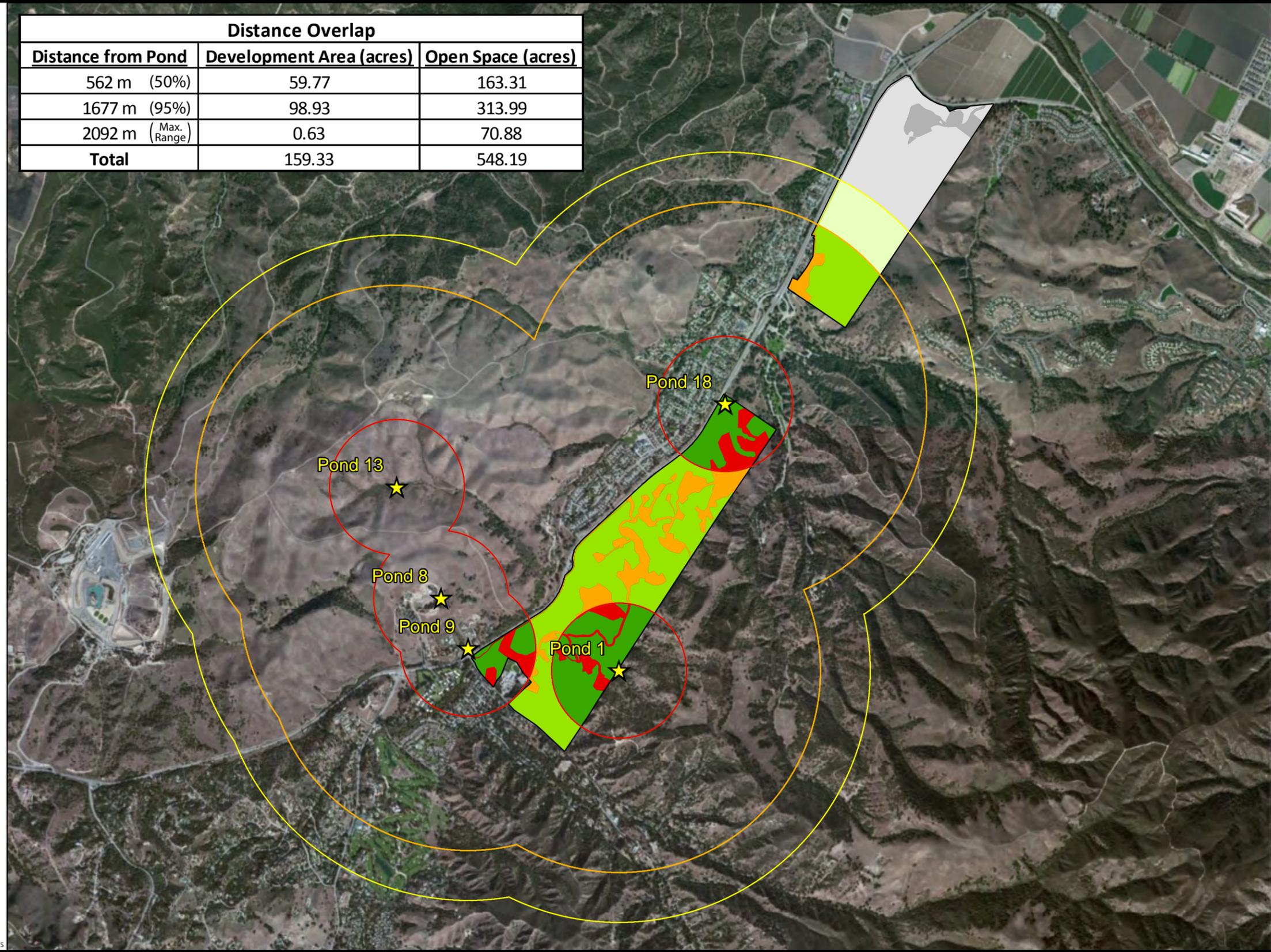
The CDFW requested an analysis of the distances from the one on-site occupied pond and each of the four off-site ponds for the purposes of assessing the potential relative use of the project by aestivating salamanders or for migration to other ponds. Based on Searcy and Shaffer (2011), the following distances were evaluated:

- The first 562-meter zone captures the distance from the breeding pond within which 50 percent of dispersing CTS adults were found.
- The second zone of 1,677 meters is the distance from the breeding pond within which 95 percent of the dispersing CTS were found.²
- The third and largest of the zones, within 2.1 kilometers (1.2 miles) of a potential breeding pond, is more remote and is based on the maximum distance adults have been found to move from a breeding site (Orloff 2007, as confirmed by Searcy and Shaffer 2011).

Some of the distances for individual ponds overlap; therefore, the most conservative approach was used in that for any portion of the overlap, the distance to the closest pond was used to calculate development impacts for the summary table (**Figure 3.3-5; Table 3.3-2**). This avoids double counting, but also provides the most conservative analysis in terms of distance. In addition, these distances do not take into account the presence of State Route 68, which will

² This is the corrected value that Searcy and Shaffer calculated for the Trenham and Shaffer (2005) study conducted for tiger salamander closest to the project site in Monterey County.

Distance Overlap		
Distance from Pond	Development Area (acres)	Open Space (acres)
562 m (50%)	59.77	163.31
1677 m (95%)	98.93	313.99
2092 m (Max. Range)	0.63	70.88
Total	159.33	548.19



T:\CS\Work\Monterey County of Ferrini Ranch\Figures\Section 3.3

Source: WRA Environmental Consultants

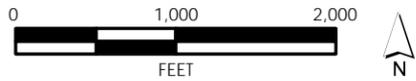


FIGURE 3.3-5
CTS DISPERSAL DISTANCES
PMC®

limit the effectiveness of dispersal from the three off-site ponds on Fort Ord or on private property.

**TABLE 3.3-2
PROPOSED DEVELOPMENT AND OPEN SPACE FOR THE PROPOSED PROJECT WITHIN SPECIFIED CTS
MIGRATION DISTANCES FROM POND 18 AND FOUR OFF-SITE PONDS**

Distance from Pond (meters)	Proposed Development (acres)	Open Space (acres)
562	62.0	162.6
1,677	85.3	296.2
2,092	0.3	71.2
Total	147.5	530.1

Given the porous and low density nature of the proposed development, undeveloped lands within the project site are considered open space and potential CTS habitat. Movement between these areas will be aided through the appropriate curb and gutter design as well as under road crossings suitable for CTS use. Barrier fencing will be installed to prohibit CTS movement into areas of human occupation and CTS permeable fencing will be installed to allow CTS movement into habitat areas. See **Figure 3.3-6** illustrating how fencing will be used to enhance and control CTS movement in and around Pond 18.

Based on this analysis, the potential aestivation and migration area covered by the development in the proposed project is 147.5 acres. These calculations assume that off-site Pond 1 is suitable habitat for CTS. To date, no individuals have been identified within this off-site pond or at trap lines near this pond.

Direct impacts to CTS and its habitat from development would be considered a **potentially significant impact**. In addition, the proposed project would result in indirect effects from increased traffic within the project footprint and nighttime lighting, potential introduction of predatory non-native species, and potential harassment by pets within suitable aestivation habitat area, which could indirectly result in **potentially significant impacts**.

Avoidance and minimization measures proposed below are designed to first avoid direct take of CTS, then to mitigate for loss of habitat and indirect impacts. The project applicant is consulting with the USFWS through Section 7 of the Endangered Species Act and consulting with the CDFW regarding the California Endangered Species Act. A Biological Opinion will be required from the USFWS. If the USFWS does not issue a Biological Opinion under Section 7 of the Endangered Species Act, a Section 10 Habitat Conservation Plan must be prepared for USFWS consideration. Avoidance measures will be implemented as discussed below; however, if needed, an Incidental Take Permit or a Section 2080.1 Consistency Determination for the California Tiger Salamander will be obtained under the California Endangered Species Act.

In addition, the following mitigation measures are required consistent with standard protocols for California tiger salamanders and their habitat according to the state and federal Endangered Species Acts, and would reduce this impact to a **less than significant** level.

3.3 BIOLOGICAL RESOURCES

Mitigation Measures

MM 3.3-2a The County of Monterey shall require the implementation of the following mitigation measures:

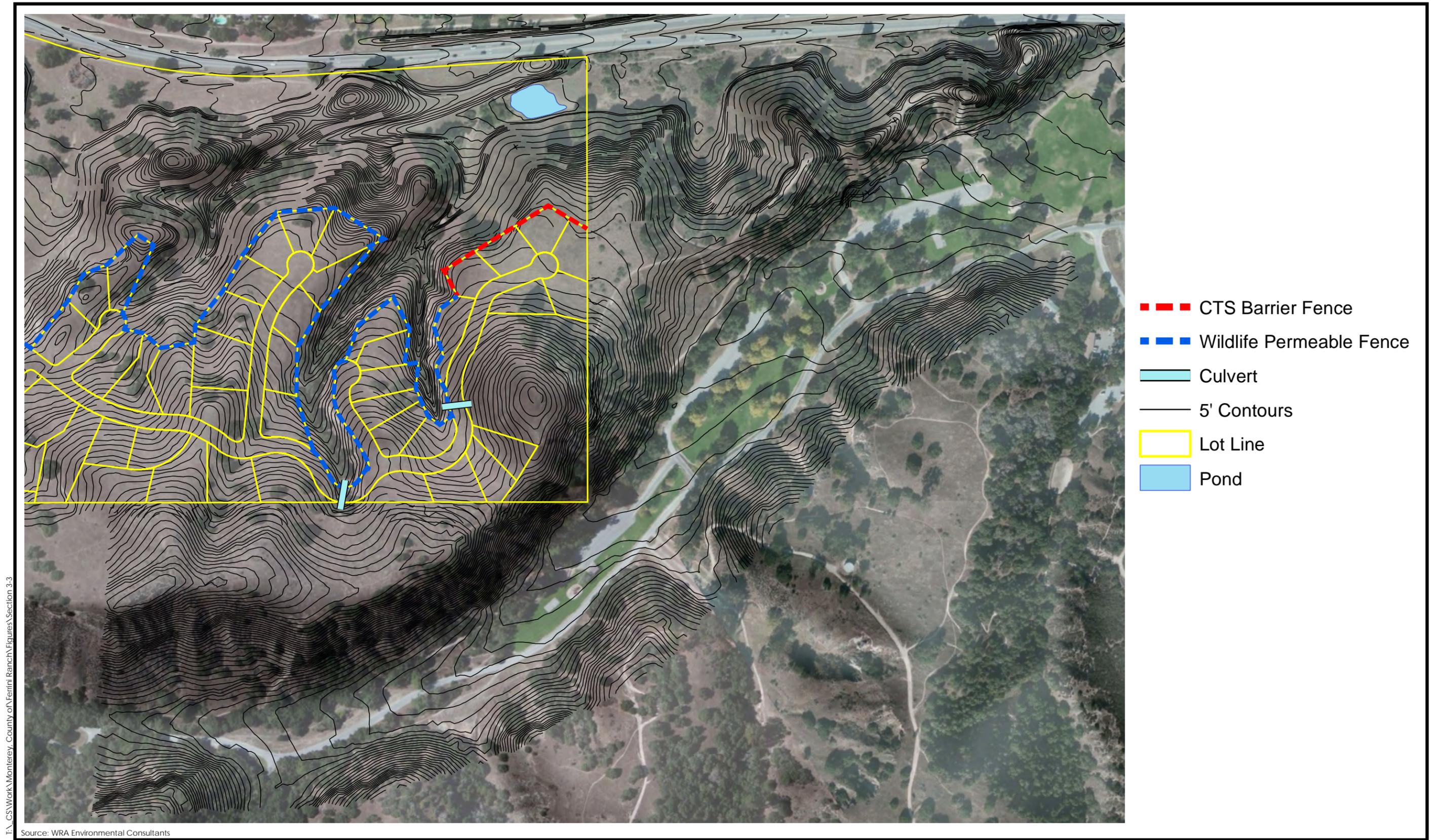
Design:

- 1) The design of the subdivision shall be modified to avoid direct effects to Pond 18. Pond 18, the area adjacent to Pond 18, and the undeveloped open space area contiguous with Pond 18 shall be protected during construction by installation of temporary exclusion fencing and by providing an appropriate buffer (to be determined by a qualified biologist) from areas of disturbance. As per MM 3.3-2b, the development of Lots #131 through #137 shall be contingent on the successful use of the created breeding pond as identified in MM 3.3-2b by CTS. Successful use shall be defined as the breeding pond containing water for 4 months during a normal rainy season and a finding of larval salamanders within the pond for at least two out of five years. No development with the exception of underground utilities shall be completed in the area of Lots #131 through #137 until these performance criteria are met.
- 2) The project will employ permanent barrier fences specifically designed to exclude CTS at Lots #131 through #137. These fences will be incorporated into Lots #131 through #137 facing Pond 18 to exclude CTS from these areas and direct them to open space areas or undercrossings. Fencing on Lots #100 through #130 shall allow for the passage of CTS to open space areas surrounding and within the undeveloped portions of the lots.
- 3) The project's main access roads will be made permeable for CTS dispersal through the use of undercrossings combined with vertical curbs and/or fences (see **Figure 3.3-7**). The design and location of the undercrossings will be determined in consultation with a qualified biologist and any incidental take permit requirements, if an Incidental Take Permit is required. Cattle fencing that will be installed adjacent to the main access roads will be designed with amphibian barrier fencing at the bottom of the fence to direct animals to the location of the culverts.

Fencing to keep people from accessing Pond 18 will be installed around the pond. Except as provided in mitigation measure MM 3.3-2(a)(4), above, the fencing around Pond 18 will be permeable to CTS and other wildlife.

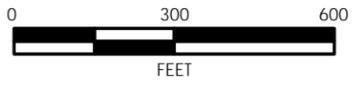
Construction:

- 4) Construction best management practices (BMPs) shall be implemented for work near Harper Creek, including working in the dry season, keeping heavy equipment out of the streambed, refueling and maintaining equipment outside the floodplain, stockpiling soils outside the floodplain, tree removal only as necessary to complete improvements, hydromulch and straw bales to be installed prior to October 15, and other measures as identified by the US Army Corps of Engineers. The project applicant shall ensure that work is done within the creek only when the creek is dry.



I:_CS\Work\Monterey County of\Ferrini Ranch\Figures\Section 3.3

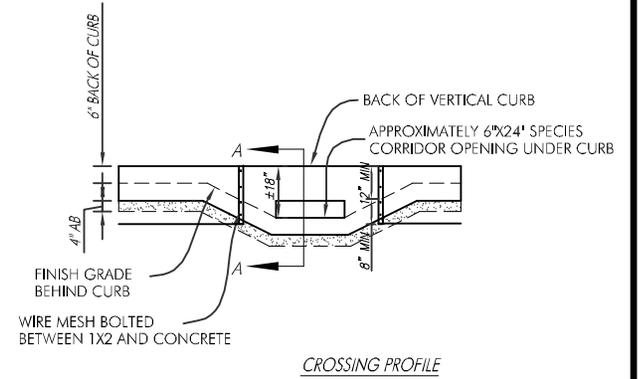
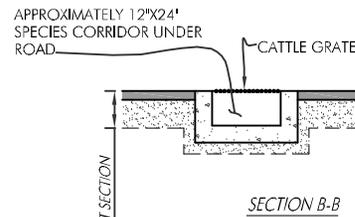
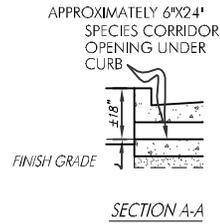
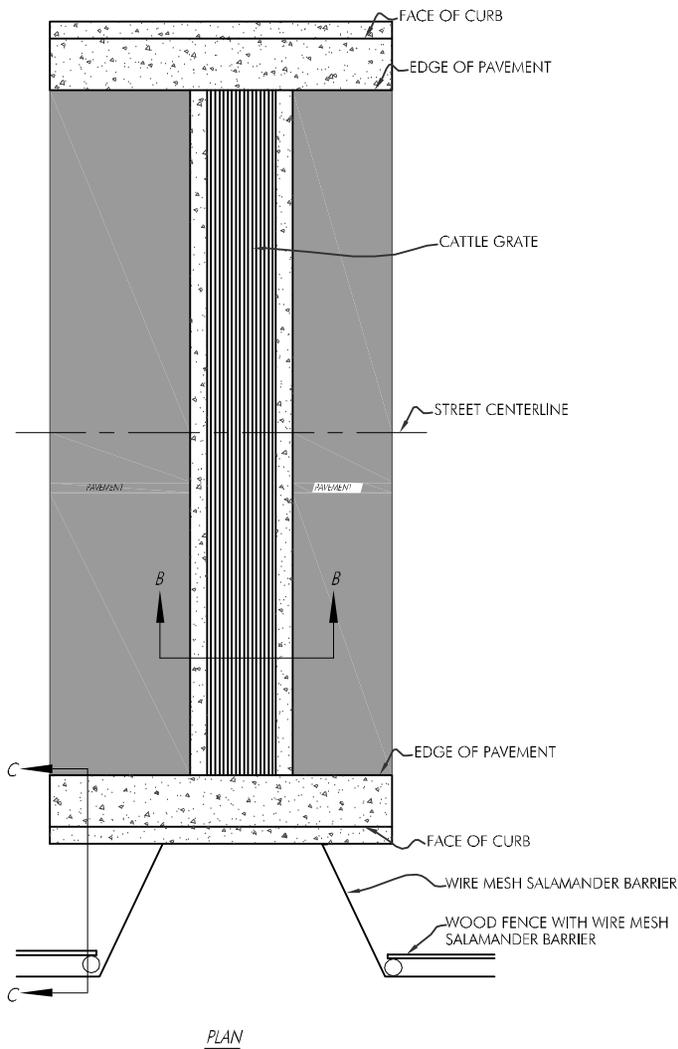
Source: WRA Environmental Consultants



- CTS Barrier Fence
- Wildlife Permeable Fence
- Culvert
- 5' Contours
- Lot Line
- Pond

FIGURE 3.3-6
CTS BARRIER AND CROSSING LOCATIONS





Source: WRA Environmental Consultants

NOT TO SCALE

- 5) All construction personnel shall receive training sessions, conducted by a qualified biologist and in accordance with any Incidental Take Permit requirements, as may be relevant, that describes the California tiger salamander and its habitat, the specific measures that are being implemented to conserve the species and habitat, and the boundaries of the area of permitted disturbance.
- 6) Before beginning construction activities, the project applicant shall construct a temporary barrier along the limits of grading and disturbance. This barrier shall consist of silt fencing at least 2 feet tall and buried to a depth of at least 6 inches below the soil surface. A qualified biologist shall inspect this area prior to installation of this barrier. The barrier shall be designed to allow California tiger salamanders to leave the construction site and prevent them from entering the construction site, and shall remain in place until all development activities have been completed. The development area including all burrows shall be inspected by the qualified biologist daily; if CTS are found within the limits of grading, no construction work in the surrounding area shall proceed until the CTS has left on its own volition or the CTS is removed consistent with any federal and state incidental take permits, including a collection and transplant plan that has been submitted to the USFWS and the CDFW for review and approval. A final report of the project applicant's compliance with the collection and transplant plan shall be submitted to the County within 90 days of the completion of all planned development on the project site.
- 7) The project applicant shall terminate construction work involving ground disturbance 30 minutes before sunset and shall not resume ground disturbance work until 30 minutes after sunrise during the CTS migration/active season from November 1 to June 15 within those areas considered aestivation habitat.

Operation:

- 8) Codes, Covenants and Restrictions (CCRs) will be established that provide the following compliance requirements:
 - a. All sources of trash that may attract predators of California tiger salamanders shall be properly contained at each residence. No pets shall be permitted within Pond 18 and any other designated CTS breeding areas and portions of the open space area preserved and managed for the benefit of CTS as provided in mitigation measure MM 3.3-2b.
 - b. Signage shall be installed and maintained identifying areas of protected habitat to inform, residents, and recreationalists as to the presence of protected species, its habitat, and the importance of preservation.
 - c. High intensity lighting shall be avoided within or adjacent to designated CTS breeding or aestivation habitat. Downcast lighting

3.3 BIOLOGICAL RESOURCES

with cutoffs and minimal spill shall be used for outdoor areas to avoid negative effects to CTS.

- d. Fencing to keep people from accessing Pond 18 will be installed around the pond. Except as provided in mitigation measure MM 3.3-2(a)(4), above, the fencing around Pond 18 will be permeable to CTS and other wildlife.

MM 3.3-2b

The applicant will construct a new breeding pond and manage the new pond and suitable aestivation habitat within conservation areas for CTS (See **Figure 3.3-8**). The preferred pond will be located in the on-site open space area within the southwestern parcel. An alternative pond location has been identified on the northeastern parcel. The determination of the acreage of aestivation habitat to be included in the conservation areas shall be based on providing 2:1 mitigation for any potential aestivation habitat impacted by roads or development for the proposed project within 562 meters of known or potential breeding ponds and 1:1 mitigation for potential aestivation habitat between 562 meters and 2,092 meters. Based on this calculation, 210 acres of open space land will be included within the on-site CTS conservation area and shall include the open space lands contiguous with Pond 18 and the new breeding pond. Should it be determined that off-site Pond 1 is not occupied habitat after two years of protocol-level surveys (during average precipitation years), the amount of aestivation habitat protected will be reduced accordingly.

The new breeding pond will have suitable water sources to sustain water within the pond for 3 to 4 months. The pond will be dry or drained during the summer and fall to prevent the establishment of non-native predator species. The applicant, with authorization and permission from the CDFW and the USFWS, will transfer any CTS that are collected during preconstruction monitoring to the new breeding pond (MM 3.3-2a [6]).

The development of Lots #131 through #137 shall be contingent on the successful use of the created pond by CTS. Successful use shall be defined as the breeding pond containing water for 4 months during a normal rainy season and a finding of larval salamanders within the pond for at least two out of five years. No development with the exception of underground utilities shall be completed in the area of Lots #131 through #137 until these performance criteria are met.

The compensatory mitigation lands, including the on-site constructed pond, will be managed for the benefit of CTS and other sensitive species under the conservation area plan. The conservation area will be deed restricted in a form approved by the County, and the conservation area may be subject to a conservation easement in a form generally consistent with the requirements as set forth in the conservation easement template used by the CDFW and the USFWS.

Consistent with the requirements of this mitigation measure MM 3.3-2b and after implementing the avoidance measures in MM 3.3-2a, the applicant shall submit the final open space area management plan that includes the

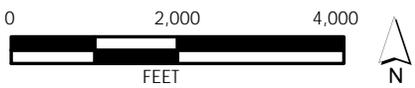
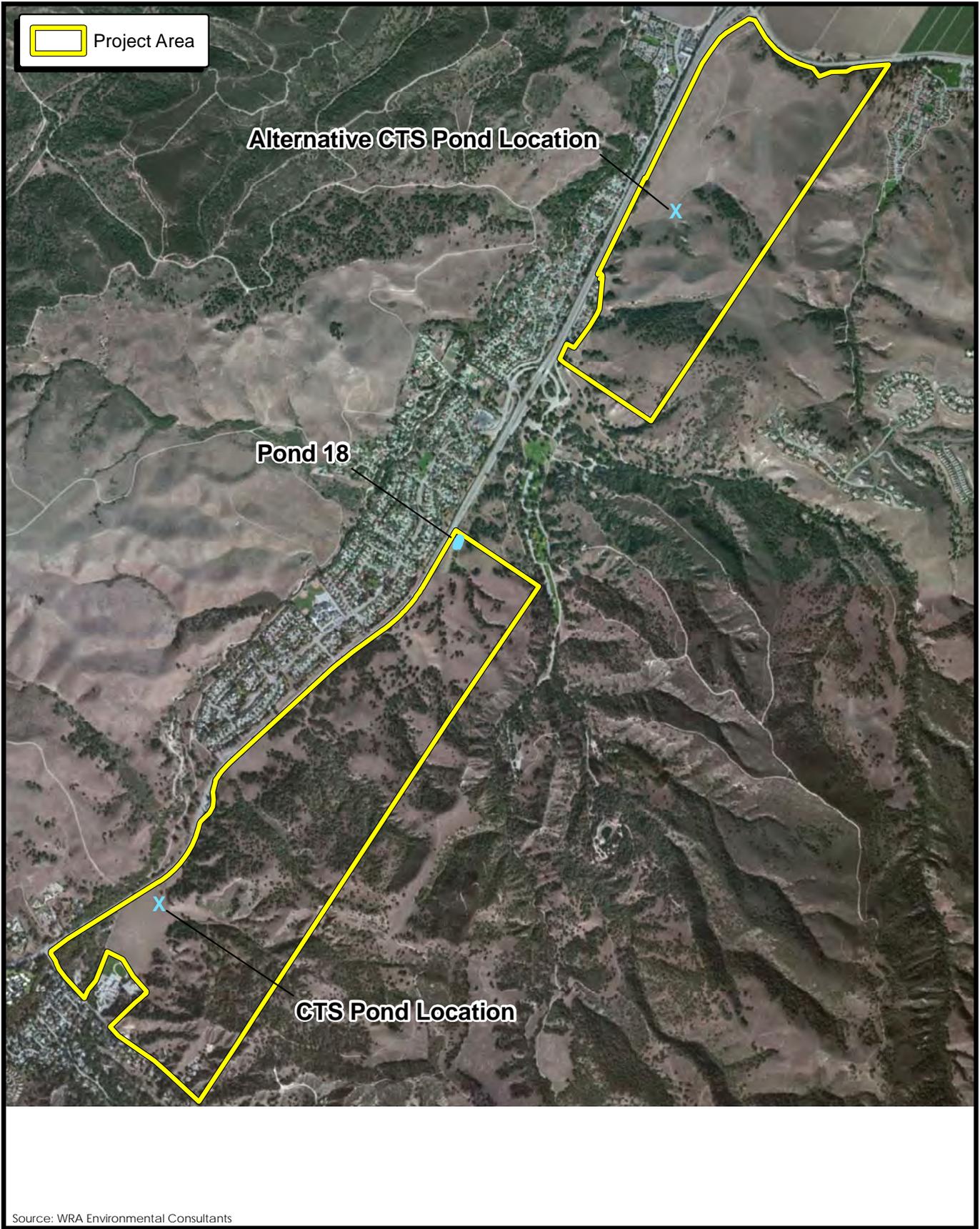


FIGURE 3.3-8
PROPOSED CTS MITIGATION PONDS

conservation area design and the conservation area plan to the County for approval prior to construction.

Alternatively, the applicant may elect to purchase equivalent habitat credits within an approved CTS mitigation bank subject to approval by the CDFW and the USFWS, as applicable.

MM 3.3-2c Prior to construction of any stormwater detention basins or other water features on the project site (other than mitigation land), the County of Monterey shall require that the project applicant design detention basins to drain rapidly after a storm event so that these water features minimize attracting breeding of non-native California tiger salamanders and other invasive species, such as bullfrogs. Proposed stormwater design features and strategies shall also be subject to review and approval by RMA Environmental Services. Stormwater system design shall be part of an approved stormwater pollution prevention program (SWPPP).

Implementation of the above mitigation measures will ensure avoidance, minimization, and mitigation of direct and indirect impacts to California tiger salamanders and their habitat. Implementation of the above mitigation measures would reduce impacts to California tiger salamander breeding, aestivation, and movement habitat to a **less than significant** level by avoiding the impact or providing/creating appropriate compensatory habitat values in consultation with the appropriate resource and permitting agencies.

Potential Disturbance Biological Communities That Support Special-Status Animal Species

Impact 3.3-3 Implementation of the proposed project would result in temporary disturbance and direct alteration of the project site, which potentially provides foraging, hibernating, reproduction (breeding, rearing), nesting, and roosting opportunities for special-status animal species. This would be considered a potentially significant impact. Specific impacts to nesting special-status bird species are discussed in Impact 3.3-7.

Wetland, riparian, coast live oak woodland/savanna, coastal scrub, and annual grassland biological communities on the project site provide a variety of foraging, hibernating, and reproduction opportunities for special-status species. The silvery legless lizard may occur in areas with sandy or loose loam soils under the sparse oaks found in the grassland vegetation on the project site. The two-striped garter snake may be found in the riparian habitat on the project site. Seasonal wetland habitat that provides temporary pool-like habitat may be suitable for western spadefoot toad and Coast Range newt species. In addition, ephemeral drainages on the project site may provide habitat for the coast horned lizard. Hollows in oak trees provide potential roosting habitat for special-status bat species on the project site. **Table 3.3-3** provides a summary of special-status species that may occur on-site during different life-cycle stages.

3.3 BIOLOGICAL RESOURCES

**TABLE 3.3-3
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR ON THE PROJECT SITE**

Species	Life-Cycle Stage Supported on Project Site: foraging, hibernating, reproduction (breeding, rearing), nesting, roosting
American badger (<i>Taxidea taxus</i>)	Foraging, Reproduction
American peregrine falcon (<i>Falco peregrinus anatum</i>)	Foraging
Bell's sage sparrow (<i>Amphispiza belli belli</i>)	Foraging, Nesting
California horned lark (<i>Eremophila alpestris actia</i>)	Foraging, Nesting
California red-legged frog (<i>Rana aurora draytonii</i>)	Hibernating, Nesting, Reproduction
Coast (California) horned lizard (<i>Phrynosoma coronatum frontale</i>)	Foraging, Hibernating, Reproduction
Coast Range newt (<i>Taricha torosa torosa</i>)	Reproduction
Cooper's hawk (<i>Accipiter cooperi</i>)	Foraging, Nesting
Ferruginous hawk (<i>Buteo regalis</i>)	Foraging
Golden eagle (<i>Aquila chrysaetos</i>)	Foraging
Lawrence's goldfinch (<i>Carduelis lawrencei</i>)	Foraging, Nesting
Lewis's woodpecker (<i>Melanerpes lewis</i>)	Foraging, Nesting
Long-eared owl (<i>Asio otus</i>)	Foraging, Nesting
Monterey dusky-footed woodrat (<i>Neotoma fuscipes luciana</i>)	Foraging, Reproduction
Monterey (Salinas) ornate shrew (<i>Sorex ornatus salaries</i>)	Foraging, Reproduction
Northern harrier (<i>Circus cyaneus</i>)	Foraging, Nesting
Olive-sided flycatcher (<i>Contopus cooperi</i>)	Foraging, Nesting
Pallid bat (<i>Antrozous pallidus</i>)	Foraging, Reproduction, Roosting
Prairie falcon (<i>Falco mexicanus</i>)	Foraging
Sharp-shinned hawk (<i>Accipiter striatus</i>)	Foraging
Silvery legless lizard (<i>Anniella pulchra pulchra</i>)	Foraging, Hibernating, Reproduction
Southwestern pond turtle (<i>Clemmys marmorata pallida</i>)	Foraging, Hibernating, Reproduction
Two-striped garter snake (<i>Thamnophis hammondi</i>)	Foraging, Hibernating, Reproduction
Western spadefoot toad (<i>Spea hammondi</i>)	Foraging, Hibernating, Reproduction
White-tailed kite (<i>Elanus leucurus</i>)	Foraging, Nesting

According to the Vesting Tentative Map, approximately 600 acres (69 percent) of the project site would be designated as open space and remain viable habitat for foraging, hibernating, and reproduction of special-status species. However, construction activities that affect the habitats discussed above may result in a loss of habitat or direct loss of special-status species. Implementation of mitigation measures **MM 3.3-2a** and **MM 3.3-2b** would ensure that upland grasslands and pond habitat are protected and/or replaced. Implementation of mitigation measures **MM 3.3-6a** and **MM 3.3-6b** would ensure that oak woodland foraging and roosting values are protected and/or replaced. The designation of 600 acres of open space combined with implementation of mitigation measures **MM 3.3-2a**, **MM 3.3-2b**, **MM 3.3-6a**, and **MM 3.3-6b** would reduce the potential loss of foraging, nesting, and reproduction habitat. However,

potential indirect and direct impacts to habitat used by special-status bats and mammals may still occur. These impacts are discussed in more detail below.

Special-Status Bats

The project site contains oak woodland habitat that may provide roosting habitat for special-status species of bats, such as the pallid bat. Removal of mature oak trees would directly impact special-status bats if present at the time of removal, and removal of the oak woodland habitat would indirectly impact special-status bats by reducing the amount of available habitat, which would be considered a **potentially significant impact**. The following mitigation measure has been provided to reduce the impact on roosting habitat for special-status bats to a **less than significant** level.

Mitigation Measure

MM 3.3-3a Prior to removal or disturbance of oak trees, the project applicant shall contract with a qualified biologist to conduct preconstruction surveys for potential bat roost sites within 100 feet of the area of site disturbance. Preconstruction surveys shall occur during the time when bats would be expected to be present and active (i.e., early April) in order to determine whether or not roosting bats are present. If no evidence exists that bats are roosting, no further action is required. Any and all survey results shall be submitted to Monterey County Planning Department to assess and verify condition compliance. If roosting bats are determined to be present, the following mitigation measure shall be implemented:

- 1) Roosting sites maintained within open space areas shall be protected during construction by construction fencing, providing a minimum 100-foot buffer from areas of disturbance.
- 2) Signage shall be provided identifying areas of protected habitat to inform construction personnel and recreationalists as to the presence of protected species and habitat and the importance of preservation.

Special-Status Mammals

As noted above, the proposed project will impact riparian and grassland habitats. Riparian vegetation provides nesting habitat for the special-status Monterey dusky-footed woodrat. Grasslands provide habitat for American badger species to make their dens. Construction activities that result in the disturbance or removal of either riparian and/or grassland habitat may directly impact nesting habitat for the Monterey dusky-footed woodrat and American badger, respectively. In addition, increased development may result in indirect impacts to these special-status mammal species through the introduction of domestic pets, which may be predators or harass the mammals; increased nighttime lighting may affect behavior movement patterns and increase the risk of predation; and increased noise levels and traffic may result in nest abandonment. Therefore, the proposed project's effect on nesting habitat for special-status mammal species would be considered a **potentially significant impact**. The following mitigation measure has been provided to reduce this impact to a **less than significant** level.

3.3 BIOLOGICAL RESOURCES

Mitigation Measure

MM 3.3-3b

Prior to removal or disturbance of riparian and grassland habitat on the project site, the project applicant shall contract with a qualified biologist to conduct preconstruction surveys for the presence of the following special-status mammal species and their nesting sites: Monterey dusky-footed woodrat (and their nests) and American badger (and their dens). Preconstruction surveys shall occur during the time when these species would be expected to be present. If no evidence exists that either species is present, no further action is required. If species or nests/dens are determined to be present, the following mitigation steps shall be taken.

- 1) Nesting habitat area maintained within open space areas shall be protected during construction by construction fencing, providing a minimum 100-foot buffer from areas of disturbance.
- 2) For impacts to nesting habitat for Monterey dusky-footed woodrat that cannot be avoided due to engineering and site constraints, the project applicant shall contract with a qualified biologist to dismantle the nests prior to construction to ensure that no animals are taken during construction.
- 3) For impacts to natal habitat for the American badger, temporary protective buffers shall be established by a qualified biologist to avoid direct take of this mammal species.

All survey results and recommendations shall be submitted to Monterey County to assess and verify condition compliance.

Implementation of the above mitigation measures would require avoidance, preservation, and protection of nesting habitat for special-status bat and mammal species as feasible. Preconstruction surveys for potential roost sites for special-status bat species, nest sites for Monterey dusky-footed woodrat, and den sites for American badger shall be conducted by a qualified biologist, with results submitted to Monterey County RMA-Planning. For impacts that cannot be avoided through design, replacement roosting sites shall be provided, Monterey dusky-footed woodrat nests shall be dismantled by a qualified biologist prior to construction, and protective buffers shall be established to avoid direct take of the American badger. Implementation of the above measures would reduce the impact to nesting habitat for special-status bat and mammal species to a **less than significant** level.

Potential Loss of Riparian and Wetland Habitat

Impact 3.3-4

Implementation of the proposed project would result in the construction of buildings, roads, and other facilities that would in turn result in the loss of riparian and wetland habitat. This would be considered a significant impact.

Implementation of the proposed project would result in the construction of buildings, roads, trails, and other facilities that may result in a loss of riparian and non-jurisdictional wetland habitat as shown in **Figures 3.3-3a** and **3.3-3b**. Sensitive riparian and wetland habitats were identified on the project site as shown in **Figures 3.3-1a**, **3.3-1b**, and **3.3-2**. The recent substantial decline of riparian and wetland communities throughout the state has increased concerns regarding plant and wildlife species associated with such communities; therefore, state and

federal agencies have adopted policies to arrest further loss. The CDFW and the USACE have adopted "no-net-loss" policies for riparian and wetland habitat.

Riparian Habitat

Generally, impacts to riparian habitat are measured based on the acreage of riparian tree cover to be removed or disturbed. Riparian is defined as on, or pertaining to, the banks of a stream. Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on and occurs because of, the stream itself" (WRA 2007a). Removal of riparian vegetation requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW. In addition, riparian habitat is considered suitable habitat for a number of special-status species, including the two-striped garter snake. Development of portions of Lots #1 through #15, as well as a proposed trail across Harper Creek, would result in the disturbance or removal of riparian vegetation, which would be considered a **significant impact**.

Mitigation Measure

MM 3.3-4a Existing riparian habitat areas shall be avoided and protected where feasible and otherwise mitigated so that there will be no net loss of riparian habitat. The following performance-based mitigation and management steps shall be taken to avoid disturbance or removal of habitat and associated special-status species (plant and animal) and to create or restore additional habitat if necessary:

- 1) The site plan or final improvement plans shall be modified to relocate Lots #1 through #15 and associated improvements in order to avoid riparian habitat and to include the riparian habitat within open space easements. Any plan modifications are subject to review and approval by Monterey County RMA-Planning.
- 2) During construction, avoided riparian habitat shall be protected using construction fencing, providing a minimum 100-foot buffer from areas of disturbance where feasible. No construction activity shall be allowed beyond exclusionary fence lines, and the exclusionary fences are to be monitored on a daily basis while work is being performed adjacent to these resources.
- 3) Signage shall be provided identifying protected areas to inform construction personnel and recreationalists as to the presence of the protected habitat and the importance of preservation.
- 4) Impacted habitat shall be replaced through restoration activities or mitigation bank credit purchase so that there will be no net loss of riparian habitat. Should mitigation consist of restoration, a riparian mitigation and monitoring plan shall be prepared, submitted to the County for review, and implemented during construction.

Wetland Habitat

According to the 2007 Biological Assessment and verified wetland delineation, none of the wetlands on-site (other than the perennial waters of El Toro Creek, addressed separately) were determined to be jurisdictional as defined by the USACE (WRA 2007a, 2007b). However, these

3.3 BIOLOGICAL RESOURCES

wetlands may be considered waters of the State by the Regional Water Quality Control Board. Although the wetland habitat on the project was determined to be non-jurisdictional, this habitat is an important biological community that supports special-status plant and animal species such as the western spadefoot toad.

Development of several lots and roadway improvements would directly result in the loss or disturbance of wetland habitat, which would be considered a **significant impact**. However, implementation of the following mitigation measure would reduce this impact to a **less than significant** level.

Mitigation Measure

MM 3.3-4b

Prior approval of final improvement plans on or near Lots #91 through #93, Lots #104 through #107, Ferrini Ranch Road at the north end of Parcel A, Lots #138, #141, and #142, and the roadway between Lots #29 and #31, the grading areas shall be resurveyed by a qualified biologist to document and confirm the area of disturbance to wetland habitat. Where wetlands or wetland habitat would be disturbed by construction activities, the following performance-based mitigation and management steps shall be taken to reduce the loss of wetland habitat, avoid disturbance or removal of associated special-status species (plant and animal) as feasible, and create additional habitat:

- 1) Where feasible, the site plan/improvement plans shall be modified to relocate individual lots or improvements in order to avoid wetland habitat and to include the wetland habitat within open space easements. Any plan modifications are subject to review and approval by Monterey County RMA-Planning.
- 2) Existing wetland habitat shall be restored, maintained, and protected within open space areas and placed under conservation easements in perpetuity.
- 3) For impacts to non-jurisdictional wetland habitat that cannot be avoided due to engineering and site constraints, the project applicant shall identify an area of the project site as created wetland habitat, for long-term management, in an amount at least equal to the area disturbed or impacted resulting in "no net loss" of wetland area. The project applicant shall contract with a qualified biologist to prepare a wetland mitigation and management plan in accordance with the requirements of the Regional Water Quality Control Board. The wetland mitigation and management plan shall include the following:
 - Target areas for creation/restoration.
 - A complete biological evaluation of the existing resources on the target areas.
 - Specific creation and/or restoration plans for each target area.
 - Performance standards for success that will illustrate that the compensation ratios are met.

- A monitoring plan including schedule and annual report format.
- Detailed management measurements.

The project applicant shall submit the wetland mitigation and management plan to Monterey County RMA-Planning for approval prior to engaging in mitigation activities (including mitigation land acquisition). The land utilized to satisfy this mitigation measure shall be protected through a fee title or conservation easement in perpetuity. Additionally, the project applicant is responsible for the cost of the conservation easement or fee title and establishment of a maintenance plan for mitigation areas. Resources within the on-site preserve can be assumed to partially fulfill this requirement when the conservation easement for this area is established. Mitigation monitoring will be continuous until the performance standards identified in the wetland mitigation and management plan are consistently met for five consecutive years.

- 4) During construction, protective construction fencing shall be used, providing a minimum 100-foot buffer from areas of disturbance. No construction activity shall be allowed beyond exclusionary fence lines, and the exclusionary fences are to be monitored on a daily basis while work is being performed adjacent to these resources. If any soils or materials enter the riparian or wetland habitats, all construction shall be halted until the County is consulted. Construction shall re-commence upon authorization.
- 5) Signage shall be provided identifying protected areas to inform construction personnel and recreationalists as to the presence of the protected habitat and the importance of preservation.

Implementation of the above mitigation measures would require avoidance, preservation, and protection of riparian and wetland habitats as feasible. A riparian mitigation and management plan shall be prepared and include details for restoration of the riparian habitat. For impacts to wetland habitat that cannot be avoided, the project applicant shall identify an area of project site as wetland habitat, for long-term management, in an amount equal to or greater than the area disturbed or impacted. A wetland mitigation and management plan shall be prepared and implemented in accordance with the requirements of the Regional Water Quality Control Board. Implementation of the above mitigation measures would reduce the impact to wetland and riparian habitats to a **less than significant** level.

Potential Disturbance of Waters of the United States

Impact 3.3-5 Implementation of the proposed project would result in construction activities in the vicinity of approximately 2,099 linear feet (0.17 acres) of perennial waters that are considered waters of the United States under Section 404 of the Clean Water Act, which are subject to permit approval from the US Army Corps of Engineers. The pedestrian bridge over Harper Creek will result in fill to waters of the United States; therefore, this would be considered a significant impact.

3.3 BIOLOGICAL RESOURCES

Implementation of the proposed project would require placement of fill material into waters of the United States. However, implementation of the following mitigation measure would reduce this impact to a **less than significant** level.

Mitigation Measure

MM 3.3-5 The project applicant shall ensure that the project will result in no net loss of waters of the United States by providing mitigation through impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the CWA Section 404/401 permits.

Compensatory mitigation may consist of (a) obtaining credits from a mitigation bank; (b) making a payment to an in-lieu fee program that will conduct wetland, stream, or other aquatic resource restoration, creation, enhancement, or preservation activities; these programs are generally administered by government agencies or nonprofit organizations that have established an agreement with the regulatory agencies to use in-lieu fee payments collected from permit applicants; and/or (c) providing compensatory mitigation through an aquatic resource restoration, establishment, enhancement, and/or preservation activity. This last type of compensatory mitigation may be provided at or adjacent the impact site (i.e., on-site mitigation) or at another location, usually within the same watershed as the permitted impact (i.e., off-site mitigation). The project proponent/permit applicant retains responsibility for the implementation and success of the mitigation project.

Evidence of compliance with this mitigation measure shall be provided to Monterey County prior to construction and grading activities for the proposed project.

Implementation of the above mitigation would reduce impacts to wetlands and other waters of the United States to a **less than significant level**.

Loss of Sensitive Coast Live Oak Woodland Habitat and Oak Trees

Impact 3.3-6 Implementation of the proposed project would result in permanent alteration of site conditions that may result in the loss of coast live oak woodland habitat and the removal of a maximum of 921 coast live oak trees from the project site. This would be considered a significant impact.

According to the Biological Assessment, approximately 49 percent of the project site contains oak woodlands and/or oak savanna (WRA 2007a). These areas are dominated by open to nearly closed canopies of coast live oak (*Quercus agrifolia*) trees. According to the Forest Management Plan, approximately 24 acres are classified as having dense canopies and approximately 412 acres are classified as having moderate canopies. Oak woodlands are provided special protection under Section 21083.4 of the Public Resources Code and local policies that address SB 1334. An oak woodland is any acre with a native oak species in the genus *Quercus* that has a diameter at breast height (dbh) of 5 inches or greater and is not subject to timber harvest or exempt pursuant to Section 21083.4(d) of the Public Resources Code.

Within the coast live oak woodland habitat, there are approximately 29,300 native oak trees with diameters (at breast height) greater than 6 inches on the property (Staub 2006). The site is dominated with coast live oaks on the steeper north-facing slopes, with some valley oaks (*Quercus lobata*) at the gentle flats and toe slopes of the valley bottoms. According to the Forest Management Plan, approximately 632 to 921 trees would be removed during construction based on approximate limits of grading for construction of roads, driveways, and building pads (Staub 2006, 2010). However, the actual final number of trees to be removed cannot be determined until final site plans for all lots are prepared. Approximately 20 to 25 percent of the trees estimated to be removed are suffering from extensive decay, breakage, and/or low vigor. No trees with diameters greater than 24 inches (at breast height) would be removed if careful construction methods were implemented and some portions of the roadways were constructed to be less than the standard 20-foot width. Removal of a maximum of 921 trees would represent less than 3.2 percent of the total trees currently estimated on the project site.

Although the largest blocks of continuous forest cover would be preserved, some fragmentation of forest resources would occur with development of the proposed project, and tree removal will be required. In addition, the final tree removal count may vary somewhat from these preliminary estimates due to realignment of roadways and actual placement building envelopes. Tree and oak woodland removal would be considered a **significant impact**. The following mitigation measures are required to ensure that removal of coast live oak trees is kept at a minimum, that trees are replanted after construction, that remaining trees are protected during construction activities, and that project mitigation complies with requirements of the Public Resources Code.

Mitigation Measures

MM 3.3-6a

Prior to issuance of grading permits, improvement plans shall be reviewed by a certified arborist and County planning staff. Plans shall be field verified and modified as feasible and practicable considering engineering constraints to preserve as many healthy trees as possible and to minimize impacts on trees to be retained. Design and construction recommendations provided in the Forest Management Plan and Supplemental Forester's Report, prepared by Staub Forestry and Environmental Consulting in September 2006 and March 2010, respectively, shall be implemented during the final design of the roadways, trails, utilities, and individual building envelopes. Tree removal and replacement plans shall be prepared by a qualified professional forester or arborist and shall be subject to review and approval by the County of Monterey Planning Department. The Monterey Agricultural Commissioner's Office shall be contacted prior to removing any oak tree in order to comply with current Sudden Oak Death quarantine requirements.

The tree removal and replacement plan shall address removal of trees within any acre of land with a 5-inch dbh or greater native oak species consistent with Section 21083.4(b) of the Public Resources Code. The mitigation measures required by the County of Monterey include the following:

- 1) Replant on-site an appropriate number of trees for 100 percent of the direct impact at a 1:1 ratio (currently estimated at 921 trees). Maintenance and monitoring of plantings shall be kept in place by the project applicant and/or property owners association (POA) for seven years. Replanting as required by this measure may be used to restore

3.3 BIOLOGICAL RESOURCES

former oak woodlands, and replanting shall be located in areas that will not be compromised by excessive tree density.

- 2) The project applicant shall contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. This measure shall apply to the 50 percent of impact, equivalent to approximately 7 acres of oak woodland removal.

All protected coast live oak (*Quercus agrifolia*) trees with diameters at breast height less than 24 inches that are proposed for removal shall be replaced on a 1:1 basis in accordance with Section 21.64.260 of the Monterey County Zoning Code. Frequently, replanting at a 3:1 ratio is recommended in order to achieve a successful replacement ratio of 1:1. However, grassland habitat on the project site is considered to be at least as ecologically valuable as the oak woodland habitats. Therefore, replanting of coast live oaks at a 1:1 ratio is recommended on the project site in order to ensure there is no excessive loss of grassland habitat. Additional mitigation will be provided through a contribution to the Oaks Woodlands Conservation Fund.

Tree replacement shall be the same species as removed and should be local native stock. Existing volunteer seedlings on the project site may be transplanted to provide suitable replacement planting stock of known local origin. If replanting stock is not transplanted from on-site sources, the replanting stock shall be grown from local native seed stock in sizes no greater than 5 gallons, with 1-gallon, D40 Treepot size or smaller preferred to ensure the highest replanting success rate. Trees removed shall be replanted on the same lot(s) outside areas subject to development. Trees removed due to infrastructure improvements (i.e., roadways) shall be replanted on designated open space parcels or easements.

MM 3.3-6b

Prior to commencement of construction activities, protective fencing shall be erected along the driplines of each protected tree or group of trees to be preserved. No construction activities or storage of equipment or construction materials shall occur within the protective fence line. No soil may be removed from and no fill of additional soil exceeding 2 inches shall occur within the dripline or against the base of any tree, unless it is part of approved construction and approved on the improvement plans.

Implementation of the above mitigation measures would require preparation of site-specific tree removal and replacement plans prior to issuance of grading permits to ensure the loss of oak woodlands and individual coast live oak trees is minimized and that removed trees are replanted in accordance with Section 21.64.260 of the Monterey County Zoning Code and Section 21083.4 of the Public Resources Code. In addition, during construction activities, protective fencing shall be installed along the dripline of protected trees or group of trees to be preserved in order to minimize damage to remaining trees. Therefore, the impact to sensitive oak woodland habitat would be reduced to a **less than significant** level.

Potential Loss of Protected Avian Species and Habitat

Impact 3.3-7 Implementation of the proposed project would result in temporary and direct disturbance to nesting raptors and migratory birds. This would be considered a potentially significant impact.

Habitat within the project site provides suitable foraging opportunities for many avian species, including special-status bird species (see **Table 3.3-3**). Raptors and raptor nests are considered to be a special resource by federal and state agencies and are protected under the Migratory Bird Treaty Act (MBTA) and the California Code of Regulations. All migratory birds are also protected under the MBTA. Future development within the project site may affect suitable habitat for these avian species.

Protocol-level burrowing owl surveys were conducted by Denise Duffy & Associates in March 2008. These surveys did not detect any burrowing owls on the project site. However, as long as habitat that supports burrowing owls exists, the species could move onto the project site. If they moved on-site, construction activities associated with the proposed project may directly impact individually species or indirectly impact burrowing owl habitat, which would be considered a **potentially significant impact**. In addition, construction activities that require disturbance of trees or other vegetation containing active nests could cause direct impact to nesting raptors and migratory birds. Disturbance of active nests within the project site would be considered a **significant impact**. Construction could also result in noise, dust, increased human activity, and other indirect impacts to nesting raptors or migratory bird species in the project vicinity. Potential nest abandonment and mortality to eggs and chicks, as well as stress from loss of foraging areas, would also be considered a **significant impact**. Implementation of the following mitigation measure would reduce this impact.

Mitigation Measure

MM 3.3-7 The project applicant shall conduct all construction or tree removal outside the active nesting seasons (typically February 1 through August 31) to the extent feasible and practicable. In areas where construction will occur during the active nesting season, the project applicant shall retain a qualified biologist to conduct a focused survey for the presence or absence of burrowing owls and active nests of raptors and migratory birds within and in the vicinity of the construction area. Surveys shall be conducted no more than 30 days prior to ground disturbance and provided to Monterey County RMA-Planning for verification of condition compliance.

If burrowing owls or active nests are located during preconstruction surveys, the following mitigation steps shall be taken:

- 1) During construction, exclusion fencing shall be maintained, providing a minimum 300-foot buffer from areas where burrowing owls have been identified. For construction activities proposed near active nests of other migratory birds, buffer/exclusion zones (no ingress of personnel or equipment at a minimum radius of 100 feet around the nest) shall be established or the construction schedule altered. The buffer zones shall remain in place until the nests are abandoned or the biologist deems disturbance potential to be minimal. No action is necessary if construction will occur during the non-breeding season (between August 1 and November 1).

3.3 BIOLOGICAL RESOURCES

- 2) Signage shall be provided identifying areas of buffers to inform construction personnel and recreationalists as to the presence of protected species and habitat and the importance of preservation.
- 3) For impacts to burrowing owls that cannot be avoided due to engineering and site constraints, the project applicant shall contract with a qualified biologist to relocate the owls through the use of one-way doors over burrows as approved by the CDFW during the non-nesting season (March through August). For active nests that cannot be avoided, the USFWS and/or CDFW (as appropriate) shall be notified regarding the status of the nests and agency recommendations regarding nest avoidance measures implemented.

Implementation of the above mitigation measures would reduce impacts to raptors and migratory birds and burrowing owls to a **less than significant** level by limiting the exposure to construction activities.

Wildlife Corridors

Impact 3.3-8 Implementation of the proposed project would result in disturbance and construction activity in the vicinity of the State Route 68/El Toro Creek Bridge undercrossing, which is considered to be a significant route of safe passage for both small and large mammals, amphibians, and reptiles moving between Fort Ord lands and the Sierra de Salinas or Santa Lucia ranges. This would be considered a potentially significant impact.

Proposed Lots #1 through #5 and Lots #13 through #15 are located adjacent to the El Toro Creek undercrossing, which has been shown to be a significant wildlife corridor for mammals moving between Fort Ord lands and the project site (Diamond et al. 2011). Development on Lots #1 through #5 and #13 through #15 may discourage, interrupt, or otherwise impact the use of this wildlife corridor.

State Route 68 and Toro Park Estates development are major barriers for wildlife species attempting to travel between Fort Ord and the project site. The noise and vehicular movement along State Route 68, the sound barrier wall along Toro Park Estates, and the 1,400-foot-wide band of development discourage movement of wildlife. Existing corridors for wildlife are limited to El Toro Creek, the Portola Drive overpass, and possibly culverts that run beneath State Route 68. The El Toro Creek undercrossing is located on the western parcel of the project site adjacent to proposed Lots #1 through #5 and #13 through #15.

El Toro Creek is bordered by riparian vegetation that offers cover and shade for daytime movements, and the creek itself is shallow and usually flowing slowly enough for mammals to wade through it. A small seasonal tributary to El Toro Creek also joins at this location and provides additional cover and opportunity for wildlife movement. Therefore, El Toro Creek provides good opportunity for many species to move between Fort Ord and the open space provided on the project site and to the south. According to a review of the scientific literature by Hennings and Soll (2010), a corridor width of approximately 300 to 400 feet with a variety of habitats provides protected movement corridors and staging areas for wildlife moving from higher open space in the mountains to the lower valleys.

The proposed project would dedicate approximately 600 acres as permanent open space. Specifically the large valley floor would remain primarily undeveloped, as would the grassland

and oak woodland habitat areas located between Lots #30 through #38 and Lots #40 through #44. These areas contain woodland and aquatic habitats that support a variety of species and provide an open space corridor between Lots #30 and #40b. The only feature within this corridor is a local road that will serve the development and is not a major thoroughfare as State Route 68. This local road will not be a barrier to large mammal movement.

Noise generated by construction activities associated with development of residential units on Lots #1 through #5 and Lots #13 through #15 may discourage wildlife from using the El Toro Creek undercrossing. However, this noise would be temporary and wildlife movement would likely return to the area upon completion of construction. Restricting access to or from the El Toro Creek undercrossing would also limit use of this safe wildlife corridor. Access could be restricted due to lack of maintenance of vegetation on either side of the undercrossing and if development was permitted to allow solid barrier fencing that limits the amount of area wildlife would have to move from the El Toro Creek undercrossing to the open space area to the south. These impacts of project development would be considered a **potentially significant impact**.

Mitigation Measures

- MM 3.3-8a** Consistent with mitigation measure MM 3.3-4a, the project applicant shall revise the site plan in the vicinity of El Toro Creek to remove or relocate development away from the riparian corridor to allow sufficient wildlife movement and access and preserve other biological resources and habitat. No new development or improvements, including fencing, shall occur within 200 feet of the riparian edge or Highway 68 undercrossing.
- MM 3.3-8b** CC&Rs shall be established for the subdivision that limit the use and installation of solid barrier fencing beyond future building envelopes and yard areas. Fencing along State Route 68 in the vicinity of the wildlife corridor as identified in Diamond et al. (2011) will be designed to allow for wildlife movement but still contain cattle and allow for continued grazing on the open space lands. Cattle fencing along the internal road system will also be designed to allow for wildlife movement while keeping cattle off the road system.
- MM 3.3-8c** Prior to recordation of the final map, Monterey County RMA-Planning shall require the project applicant to submit for review and approval an open space management plan (OSMP). The OSMP shall identify the area to be placed under the open space easement, scenic corridor easement, B-6 zoning, allowed uses, maintenance management procedures, and timing. The plan shall identify all sensitive areas and specific management requirements for each area. This shall include, but not be limited to, maintaining open space areas located on both sides of the undercrossing and along State Route 68 in the vicinity of the undercrossing so that species moving north-south through the project site have an intact corridor through which to pass. The small portion of the project site located north of State Route 68 shall be reclassified RC-VS-D-S (Resource Conservation with Visual Sensitivity, Design Control, and Site Plan review overlays), with a scenic conservation easement. All maintenance plans shall be made part of the project's OSMP. As part of the OSMP, a Property Analysis Record (PAR) shall be used to calculate the endowment required to fund the OSMP in perpetuity.

3.3 BIOLOGICAL RESOURCES

MM 3.3-8d Cattle fencing that is permeable to wildlife movement will be installed along the road in the vicinity of Lots #27 and #28 as it traverses up the canyon in the southern portion of the site. Where appropriate to direct tiger salamander to road undercrossings, barriers along the bottom of the fence will be included to direct amphibians and small mammals to such undercrossings. Lighting will be restricted to that necessary to illuminate the road surface and will not be directed into open space areas. Any culverts or bridges over the ephemeral drainage will be designed with sufficient capacity to allow for small animal passage including CTS.

Implementation of the above mitigation measures would minimize restriction of access to the El Toro Creek undercrossing in order to ensure movement of wildlife to and from the undercrossing. This would reduce the proposed project's effect on the wildlife corridor to a **less than significant** level. No further mitigation measure would be necessary.

Conflicts with Adopted Habitat Conservation Plan

The proposed project is not located within an area associated with an adopted habitat conservation plan. Therefore, there would be **no impact** associated with a habitat conservation plan.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Effect on Special-Status Species and Sensitive Habitats

Impact 3.3-9 Buildout of the proposed project, combined with buildout of reasonably foreseeable development in the vicinity of the project site, would result in disturbance to special-status species and sensitive habitats throughout the region. However, implementation of mitigation measures presented in this section, **MM 3.3-1** through **MM 3.3-8d**, would reduce the overall contribution to cumulative biological resource impacts resulting from buildout of the proposed project. Therefore, this would be considered a less than significant cumulative impact.

As presented in the impact discussions above (see Impacts 3.3-1 through 3.3-8), implementation of the proposed project would result in a disturbance to special-status species and sensitive habitats. When these impacts are combined with biological resources impacts associated with reasonably foreseeable development in the vicinity of the project site, the disturbance to special-status species and sensitive habitats is likely to be compounded and considered a cumulative impact. However, implementation of mitigation measures presented in this section, **MM 3.3-1a** through **MM 3.3-8d**, would reduce the overall contribution to cumulative biological resource impacts resulting from buildout of the proposed project. Therefore, the proposed project's contributions to the cumulative loss and/or restriction of biological resources in the region are considered **less than significant**.

REFERENCES/DOCUMENTATION

- Andrews, K. M., J. W. Gibbons, and D. M. Jochimsen. 2008. *Ecological effects of roads on amphibians and reptiles: A literature review*, In *Urban Herpetology*, J. C. Mitchell, R. E. Jung Brown, and B. Bartholomew, eds. Society for the Study of Amphibians and Reptiles, Salt Lake City, UT.
- California Department of Fish and Wildlife (CDFW). 2010. *A Status Review of the California Tiger Salamander (Ambystoma californiense)*. Sacramento CA.
- California Native Plant Society (CNPS). 1994. *Rare and Endangered Vascular Plants of California*.
- Connectivity for Wildlife, LLC (CFW). 2009. *Central Coast Connectivity Project Northern Monterey County Linkages: Report on the Mount Toro to Fort Ord Reserve Study*. Prepared for the Big Sur Land Trust.
- Denise Duffy & Associates, Inc. (DDA).
- 2008a. *Protocol-level Burrowing Owl Survey Report, Ferrini Ranch Property, Monterey County, California*. March 2008.
- 2008b. *Protocol California Tiger Salamander Survey Results for the Ferrini Ranch Development Area*. September 2008.
- 2008c. *California Red-Legged Frog Protocol-level Survey Results for the Ferrini Ranch Development Area*. September 2008.
2013. *California Tiger Salamander Survey Results Ferrini Ranch – 2012/2013 Season*. June 2013.
- Diamond, T., D. Waetjen, I. Lacher, David Waetjen, K. Harrold, and F. M. Shilling. 2013. "Prioritizing mitigation for interstates using wildlife movement information." In *Proceedings of the 2013 International Conference on Ecology and Transportation (ICOET 2013)*
- Gibbs, J. P., and W. G. Shriver. 2005. *Can road mortality limit populations of pool-breeding amphibians? Wetlands Ecology and Management* 13: 281–289.
- Hennings, L., and J. Soll. 2010. *Wildlife corridors and permeability: a literature review*. Metro Sustainability Center.
- Jackson, S. D. 1996. Underpass systems for amphibians. In G. L. Evink, P. Garrett, D. Zeigler and J. Berry, eds. *Trends in Addressing Transportation Related Wildlife Mortality, proceedings of the transportation related wildlife mortality seminar*. Tallahassee, FL: State of Florida Department of Transportation, FL-ER-58-96.
- Launer, A., and C. Fee. 1996. *Biological research on California tiger salamanders at Stanford University*. Annual report August 8, 1996.
- Monterey, County of (Monterey County).
1982. *Monterey County General Plan*. August 1982, as amended through November 5, 1996.

3.3 BIOLOGICAL RESOURCES

1983. *Toro Area Plan*. December 1983, as amended through 1998.
- 2000a. *Monterey County Zoning Ordinance*. October 11, 2000.
- Orloff, S. 2007. *Migratory movements of California tiger salamander in upland habitat – a five-year study (Pittsburg, California)*. Ibis Environmental, Inc., prepared for Bailey Estates LLC.
- PMC.
- 2006a. *Peer Review of the Forest Management Plan*. December 5, 2006.
- 2007a. *Peer Review of the Biological Assessment*. February 21, 2007.
- 2007b. *Peer Review of the Delineation of Potential Jurisdictional Wetlands and Waters Under Section 404 of the Clean Water Act*. March 23, 2007.
2008. *Peer Review of the Biological Assessment*. March 1, 2008.
- Searcy, C. A. and H. B. Shaffer. 2011. Determining the migration distance of a vagile vernal pool specialist: How much land is required for conservation of California tiger salamanders? Pages 73–87 in D. G. Alexander and R. A. Schlising (Editors), *Research and Recovery in Vernal Pool Landscapes*. Studies from the Herbarium, Number 16. California State University, Chico, CA.
- Staub Forestry and Environmental Consulting (Staub).
2006. *Forest Management Plan for Ferrini Ranch*. September 27, 2006.
2010. *Supplemental Forester's Report for Ferrini Ranch Alternative Option as Requested in County Letter Dated 12/15/09*. March 17, 2010.
- US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1978. *Soil Survey of Monterey County*.
- US Fish and Wildlife Service (USFWS).
2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*.
2005. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population*. Federal Register, Vol. 70, Page 49380, August 23, 2005.
- Whitson Engineers (Whitson).
2005. *Vesting Tentative Map Ferrini Ranch (Sheets 1 through 5)*. March 15, 2005.
- 2010a. *Ferrini Ranch Access and Other Improvements (Sheet 1 of 1)*. February 1, 2010.
- 2010b. *Riparian Areas Exhibit – Vesting Tentative Map (Sheet 1 of 1)*. February 22, 2010.
- 2010c. *Vesting Tentative Map Preliminary Grading Data*. March 2010.

WRA Environmental Consultants (WRA).

2006. *Biological Assessment*. December 15, 2006.

2007a. *Biological Assessment*. December 2007.

2007b. *Delineation of Potential Jurisdictional Wetlands and Waters Under Section 404 of the Clean Water Act*. January 2007.

2008. *Technical Memorandum: Ferrini Ranch Wildlife Corridor*. December 10, 2008.

2009a. *Technical Memorandum: Genetic Testing on CTS at Ferrini Ranch: Mitigation Measure Implications*. January 27, 2009.

2009b. *Ferrini Ranch Development – Proposed Biological Resources Impact and Mitigation Measures*. January 27, 2009.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

This section provides an analysis of the potential for construction and operation of the proposed project to result in a significant effect on climate change. This section is based, in part, on the Air Quality Impact Assessment prepared by Ambient Air Quality & Noise Consulting in February 2009 and augmented with updated greenhouse gas emission modeling conducted by DD&A in April 2013 provided in **Appendix B**. The reader is referred to **Section 3.2**, Air Quality, for a discussion of project impacts associated with air quality.

3.13.1 EXISTING SETTING

EXISTING CLIMATE SETTING

Since the early 1990s, scientific consensus holds that the world's population is releasing greenhouse gases (GHG) faster than the earth's natural systems can absorb them. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land-use changes, and other human activities. This release of gases, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), creates a blanket around the earth that allows light to pass through but traps heat at the surface preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

While often used interchangeably, there is a difference between the terms "climate change" and "global warming." According to the National Academy of Sciences, climate change refers to any significant, measurable change of climate lasting for an extended period of time that can be caused by both natural factors and human activities. Global warming, on the other hand, is an average increase in the atmosphere's temperature caused by increased GHG emissions. The use of the term climate change is becoming more prevalent because it encompasses all changes to the climate, not just temperature.

To fully understand global climate change, it is important to recognize the naturally occurring greenhouse effect and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Table 3.13.1 provides descriptions of the primary GHGs attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

**TABLE 3.13.1
GREENHOUSE GASES**

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	Carbon dioxide (CO ₂) is a colorless, odorless gas. CO ₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO ₂ emissions. The atmospheric lifetime of CO ₂ is variable because it is so readily exchanged in the atmosphere. ¹
Methane (CH ₄)	Methane (CH ₄) is a colorless, odorless gas that is not flammable under most circumstances. CH ₄ is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years. ²
Nitrous Dioxide (N ₂ O)	Nitrous oxide (N ₂ O) is a clear, colorless gas with a slightly sweet odor. N ₂ O is produced by both natural and human-related sources. Primary human-related sources of N ₂ O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N ₂ O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. ³
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years). ⁴
Perfluorocarbons (PFCs)	Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF ₄), perfluoroethane (C ₂ F ₆), perfluoropropane (C ₃ F ₈), perfluorobutane (C ₄ F ₁₀), perfluorocyclobutane (C ₄ F ₈), perfluoropentane (C ₅ F ₁₂), and perfluorohexane (C ₆ F ₁₄). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF ₄ and C ₂ F ₆ as byproducts. The estimated atmospheric lifetimes for CF ₄ and C ₂ F ₆ are 50,000 and 10,000 years, respectively. ^{4,5}
Sulfur Hexafluoride (SF ₆)	Sulfur hexafluoride (SF ₆) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF ₆ is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF ₆ produced worldwide. Significant leaks occur from aging equipment and during equipment maintenance and servicing. SF ₆ has an atmospheric life of 3,200 years. ⁴

Source: 1USEPA 2011a, 2USEPA 2011b, 3USEPA 2010a, 4USEPA 2010b, 5EFCTC 2003

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Gases with high global-warming potential, such as HFCs, PFCs, and SF₆, are the most heat absorbent. Methane traps over 21 times more

heat per molecule than CO₂, and N₂O absorbs 310 times more heat per molecule than CO₂. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. **Table 3.13-2** shows the GWPs for different GHGs for a 100-year time horizon.

**TABLE 3.13-2
GLOBAL WARMING POTENTIAL FOR GREENHOUSE GASES**

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous Dioxide (N ₂ O)	310
Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs)	6,500
Sulfur Hexafluoride (SF ₆)	23,900

Source: California Climate Action Registry 2009

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is a significant emitter of CO₂ in the world and produced 477 million gross metric tons of CO₂ equivalents in 2008 (CARB 2010a). Consumption of fossil fuels in the transportation sector was the single largest source of California’s GHG emissions in 2008, accounting for 36.4 percent of total GHG emissions in the state (CARB 2010a). This category was followed by the electric power sector (including both in-state and out-of-state sources) (24.3 percent) and the industrial sector (19.3 percent) (CARB 2010a).

EFFECTS OF GLOBAL CLIMATE CHANGE

California can draw on substantial scientific research conducted by experts at various state universities and research institutions. With more than a decade of concerted research, scientists have established that the early signs of climate change are already evident in the state—as shown, for example, in increased average temperatures, changes in temperature extremes, reduced snowpack in the Sierra Nevada, sea level rise, and ecological shifts.

Many of these changes are accelerating—locally, across the country, and around the globe. As a result of emissions already released into the atmosphere, California will face intensifying climate changes in coming decades (CNRA 2009). Generally, research indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea-level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing (CNRA 2009).

Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following (CNRA 2009):

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer, and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- As GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4 °F (an increase one to three times as large as that which occurred over the entire 20th century).
- By 2100, the models project temperature increases between 3.6 to 9 °F.

According to the 2009 California Climate Adaptation Strategy, the impacts of climate change in California have the potential to include, but are not limited to, the areas discussed in **Table 3.13-3** below.

**TABLE 3.13-3
POTENTIAL STATEWIDE IMPACTS FROM CLIMATE CHANGE**

Potential Statewide Impact	Description
Public Health	<p>Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer than in winter months. Larger temperature increases are anticipated in inland communities as compared to the California coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Numerous studies have indicated that there are generally more deaths during periods of sustained higher temperatures, and these are due to cardiovascular causes and other chronic diseases. The elderly, infants, and socially isolated people with pre-existing illnesses who lack access to air conditioning or cooling spaces are among the most at risk during heat waves.</p>
Floods and Droughts	<p>The impacts of flooding can be significant. Results may include population displacement, severe psychosocial stress with resulting mental health impacts, exacerbation of pre-existing chronic conditions, and infectious disease. Additionally, impacts can range from a loss of personal belongings, and the emotional ramifications from such loss, to direct injury and/or mortality.</p> <p>Drinking water contamination outbreaks in the U.S. are associated with extreme precipitation events. Runoff from rainfall is also associated with coastal contamination that can lead to contamination of shellfish and contribute to food-borne illness. Floodwaters may contain household, industrial, and agricultural chemicals as well as sewage and animal waste. Flooding and heavy rainfall events can wash pathogens and chemicals from contaminated soils, farms, and streets into drinking water supplies. Flooding may also overload storm and wastewater systems, or flood septic systems, also leading to possible contamination of drinking water systems.</p> <p>Drought impacts develop more slowly over time. Risks to public health that Californians may face from drought include impacts on water supply and quality, food production (both agricultural and commercial fisheries), and risks of waterborne illness. As surface water supplies are reduced as a result of drought conditions, the amount of groundwater pumping is expected to increase to make up for the water shortfall. The increase in groundwater pumping has the potential to lower the water tables and cause land subsidence. Communities that utilize well water will be adversely affected by drops in water tables or through changes in water quality. Groundwater supplies have higher levels</p>

Potential Statewide Impact	Description
	of total dissolved solids compared to surface waters. This introduces a set of effects for consumers, such as repair and maintenance costs associated with mineral deposits in water heaters and other plumbing fixtures, and on public water system infrastructure designed for lower salinity surface water supplies. Drought may also lead to increased concentration of contaminants in drinking water supplies.
Water Resources	The state’s water supply system already faces challenges to provide water for California’s growing population. Climate change is expected to exacerbate these challenges through increased temperatures and possible changes in precipitation patterns. The trends of the last century—especially increases in hydrologic variability—will likely intensify in this century. The State can expect to experience more frequent and larger floods and deeper droughts. Rising sea level will threaten the Delta water conveyance system and increase salinity in near-coastal groundwater supplies. Planning for and adapting to these simultaneous changes, particularly their impacts on public safety and long-term water supply reliability, will be among the most significant challenges facing water and flood managers this century.
Forests and Landscapes	Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, wildfire occurrence statewide could increase from 57 percent to 169 percent by 2085. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state.

Source: CNRA 2009

GHG SEQUESTRATION

Carbon is stored in nature within the atmosphere, soil organic matter, ocean, marine sediments and sedimentary rocks, terrestrial plants and fossil fuel deposits. Carbon is constantly changing form on the planet through the a number of processes referred to as the carbon cycle, which includes but is not limited to degradation and burning, photosynthesis and respiration, decay, dissolution. When the carbon cycle transfers more carbon to the atmosphere this can lead to global warming. Over the last 300 years atmospheric levels of carbon have increased by more than 30 percent, of which approximately 65 percent is attributable to fossil fuel combustions and 35 percent is attributed to deforestation and the conversion of natural ecosystems to agricultural use (Pidwirny 2006).

The U.S. Environmental Protection Agency (U.S. EPA) defines carbon sequestration as the “process through which CO₂ from the atmosphere is absorbed by trees, plants and crops through photosynthesis, and stored as carbon in biomass (tree trunks, branches, foliage and roots) and soils.”¹ Carbon is released back into the atmosphere during decomposition, both in a limited amount during seasonal changes for deciduous trees and removal of leaves and limbs for maintenance, as well as in a greater amount upon tree death. As identified by the U.S. EPA and others, the ability of trees to sequester CO₂ is limited; mature trees are unable to sequester additional CO₂ beyond their saturation point, the point at which the amount of CO₂ being sequestered in a particular tree or area becomes significantly reduced.² According to the U.S.

¹ U.S. Environmental Protection Agency. 2006. Carbon Sequestration in Agriculture and Forestry: Frequent Questions. Available at <http://www.epa.gov/sequestration/faq.html>. Accessed August 5, 2009.

² *Ibid.*

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

EPA and others, carbon saturation may occur “when trees reach maturity, or when the organic matter in soils builds back up to original levels before losses occurred.”³ The accumulation of carbon in biomass slows with age, and carbon releases during clipping and pruning typically will completely offset the small amount of carbon accumulation in older trees.

A particular area may be considered a carbon sink when CO₂ sequestration exceeds CO₂ releases over a period of time. Mature trees, while having sequestered CO₂ over a period a time, no longer serve in the capacity of a CO₂ sink since additional CO₂ sequestration is severely limited.⁴ Actual active growing periods are subject to, among other things, species, climate regime, and planting density.

The net CO₂ emissions released due to vegetation change will be effected by two processes: 1) the removal of specified vegetation, which would lead to a one-time release of the sequestered carbon back into the atmosphere, and 2) the sequestration of carbon by new plantings.

Carbon stored in plants and rocks is referred to as being sequestered. Within the United States, forest sequestration of carbon off-sets approximately 11 percent of the fossil fuel GHG emissions each year (USDA 2010a). The U.S. Forest Service in partnership with the California Department of Forestry and Fire Protection developed the Center for Urban Forest Research (CUFR) Tree Carbon Calculator (CTCC) to estimate energy reductions, emissions reductions, CO₂ sequestration and Total CO₂ stored within trees based on numerous variables including, but are not limited to, the following: diameter at breast height (or age), climate zone, tree species, and building structure characteristics. Based on the climate region and a tree’s size or age, the CTCC produces information on: the amount CO₂ stored in the tree due to its growth over many years; CO₂ sequestered during the past year; and dry weight of aboveground biomass that could be utilized if the tree was removed. Based on the estimated tree count and diameter of the trees on the project site, the trees on the project site were estimated to sequester approximately 5,475 metric tons of CO₂ per year and store approximately 82,607 metric tons of CO₂ as shown in **Table 3.13-4**. In addition, according to the U.S. Forest Service, approximately 11.2 metric tons of carbon is stored within one acre of soil. Conservatively assuming that the 870 acres of the project site is covered in soil (no rock outcrops or water), approximately 9,744 metric tons of carbon would be stored within the soil in addition to the 82,607 metric tons of CO₂ sequestered by trees on the project site, totaling 92,351 metric tons.

³ *Ibid.*

⁴ The World Resource Institute (WRI) “Land Use, Land-Use Change, and Forestry Guidance for GHG Project Accounting” protocol available online at <http://www.ghgprotocol.org/files/lulucf-final.pdf>.

TABLE 3.13-4
ESTIMATED TOTAL CO₂ STORED AND SEQUESTERED WITHIN EXISTING TREES

DBH (Inches)	Total # of Trees	Percent of Total Trees	CO ₂ Sequestered Annually		CO ₂ Stored	
			Metric Ton/Tree	Total Metric Tons	Metric Tons/Tree	Total Metric Tons
11	15,184	52%	0.11	1,616	0.87	13,242
23	12,930	44%	0.27	3,504	4.83	62,438
25	1,186	4%	0.30	355	5.84	6,928
Totals	29,300	100%		5,475		82,608

Notes:

1. Trees counts based on the high estimated provided in the Forest management Plan prepared by Staub Forestry & Environmental consulting dated September 2006.

2. Modeling assumptions used included all trees be Coast live oaks. The other trees on the site are of similar size and including these in the model would not result in a noticeable change to the results above.

Source: USDA 2010b, Staub 2006.

CURRENT GREENHOUSE GAS EMISSIONS

California Emissions

The California Energy Commission estimates that California is the second-largest state emitter of GHG emissions in the United States, behind Texas in absolute emissions (CEC 2006). However, the state has relatively low carbon intensity when considering GHG emissions per person or GHG emissions per unit gross state product. Worldwide, California is responsible for approximately 2 percent of the world's CO₂ emissions (CEC 2006). The California Air Resources Board (CARB) released estimates of California's 1990 emissions inventory, which amounted to 433.29 million gross metric tons of carbon dioxide equivalent (MMT CO₂e) (CARB 2009). CARB has also estimated that 2008 emissions levels were 477 MMT CO₂e (CARB 2010a).

Monterey County Emissions

According to the Monterey County General Plan Draft Environmental Impact Report (Monterey County 2008), in 2006 1,394,404 metric tons of CO₂e was emitted Countywide. While many different sources emit GHG emissions in Monterey County, a few sources account for the vast majority of emissions. The on-road transportation category—comprising cars and trucks—is by far the largest contributor of GHG emissions in the region, accounting for 46 percent of the total, almost three times as much as the next largest sector. Electricity generation and industrial processes were the second (15 percent) and third (14 percent) highest emitting sectors. These top three categories emit 75 percent of total GHG emissions in Monterey County. Natural gas combustion is the fourth highest emitting category (13.6 percent). Finally, agricultural equipment fuel use and landfill emissions account for 8 and 2 percent of the emissions, respectively (Monterey County 2008).

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

3.13.2 REGULATORY SETTING

FEDERAL

Federal Regulation and the Clean Air Act

In the past, the U.S. Environmental Protection Agency (USEPA) has not regulated GHGs under the Clean Air Act (CAA) because it asserted that the act did not authorize the USEPA to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. However, the U.S. Supreme Court held that the USEPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, 12 states and cities, including California, together with several environmental organizations, sued to require the USEPA to regulate GHGs as pollutants under the Clean Air Act (127 S. Ct. 1438 [2007]). The court ruled that GHGs fit within the Clean Air Act's definition of a pollutant and that the USEPA did not have a valid rationale for not regulating GHGs. In response to this ruling, the USEPA has recently made an endangerment finding that GHGs pose a threat to the public health and welfare. This is the first step necessary for the establishment of federal GHG regulations under the Clean Air Act.

In April 2010, the USEPA issued the final rule on new standards for GHG emissions and fuel economy for light-duty vehicles in model years 2017–2025. In November 2010, the USEPA published the "Prevention of Significant Deterioration (PSD) and Title V Permitting Guidance for Greenhouse Gases," which provides the basic information that permit writers and applicants need to address GHG emissions regulated under the Clean Air Act. In that document, the USEPA described the "Tailoring Rule" in the regulation of GHG emissions. With the Tailoring Rule, the USEPA established a phased schedule in the regulation of stationary sources. The first phase of the Tailoring Rule began January 2, 2011, and focuses the GHG permitting programs on the largest sources with the most Clean Air Act-permitting experience. In phase two, which began June 1, 2011, the rule expands to cover large sources of GHGs that may not have been previously covered by the Clean Air Act for other pollutants. The rule also describes the USEPA's commitment to future rulemaking that will describe subsequent steps of the Tailoring Rule for GHG permitting (USEPA 2010d).

Federal Heavy-Duty National Program

In August 2011, the USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced the first-ever program to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses. The USEPA and the NHTSA have each adopted complementary standards under their respective authorities covering model years 2014–2018, which together form a comprehensive Heavy-Duty National Program. The goal of the joint rulemakings is to present coordinated federal standards that help manufacturers build a single fleet of vehicles and engines that are able to comply with both agencies. The USEPA and NHTSA have adopted standards for CO₂ emissions and fuel consumption, respectively, tailored to each of three main regulatory categories: (1) combination tractors; (2) heavy-duty pickup trucks and vans; and (3) vocational vehicles. The USEPA has additionally adopted standards to control HFC leakage from air conditioning systems in pickups and vans and combination tractors. Also exclusive to the USEPA program are the USEPA's N₂O and CH₄ standards that will apply to all heavy-duty engines, pickups, and vans. For purposes of this program, the heavy-duty fleet incorporates all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them, except those covered by the current GHG emissions and Corporate Average Fuel Economy standards for model year 2012–2016 passenger vehicles.

The Heavy-Duty National Program is projected to reduce fuel use and GHG emissions from medium- and heavy-duty vehicles, from semi-trucks to the largest pickup trucks and vans, as well as all types and sizes of work trucks and buses in between. Vehicles covered by this program make up the transportation segment's second largest contributor to oil consumption and GHG emissions. This comprehensive program is designed to address the urgent and closely intertwined challenges of dependence on oil, energy security, and global climate change. The USEPA and the NHTSA estimate that the combined standards will reduce CO₂ emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years, providing \$49 billion in net program benefits. A second phase of regulations is planned for model years beyond 2018. The goals would include spurring innovation as well as updating the assessment of actual emissions and fuel use from this sector. Such future regulation would also be designed to align with similar programs developed outside the U.S.

STATE

Assembly Bill 1493

Assembly Bill (AB) 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the California Air Resources Board (CARB) to develop and adopt the nation's first GHG emission standards, also known as Pavley 1, for automobiles. The California legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the state of California submitted a request for a waiver from federal clean air regulations, as the state is authorized to do under the CAA, to allow the state to require reduced tailpipe emissions of CO₂. In late 2007, the USEPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the state brought suit against the USEPA related to this denial.

In January 2009, President Obama instructed the USEPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the USEPA granted California's waiver request, enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the U.S. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon (mpg) by 2016. When the national program takes effect, California has committed to allowing automakers showing compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards requiring a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multiagency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006 (AB 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) was signed into law in September 2006 after considerable study and expert testimony before the Legislature. The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The Act directed CARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. Based on CARB's calculation of 1990 baseline emissions levels, California must reduce GHG emissions by approximately 29 percent below "business-as-usual" predictions of year 2020 GHG emissions to achieve this goal.⁵

The bill required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. CARB accomplished the key milestones set forth in AB 32 including the following:

- June 30, 2007. Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures. These were later supplemented by adding six other discrete early action measures.
- January 1, 2008. Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.

⁵ Emissions forecasts have since been revised and the percent below "business-as-usual" necessary to achieve AB 32 goals is now considered to be closer to 20 percent.

- January 1, 2009. Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted Climate Change Scoping Plan: A Framework for Change (Scoping Plan), discussed in more detail below.
- January 1, 2010. Adoption and enforcement of regulations to implement the “discrete” actions. Several early action measures have been adopted and became effective on January 1, 2010.
- January 1, 2011. Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California’s GHG emissions (CARB 2010b). CARB’s Board ordered CARB’s Executive Director to prepare a final regulatory package for cap-and-trade on December 16, 2010.
- January 1, 2012. GHG emissions limits and reduction measures adopted in 2011 become enforceable.

AB 32 Scoping Plan

As noted above, on December 11, 2008, CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California’s GHG emissions. CARB determined that achieving the 1990 emission level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as “business as usual”). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations will occur through the end of year 2013. The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and applying standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California’s GHG emissions;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California’s clean car standards, heavy-duty truck measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California’s long-term commitment to AB 32 implementation (CARB 2008).

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

In 2009, a coalition of special interest groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document") violated the California Environment Quality Act (CEQA) by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment ordering that CARB take no further action with respect to cap and trade rulemaking until it complies with CEQA. While CARB disagrees with the trial court finding and appealed the decision on May 23, 2011, in order to remove any doubt about the matter and in keeping with CARB's interest in public participation and informed decision-making, CARB revisited the alternatives. The revised analysis includes the five alternatives included in the original environmental analysis: a "no project" alternative (that is, taking no action at all); a plan relying on a cap-and-trade program for the sectors included in a cap; a plan relying more on source-specific regulatory requirements with no cap-and-trade component; a plan relying on a carbon fee or tax; and, a plan relying on a variety of proposed strategies and measures. The public hearing to consider approval of the AB 32 Scoping Plan Functional Equivalent Document and the AB 32 Scoping Plan was held on August 24, 2011. On this date the Scoping Plan was re-approved by the Board.

In August 2012, CARB released revised estimates of the expected 2020 emission reductions. The revised analysis relies on emissions projections updated in light of current economic forecasts which account for the economic downturn since 2008 as well as reduction measures already approved and put in place. This reduced the projected 2020 emissions from 596 million metric tons (MMT) CO₂e to 545 MMTCO₂e. The reduction in projected 2020 emissions means that the revised Business As Usual (BAU) reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now only 21 percent.

Senate Bill 1368

SB 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Renewable Portfolio Standards (Senate Bill 1078, Senate Bill 107 and Senate Bill X1-2)

Established in 2002 under SB 1078, and accelerated in 2006 under SB 107 and again in 2011 under SBX1-2, California's Renewable Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. As interim measures, the RPS requires 20 percent of retail sales to be sourced from renewable energy by 2013, and 25 percent by 2016. Initially, the RPS provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to RPS. The expected growth in RPS to meet the standards in effect in 2008 is not reflected in the BAU calculation in the AB 32 Scoping Plan, discussed previously. In other words, the Scoping Plan's 2020 BAU does not take credit for implementation of RPS that occurred after its adoption.

Senate Bill 375

SB 375 (codified at Government Code and Public Resources Code⁶), signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy or Alternative Planning Strategy, which will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's Sustainable Communities Strategy or Alternative Planning Strategy for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

California Building Energy Efficiency Standards

Energy Conservation Standards for new residential and commercial buildings were originally adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6 of the California Code of Regulations [CCR, 2008]). In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). Part 11 establishes voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Some of these standards have become mandatory in the 2010 edition of the Part 11 Code. Current mandatory standards include:

- 20 percent mandatory reduction in indoor water use, with voluntary goal standards for 30, 35 and 40 percent reductions;
- Separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;
- Diversion of 50 percent of construction waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects;
- Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies;
- Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particle board.

⁶ Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01 as well as Public Resources Code Sections 21061.3, 21159.28, and Chapter 4.2.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

The California Energy Commission has opened a public process and rulemaking proceeding the adoption of changes to the 2013 Building Energy Efficiency Standards contained in the CCR, Title 24, Part 6 (also known as the California Energy Code), and associated administrative regulations in Part 1 (collectively referred to here as the Standards). The proposed amended standards will be adopted in 2014. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The standards, which take effect on January 1, 2014, will offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. Proposed development must meet Title 24 as adopted by Monterey County.

LOCAL

Monterey Bay Unified Air Pollution Control District

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, the Monterey Bay Union Air Pollution Control District (MBUAPCD) staff proposed interim GHG CEQA Significance Thresholds in June 2011. These thresholds have not been finalized and continue to be developed. Therefore, MBUAPCD has no established significance thresholds for greenhouse gas emissions.

Monterey County General Plan

Policies

- 20.2.3 The County shall continue to support air quality monitoring and air pollution control strategies and enforcement by the Monterey Bay Unified Air Pollution Control District.
- 20.2.4 The County should operate in accordance with current regional, state, and federal air quality standards.
- 20.2.5 The County shall encourage the use of the best available control technology as defined in the most current Monterey Bay Unified Air Pollution Control District rules and regulations in reducing air pollution emissions.

3.13.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Criteria for determining the significance of air quality impacts were developed based on information contained in the California Environmental Quality Act Guidelines (CEQA Guidelines, Appendix G). According to those guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

- 1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- 2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

To meet GHG emission targets of AB 32, described above, California would need to generate fewer GHG emissions in the future than current levels. It is recognized, however, that for most projects there is no simple metric available to determine if a single project would substantially increase or decrease overall GHG emission levels or conflict with the goals of AB 32. Moreover, emitting GHG emissions into the atmosphere is not itself an adverse environmental effect. It is the increased concentration of GHG emissions in the atmosphere resulting in global climate change and the associated consequences of climate change that results in adverse environmental effects (e.g., sea level rise, loss of snowpack, severe weather events). Although it is possible to generally estimate a project's incremental contribution of GHGs into the atmosphere, it is typically not possible to determine whether or how an individual project's relatively small incremental contribution might translate into physical effects on the environment. Given the complex interactions between various global and regional-scale physical, chemical, atmospheric, terrestrial, and aquatic systems that result in the physical expressions of global climate change, it is impossible to discern whether the presence or absence of GHGs emitted as a result of the proposed project would result in any altered conditions.

However, the State of California has established GHG reduction targets and has determined that GHG emissions as they relate to global climate change are a source of adverse environmental impacts in California that should be addressed under CEQA. Although AB 32 did not amend CEQA, it identifies the myriad environmental problems in California caused by global warming (Health and Safety Code, Section 38501[a]). In response to the relative lack of guidance on addressing GHGs and climate change, SB 97 was passed in order to amend CEQA by directing the Office of Planning and Research (OPR) to prepare revisions to the CEQA Guidelines addressing the mitigation of GHGs or their consequences. These revisions to the CEQA Guidelines went into effect in January 2010.

Thresholds of significance illustrate the extent of an impact and are a basis from which to apply mitigation measures. Currently, neither the CEQA statutes, the Office of Planning and Research (OPR) guidance, nor the State CEQA Guidelines prescribe specific quantitative thresholds of significance or a particular methodology for performing an impact analysis. Significance criteria are left to the judgment and discretion of the Lead Agency, in this case, the County of Monterey. As discussed above, significance thresholds for greenhouse gas emissions resulting from land use development projects have not been established by MBUAPCD for the NCCAB. Based on current legal and regulatory guidance, MBUAPCD recommend that CEQA documents use a project-specific, quantitative threshold of significance based on other districts' thresholds of significance that have been developed and approved through a public review process and supported by substantial evidence. Section 15064.7 of the CEQA Guidelines, Thresholds of Significance, describes the approaches a public agency may use when establishing thresholds of significance.

- (a). Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.
- (b). Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

(c). When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

Consistent with Section 15064.7 of the CEQA Guidelines, MBUAPCD recommends that the proposed project analyze its impacts on climate change due to GHG emissions based on another districts threshold of significance. **Table 3.13-5** presents information about nearby Air Pollution Control Districts which have or are in the process of adopting thresholds of significance for GHG.

**TABLE 3.13-5
CALIFORNIA AIR DISTRICTS WITHIN AIR BASINS ADJACENT TO THE NORTH CENTRAL COAST
AIR BASIN THRESHOLDS OF SIGNIFICANCE FOR CO₂E**

Air District	Land Use GHG Threshold	Stationary Source GHG Threshold
Bay Area AQMD*	1,100 MT/year	10,000 MT/year
San Joaquin Valley APCD	Best performing standards (BPS) or 29% GHG emission reduction compared to business as usual (BAU)	
San Luis Obispo County APCD	1,150 MT/year or 4.9 MT Service Population (SP)/year (residents + employees)	10,000 MT/year
Santa Barbara County APCD**	None	10,000 MT/year
South Coast Air Quality Management Agency	3,000 MT/Year**	10,000 MT/year

*In view of the March 5, 2012 Alameda County Superior Court order, the Bay Area AQMD is no longer recommending that these thresholds be used as a generally applicable measure of a project's significant air quality impacts; however, a project-specific threshold that relies upon the substantial evidence developed by the BAAQMD as part of development of the proposed threshold.

**Proposed but not yet adopted.

As presented in **Table 3.13-5**, several other air pollution control districts have adopted thresholds of significance for land use and/or stationary sources of CO₂e. In April 2012, the San Luis Obispo County Air Pollution Control District (SLOAPCD) published its greenhouse gas threshold in their CEQA Handbook based upon substantial evidence. In accordance with CEQA Guidelines Section 15064.7 and MBUAPCD recommendations (Amy Clymo, personal communication, 2012, and 2013), Monterey County has elected to use the SLOAPCD GHG threshold as a project-specific threshold based on use of the substantial evidence gathered by SLOAPCD in their development and approval of GHG thresholds. More detailed information on the greenhouse gas thresholds can be found in the SLOAPCD's Greenhouse Gas Thresholds and Supporting Evidence document (March 28, 2012) that is available at: http://slocounty.granicus.com/MediaPlayer.php?view_id=7&clip_id=1251&meta_id=242200.

Construction generated GHG emissions will be quantified, amortized over the life of the project, added to the annual operational emissions, and the sum will be compared to the relevant threshold. SLOAPCD has established a threshold of significance of 1,150 metric tons per year or or 4.9 metric tons of CO₂e per service population (residents plus employees) per year for operational emissions generated by a land use development projects (SLOACPD 2012b). If annual emissions of GHGs exceed these threshold levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact

to global climate change. If mitigation can be applied to lessen the emissions such that they are below that threshold, the project’s impact due to GHG emissions would be considered less than cumulatively considerable and thus, less than significant.

Methodology

Methodologies employed for the analysis of short-term and long-term air quality impacts associated with the proposed project are discussed in more detail, as follows:

Operational emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2011.1.1, computer program. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals. SLOAPCD requires the use of CalEEMod for estimating GHG emissions and MBUACPD now accepts CalEEMod for land use air pollutant modeling and recommends it for operational GHG emission modeling (Amy Clymo, personal communication, April 2013).

Construction GHG emissions were quantified using URBEMIS2007 (version 9.2.4) because the CALSEEMod model defaults do not accurately model projects that are over 35 acres and URBEMIS2007 allows more flexibility in modification of project-specific inputs for construction phasing. Short-term construction emissions generated during construction are anticipated to occur in least four phases as described in **Section 2.0**, Project Description with assumptions (see **Appendix B** for construction modeling outputs).

The number of service population was based on the estimated increase in population discussed in **Section 3.9**, Land Use and Population and average number of employees for various types of commercial buildings associated with the conceptual agricultural industrial uses. **Table 3.13-6** summarized the average number of employees per building type obtained from the U.S. Energy Information Administration (EIA) used for this analysis.

**TABLE 3.13-6
NUMBER OF EMPLOYEES PER BUILDING SQUARE FOOTAGE BY BUILDING TYPE**

Conceptual Building		Commercial Building Type	Average Square Feet Per Employee	Estimated Employees
Winery Storage/Production	60,000 SF	Warehouse	1,730	35
Winery Office	25,000 SF	Office	387	65
Winery Tasting Room	15,000 SF	Retail-Service	752	20
Visitor’s Center	10,000 SF	Public	746	13
Total				133

Source: EIA 2001.

PROJECT IMPACTS AND MITIGATION MEASURES

Increase of Greenhouse Gas Emissions

Impact 3.13-1 Development of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Therefore, the

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

proposed project would result in increased greenhouse gas emissions that would be considered a **potentially cumulatively considerable impact**.

Development of the proposed project would contribute to short-term and long-term increases of GHG emissions that are associated with global climate change. Temporary increases in GHG emissions would be associated with construction activities including but are not limited to, grading, clearing, construction, tree removal and waste disposal. Operational emissions would be primarily associated with mobile source emissions and onsite operational energy use. In addition, changes to natural resources on the project site that currently store and sequester carbon would result in changes to the carbon cycle and may result in the release of CO₂.

GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts and as such is addressed only as a cumulative impact. As discussed above, construction period emissions were estimated using URBEMIS2007 and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2011.1, computer program.

Construction Emissions

Temporary emissions would be associated with the use of gasoline or diesel powered equipment to remove the trees and release of carbon through disposal of removed trees and disturbance of soils during site clearing, grading and construction. Short-term emissions would be generated during each phase of construction. Development of the site is anticipated to occur in at least four phases as described in **Section 2.0**, Project Description. The timing of the phases of development are unknown and market driven. To estimate emissions, project construction was estimated to occur over five years (between 2014 and 2018), with no construction in 2017 to provide reasonable estimates of worst-case daily, annual, and total emissions. Short-term construction emissions associated with the development of the proposed land uses are summarized in **Table 3.13-7**.

TABLE 3.13-7
SHORT-TERM CONSTRUCTION GREENHOUSE GAS EMISSIONS

Construction Phase	CO ₂ Equivalent (MT/Year)
Phase 1 (2014)	412
Phase 2 (2015)	267
Phase 3 (2016)	261
Phase 4 (2018) ¹	257
Total	1,197

Notes: Construction CO₂ emissions were calculated by DD&A using the URBEMIS2007 (version 9.2.4) and converted from tons of CO₂ per year to metric tons of CO₂e per year. See assumptions in model output files.¹

As shown in **Table 3.13-7**, the project would generate a maximum of approximately 1,197 metric tons per year of CO₂e from construction equipment emissions. California Air Pollution Control Officers Association and SLOAPCD guidance and professional practice, the total construction

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

emission were quantified and amortized over the life of the project (50 years, in this case, as required for residential projects) and added to the operational emissions below.

Operational Emissions

GHG emissions attributable to future development would be primarily associated with increases of CO₂ from mobile sources. To a lesser extent, other GHG pollutants, including as methane and nitrous oxide would also be generated, largely associated with electricity use, natural-gas consumption, water conveyance, wastewater treatment and solid waste generation. Estimated emissions of CO₂ were calculated based on proposed residential land uses and conceptual agricultural industrial land uses, anticipated increase in population, and vehicle data obtained from the traffic analysis prepared for this project. Long-term operational emissions associated with the development of the proposed land uses are summarized in **Table 3.13-8**.

**TABLE 3.13-8
LONG-TERM GREENHOUSE GAS EMISSIONS**

Emissions Source	Unmitigated CO₂ Equivalent (MT/Year)	Mitigated CO₂ Equivalent (MT/Year)
Area	1,011	1,363
Energy	1,259	1,061
Mobile	3,795	3,635
Waste	437	241
Water	800	480
Operational Emissions Subtotal:	7,302	6,780
Amortized Construction Emissions	24	24
Total Operational Emissions:	7,326	6,804
Total Service Population	801	801
MT/ Service Population/Year:	9.15	8.49

Notes: Emissions were calculated using the CalEEMod computer program. Land uses were based on proposed tentative map and conceptual agricultural industrial land uses which include: 25,000 SF winery office (general office); 10,000 SF visitors center (government civic center); 60,000 SF winery storage/production (unrefrigerated warehouse-no rail); 280 parking spaces; 43 inclusionary lots (low rise apartments); 146 market rate lots (single family housing); 23 clustered market rate lots (single family housing 5000 SF); and 43 acres of roadways. Electricity and natural gas usage rates were based on PG&E forecast zone 4, within which the project site is located, and emission factors derived from the California Climate Action Registry's General Reporting Protocol (2009). Vehicle trips were adjusted to match Traffic Impact Analysis prepared by Hatch Mott MacDonald in October 2010. Source: DD&A, 2013

As shown in **Table 3.13-8**, the proposed project would generate a maximum of approximately 6,780 MT/year of CO₂e upon buildout. Approximately 54 percent of the predicted annual operational GHG emissions would be associated with motor vehicle use. The amortized construction emissions increase the annual emissions by 24 MT/year for a total of approximately 6,804 MT/year of CO₂e upon buildout. Dividing the total estimated operational emissions by the estimated service population of 801 persons (133 employees plus 668 residents) results in a 8.5 CO₂e MT/Service Population/Year, which exceeds the threshold of 4.9 CO₂e MT/Service Population/Year. This would be considered a significant impact. Implementation of the mitigation measure 13-1 provided below would reduce this impact; however, not to a less-than-significant level; therefore, this impact would be **significant and unavoidable**.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

CO₂ Storage and Sequestration

Implementation of the proposed project would result in the removal of approximately 921 trees and disturbance of approximately 92 acres of soil. Removal of trees/oak woodlands, replanting of trees, and disturbance of soil, can affect the amount of CO₂ sequestered on the project site and result in the release of stored CO₂. In addition, proposed tree removal using gasoline powered equipment would generate CO₂ emissions through the burning of fossil fuels.

As noted above, it is estimated that approximately 92,351 metric tons of CO₂ is currently stored on the project site within the trees and soil (trees equal approximately 82,607 metric tons; and the soil equals approximately 9,744 metric tons). Using the CUFR Tree Carbon Calculator, it has been estimated that the amount of stored CO₂ that would be released through removal of 921 trees would be approximately 2,590 metric tons, of which approximately 1,101 metric tons would be stored in above-ground biomass. The disposal of removed trees through burning or natural decay would release stored carbon but at different rates and in different forms. Wood that is burned immediately returns carbon in the form of combustion gases, primarily CO₂ and methane. Wood that naturally decays would return carbon over many years. In addition, disturbance of approximately 92 acres of soil would release approximately 1,067 metric tons of carbon into the atmosphere (11.2 metric tons of carbon per acre x 92 acres).

The removal of approximately 921 trees would initially (prior to replanting) reduce the rate of carbon sequestration on the project site by approximately 172 metric tons per year as shown in **Table 3.13-9**. However, all oak trees must be replaced by replanting trees from native seed stock at a ratio of 1:1 (see mitigation measure **MM 3.3-6a**). It would take approximately 25 years for the replanted trees to sequester CO₂ at the same rate as the removed trees and over 30 years to store the same amount of CO₂ within the trees as currently stored, as shown in **Table 3.13-10**.

**TABLE 3.13-9
ESTIMATED REDUCTION IN CO₂ SEQUESTRATION DUE TO TREE REMOVAL**

DBH (Inches)	Total # of Trees to be Removed	% of Total Trees	Reduction in CO ₂ Sequestration	
			Metric Ton/Tree/Year	Total Metric Tons/Year
11	479	52%	0.11	51
23	405	44%	0.27	110
25	37	4%	0.30	11
Totals	921	100%		172

Notes:

1. Total tree count based on the high estimated provided in the Forest Management Plan prepared by Staub Forestry & Environmental consulting dated September 2006. Number of trees by size estimated based on the percentage of total number of trees of that size on the project site.

2. Modeling assumptions used included all trees be Coast live oaks.

Source: USDA 2010b, Staub 2006.

TABLE 3.13-10
CO₂ SEQUESTRATION AND STORAGE UPON REPLANTING OF TREES

Years After Planting	CO ₂ Sequestered Annually		CO ₂ Stored	
	Metric Ton/Tree	Total Metric Tons	Metric Ton/Tree	Total Metric Tons
5	0.02	18	0.05	46
10	0.05	46	0.24	219
15	0.09	79	0.59	547
20	0.12	114	1.13	1,044
25	0.16	150	1.87	1,720
30	0.20	186	2.80	2,578

Notes:

1. Replanting of trees at a ratio of 1:1 (921 trees)
2. Modeling assumptions used included all trees be Coast live oaks.

Source: USDA 2010b

Implementation of the mitigation measures **MM 3.3-6a**, **MM 3.3-6b** (see Section 3.3, Biological Resources) and **MM 3.5-1** (see Section 3.5, Geology and Soils) would minimize removal of and/or damage to existing trees and soil disturbance. Mitigation measure **MM 3.3-6a** requires preparation of site specific tree removal and replacement plans prior to issuance of grading permit to ensure the loss of oak woodlands and individual coast live oak trees (*Quercus agrifolia*) is minimized and that removed trees are replanted in accordance with Section 21.64.260 of the *Monterey County Zoning Ordinance* and Section 21083.4 of the CEQA Guidelines. Mitigation measure **MM 3.3-6b** requires installation of protective fencing along the driplines of protected trees in order to minimize damage to remaining trees during construction. Mitigation measure **MM 3.5-1** would ensure that design level specifications and recommendations provided in the Geotechnical Investigation prepared by Soil Survey, Inc. in the December 31, 2007 or any subsequent updates are followed for individual lots. Implementation of these measures would minimize the proposed project’s impact on the carbon stored and sequestered on the project site.

AB 32 Compliance

In August 2011, CARB approved the AB 32 Scoping Plan outlining the state’s strategy to achieve the 2020 GHG emissions limit. This Scoping Plan, developed by CARB in coordination with the Climate Action Team (CAT), proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California’s energy sources, save energy, create new jobs, and enhance public health. The measures in the Scoping Plan are scheduled to be in place by 2012. The Scoping Plan contains a list of 39 recommended actions contained in Appendices C and E of the Scoping Plan. This list is also shown in **Table 3.13-11**.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

**TABLE 3.13-11
RECOMMENDED ACTIONS OF CLIMATE CHANGE SCOPING PLAN**

Measure Number	Measure Description
Transportation	
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards
T-2	Low Carbon Fuel Standard (Discrete Early Action)
T-3	Regional Transportation-Related Greenhouse Gas Targets
T-4	Vehicle Efficiency Measures
T-5	Ship Electrification at Ports (Discrete Early Action)
T-6	Goods Movement Efficiency Measures <ul style="list-style-type: none"> • Ship Electrification at Ports • System-Wide Efficiency Improvements
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Medium- and Heavy-Duty Vehicle Hybridization
T-9	High Speed Rail
Electricity and Natural Gas	
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) <ul style="list-style-type: none"> • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)
E-3	Renewables Portfolio Standard (33% by 2020)
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) <ul style="list-style-type: none"> • Target of 3000 MW Total Installation by 2020
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) <ul style="list-style-type: none"> • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs
CR-2	Solar Water Heating (AB 1470 goal)
Green Buildings	
GB-1	Green Buildings
Water	
W-1	Water Use Efficiency
W-2	Water Recycling
W-3	Water System Energy Efficiency
W-4	Reuse Urban Runoff
W-5	Increase Renewable Energy Production
W-6	Public Goods Charge (Water)
Industry	
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

Measure Number	Measure Description
I-2	Oil and Gas Extraction GHG Emission Reduction
I-3	GHG Leak Reduction from Oil and Gas Transmission
I-4	Refinery Flare Recovery Process Improvements
I-5	Removal of Methane Exemption from Existing Refinery Regulations
Recycling and Waste Management	
RW-1	Landfill Methane Control (Discrete Early Action)
RW-2	Additional Reductions in Landfill Methane <ul style="list-style-type: none"> • Increase the Efficiency of Landfill Methane Capture
RW-3	High Recycling/Zero Waste <ul style="list-style-type: none"> • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing
Forests	
F-1	Sustainable Forest Target
High Global Warming Potential (GWP) Gases	
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)
H-2	SF6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	Reduction of Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)
H-5	High GWP Reductions from Mobile Sources <ul style="list-style-type: none"> • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems
H-6	High GWP Reductions from Stationary Sources <ul style="list-style-type: none"> • High GWP Stationary Equipment Refrigerant Management Program: <ul style="list-style-type: none"> - Refrigerant Tracking/Reporting/Repair Deposit Program - Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program
H-7	Mitigation Fee on High GWP Gases
Agriculture	
A-1	Methane Capture at Large Dairies

The strategies included in the Scoping Plan that apply to the project are contained in **Table 3.13-12**, which also summarizes the extent to which the project would comply with the strategies to help California reach the emission reduction targets. The strategies listed in **Table 3.13-12** are either required mitigation measures or requirements under local or state ordinances. With implementation of these strategies/measures, the project's contribution to cumulative GHG

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

emissions would be reduced. In order to ensure that the proposed project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, mitigation measure **MM 3.13-1**, described below, shall be implemented.

**TABLE 3.13-12
AB 32 COMPLIANCE**

Strategy	Project Compliance
Energy Efficiency Measures	
<p>Energy Efficiency Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).</p> <p>Renewable Portfolio Standard Achieve a 33 percent renewable energy mix statewide.</p> <p>Green Building Strategy Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.</p>	<p>Compliant The proposed project will comply with the updated Title 24 standards, including the new 2010 California Building Code (CBC), for building construction. These standards require new buildings to reduce water consumption by 20 percent, which results in less energy consumption for pumping water. In addition, the project would comply with mitigation measure MM 3.13.1, identified below, including measures to incorporate energy-efficient building design features.</p>
Water Conservation and Efficiency Measures	
<p>Water Use Efficiency Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.</p>	<p>Compliant As previously describes, the project would comply with Title 24 standards which require new buildings to reduce water consumption by 20 percent. In addition, the project would comply with mitigation measure MM 3.13.1, identified below, including measures to increase water use efficiency, such as the installation of high-efficiency urinals that use only 1/8 gallon (one pint) of water per flush. This fixture reduces water use by 87 percent compared to the conventional one gallon per flush urinal. The 1/8-gallon urinal also requires less maintenance than waterless urinals. All restroom toilets will also be highly efficient and reduce water use.</p>
Transportation and Motor Vehicle Measures	
<p>Vehicle Climate Change Standards AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles and light-duty trucks. Regulations were adopted by CARB in September 2004.</p> <p>Light-Duty Vehicle Efficiency Measures Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency.</p> <p>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures</p>	<p>Compliant The project does not involve the manufacture of vehicles. However, vehicles that are purchased and used within the project site would comply with any vehicle and fuel standards that CARB adopts.</p>

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

Strategy	Project Compliance
<p>Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of and increased engine efficiency of vehicles.</p> <p>Low Carbon Fuel Standard</p> <p>CARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020.</p>	
<p>Regional Transportation-Related Greenhouse Gas Targets</p> <p>Develop regional GHG emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle GHG emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHGs associated with vehicle travel.</p>	<p>Compliant</p> <p>Specific regional emission targets for transportation emissions do not directly apply to this project; regional GHG reduction target development is outside the scope of this project. The project will comply with any plans developed by Monterey County.</p>
<p>Measures to Reduce High Global Warming Potential (GWP) Gases</p> <p>CARB has identified Discrete Early Action measures to reduce GHG emissions from the refrigerants used in car air conditioners, semiconductor manufacturing, and consumer products. CARB has also identified potential reduction opportunities for future commercial and industrial refrigeration, changing the refrigerants used in auto air conditioning systems, and ensuring that existing car air conditioning systems do not leak.</p>	<p>Compliant</p> <p>New products used or serviced on the project site (after implementation of the reduction of GHG gases) would comply with future CARB rules and regulations.</p>
<p>Forests</p>	
<p>Urban Forestry</p> <p>A statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.</p>	<p>Compliant</p> <p>Mitigation measure MM 3.3-6a requires preparation of site specific tree removal and replacement plans prior to issuance of grading permit to ensure the loss of oak woodlands and individual coast live oak trees (<i>Quercus agrifolia</i>) is minimized and that removed trees are replanted in accordance with Section 21.64.260 of the <i>Monterey County Zoning Ordinance</i> and Section 21083.4 of the CEQA Guidelines. Mitigation measure MM 3.3-6b requires installation of protective fencing along the driplines of protected trees in order to minimize damage to remaining trees during construction.</p>
<p>Recycling and Waste Management</p>	
<p>High Recycling / Zero Waste</p> <p>Achieve 50 percent statewide Recycling Goal: Achieving the state’s 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.</p>	<p>Compliant</p> <p>Mitigation measure MM 3.13-1 requires the reuse and recycling of construction and demolition waste to the maximum extent practical. In addition, the Monterey Regional Waste Management District which would serve the proposed project is compliant with the Assembly Bill 939 State-mandated 50 percent recycling goal.</p>

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

Implementation of mitigation measure **MM 3.13-1** would ensure that the proposed project complies with and would not conflict with or impede the reduction goals identified in AB 32.

Mitigation Measures

MM 3.13-1 Prior to building permit approval, Monterey County RMA-Planning shall require that project applicant(s) implement the following measures to reduce short-term and long-term emissions of GHGs associated with construction and operation of the proposed project:

Construction

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard) to the extent practical.
- Low- or No-VOC paints, adhesives and sealants shall be used during the construction of all proposed onsite structures.
- Environmentally preferable and low-emitting materials shall be used for interior finishes and flooring materials of proposed onsite structures.

Operation

- Bicycle parking facilities and preferential parking for carpooling and alternative-fueled vehicles shall be provided at locations (such as the winery facility) determined by the County of Monterey Planning Director. This measure encourages use of alternative transportation by employees and helps to reduce the amount of vehicle miles traveled by the project.
- An alternative transportation plan shall be prepared by the project proponent and reviewed by the Transportation Authority of Monterey County and submitted to the County of Monterey RMA-Planning before issuance of construction permits. Feasible alternative transportation measures from among those recommended by TAMC and MBUAPCD include those identified in **Table 3.13-13**.
- Proposed commercial (winery related) uses shall provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- Commercial buildings shall employ energy-efficient technology unless technical feasibility or safety concerns take precedent. Examples of such systems would include use of T5HO fluorescent fixtures with electronic ballast, occupancy sensor lighting controls, light emitting diodes, external lighting controls and timers, and other similar measures.
- Indoor and outdoor water conservation measures shall be incorporated, such as use of low-flow toilets, shower heads, faucets and water efficient irrigation.
- Wood-burning fireplaces and stoves shall be prohibited.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

- Proposed residential land uses shall provide a minimum of one exterior electrical outlet at rear, side, and front yard locations to promote/allow the use of electric landscape maintenance equipment.

**TABLE 3.13-13
FEASIBLE ALTERNATIVE TRANSPORTATION MEASURES**

The following feasible measures promote use of alternatives to driving, bicycling, walking, and taking the bus. The goal of these measures is to make more efficient use of transportation facilities (roads, highways, parking lots):

#	Measure
1	Provide ridesharing, public transportation, and nearby licensed child care facility information to tenants/buyers as part of move-in materials.
2	Print transit information on promotional materials.
3	Install bicycle amenities, such as bicycle racks and bicycle lanes.
12	Pedestrian and bicycle system improvements

In addition to the above mitigation measure, the proposed project will be conditioned to comply with Section 18.44.040 of the Monterey County Municipal Code, which requires that all new construction use low water use or native plant material and low precipitation sprinkler heads, bubblers, drip irrigation system and timing devices for all exterior landscaping. Before any permit may be issued for such new construction, the applicant shall submit a landscape plan for review and approval by the Director of Building Inspection in conformity with landscape guidelines adopted by the Board of Supervisors. Such measures would result in the demand for less water consumption which then results in less energy consumption for pumping water.

The proposed project would also be conditioned to comply with Section 19.10.080 of the Monterey County Municipal Code. Section 19.10.080, Energy Conservation, requires the design of a subdivision to provide, to the extent feasible, for future passive or natural heating or cooling opportunities in the subdivision. Examples of passive or natural heating opportunities in subdivision design include design of lot size and configuration to permit orientation of a structure in east-west alignment for southern exposure. Examples of passive or natural cooling opportunities in subdivision design include design of lot size and configuration to permit orientation of a structure to take advantage of shade or prevailing breezes. In providing for future passive or natural heating and cooling opportunities in the design of the proposed residential development, consideration shall be given to local climate, to contour, to configuration of the parcels, and to other design improvement requirements.

The project is considered to be consistent with GHG emission-reduction strategies adopted by the State of California. Furthermore, implementation of mitigation measures **MM 3.3-6a**, **MM 3.3-6b** (see **Section 3.3**, Biological Resources) and **MM 3.5-1** (see **Section 3.5**, Geology and Soils) would minimize the proposed project's impact on the carbon stored and sequestered on the project site. Implementation of the above mitigation measures in conjunction with mitigation measure **MM 3.2-1** (see **Section 3.2**, Air Quality), compliance with Section 18.44.050 and 19.10.080 of the Monterey County Municipal Code, and application of State regulatory requirements such as the Renewables Portfolio Standards, and California Building Energy Efficiency Standards, regulations described above, would reduce project-generated GHG emissions, however, not to a less than significant level.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

Although the proposed project would exceed the project-specific threshold and thus is presented as a significant cumulative impact, the proposed project includes, or is required to comply with, many GHG reduction measures:

- Compliance with Title 24 California Green Building Code.
- Full implementation of the statewide Renewable Portfolio Standards that mandates replacement of fossil fuel based electricity production with alternative energy sources to achieve a 33% renewables mix by 2020.⁷

The GHG reductions realized by the mitigation measures above are not all quantifiable due to emissions modeling software limitations. **Table 3.13-8** presents GHG emissions reductions from all the quantifiable mitigation measures and conditions required. Reductions in GHG emissions were quantified using CalEEMod.

The quantifiable requirements of mitigation measure **MM 3.13-1**, the California Building Energy Efficiency Standards, and the Monterey County Municipal Code would reduce GHG emissions by 522 metric tons of CO₂e each year of project operations. This does not include reductions due to conversion of electricity production from fossil-fuel based sources to renewable mandated by the Renewable Portfolio Strategy.

The project as mitigated would be consistent with the policies and measures and not impede implementation of AB 32. The project proposes key project features and mitigative strategies that will reduce emissions to the extent feasible; however, based on the project-specific threshold and the conservative estimate of emissions and emission reductions, the proposed project's contribution to cumulative GHG emissions would be considered cumulatively considerable and thus, a **significant unavoidable cumulative impact**.

⁷ The RPS is expected to provide about 50% of the electricity sector greenhouse gas reductions identified in the AB 32 Scoping Plan.

REFERENCES/DOCUMENTATION

- Ambient Air Quality and Noise Consultants. (Ambient) 2009. *Air Quality Impact Assessment for Ferrini Ranch Subdivision*. February 6, 2009.
- California Air Resources Board (CARB).
2008. *Climate Change Scoping Plan Appendices* (Appendix F). 2008.
2009. *California Greenhouse Gas Inventory Data 2000 to 2006*. Last Reviewed on December 10, 2009.
2010a. *California Greenhouse Gas Inventory for 2000–2008*.
<http://www.arb.ca.gov/cc/inventory/data/data.htm>
2010b. *Proposed Regulation to Implement the California Cap-and-Trade Program*. 2010.
- California Climate Action Registry. 2009. *California Climate Action Registry General Reporting Protocol Version 3.1*.
- California Energy Commission (CEC).2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Publication CEC-600-2006-013-D.
- California Natural Resources Agency (CNRA). 2009. *2009 California Climate Adaptation Strategy*.
- Clymo, Amy. 2012. *Personal Communication between Amy Clymo, Supervising Air Quality Planner, Monterey Bay Unified Air Pollution Control District and Pamela Lapham, PMC on June 17, 2012 and Seth Myers, PMC, April 2013*.
- DD&A, *Air Pollutant and Greenhouse Gas Modeling Results for Ferrini Ranch Subdivision*, April 2013.
- European Fluorocarbons Technical Committee (EFCTC). 2003. *Fluorocarbons and Sulphur Hexafluoride: Perfluorocarbons (PFCs) Fact Sheet*. http://www.fluorocarbons.org/en/info/brochures/fact_10.html.
- Monterey Bay Union Air Pollution Control District (MBUAPCD). 2011. *Agenda Item Number 20*. July 15, 2011.
- Monterey County. 2008. *Monterey County General Plan Draft Environmental Impact Report*. September 2008
- Pidwirny, M. 2006. *The Carbon Cycle: Fundamentals of Physical Geography*. 2nd Edition. <http://www.physicalgeography.net/fundamentals/94.html>.
- San Luis Obispo Air Pollution Control District (SLOAPCD). 2012a. *CEQA Handbook*. April 2012.
- SLOAPCD. 2012b. *Greenhouse Gas Thresholds and Supporting Evidence*. March 28, 2012.
- Smith, James E. et al. 2006. *Methods for Calculating Forest Ecosystem and Harvested Carbon with Standard Estimates for Forest types of the United States*. April 2006. <http://www.treearch.fs.fed.us/pubs/22954>.

3.13 GREENHOUSE GASES AND CLIMATE CHANGE

Staub Forestry and Environmental Consulting (Staub). 2006 *Forest Management Plan for Ferrini Ranch*. September 27, 2006.

U.S. Environmental Protection Agency (USEPA). 2005. url: <http://www.epa.gov/ebtpages/airairquality.html>

U.S. Department of Agriculture (USDA). Forest Service.

2010a. New Data Highlights Role of Forests in Fight Against Climate Change. (Release No. 0532.10). October 15, 2010. <http://www.fs.fed.us/rmrs/docs/foest-carbon/news-release.pdf>.

2010b. Center for Urban Forest Research (CUFR) Tree Carbon Calculator (CTCC). H:\Carbon Calculator\CCTC_Help.html

United States Environmental Protection Agency (USEPA). 2008. "SF6 Emission Reduction Partnership for Electric Power Systems: Basic Information." <http://www.epa.gov/electricpower-sf6/basic.html>.

2010a. "Nitrous Oxide." <http://www.epa.gov/nitrousoxide/scientific.html>.

2010b. "High Global Warming Potential Gases." <http://epa.gov/highgwp/>.

2010d. *PSD and Title V Permitting Guidance for Greenhouse Gases*.

2011a. "Climate Change – Greenhouse Gas Emissions: Carbon Dioxide." <http://www.epa.gov/climatechange/emissions/co2.html>.

2011b. "Methane." <http://www.epa.gov/methane/scientific.html>.

U.S. Energy Information Administration (EIA). 2001. *Principal Building Activities in the Commercial Buildings Energy Consumption Survey (CBECS)*. Modified January 3, 2001. Accessed July 19, 2012. URL: <http://www.eia.gov/emeu/consumptionbriefs/cbecs/pbawebwebsite/contents.htm>

4.0 ALTERNATIVES TO THE PROJECT

4.1 GENERAL CEQA REQUIREMENTS

This section will discuss alternatives to the proposed project that are capable of avoiding or substantially reducing significant environmental impacts. CEQA requires that a reasonable range of alternatives to the proposed project be described and considered in an EIR. The alternatives considered should represent scenarios that could feasibly attain most of the basic objectives of the project, but will avoid or substantially lessen any of the significant environmental effects. The purpose of this process is to provide decision-makers and the public with a discussion of viable development options and to document that other options to the proposal were considered within the application and review process (CEQA Guidelines, Section 15126.6). CEQA provides the following guidelines for discussing project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation (§15126.6(a)).
- An EIR is not required to consider alternatives which are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location, which are capable of avoiding or substantially lessening any significant effects of the project (§15126.6(b)).
- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (§15126.6(c)).
- The EIR should briefly describe the rationale for selecting the alternatives to be discussed (§15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project (§15126.6(d)).

4.2 RELATIONSHIP TO THE PROJECT OBJECTIVES

A project's objectives provide an important benchmark in conducting the comparative alternatives analysis and the feasibility of each. As discussed above, an alternative is only meaningful for consideration if it can meet the basic objectives of the project as proposed. The objectives for the proposed project include:

- Establish large permanent open spaces on the property in those areas identified on the plan as open space.
- Continue the history of cattle grazing upon a significant portion of the areas designated as open space on the plan.
- Secure approvals to create a residential community of 169 market-rate lots along with an additional 43 inclusionary units.
- Use a portion of the eastern side of the property, accessed via River Road, for a wine-oriented facility of sufficient size to attract visitors and serve as a gateway to the Salinas Valley Wine Corridor.

4.0 ALTERNATIVES TO THE PROJECT

- Create an economically viable and sound plan that will promote the development of this new community and provide sufficient funds to accomplish all of the other project objectives and build the necessary infrastructure.
- Provide additional public access and recreational opportunity through a public bike and pedestrian path connecting Toro County Park and River Road on the east and the San Benancio Canyon vicinity on the west.

4.3 PROJECT ALTERNATIVES CONSIDERED

As identified within various sections of this Draft EIR, the proposed project would result in significant and unavoidable impacts to scenic resources relating to the portion of the proposed Ferrini Ranch access road that runs through Toro Park and is parallel with and immediately adjacent to State Route 68, the contribution of new traffic to existing deficient facilities and greenhouse gas emissions. All other impacts identified in the DEIR can be mitigated to a less than significant level with the adoption of mitigation measures as specified in this DEIR.

ALTERNATIVES CONSIDERED AND ELIMINATED

As part the process to identify alternatives to the proposed project, it is common to identify or discuss a wide range of potential alternatives prior to selecting those that best meet CEQA criteria¹. CEQA encourages the consideration of alternative locations for projects that will result in significant environmental impacts. Alternative locations are best suited to projects that are less constrained by property ownership patterns, infrastructure projects, and public facilities that seek to optimize a project's location or specifically avoid environmental constraints. Examples of such projects include power plants, desalination plants, bridge crossings, roadway alignments, government buildings, and similar projects that can be placed in a variety of locations where the benefits and consequences can be weighed. For a residential subdivision, an applicant rarely has the flexibility to consider an alternative location of a proposal simply due to limitations of land ownership.

As the objective of the proposal is to develop the subject property, no alternative locations for the Ferrini Ranch proposal exist. As such, alternative locations have been eliminated from the analysis.

Also eliminated from consideration was a "western parcel only" alternative, which would essentially eliminate development on the eastern parcel and reduce the total number of residential lots. Such an alternative is contrary to the project objectives involving a wine-oriented project component at the gateway to the Salinas Valley Wine Corridor.

¹ Per 15126.6 (c) CEQA, the EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts. In defining feasibility of alternatives, the CEQA Guidelines state: "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site." (CEQA Guidelines Section 15126.6(f)(1)).

Also eliminated from consideration during the applicant's project development process was development at a higher density than the proposed project and its alternatives². Earlier versions of the project site plan proposed higher density development. Project constraints analysis, including preliminary viewshed and slope analyses conducted by Whitson Engineers, resulted in the densities and site plan configuration of the Proposed Project.

This alternatives discussion identifies and examines a range of feasible alternatives that would reduce the severity of one or more significant environmental effects. These alternatives include the following:

- Alternative 1 – No Project/No Development
- Alternative 2 – "Flatland" Subdivision Design
- Alternative 3 – "Reduced Impact" Subdivision Design (ASP Version A and B)
- Alternative 4 – "Compact Footprint" Subdivision Design
- Alternative 5- "Reduced Impact/Reduced Unit Count" Subdivision Design (with a second alternative for Parcel E designated "Parcel E Option B")

Environmental impacts associated with each of the five alternatives are compared with impacts resulting from the proposed project. The impact level of the alternative as compared to the project (less, slightly less, similar, slightly greater, or greater) is noted in parentheses at the beginning of each comparison. **Table 4-2** at the conclusion of this section provides a summary and compares the impacts of each of the project alternatives. This section also includes identification of the environmentally superior alternative, as required by CEQA.

ALTERNATIVE ANALYSIS

Alternative 1 – No Project/No Development

CEQA Guidelines Section 15126.6(e)(3) requires that a No Project/No Development Alternative be evaluated as part of an EIR, proceeding along one of two lines: the project site remaining in its existing undeveloped state or development of the project site under existing underlying land use designations. The following No Project/No Development Alternative considers the comparative environmental effects of not approving the proposed project, with the site remaining in its current use of grazing.

² An additional alternative eliminated early in the applicant's planning process was development based upon the Toro Vista Specific Plan which was previously approved and then repealed a number of years later. This plan proposed to cluster up to 386 units within the low lying areas along State Route 68; under the Specific Plan, the maximum density of these areas was 832 units. While reducing some impacts, this alternative plan was eliminated early in the planning process due to its high visual impact.

4.0 ALTERNATIVES TO THE PROJECT

Comparative Analysis

Aesthetics and Visual Sensitivity (less)

Under the No Project/No Development Alternative, there would be no visual change to the project site. The mostly vacant project site currently used for grazing would remain undeveloped, avoiding adverse effects on scenic resources and not creating new sources of light or glare. There would be no impacts within the critical viewshed or impacts to views from public viewing areas. Berms would not be required. No oak trees would be removed and no structures would be built, which would avoid impacts to the scenic resources and the visual character of the site. The significant unavoidable impact from construction of the portion of Ferrini Ranch Road that runs through Toro Park parallel with and immediately adjacent to State Route 68 would be eliminated under this alternative. Therefore, the impacts to aesthetics and visual sensitivity under the No Project/No Development Alternative would be less compared to the proposed project.

Air Quality (less)

The potential short-term construction air quality impacts and long-term operational impacts that would result from the proposed project would not occur without the project. Short-term impacts resulting from the project, including fugitive dust and equipment emissions during the construction phase, would not occur. Long-term air quality impacts resulting from the project, including increased vehicle emissions, would also not occur. Therefore, air quality impacts under the No Project/No Development Alternative would be less compared to the proposed project.

Biological Resources (less)

The potential temporary disturbance and permanent loss of special-status plant and wildlife species and sensitive habitats would be eliminated under the No Project/No Development Alternative. This alternative maintains the property in the existing condition and does not impact identified sensitive species or wildlife movement. Therefore, the impacts on biological resources under the No Project/No Development Alternative would be less compared to the proposed project.

Cultural Resources (less)

The potential impact to cultural, historical, or archaeological resources resulting from eventual site construction would not occur under this alternative, since the site would remain undisturbed under the No Project/No Development Alternative. Therefore, the impacts to cultural resources under the No Project/No Development Alternative would be less compared to the proposed project.

Geology and Soils (less)

The potential significant impacts associated with potential structural damage and associated human safety hazards resulting from seismic ground shaking would be reduced because the site would remain relatively undisturbed and no structures would be built on the project site. This would also reduce potential impacts associated with landslides, erosion, and expansive soils and eliminate any alteration to slopes greater than 30 percent. Therefore, the geology, geotechnical, and soil impacts under the No Project/No Development Alternative would be less compared to the proposed project.

Groundwater Resources and Hydrogeology (less)

The potential impacts on the Salinas Valley Groundwater Basin and on water quality would be eliminated under the No Project/No Development Alternative because there would not be an increased demand on groundwater resources. There would be no impact associated with water treatment or neighboring wells. Therefore, the impacts to groundwater resources and hydrogeology under the No Project/No Development Alternative would be less compared to the proposed project.

Surface Water Hydrology and Water Quality (less)

The No Project/No Development Alternative would not increase stormwater runoff or contribute to contaminants in surface waters when compared to the proposed project. In addition, there would be no impact associated with erosion or flooding since the project site would remain primarily undeveloped. Therefore, the impacts to surface water hydrology and water quality under the No Project/No Development Alternative would be less compared to the proposed project.

Hazards and Hazardous Materials (slightly less)

Since no development or demolition would occur on the project site, there would be no increased exposure to people or the environment to hazardous materials, including asbestos and/or lead or wildland fire hazards. No development also means that any existing hazardous condition that may be present at the site would not trigger the need for remediation. Overall, the impacts associated with hazards and hazardous materials under the No Project/No Development Alternative would be slightly less compared to the proposed project.

Land Use, Population, and Housing (slightly greater)

This alternative is similar to the project in that neither would disrupt or divide an existing community, conflict with an adopted habitat conservation plan, induce substantial growth (directly or indirectly), or displace housing. The No Project/No Development Alternative would, however, fail to implement the intended residential land uses as envisioned by the *Monterey County General Plan*, which designates the project site Low Density Residential. This would reduce market-rate housing opportunities in the county and would not provide affordable housing as planned by the project. Impacts associated with land use, population, and housing under the No Project/No Development Alternative would therefore be slightly greater compared to the proposed project.

Public Services and Utilities (less)

The increase in demand on law enforcement, fire protection services, schools, and other public services would not occur under the No Project/No Development Alternative. This alternative would also eliminate the need for new utilities or expansion of existing utility facilities and any associated physical environmental consequences. Therefore, the impacts to public services and utilities under the No Project/No Development Alternative would be less compared to the proposed project.

4.0 ALTERNATIVES TO THE PROJECT

Noise (slightly less)

The No Project/No Development Alternative would eliminate the potentially significant short-term impact of noise generated by construction activities. The long-term impacts from increased traffic noise would be slightly reduced because the additional trips generated by the proposed project would be eliminated. As long-term noise levels were not predicted to be significant to begin with, impacts under the No Project/No Development Alternative would be only slightly less when compared to the proposed project.

Transportation and Circulation (less)

Under the No Project/No Development Alternative, existing roadway operations would remain the same as existing conditions. Project impacts at specific intersections and roadway segments would not occur. While the project would contribute fees toward State Route 68 improvements, the project's impact would remain significant and unavoidable at some locations. In comparison, the No Project/No Development Alternative's impact would be less.

Greenhouse Gases and Climate Change (less)

Under the No Project/No Development Alternative, potential short-term and long-term greenhouse gas emissions would not occur without the project. Short-term impacts resulting from the project, including equipment emissions during the construction phase, would not occur. Long-term impacts resulting from increased vehicle emissions, stationary source emissions, and carbon sequestration, would also not occur. Therefore, greenhouse gas and climate change impacts under the No Project/No Development Alternative would be less compared to the proposed project.

Consistency with Project Objectives

The No Project/No Development Alternative does not meet any of the project objectives, except for the continuation of cattle grazing on the site. Therefore, this alternative would be **less consistent** compared to the proposed project in meeting the basic project objectives.

Alternative 2 – “Flatland” Subdivision Design

The intent of this alternative is to reduce disturbance of soil by reducing grading requirements, and limit exposure of people and structures to the potential hazards that may be associated with steeper slopes by concentrating all development on the flatland areas of the site and eliminating development on the steeper slopes and hilly portions of the project site. Representing a significant departure from the proposed project, Alternative 2 relocates all development in the western parcel to the flatland areas and meadows of the project site. Development would occur in six general areas that are bounded by State Route 68 on the northwest and the slope toes on the southeast as designated for Low Density 5-1 A/DU land use in the *Toro Area Plan*. The Low Density 5-1 A/DU land use designation would allow development at a density of 1 to 5 acres per unit, which could result in development more or less dense compared to the proposed project (1.3 acres per unit of subdivided area or 4.1 acres per unit of total project site). **Table 4-1** provides a summary of potential buildout for these areas.

**TABLE 4-1
ALTERNATIVE 2 POTENTIAL BUILDOUT**

Area/Location	Acreage ¹ (A)	Potential Buildout of Residential units (DU) ²	
		5 A/DU	1 A/DU
1. Grazing field northeast of San Benancio Middle School	32.2	6	32
2. Area northeast of Toro Café	6.8	1	7
3. Area in vicinity of Lots #79 through #84 ³	23.2	5	23
4. Parcel E	8.0	2	8
5. Bull Field	56.2	11	56
6. Mesa	35.4	8	35
Totals:	161.8	33	161

Notes: 1. Acreage obtained from Whitson Engineering.

2. Buildout based on Low Density 5-1A/DU land use designation in the Toro Area Plan.

3. Based on Vesting Tentative Map and includes Lot #71.

DU = Residential units

As shown in **Table 4-1**, relocating development to the flatland would allow development of approximately 33 to 162 residential units on approximately 162 acres. This alternative would reduce housing opportunities on the project site by approximately 51 to 179 residential units compared to the proposed project. This alternative assumes that there is no development of the winery parcel.

Access to the development areas under Alternative 2 would be similar to the proposed project. Access roads from San Benancio Road would be available to serve the westerly parcels including the area northeast of San Benancio School. The identified flat parcels northeast of Toro Cafe in the vicinity of lots #79-84 would be served through the existing interchange, through Portola Road to a new access road. To access these areas, a road similar to the proposed new Ferrini Road would be required. Access from the interchange to Portola and then Road 117 would serve Parcel E. River Road access as proposed by this alternative would serve the remaining eastern parcel development areas identified in **Table 4-1**, above.

Comparative Analysis

Aesthetics and Visual Sensitivity (greater)

Depending on locations of development, Alternative 2 could decrease or increase the density of development in areas where potentially significant impacts to the scenic vista, scenic resources, ridgeline development, and light and glare that would occur under the proposed project. Although Alternative 2 would reduce the overall number of residential units developed on the project site, the development would be concentrated in specific areas of the project site within the State Route 68 scenic corridor and critical viewshed which are visually sensitive.

This alternative would cluster residential units closer to State Route 68, which would likely reduce potential impacts to scenic vistas from Bureau of Land Management lands and Toro County Park, and reduce the minor degree of impact associated with ridgeline development compared to the proposed project. However, focusing development along State Route 68, a state-designated scenic highway, would increase the degree of adverse impact to scenic resources in the State Route 68 scenic corridor and in areas that are considered visually sensitive

4.0 ALTERNATIVES TO THE PROJECT

and within the critical viewshed. In addition, the visual character of the land would substantially change from rural open space to a more suburban setting. In addition, the light and glare impacts would be greater under Alternative 2 compared to the proposed project due to increased density. The significant unavoidable impact from construction of the portion of Ferrini Ranch Road that runs through Toro Park and is parallel with and immediately adjacent to State Route 68 would not be eliminated under this alternative.

Mitigation measures identified for the proposed project would also be applicable to this alternative. However, the change in visual character, impact to critical viewshed, and substantial adverse impact to the scenic resources within a state-designated scenic corridor would be considered significant impacts to aesthetics and visual resources. Therefore, the project-generated and cumulative impacts to aesthetics and visual sensitivity under Alternative 2 would be greater compared to the proposed project.

Air Quality (less)

Under Alternative 2, the short-term construction-generated emissions would be less compared to the proposed project and the long-term operational emissions would be slightly less compared to the proposed project. Under Alternative 2, the density could increase or decrease but the overall residential units and area of development would be reduced compared to the proposed project. Based on a trip generation rate of 9.57 daily trips for single family development and a 5.86 rate for inclusionary for this alternative), a reduction of residential units by 51 to 179 units would result in a reduction of approximately 485 to 1,617 daily trips from residential traffic compared to the proposed project³.

Reducing the number of units and relocating the units closer to the highway corridor could potentially reduce short-term air quality impacts by reducing the duration of construction activities and by providing a more direct route for construction equipment to access the project site. Grading and site construction time frames would also be reduced as a result of shorter roadway and utility line construction. Therefore, short-term construction-related impacts would be less compared to the proposed project.

In comparison to the proposed project's daily traffic contribution of 2,392 vehicle trips per day on the transportation system, Alternative 2 would result in a decrease of approximately 485 to 1,617 daily trips. Alternative 2 would therefore decrease mobile source emissions, which would result in less long-term air quality impacts compared to the proposed project. This alternative would decrease operational emissions of ROG, NO_x, PM₁₀, SO_x, CO, and diesel-exhaust particulate matter emissions. In addition, the CO emissions generated where unacceptable levels of service exist would also decrease. If development under Alternative 2 were to increase the density of development adjacent to the highway, a greater number of sensitive receptors would be exposed to toxic air contaminants generated along the roadway, and the opposite is true if this alternative were to decrease density of development on the project site. Overall, the number of sensitive receptors on the project site would be reduced. Therefore, exposure of

³The proposed project results in a total of 1,907 daily trips from residential uses. The alternative results in 290 to 1,617 daily trips for the 33 to 161 residential units, respectively. This assumes single-family residential development traffic generation rates for all but 20% of the residential units. It is likely 20% of the residential lots would be inclusionary at a daily rate of 5.86 vehicle trips/unit. The elimination of the winery further reduces the daily trips by 362 compared to the proposed project.

sensitive receptors to toxic air contaminants generated along the roadway would be slightly less compared to the proposed project.

Mitigation measures identified for the proposed project would be applicable to Alternative 2. Under Alternative 2, the short-term construction-generated emissions and the long-term operational emissions of criteria pollutants and toxic air contaminants would be reduced. Therefore, the project-generated and cumulative air quality impacts under Alternative 2 would be less compared to the proposed project.

Impacts from the proposed project on greenhouse gases are shown in Recirculated Draft EIR Table 3.13-8. The proposed project would generate a maximum of approximately 6,780 MT/year of CO₂e upon buildout with approximately 54 percent of the predicted annual operational GHG emissions would be associated with motor vehicle use. The project exceeds the threshold of 4.9 CO₂e MT/Service Population/Year. This would be considered a cumulative significant impact. Implementation of the mitigation measure 13-1 provided in the Recirculated Greenhouse Gases and Climate Change Section would reduce this impact; however, not to a less-than-significant level; therefore, this project impact is considered significant and unavoidable. Although this alternative would reduce emissions in comparison to the proposed project, the significant unavoidable impact from greenhouse gas identified as a cumulative impact for the proposed project would still remain under this alternative as the threshold identified above will still be exceeded.

Biological Resources (slightly less)

Under Alternative 2, temporary disturbance and the potential loss of special-status plants, wildlife, and sensitive habitats would be similar or slightly less compared to the proposed project. This alternative would focus development within the flatland area, which primarily consists of annual grassland habitat.

Under Alternative 2, the degree of impact to oak woodlands would be reduced. However, if this alternative increased the density of development compared to the proposed project, this alternative would increase the degree of impact to Congdon's tarplant, Pacific Grove clover, and California tiger salamander due to the location of the sensitive species and proposed development under this alternative. The reduction in residential units would slightly reduce the degree of impact to sensitive riparian and wetland habitats, special-status bird species, and other special-status animal habitat compared to the proposed project. However, depending on the concentration of development, this alternative may increase impacts to the wildlife movement/wildlife corridor by concentrating development in the flatlands area near State Route 68/El Toro Creek. This could impact the identified wildlife passage routes that connect habitats on both sides of State Route 68 via the State Route 68/El Toro Creek bridge undercrossing.

Mitigation measures identified for the proposed project would be applicable to this alternative. Under Alternative 2, the development density is reduced from 212 units to a maximum of 161 units and the winery area of development is eliminated. Therefore, less development would occur over a smaller area of land; therefore, the project-generated and cumulative biological impacts under Alternative 2 would be slightly less compared to the proposed project.

Cultural Resources (similar)

The potential impact to cultural or archaeological resources resulting from eventual site construction would be similar to the proposed project under Alternative 2, since the area of disturbance would be concentrated in the flatter areas of the site, where known archaeological

4.0 ALTERNATIVES TO THE PROJECT

resources are located. Mitigation measures identified for the proposed project would be applicable to this alternative. The project-generated and cumulative impacts to cultural resources under Alternative 2 would be similar compared to the proposed project.

Geology and Soils (less)

Under Alternative 2, the potential risk of exposure to seismic ground shaking, erosion, expansive soils, and slope failure would be slightly less compared to the proposed project. This alternative would reduce the number of residential units, and the lots and access roads would be relocated from the hilly areas of the project site to the flatland areas.

Under Alternative 2, the degree of impact associated with safety hazards resulting from seismic ground shaking would be reduced due to the decreased residential units on the project site. The degree of impact associated with landslides would be slightly reduced because development would not occur on steep slopes, which would also reduce impacts associated with erosion on steep slopes. However, development would occur at the base of steep slopes, which would continue to be at risk for exposure to landslides. Potential impacts associated with expansive soils would be less due to a decrease in residential units in the area with expansive soils. Under Alternative 2, exposure to hazards such as liquefaction, lateral spreading, and dynamic compaction would be similar compared to the proposed project.

Mitigation measures identified for the proposed project would be applicable to Alternative 2, except where lot-specific mitigation measures are provided and no development would occur. Although development would occur on flatter slopes compared to the proposed project, this alternative would still result in development at the base of steep slopes and disturbance of an area greater than 1 acre. Therefore, mitigation measures identified for the proposed project to reduce impacts associated with slope-failure hazards such as landslides and slope stability would be applicable to Alternative 2. The project-generated and cumulative impacts to geology and soils under Alternative 2 would be less compared to the proposed project.

Groundwater Resources and Hydrogeology (less)

Under Alternative 2, potential impacts to the 180/400 Foot Aquifer Subbasin of the Salinas Valley Groundwater Basin would be less compared to the proposed project, while potential hazards associated with groundwater contamination would be similar. Alternative 2 would not increase the degree of impact on water quality.

By developing only the flatter areas near State Route 68, this alternative could increase the density of development in certain areas of the project site and reduce the density of development in other areas; however, the overall number of residential units would be reduced. The decreased potable water demand would correspondingly decrease the demand on groundwater resources in the subbasins as a whole. The project site would still be located in Zone 2C, and mitigation/conservation measures identified for the proposed project would remain applicable. The project-generated and cumulative impacts to groundwater resources and hydrogeology under Alternative 2 would be less compared to the proposed project.

Surface Water Hydrology and Water Quality (similar)

Under Alternative 2, the potential impacts associated with stormwater runoff and surface water quality would be less compared to the proposed project. The construction-generated erosion and water impacts associated with development of Alternative 2 would be similar to slightly less compared to the proposed project. The risk of exposure to flood hazards associated with a 100-year storm event would be greater compared to the proposed project.

The reduction of residential units and relocation to the flatlands would decrease the amount of impervious surface area and the generation of urban contaminants. Development of the flatland would reduce the risk of erosion during construction activities; however, the mitigation measures that require preparation of a SWPPP would remain applicable to Alternative 2. The flatland area of the project site is more prone to flood hazards associated with a 100-year storm, especially in the northwest corner of the project site near Toro Creek. If this alternative increased the density of development in areas in the 100-year flood zone, the number of people and structures potentially exposed to these flood hazards would increase and the opposite would be true if this alternative decreased the density of development.

Mitigation measures identified for the proposed project would be applicable to Alternative 2. Under Alternative 2, impacts associated with stormwater runoff, construction-generated erosion, and urban contaminants would be reduced; however, impacts associated with flood hazards could be similar or slightly greater or slightly reduced, depending on the density of development. Therefore, the project-generated and cumulative surface water hydrology and water quality impacts under Alternative 2 would be similar compared to the proposed project.

Hazards and Hazardous Materials (slightly greater)

Under Alternative 2, the potential exposure to on-site hazardous materials and asbestos and/or lead would be slightly greater compared to the proposed project. The flatland area may contain concentrations of residual agricultural chemicals from past farming operations, and this alternative would necessitate more intensive development in this area. Mitigation measures identified for the proposed project would be applicable to Alternative 2, which would reduce this impact to a less than significant level. However, the risk of exposure would be slightly higher. This alternative would not increase exposure to hazards associated with listed hazardous material sites, groundwater contamination, septic tanks, or wildlife hazards. Therefore, the project-generated and cumulative impacts associated with hazards and hazardous materials under Alternative 2 would be slightly greater compared to the proposed project.

Land Use, Population, and Housing (similar)

Under Alternative 2, the number of residential units would be reduced, which would result in less impact to population growth compared to the proposed project. Based on the average number of persons per household in the unincorporated area of Monterey County being 3.15 (U.S. Census 2006), this alternative would increase the population in the unincorporated area of Monterey County by approximately 104 to 507 persons, which is less compared to the proposed project. This alternative would be consistent with the *Monterey County General Plan* and the *Toro Area Plan* and would result in fewer housing opportunities than the proposed project, which would also be obligated to provide less inclusionary housing. The project-generated and cumulative land use, population, and housing impacts under Alternative 2 would be similar compared to the proposed project.

Public Services and Utilities (less)

Under Alternative 2, the demand on public services and utilities would decrease. This alternative would decrease the number of residential units and population, which would result in a decrease in demand on law enforcement, fire protection services, schools, potable water service, stormwater service, wastewater service, and solid waste service compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to this alternative. The project-generated and cumulative impacts to public services and utilities under Alternative 2 would be less compared to the proposed project.

4.0 ALTERNATIVES TO THE PROJECT

Noise (greater)

Alternative 2 would increase the degree of impact to nearby sensitive receptors in the short term and concentrate operational noise sources generated by the project. Under Alternative 2, the number of residential units would decrease, but they would be concentrated in an area adjacent to San Benancio Middle School and State Route 68. Increasing the density of development adjacent to San Benancio Middle School, a sensitive receptor, would increase the potential for impacts in this location. By comparison, the proposed project would spread construction and operational noise throughout a larger and more remote area. Development of residential units and new neighborhoods, themselves sensitive receptors, adjacent to State Route 68 would increase the number of sensitive receptors exposed to noise generated along the highway as compared to the proposed project. Although the reduction in daily trips associated with this alternative would reduce total traffic noise generated along roadways compared to the proposed project, this reduction is not enough to offset the potential increase in noise experienced from the more concentrated development pattern. Therefore, the project-generated and cumulative noise impacts under Alternative 2 would be greater compared to the proposed project.

Transportation and Circulation (slightly less)

Alternative 2 would decrease the degree of impact to operations on the regional and local roadway network, as well as hazards associated with limited sight distance. As noted above, the number of residential units would be reduced under Alternative 2 compared to the proposed project, which would reduce the overall daily trips generated. Based on a trip generation rate of 9.57 daily trips for single family development and a 5.86 rate for inclusionary for this alternative), a reduction of residential units by 51 to 179 units (based on allowable density) would result in a reduction of approximately 485 to 1,617 daily trips from residential traffic compared to the proposed project. Alternative 2 would result in a total of approximately 583 to 2,201 daily trips, depending on the density assumed.

A reduction of daily trips would reduce the degree of impact on the level of service at intersections and roadway segments; however, the impact would remain significant and unavoidable. Under Alternative 2, the potential hazards associated with limited sight distance at the three access points would be similar compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to Alternative 2. However, the impacts to operations along State Route 68 would remain significant and unavoidable. Therefore, while the project-generated and cumulative traffic impacts under Alternative 2 would be only slightly reduced compared to the proposed project, due to the reduction in traffic trips, this alternative fails to eliminate the identified significant and unavoidable traffic impacts to operations on State Route 68.

Greenhouse Gases and Climate Change (less)

Alternative 2 would proportionally decrease mobile source and operational emissions of CO related to traffic trips, which would reduce greenhouse gas emissions. However, while this alternative reduces greenhouse gas impacts, the cumulative impacts under this category would remain significant and unavoidable.

Consistency with Project Objectives

Alternative 2 would not meet the basic project objectives of developing 212 residential units or establishing large permanent open spaces, which could end the tradition of cattle grazing on the property or require grazing activities to occur along the steeper slopes. In addition,

Alternative 2 does not meet the project objective of created a wine-oriented facility that would serve as a gateway to the Salinas Valley Wine Corridor. Therefore, Alternative 2 would be **less consistent** with the project objectives compared to the proposed project.

Alternative 3 – “Reduced Impact” Subdivision Design (ASP Versions A and B)

This alternative is an applicant-generated site plan concept that provides specific modifications to the 2005 Vesting Tentative Map. The intent of this alternative is to avoid or reduce certain archaeological, biological, geological, and aesthetic impacts. This alternative includes two versions of an alternate site plan (ASP Versions A and B) that reconfigures lots and the area of potential development, reduces the size of the winery-related uses, and adjusts the density and lot pattern across the project site, as shown in **Figures 4-1a, 4-1b, 4-1c, and 4-1d**.

Alternative 3 Parcel and Lot Configuration Changes

This modified subdivision would result in the potential development of 212 residential units, the same number of total units as the proposed project. A total of 170 market-rate lots would be distributed throughout the subdivision in a development pattern similar to the proposed Vesting Tentative Map. Parcel E would contain 42 inclusionary (affordable housing) units (instead of 66 total units consisting of 23 market-rate and 43 affordable housing units). The 42 Parcel E units proposed under Alternative 3 would consist of 17 moderate-income units (paired single-family homes and small-lot detached homes with three or four bedrooms), as well as 25 attached rental units ranging in size from 850 square feet to 1,250 square feet. Of these 25 rental units, 12 would be dedicated as low-income housing and 13 units as very low-income housing. The remaining 24 units formerly located within Parcel E would be distributed elsewhere in the subdivision, where some “nodes” of development have added and/or concentrated groupings of lots.

Specifically, there would be a reduction of 13 units near San Benancio Middle School and the Toro Creek undercrossing of State Route 68; an addition of two lots south of Lot #30; an addition of 11 lots near Lots #40 through #47; an addition of five lots near Lots #48 through #62; an addition of eight lots near Lots #78 through #83; a reduction of one lot near Lot #134 (Lot #135 deleted); an addition of 11 lots near Parcel D; and the reduction of 24 lots on Parcel E. **Figures 4-1a, 4-1b, and 4-1c** contain a comparison of the Alternative 3A and 3B site plans with the proposed project. The total amount of acreage included in open space under Alternative 3 is increased by approximately 90 acres compared to the proposed project (from approximately 602 acres in the proposed project to approximately 692 acres in Alternative 3) with a corresponding decrease in the total area included in residential lots, Parcels D and E, and required area for road right-of-way.

Parcel D and Winery Modifications

Parcel D would be reduced from 34.7 to 13 acres. The winery corridor gateway/visitor center proposed on Parcel D would remain in the same location but would be reduced in size from 110,000 square feet (SF) with 250 parking spaces to 28,500 SF with 100 parking spaces. Conceptually, the facility could include a 5,000 SF office building, an 8,500 SF tasting facility, a 5,000 SF visitor center/museum, and a 10,000 SF boutique winery. The location and the site plan for the reduced winery corridor/gateway center is shown on **Figure 4-1b**. As in the proposed project, the winery corridor gateway/visitor center buildings would be recessed 10 feet into the existing grade and would have a maximum building height of 25 feet (or 15 feet above grade). Along the ridgelines, three landscaped berms that follow the natural contours of the land would

4.0 ALTERNATIVES TO THE PROJECT

be provided facing both northbound traffic on River Road and eastbound traffic on State Route 68.

Internal Roadway Alignment Modifications

The alignment of various roadways on the western parcel would be slightly modified under this alternative, with the greatest change to the internal roadways being an added segment between Lots #62 and #74 in lieu of the segment proposed between Lots #54 and #67. In addition, long driveways have been added to access Lots #30a, #30b, #59a, #78a, and #78b. This alternative would slightly realign River Terrace Drive as well. Access from San Benancio Road would be eliminated, except for a single driveway to access Lot #1a.

ASP Version A and Version B

The primary difference between the two versions of Alternative 3 is site access. Under ASP Version A, the Portola Drive interchange and the proposed Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68, would continue to provide primary access to the project site and subsequent roadways in the development. The project access point at the park entrance, however, would be located slightly (approximately 200 feet) southwest of the access point as shown on the proposed Vesting Tentative Map. This access point and a portion of the proposed Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68 would be located on park property that is owned and operated by the Monterey County Parks Department.

Version B eliminates the main access point at Toro County Park and proposes a new signalized at-grade intersection along State Route 68 approximately 800 feet southwest of Torero Drive. The location of this new entrance directly from State Route 68 eliminates the need for the access road through Toro County Park. Thus, in comparison with the proposed project, Version B eliminates the significant and unavoidable visual impact associated with construction of that portion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68.

This alternate entrance was analyzed in the *Ferrini Ranch Subdivision Traffic Impact Report* (October 29, 2008), and addressed five options for intersection geometrics and traffic controls that include various combinations of signalization methods and turning movement restrictions. The 2008 preliminary traffic analysis of this at-grade intersection concluded that a fully signalized four-leg facility would function best from a traffic and circulation standpoint. Such a design, however, would depend upon other improvements to State Route 68, including widening of the highway to four lanes consistent with the State Route 68 Commuter Improvements project. To function efficiently and reduce the number of highway access points, the existing Torero Drive (in the Toro Estates neighborhood) would be closed at State Route 68 and traffic diverted to either the new intersection or the existing Portola Drive interchange. The 2012 Draft EIR, Alternative 3B and this Recirculated Draft EIR Alternatives Section, under Alternatives 3B and Alternative 5, propose this revised access. The *Ferrini Ranch Subdivision Traffic Impact Report* (October 29, 2008), prepared for the 2012 Draft EIR, was updated by analysis prepared by Wood Rodgers on the impacts and benefits of the at grade intersection. The purpose of the Wood Rodgers 2012 corridor analysis included in **Attachment 1** was to determine, utilizing the Synchro/Sim Traffic microsimulation model, the improvements needed on SR 68 to accommodate the project's additional traffic and new signalized access and to consider improvements to traffic safety and reduction in neighborhood cut-through traffic. The analysis also considers travel time for existing traffic on SR 68. (Refer to **Attachment 1**). Both Alternative 3B and Alternative 5 (discussed below) assume that the new at grade intersection will be installed

for access and that as proposed mitigation, to the project will either install or pay for 1.2 miles of the planned 4-lane expansion on State Route 68. The Wood Rodgers Traffic Report concludes that a 1.2 mile 4-lane expansion would result in a corridor travel time neutral condition, taking into account build out of the project with the new intersection.

This section analyzes both Versions A and B under this alternative. **Figures 4-1a** and **4-1c** illustrate the western portion of Alternatives 3A and 3B respectively and clearly depict the different access configurations under Alternative 3A and, Version B. **Figure 4-1b** shows the site plan for the eastern portion of the project which is the same for both 3A and 3B. **Figure 4-1d** illustrates the proposed new intersection for Alternative 3 Version B and depicts the ultimate configuration for State Route 68 with proposed widening to 4 lanes (via payment of Transportation Agency of Monterey County (TAMC) fees and/or other funding sources including applicant funding as mitigation) at this new access location⁴.

⁴ TAMC Regional Impact Fee Nexus Study Update March 26, 2008 referencing State Route 68 Commuter Improvements as widening SR 68 from existing 4-lane section, Table 3. The TAMC Regional Fee Program was approved by County Board of Supervisors and participating public agencies, and went into effect August 28, 2008. The 2010 TAMC Regional Transportation Plan (RTP) lists the 4-lane section as a planned improvement.

Reference:

http://www.tamcmonterey.org/programs/rtp/pdf/2010_rtp/RTP_04_Chapter_2%20Needs_Discussion.pdf

This page intentionally left blank.

PROJECT SUMMARY
170 MARKET RATE LOTS
42 BELOW MARKET RATE UNITS
212 TOTAL UNITS



Source: Whitson Engineers, 2010d

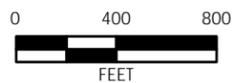
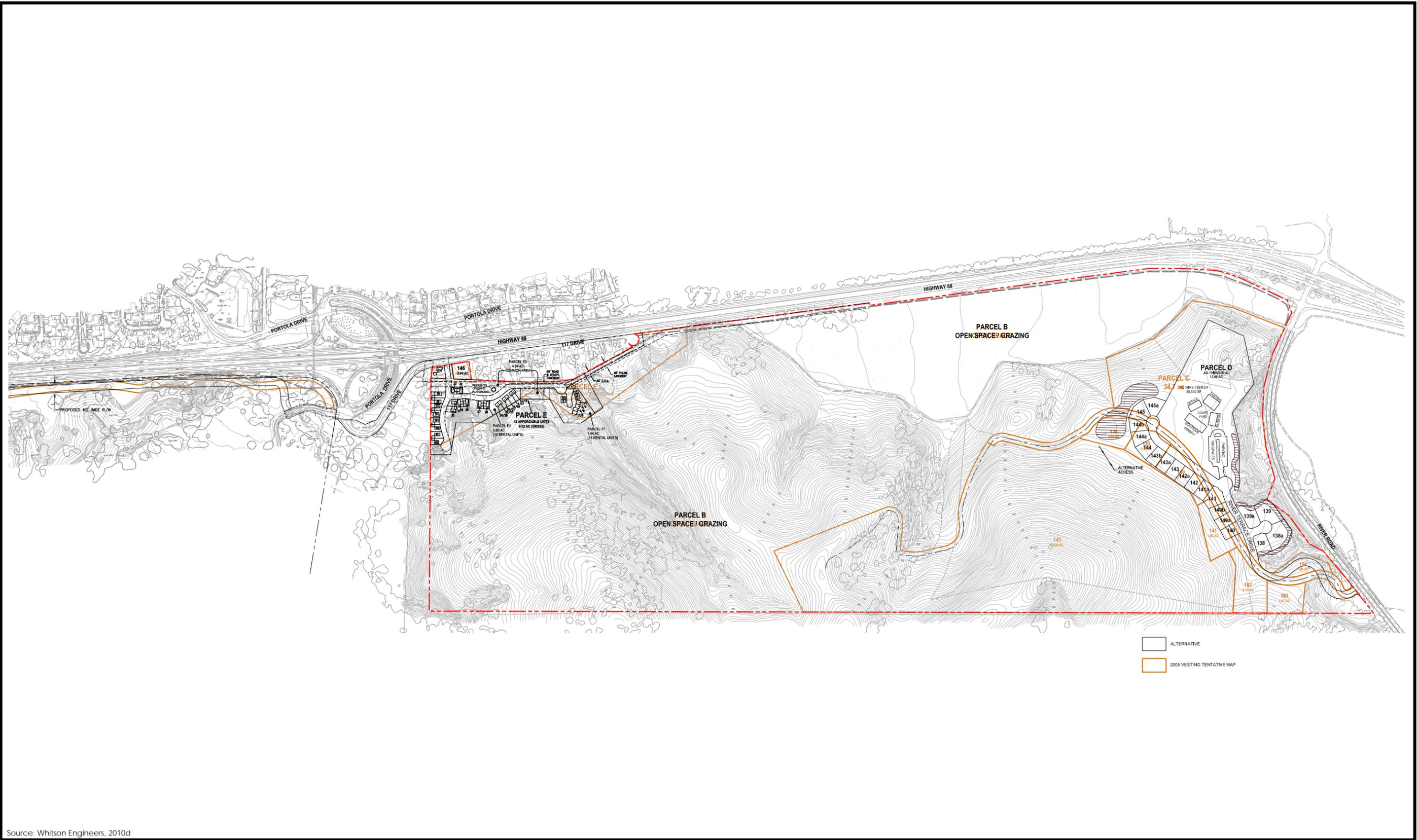


FIGURE 4-1A
ALTERNATIVE 3 SITE PLAN - WESTERN PARCEL



Source: Whitson Engineers, 2010d

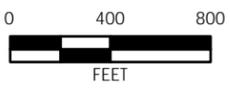
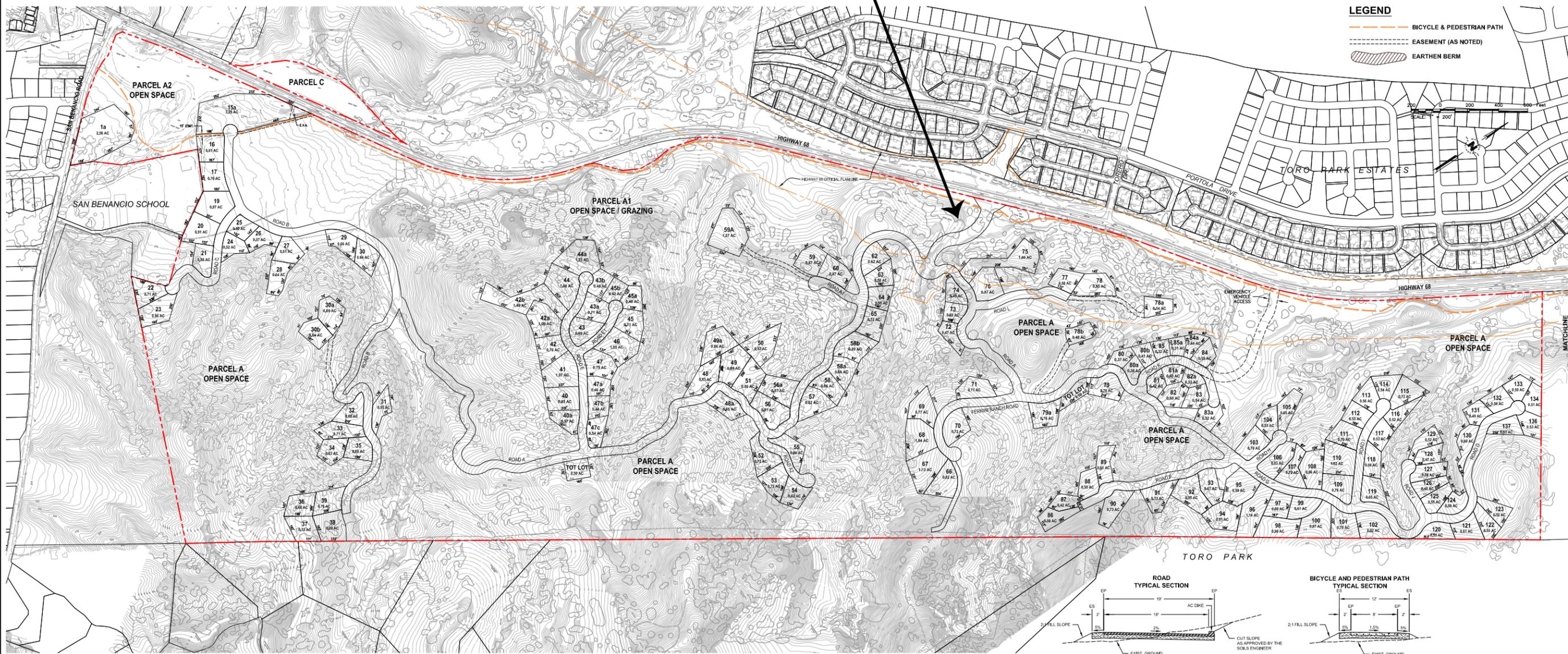


FIGURE 4-1B
ALTERNATIVE 3 SITE PLAN - EASTERN PARCEL



New Primary Access Point



Source: Whitson Engineers, 2010e

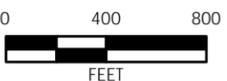
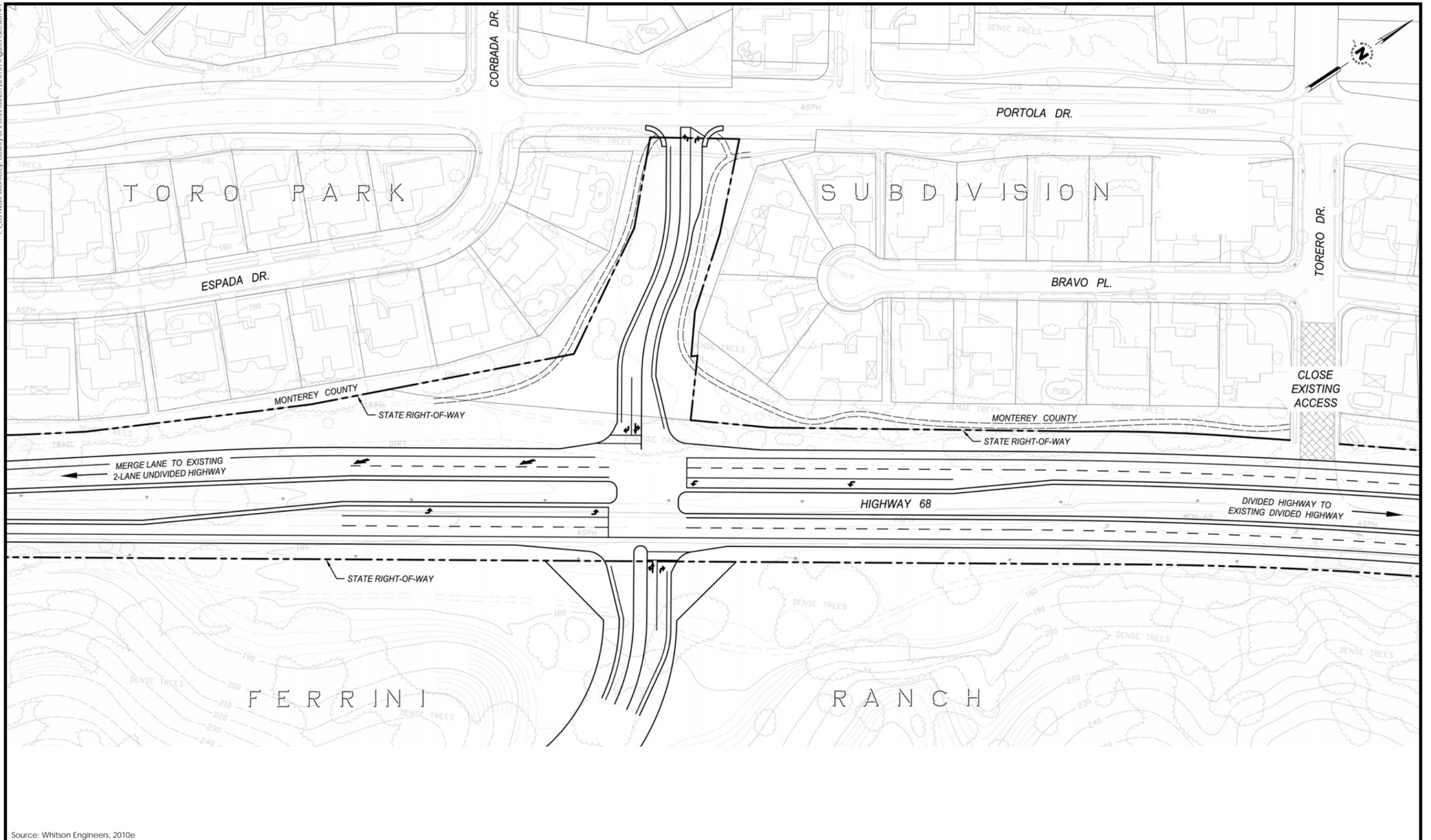


FIGURE 4-1c
ALTERNATIVE 3 VERSION B SITE PLAN - WESTERN PARCEL





Source: Whitson Engineers, 2010e

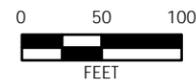


FIGURE 4-1D
 ALTERNATIVE #3 – VERSION B
 PMC®

Comparative Analysis

Aesthetics and Visual Sensitivity (less)

Alternative 3 would slightly increase the density and intensity of development on the western parcel in specific nodes where potentially significant visual impacts to scenic vistas, critical viewshed, and scenic resources would occur under the proposed project. These development nodes would be intensified with additional lots under this alternative, resulting in slightly greater visibility as viewed from Bureau of Land Management (BLM) lands across State Route 68. Views and project visibility from the higher trail systems on BLM lands (and from within Toro Park) are considered a less than significant impact of the project, and would remain so under this alternative. This slightly greater visibility from trail systems on BLM lands and Toro Park under Alternative 3 is offset by beneficial changes to the lot configuration, which removes certain lots from prominent view as seen from State Route 68.

Under Alternative 3, the developable portion of Parcel E would be reduced in size by approximately half the land area compared to the proposed project, reducing the number of units from 66 units (43 affordable units and 23 market-rate units) to 42 affordable units. The 42 affordable units would be located in an area visually buffered from State Route 68 by an existing concrete block sound/screen wall. Under Alternative 3, portions of Lot 34 (within the Parcel E site) and Lot #146 are both within the 100 foot setback of State Route 68. However, they are both located on an existing lot of record and would be set back from State Route 68 a distance that is consistent with the rest of the existing homes on Road 117. Views of this developed area would also be buffered by the concrete sound wall and existing vegetation.

On the eastern parcel (Parcel D), under the proposed project, a large 72.38-acre lot (#145) and its associated access drive would be eliminated (the driveway and lot located above the Parcel D mesa and the bull field as seen from State Route 68). The elimination of the long driveway and future homesite reduces grading and potential visual impacts.

Also on the eastern parcel in the area of the winery (Parcel D), the proposed project shows seven "estate" lots sited adjacent to the wine facility plus an additional lot (Lot 145) described in the previous paragraph. Under Alternative 3, Lot 145 and its long access driveway have been eliminated and the developable area of the wine facility would be reduced from 110,000 square feet of buildings on 34.7 acres to a total of 28,500 square feet on approximately 13 acres. The residential lots would be reconfigured to increase lot density. The majority of these reconfigured lots have been relocated within the developable area shown on the proposed project site plan. Specifically, as shown on the Alternative 3 site plans Lots #138 through #141 have been reconfigured into 15 lots and Lots 142 through 144 have been eliminated and replaced with lots 138, 138a, 139. While the number of residential lots increases under this alternative (from 8 residential lots to 19 residential lots), the average lot size decreases (lot sizes would be in the 8,500–10,000 square foot range) and the total area of development is reduced. The proposed winery uses would also be substantially reduced in scale and the buildings located and set back to minimize any potential visual impact. To further reduce the visual impact of development on these lots, three berms would be constructed along the existing ridges in the locations shown on the Alternative 3 site plans. The berms would be designed to follow the natural contours of the land and planted with native vegetation to appear indistinguishable from the existing natural hill slopes. The winery-related uses would be located as shown on the Alternative 3 site plans in locations where future structures would be screened by existing topography, minimizing visibility from the River Road and State Route 68 corridors. Although the berm construction would result in temporary visual impacts, the degree of

4.0 ALTERNATIVES TO THE PROJECT

potential impact to scenic vistas, scenic resources, and light and glare would be reduced under Alternative 3 compared to the proposed project due to reduced project visibility.

Field verification of sight lines found that site topography and existing dense vegetation will predominantly screen views at the proposed locations of the new lots proposed on the western parcel under Alternative 3 from State Route 68. The proposed berm, existing sound/screen wall along State Route 68, and natural topography would reduce the visual impacts associated with the additional and modified lots proposed on the eastern parcel under Alternative 3.

Mitigation measures identified for the proposed project would apply to the new lots proposed under Alternative 3. The degree of impact from lot development would be reduced with mitigation. However, development of the portion of Ferrini Ranch Road that runs through Toro Park and is parallel with and immediately adjacent to State Route 68 continues to provide main access to the project under Alternative 3A and would remain a potentially significant and unavoidable visual impact, consistent with the proposed project. However, the elimination of this portion of the access road proposed under Alternative 3 Version B would eliminate this significant and unavoidable project impact.

Version A and B Comparison: Under Version B, a new signalized at-grade intersection and related grading and improvements would be visible along the State Route 68 corridor. However, the visual impact of constructing Ferrini Ranch Road under Version A, would be considered to have greater impact due to the location of grading and road cuts within Toro Regional Park and the fact that the proposed road would be immediately adjacent to State Route 68 corridor, including the related cuts and tree removal along that alignment, views would be more prominent since that proposed section of Ferrini Ranch Road (including road and traffic views) would be highly visible to those traveling eastbound along State Route 68. Additionally, Version A would be converting existing open space within public park land to create a section of Ferrini Ranch Road. The combination of all of these factors is considered a significant unavoidable visual impact in the Draft EIR. Additionally, there are a number of signalized intersections already located on State Route 68. For those reasons, Version B would have fewer impacts to the State Route 68 scenic highway.

Air Quality (slightly less)

Under Alternative 3, the short-term construction emissions would be similar compared to the proposed project, while long-term operational emissions would be slightly reduced compared to the proposed project. This alternative would redistribute the residential units and decrease the size of the proposed winery corridor gateway/visitor center facility by 81,500 square feet, which would result in a reduction of approximately 393 daily trips.

The decreased size of the winery corridor gateway/visitor center development would reduce construction-generated emissions. As noted above, under Alternative 3 the daily trips would be reduced. This would slightly reduce operational emissions of ROG, NO_x, PM₁₀, SO_x, CO, and diesel-exhaust particulate matter emissions. In addition, the amount of CO emissions generated where unacceptable levels of service exist would also be slightly reduced compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to construction activities under Alternative 3 and would result in construction emissions that would be considered less than significant. Under Alternative 3, the short-term construction-generated emissions, long-term emissions of criteria pollutants, toxic air contaminants, and greenhouse gases would be slightly reduced. Therefore, project-generated and cumulative impacts on air quality under Alternative 3 would be less compared to the proposed project.

Impacts would be less but still considered significant unavoidable under the cumulative scenario.

Version A and B Comparison. The different access options under Alternative 3 may provide only slightly different air quality and emissions impacts. Construction of a new at-grade intersection at State Route 68 under Version B would require approximately 20,000 cubic yards of grading (and resulting air quality impacts, i.e., particulates). However, Version B would eliminate the need to construct the length of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68. The result is a trade off in terms of construction impacts. Mobile source emissions and impacts are assumed to be similar with either version. Grading and resultant air quality impacts for both versions can be mitigated with typical construction watering required.

Biological Resources (less)

Impacts to some of the seasonal wetlands identified in the biological assessment would be avoided or reduced through specified adjustments to the roadway and lot configurations under this alternative. The rare plants Pacific Grove clover and Congdon's tarplant, both List 1B species, have been identified and according to WRA, Inc. would be avoided to a greater extent than under the proposed project (WRA 2009b). According to Staub Forestry and Environmental Consultants, Alternative 3 would result in the removal of approximately 46 fewer trees than the proposed project (Staub 2010). Replacing Lots #1 through #12 with a single lot that is substantially reduced in comparison to the development area of the proposed project would minimize intrusion into the riparian areas and preserve the riparian corridor along El Toro Creek and its tributary. The elimination of 11 lots to create one single family lot and driveway would reduce traffic and disturbance in this area. This alternative will also increase the size of the open space preserve lot (Parcel A2). Consolidation of Lots #13 through #15 to one lot and the reconfiguration of the lots above would also increase the amount of area that wildlife would have to move to and from the El Toro Creek undercrossing. This alternative reduces impacts to wildlife movement by decreasing development in the passage routes and riparian habitats in the area connecting the project site to the BLM lands south of State Route 68 connected through the El Toro Creek bridge undercrossing. Overall, this alternative also increases open space by over 90 acres in comparison to the proposed project and reduces development and construction impacts in the riparian area near El Toro Creek undercrossing. In addition, proposed project Lot 134 has been eliminated which increases the distance between Pond 18 and the closest residential lot by approximately 200 feet. Therefore, project-generated and cumulative impacts on biological resources under Alternative 3 would be less compared to the proposed project.

Version A and B Comparison. Version B, with the new at-grade intersection, would result in the removal of fewer trees compared to the Toro County Park entrance and Ferrini Ranch Road construction due to the smaller construction footprint of this feature and based upon an aerial review of existing tree coverage, in accordance with "Supplemental Forester's Report for Ferrini Ranch Alternative Option" dated March 17, 2010. In addition, Version B would eliminate the portion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68 proposed immediately next to pond 18. This alternative therefore avoids road construction immediately adjacent to Pond 18, which supports a population of California tiger salamander. By eliminating this section of Ferrini Ranch Road both construction and potential permanent impacts are reduced to the breeding pond and the potential estivation habitat that is immediately adjacent to the pond. Version B is estimated to result in fewer biological impacts than Version A.

4.0 ALTERNATIVES TO THE PROJECT

Cultural Resources (less)

Under Alternative 3, the potential impacts to cultural or archaeological resources resulting from eventual site construction would decrease compared to the proposed project. Under this alternative development, Lots #1 through #12 and Lots #13 through #15 would be consolidated. Lots #1 through #12 would be combined into one 2.58-acre lot (Lot 1a) and Lots #13 through #15 would be combined into one 3.25-acre lot (Lot #15a). Minimizing development in the vicinity of Lots #1 through #12 would reduce potential impacts in the general vicinity of known archaeological resources. Minimizing development in the vicinity of Lots #13 through #15 would further reduce impacts.

Mitigation measures required for the proposed project would also be applicable to Alternative 3, which would ensure that the impacts to cultural resources are reduced to a less than significant impact. Without site plan modifications such as those proposed under Alternative 3, known cultural resources could be jeopardized. Avoidance of resources is the preferred mitigation option, and Alternative 3 avoids the key areas where cultural resources are known to exist and accomplishes that objective. The project-generated and cumulative impacts to cultural resources under Alternative 3, which avoids the primary areas of identified sensitive sites, would therefore be less as compared to the proposed project.

Version A and B Comparison. The access options under Version A and B would have little or no bearing on cultural resources. The access points are not located in areas of known sensitive cultural resources, and all mitigation regarding undiscovered resources would still apply.

Geology and Soils (similar)

Alternative 3A would result in approximately 450,000 cubic yards of grading (234,000 cubic yards of cut, 216,000 cubic yards of fill). This is similar to the proposed project which would result in approximately 466,000 total cubic yards of grading (cut and fill) but with slightly less cut and slightly more fill (approximately 240,000 cubic yards of cut and approximately 225,000 cubic yards of fill) (Whitson 2010c, updated 2013). Under the proposed project, a majority of the cut (approximately 117,000 cubic yards) would occur at the on-site road improvements. The elimination of that portion of Ferrini Ranch Road that runs through Toro Park, parallel and adjacent to State Route 68 as proposed in Alternative 3B, would eliminate grading in the Toro County Park for this portion of the road improvements. Cut/fill would be expected to balance on site.

Under Alternative 3, the potential impacts associated with exposure to risk associated with seismic ground shaking and expansive soils would be similar compared to the proposed project. Construction of additional berms on the eastern parcel will slightly increase erosion potential from exposed earth that will require standard mitigation.

However, mitigation measures identified for the proposed project would remain applicable to Alternative 3 and would reduce impacts to a less than significant level. This alternative would not increase exposure to liquefaction, lateral spreading, or dynamic compaction. Therefore, project-generated and cumulative impacts to geology and soils under Alternative 3 would be similar compared to the proposed project.

Version A and B Comparison. The access options under Alternative 3 represent relatively small differences in grading quantities; however, overall the impacts of these options can be mitigated and are essentially the same.

Groundwater Resources and Hydrogeology (slightly less)

Under Alternative 3, the degree of impact to groundwater supply would be slightly reduced and the potential impact for groundwater contamination would be similar compared to the proposed project. This alternative would reduce the size of the winery and related uses, which would likely result in slightly less water consumption, which would also reduce the cumulative impact on groundwater resources. Mitigation measures identified for the proposed project would remain applicable to Alternative 3. Alternative 3 would not increase the degree of impact to water quality and nearby wells compared to the proposed project. Therefore, project-generated and cumulative impacts to groundwater resources and hydrogeology under Alternative 3 would be slightly less compared to the proposed project. Impacts between access Version A and Version B would also be similar.

Surface Water Hydrology and Water Quality (similar)

Under Alternative 3, the potential impacts associated with increased stormwater runoff and surface water quality would be similar compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to Alternative 3. This alternative would not increase the potential for accelerated erosion during construction or exposure to flood hazards. Therefore, project-generated and cumulative impacts to surface water hydrology and water quality under Alternative 3 would be very similar compared to the proposed project.

Version A and B Comparison. Drainage and hydrology impacts between the different access points proposed in Version A and Version B would also be similar. The proposed access roads would both require drainage improvements, although drainage improvements required for a new intersection along the state highway may require more extensive facilities and design review by Caltrans. Both access roads would be required to be designed to mitigate impacts from increased stormwater runoff consistent with State and County standards.

Hazards and Hazardous Materials (similar)

Under Alternative 3, the potential exposure to on-site hazardous materials and asbestos and lead would remain similar compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to Alternative 3. This alternative would not increase risk of exposure to listed hazardous material sites, transportation of hazardous materials, groundwater contamination, septic tanks, or wildland fire hazards. Therefore, project-generated and cumulative impacts associated with hazards and hazardous materials under Alternative 3 would be similar compared to the proposed project. Impacts between access Version A and Version B would also be similar.

Land Use, Population, and Housing (similar)

Alternative 3 would be consistent with applicable land use plan policies and would not result in an increase in population compared to the proposed project. This alternative does not include a greater number of residential units compared to the proposed project; therefore, the density would remain consistent with the regional population and housing forecasts, the *Monterey County General Plan*, and the *Monterey County Inclusionary Housing Ordinance* (Ordinance No. 04185). Under this alternative, one less inclusionary unit would be provided than the proposed project. Of the 42 inclusionary units, 13 units would be affordable to very low income households, 12 units would be affordable to low-income households, and 17 would be affordable to moderate-income households. The 25 rental units would be two-, three-, and four-bedroom units and would have uncovered parking. Of the 17 units that would be affordable to moderate-income households, 8 units would be three- and four-bedroom paired single-family units with attached garages. The remaining nine units would be three- and four-bedroom, small-lot

4.0 ALTERNATIVES TO THE PROJECT

detached homes with garages. Project-generated and cumulative land use, population, and housing impacts under Alternative 3 would therefore be similar compared to the proposed project.

Version A and B Comparison. Access Version A, through Toro County Park likely presents a more complex local land use and entitlement process in addressing parkland property issues. This option would also require State Park coordination and additional review under the National Environmental Policy Act. A new at-grade intersection along the state highway (Version B) would require coordination with and approval by Caltrans. Although park access presents a challenge in terms of agency coordination and approval, regulatory approvals would be required under both access versions.

Public Services and Utilities (similar/less)

Under Alternative 3, the demand on law enforcement, fire protection services, schools, and other public services would be similar compared to the proposed project, as the service populations would be the same. This alternative would slightly reduce the demand on utilities due to the reduced size of the winery and related uses. Mitigation measures identified for the proposed project would remain applicable to Alternative 3. Overall, project-generated and cumulative impacts to public services and utilities under Alternative 3 would be similar to slightly less compared to the proposed project.

Version A and B Comparison. Impacts between access Version A and Version B would be significantly different. With direct primary access from State Route 68 under Version B, all County Park impacts associated with the Portola Drive/Toro Park access configuration can be avoided (see Section 3.10). Since impacts to existing park facilities would be reduced, Version B can be considered more environmentally sensitive in terms of parks and public services.

Noise (slightly less)

Under Alternative 3, potential impacts associated with nearby sensitive receptors and land compatibility would be slightly reduced compared to the proposed project within the project site area. This alternative would reduce development in the vicinity of San Benancio Middle School and result in associated reductions in noise. Mitigation measures identified for the proposed project would also be applicable under Alternative 3. The potential need for temporary sound barriers adjacent to San Benancio Middle School would be reduced or eliminated. Alternative 3 would not measurably increase ambient noise levels either during the construction phase or the life of the project. The reduction of daily trips associated with this alternative would slightly reduce the degree of impact associated with traffic noise along State Route 68.

Under Alternative 3, there would be no increased potential for groundborne vibrations or noise generated from stationary sources. Therefore, project-generated and cumulative noise impacts within the project site area associated with Alternative 3 would be slightly less compared to the proposed project.

Version A and B Comparison. Noise associated with the project entrance under Version B would shift the location of additional traffic noise away from the park entrance to the new intersection location; however, the degree of impact would not be expected to change. The Noise Report conducted for the Draft EIR prepared by Ambient Air Quality & Noise Consulting, analyzed increases in ambient noise levels attributable to the proposed project and within the project area, and found these impacts to be less than-significant. This Draft EIR Noise report focused on analysis of project area noise impacts. Additional noise analysis was prepared by Freytag and

Associates which also analyzes the potential noise impacts on the existing Toro Park Estates neighborhood across from the project along State Route 68. Noise impacts that could be created by the 4-lane expansion of State Route 68 contemplated as a mitigation measure in connection with Alternate site plans 3B and Alternate 5 were analyzed in the Freytag assessment (**Attachment 2**).

Under Alternative 3B, project access improvements along State Route 68 would realign the existing unsignalized Torero Drive intersection approximately 800 feet to the west on State Route 68. The new Torero Drive connection to State Route 68 would include a full-access signalized intersection including a new access connection to the Ferrini Ranch. Under Alternative 3B (and Alternative 5, discussed below) it is assumed that the new at grade intersection will be installed for access. These alternatives also assume that the project will either install or pay for 1.2 miles of the planned 4-lane expansion on State Route 68. The Wood Rodgers Traffic Report (**Attachment 1**) concludes that a 1.2-mile 4-lane expansion would result in a corridor travel time neutral condition, taking into account traffic attributable to the project and the installation of the new intersection. The four-laning is part of a planned Caltrans improvement on State Route 68, and identified as a TAMC Regional Transportation Plan ("RTP") Improvement in the 2010 RTP.

The planned 4-lane improvements will result in two (2) new State Route 68 travel lanes that would be closer to existing residents at the Toro Park Estates than the current lanes. These new lanes would be located in the long-existing Caltrans right-of-way that has been reserved for this planned improvement. The Freytag Report (**Attachment 2**) analyzes potential increases in ambient noise levels and impacts to sensitive receptors due to the improvements from four-laning State Route 68 in the Toro Park/Torero Drive area.

The Freytag Report noise analyses modeled four scenarios using Caltrans standard noise prediction method, and considered peak hour traffic for automobile and truck, vehicle speeds, barrier configurations and the distance to the noise receivers. Modeling used the worst case noise exposure, that of the residences closest to the existing roadway. A design vehicle speed of 55 miles per hour (mph) was used, though actual vehicle speeds at peak hour are substantially lower (slower speeds would result in reduced noise levels). Noise analysis results are included in **Attachment 2** of this Recirculated Draft EIR.

The analysis also analyzed varying median width scenarios for the improvements on State Route 68. Noise predictions were made both at the property line and at the residence façade, 25 feet from the property line. Existing traffic noise with the current two-lane roadway and alignment is 68.6 dB at the property line of the nearest home and at 69.6 dB at the façade of the nearest home. Generally, a 3 dB increase or decrease in noise is required to be discernible except in those areas where the ambient noise levels exceeds 65 dB (Freytag, 2013; Ambient 2009)⁵. The table below summarizes the results of the Noise Exposure Analysis:

⁵ However, Draft Ferrini EIR, Appendix F, Noise Report prepared by Ambient Air Quality and Noise Consulting, Table 2 notes that according to FICON guidelines, increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (Draft Ferrini EIR, Appendix F, Noise Report and FICON 2000). The County and this EIR applies the increases of 1.5 d.B or greater in the area of State Route 68 as the threshold, as discussed in this section.

4.0 ALTERNATIVES TO THE PROJECT

NOISE TABLE 4.1A
SUMMARY OF NOISE EXPOSURE ANALYSES

CONDITION/SCENARIO	CNEL At Nearest Façade	CNEL At Property Line
Existing	68.6 dB	69.6 dB
12-ft. Median	69.2 dB	69.9 dB
36-ft. Median	71.4 dB	72.9 dB
36-ft. Median with Berm	67.4 dB	68.9 dB

Source: Freytag and Associates, June 2013

From the standpoint of noise exposure, the 12-foot median design alternative is preferred over the 36-foot median, as the noise source (travel lanes) would be farther from the residence. The 12-foot median design results in an increase under the County's 1.5 dB threshold of an increase that would be considered significant. If the 36-foot median design was required by Caltrans, then the construction of a berm would be required to reduce the noise exposure to the existing homes below current levels.⁶ Alternative 3B does not propose specific noise attenuation measures for the Caltrans improvements on State Route 68, or suggest median design, as this level of specific design will be associated with the Caltrans and County engineering design process during the refined design stage of the State Route 68 improvement plans. Design variations were modeled as presented in **Table 4.1a** above. As shown, noise impacts associated with the project and a mitigation measure consisting of a 1.2-mile, 4-lane expansion would result in a less than significant impact with either a 12-foot median design or with the 36-foot median and a noise-attenuating berm. Depending on the median design approved by Caltrans, mitigation measures may also include construction of a sound-attenuating, landscaped berm on the north side of State Route 68 that would reduce post-project noise levels below existing levels for the existing Toro Estates homes that back up to State Route 68.

Additional noise analysis for construction related noise impacts at sensitive receptors of Toro Park Estate homes was also conducted and is included in a second Noise Analysis by Freytag and Associates, included in **Attachment 2** (August 7, 2013 Report, Traffic Noise Exposure Assessment from Realigned Torero Drive, Jack Freytag). The assessment analyzed the change in noise exposure from the proposed realignment of Torero Drive which would occur under Alternative 3B and Alternative 5, per the discussion above. The resulting realignment noise analysis notes that traffic volumes are nearly the same for the existing roadway and proposed realignment and that CNEL noise exposure above 60 dB from Torero Drive is almost entirely on the roadway. The assessment concludes that the 55 dB contour falls 71 feet from the center of Torero Drive and the 55 dB contour from SR 68 extends almost 1300 feet from that roadway centerline, to the extent of Torero Drive. Therefore the noise exposure contribution from Torero Drive was considered negligible (**Attachment 2**).

⁶ As shown in the above table, the installation of the 5 ft. earthen berm would result in a CNEL decrease of approximately 4 dB in connection with the 36' median design (from 71.4 dB at the façade of the nearest home to 67.4 dB at this location with the berm). This mitigated level (67.4dB) median with berm would also reduce the noise level with the 4-lane expansion to a level below existing levels under existing condition under the current 2 lane configuration.

In comparison to the proposed project, increases in ambient noise levels attributable to the proposed project and within the project site area, would be similar or slightly less in comparison to the proposed project. Alternative 3B would also result in improvements and potential noise impacts outside of the project boundaries, including widening a portion of State Route 68 and construction of the new Torero Drive connection to State Route 68 with a full-access signalized intersection (Freytag, June 2013). While this improvement was found to reduce queuing on SR 68 and reduce commuter "cut through" trips in the Toro Estates neighborhood, lane improvements along the SR 68 would reduce the distance between the existing homes and the improved travel lanes and the new intersection. The impacts from potential increases in noise levels could be mitigated to less than significant however, and may further reduce noise exposure depending upon mitigation design. In comparison to the proposed project noise impacts, the impacts from these project "external improvements" are therefore considered similar or slightly greater, depending on mitigation design.

Transportation and Circulation (slightly less)

Alternative 3 would reduce the degree of impact to operations on the regional and local roadway network, as well as hazards associated with limited sight distance compared to the proposed project. As noted above, the total number of dwelling units would remain the same (212) under Alternative 3. However, the winery parcel and related uses would be reduced in size, which would reduce the overall daily trips generated under this alternative compared to the proposed project. Under Alternative 3, approximately 1,999 daily trips would be generated, with 165 trips (49 in, 116 out) during the weekday A.M. peak hour and 226 (138 in, 88 out) during the weekday P.M. peak hour. This would result in a reduction of approximately 393 daily trips compared to the 2,392 daily trips under the proposed project. In addition, the residential units would be shifted throughout the project site, which would eliminate the project access point at San Benancio Road/Paseo de Vaqueros.

Due to the reduction of winery development on Parcel D, there would be an overall reduction of daily traffic that would utilize River Road compared to the proposed project. Although there would be a slightly higher percentage of residential traffic that would utilize the River Road access, as more lots would be located near Parcel D (19 residential homes compared to 8 under the proposed project). However, this would be offset by the reduction in the traffic attributable to the reduced wine facility proposed under Alternative 3. In comparison to the proposed project, the residential and winery traffic impact on River Road would be reduced from 439 total daily trips to 274 daily vehicle trips, of which 92 are winery related daily vehicle trips. Since Alternatives 3A and 3B would shift some of the residential traffic to the River Road eastern parcel, the traffic distribution patterns from this access would also be shifted with the result being a reduction of vehicle trips on westbound State Route 68.

Access off from San Benancio Road would be eliminated, except for a single driveway to access Lot #1a. The elimination of 11 residential lots that were formerly accessed by San Benancio Road would result in a reduction of 105 daily vehicle trips at this access point.

It is assumed that all mitigation measures would still be required under this alternative. While the mitigation measures would vary under Versions A and B for access, it is assumed that under either version, the required mitigation measures would include payment of fees, and/or construction of improvements to mitigate project impacts relating to State Route 68 overall corridor travel time between Salinas and Monterey. Under Alternative 3, the reduction of daily trips would result in a slight reduction in level of service impacts compared to the proposed project.

4.0 ALTERNATIVES TO THE PROJECT

Refer to the Version A and B Comparison below to address Alternative 3A and 3B impacts on travel time and mitigation regarding widening of State Route 68 as described in the *Ferrini Ranch Subdivision Traffic Impact Report* (October 29, 2008).

Under Alternative 3, the potential hazards associated with sight distance at the San Benancio Road/Paseo de Vaqueros access point would be significantly reduced, since the roadway serving 12 homes would be eliminated and a driveway provided instead serving the remaining one single-family home in this plan. Operations on the local and regional roadway network would be slightly improved but would remain significant and unavoidable in some locations.

Version A and B Comparison

Version A would provide primary project access in a manner similar to the proposed project, via the Portola Drive interchange and a modified route through Toro County Park. This is similar to the proposed project access and impacts addressing the proposed project access have previously been provided. The mitigation measures for Alternative 3 Version A would be essentially the same as those relating to the proposed project with applicable "fair share" fees required proportionate to the reduced project trips under Alternative 3.

Version B provides an alternate project entrance via a new at-grade intersection on State Route 68, eliminating the Toro County Park project entrance. With the alternate project access, the existing Torero Drive intersection (across State Route 68) would be closed, and a new State Route 68/Torero Drive intersection would be constructed approximately 800 feet west of the existing State Route 68/Torero Drive intersection. Access to the project site would be via the fourth (south) leg of the new intersection. With the closure of the existing Torero Drive, existing traffic at the Torero Drive/State Route 68 intersection would be diverted either to the new intersection or to the existing Portola Drive interchange. The signal warrant improvements identified for the existing Torero Drive/State Route 68 intersection under existing traffic conditions would therefore no longer be required under Version B.

This potential new intersection with the state highway was studied by the traffic consultant, in the *Ferrini Ranch Subdivision Traffic Impact Report* (October 29, 2008), prepared for the Draft EIR which reviewed at least five options for intersection geometrics and traffic controls, including various combinations of signalization methods and turning movement restrictions. The study explored a range of options that included full and partial signal controls, no signal options, and options allowing right turns only to avoid cross-highway movements.

Only the signalized options would ensure that the newly aligned Torero Drive/State Route 68 intersection operates at acceptable levels of service under Alternative 3 traffic conditions. Under cumulative conditions, only a full-access, signalized, four-way intersection that allows all movements would result in adequate operations and acceptable levels of service.

The alternate project access recommended under Version B would be designed with Caltrans as a full-access signalized intersection that would allow all movements. Such a design and construction would utilize the existing Caltrans right-of-way to accommodate the future widening of State Route 68 in this location as envisioned by Caltrans and TAMC and as proposed as mitigation for Alternative 3B. The design would also need to meet Caltrans standards for at-grade intersections. A conceptual configuration for this new intersection is illustrated on **Figure 4-1d**. This figure is only intended to show a preliminary design for the intersection and a potential design for a portion of State Route 68 that has been expanded to 4-lanes. The final design of the new intersection and any 4-lane expansion of State Route 68 would be subject to Caltrans review and approval.

As described above, an updated traffic report has been prepared by Wood Rodgers (see **Attachment 1**) and concludes that a 1.2 mile 4-lane expansion would result in a corridor travel time neutral condition taking into account the proposed new intersection and the additional traffic generated by the project under Alternative 3 Version B.

The *Ferrini Ranch Subdivision Traffic Impact Report* (October 29, 2008), prepared for the Draft EIR was supplemented by analysis prepared by Wood Rodgers in 2012 and the conclusions of these reports are discussed below. The Wood Rodgers 2012 supplemental corridor analysis evaluated the improvements needed on State Route 68 to accommodate the project's additional traffic, new signalized access. The supplemental analysis evaluated improvements, traffic safety and reduction in neighborhood cut-through traffic. The analysis also considers impacts to travel time for existing traffic on SR 68. (Refer to the State Route 68 Traffic Analysis, February 2012 by Wood Rodgers **Attachment 1**).

The Draft EIR 2008 Traffic report concluded that implementation of a four-lane extension to the west end of Toro Park Estates could reduce the combined eastbound and westbound travel time through the SR 68 corridor by approximately 286 seconds (4.6 minutes) during the weekday AM and PM peak hours without the proposed project. With the proposed project and the four-lane extension, a decrease in travel time would still be realized (149 seconds of travel time reduction for Alternative 3A, compared to 108 seconds of reduction for the proposed project. Under Alternative 3B, with the full signalized intersection, there would be a similar reduction in travel time of approximately 109 seconds or essentially travel time neutral. Although, when compared with Version A, Version B would create a small increase in overall State Route 68 corridor travel time prior to mitigation measures, the increased mitigation required for Alternative 3B will result in a "neutral" travel time after mitigation.

In addition, there are other benefits of Version B. Version B, by requiring design and construction to accommodate the four-laning of State Route 68 for 1.2 miles, would expedite the implementation of the planned State Route 68 corridor improvements as a regional project.

The supplemental analysis prepared by Wood Rodgers (*State Route 68 Traffic Analysis, February 2012 by Wood Rodgers* in **Attachment 1** of this Recirculated Draft EIR) and provides technical background information on the impacts of the new intersection under Alternative 3B and analyzes a 1.2-mile extension of the 4-lane section of State Route 68 as a potential mitigation measure. (It would also be applicable to Alternative 5 which utilizes that same access points as Alternative 3B but with a reduced project density).⁷ The Wood Rodgers analysis (summarized in

⁷ The purpose of the Wood Rodgers corridor analysis included in **Attachment 1** is to determine the improvements needed on SR 68 to accommodate the project's additional traffic and new signalized access while improving traffic safety, reducing neighborhood cut-through traffic, and decreasing travel time for existing traffic on SR 68. The SR 68 corridor analysis was performed using the Synchro/SimTraffic microsimulation modeling software. The report summarizes the travel times for existing conditions and the three existing plus project scenarios from the SimTraffic microsimulation models during the AM and PM peak hours (refer to **Attachment 1** for existing plus project scenarios travel time data by roadway segment and the full report). The Wood Rodgers analysis recommended actual construction (or funding) of approximately 1.2 miles of 4-laning as mitigation for project traffic plus construction of the new at-grade intersection. Thus, this Alternative 3B (and Alternative 5) assume that the new at grade intersection will be constructed, with the mitigation to either install or pay for 1.2 miles of the planned 4-lane expansion on SR 68. The Wood Rodgers analysis concludes that a 1.2-mile 4-lane expansion would result in a corridor travel time neutral condition and taking into account build out of the project with the new intersection. The

4.0 ALTERNATIVES TO THE PROJECT

Findings, Scenario #3 of Table 3) analyzed the travel times with the installation of approximately 1.2 miles of additional 4-lane along SR 68. The report found under Scenario 3 (as described below) that *total* travel time on State Route 68 would be essentially the same as the existing conditions if the 1.2 mile, 4-lane expansion were to be constructed in conjunction with the build out of the project under Alternative 3B (which includes the proposed at-grade intersection described above). This analysis assumed the full buildout of the project as proposed and widening of State Route 68 to a four-lane roadway for 1.2 miles from the existing Freeway Begin/End to a point west of the new State Route 68/Torero Drive signalized intersection⁸.

The findings stated that the new configuration would provide improved safety benefits and reduce cut-through traffic in the adjacent residential area/school zone. The findings indicate that in addition to safety benefits, the signalized intersection would improve traffic flow during non-congested and congested traffic conditions by eliminating the existing side street stop-controlled access at the existing Torero Drive intersection. Table 3 in **Attachment 1** summarizes the travel times for existing conditions and the three existing plus project scenarios from the SimTraffic microsimulation models during the AM and PM peak hours. It should be noted that the slight increase in travel time on westbound SR 68 during the AM peak hour under existing plus project scenarios 2 and 3 include the 200 additional vehicles that were previously using Portola Drive/Torero Drive to bypass the existing westbound vehicle queue on SR 68.

Per the Ferrini Ranch 2008 report findings from the Draft EIR, this Alternative would have impacts similar to the proposed project, and would still result in significant and unavoidable impacts to traffic based upon the contribution of new traffic to existing deficient facilities. However, Alternative 3B would have safety benefits and reduce cut through traffic in accordance with both the 2012 Wood Rodgers supplemental analysis and the Draft EIR Ferrini Ranch 2008 Traffic Report.

Greenhouse Gases and Climate Change (slightly less)

Under the Alternative 3, the short-term construction emissions would be slightly reduced compared to the proposed project, while long-term operational emissions would be slightly reduced compared to the proposed project. Therefore, the greenhouse gas emissions would also be slightly reduced compared to the proposed project. The number of trees to be removed would also be reduced, which would reduce the impacts (or preserve the benefits) associated with carbon sequestration.

The decreased size of the winery corridor gateway/visitor center development would reduce construction-generated emissions. As noted above, under Alternative 3 the daily trips would be reduced. This would slightly reduce operational and mobile source emissions of CO, which would reduce greenhouse gas emissions. However, reduction in impacts from Alternative 3

analysis considered 212 units per the proposed project and Alternative 3B and did not consider the reduction in units and traffic volumes under Alternative 5 (1862 vehicle trips per day under Alternative 5 compared to 2,392 daily trips under the proposed project and Alternative 3B. Refer to **Attachment 3** for trip generation tables for alternatives.

⁸ Wood Rodgers 2012 analysis performed traffic operations analysis under “existing plus project” conditions using the existing AM and PM peak hour calibrated SimTraffic models of SR 68 as a starting point. Traffic volumes were developed for existing plus project conditions by adding the project traffic to existing traffic volumes based on the proposed project trip generation and trip distribution. (This supplemental analysis differed from the Ferrini Ranch 2008 traffic report in that it used 1.2 miles for the extension and also assumed existing conditions plus project).

would not avoid the projected significant unavoidable cumulative impact due to greenhouse gases.

Consistency with Project Objectives

Alternative 3 meets all of the proposed project objectives. Therefore, Alternative 3 (Version A and B) would be **consistent** with the proposed project objectives.

Alternative 4 – “Compact Footprint” Subdivision Design

The intent of this alternative is to reduce the total development footprint of the project by transferring development density to more compact development nodes and minimize impacts to cultural and riparian resources. This alternative would provide a more compact development footprint than the proposed project, reduce the amount and extent of grading, provide an alternative primary access point, and further consolidate land uses and development in the vicinity of the gateway/visitor center area along River Road.

Alternative 4 Parcel and Lot Configuration Changes

The development footprint would be reduced by eliminating development on certain custom home lots and transferring that density to development nodes, which would have a clustered type of housing product as shown in **Figures 4-2a** and **4-2b**. On the western parcel, this alternative would eliminate development of Lots #1 through #15, Lots #31 through #38, #59, #61, and Lots #72 through #78. These units would be transferred to the seven development nodes referred to as “DN” #1 through #7, as shown in **Figures 4-2a** and **4-2b**. Proposed Lots #17 through #30 would become DN #1; proposed Lots #40 through #47 along Road E would become DN #2; proposed Lot #60 would become DN #3; proposed Lots #68 through #71 would become DN #4; proposed Lots #70 and #79 and a portion of Parcel A would become DN #5; proposed Lots #94 through #102 would become DN #6; and proposed Lots #120 through #123 would become DN #7. Landscaping along the northeastern boundary of DN #1 would be provided in lieu of a landscaped berm.

Residential development within the development nodes in the western parcel would be a clustered residential type of development with more centralized points of access rather than long individual driveways. The clustered residential development would have common courtyards, open space areas, and tot lots, creating more consolidated neighborhoods. On the eastern parcel, Lots #142 through #145 would be eliminated and the density transferred to another development node. Proposed Lots #138 through #141 and Parcel D would become DN #8. This DN would encompass the reduced density winery corridor gateway/visitor center (similar in size to Alternative 3); however, the natural ridgeline would be preserved and residential units would be integrated into the gateway/visitor center in a village type of setting with a central courtyard/plaza. The residential uses would be more integrated with the winery/visitor-serving uses as a single development.

Alternative 4 Access and Circulation Changes

Under this alternative, on- and off-site circulation would be altered compared to the proposed project. Primary access to DN #1 would be provided off of San Benancio Road across from the existing intersection of San Benancio Road/Paso de Vaqueros in the same general alignment as Road D under the proposed project. This roadway would be gated at the eastern boundary of DN #1 and minimally improved to provide fire/emergency through access only. Primary access to DN #2 through #7 and remaining lots on the western parcel would be provided via a new

4.0 ALTERNATIVES TO THE PROJECT

grade-separated interchange located near the western boundary of the adjacent Toro Estates development and BLM parking areas. A grade-separated interchange was considered and analyzed for this alternative due to access and feasibility constraints associated with all other primary access concepts. The 2005 Vesting Tentative Map entrance is not consistent with Caltrans design standards; relocating the entrance through County parkland (Alternative 3 Version A) brings additional land use and parkland impacts and multi-agency review; and a new at-grade intersection on State Route 68 (Alternative 3 Version B) would require Caltrans coordination and approval for a new at-grade facility.

The general footprint of this interchange facility is shown in **Figure 4-2a**. This alternate access/interchange would include an overcrossing and ramps providing direct project access to westbound and eastbound State Route 68, and providing a new access point to the existing Toro Estates neighborhood. Implementation of this alternate access/interchange would include the closure of the existing Torero Drive/State Route 68 intersection. Access to Ferrini Ranch Road would be gated northeast of Road G and minimally improved to State Route 68 for use by fire/emergency vehicles only. Ferrini Ranch Road from the emergency access point to Toro County Park would be eliminated. Under Alternative 4, no access would be provided via Toro County Park.

Comparative Analysis

Aesthetics and Visual Sensitivity (greater)

Alternative 4 would concentrate portions of the subdivision within development nodes (DNs). These DN's would have single-family clustered residential development that would have a higher density than the large, single-family market-rate custom home lots. Many of the lots located closest to State Route 68, including Lots #1 through #15, Lots #31 through #38, #59, #61, and Lots #72 through #78, would be eliminated. In addition, this alternative eliminates the portion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68. These changes would reduce potential effects to scenic resources and scenic vistas in these areas. However, concentrated development in the areas of the development nodes would reduce the amount of natural tree coverage and increase the concentration of pavement and building mass from the development, which could increase viewshed impacts. This alternative would not have the significant unavoidable viewshed impact of Ferrini Ranch Road. However, in order to eliminate this portion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68, a grade-separated interchange/overcrossing would be required near the existing parking area for BLM. This facility, would require configuration of on- and off-ramps, associated grading, and a bridge overcrossing, all designed to Caltrans design standards. This alternative would have a greater degree of visual impact in this particular area compared to the proposed project.

Development within DN #2 (in the vicinity of proposed Lots #45 through #47 but extending closer to the ridgeline) would be subject to mitigation measures **MM 3.1-1a** and **MM 3.1-4**, which would require the staking and flagging of proposed structures prior to construction in order to prevent ridgeline development.

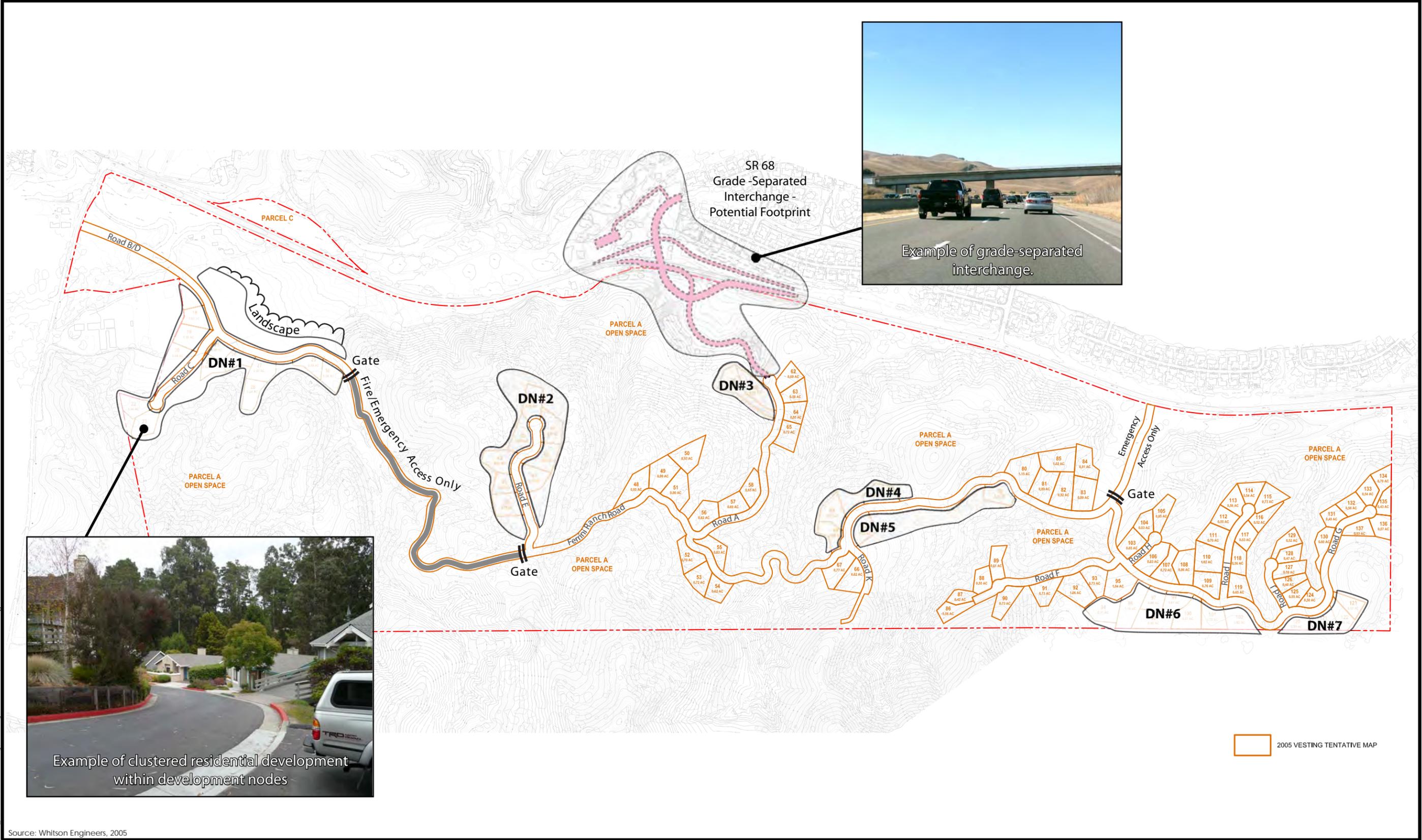
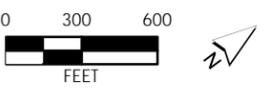
Under Alternative 4, Parcel D and Lots #138 through #141 would become DN #8. This DN would encompass the reduced-density winery uses; however, the natural ridgeline would be preserved and residential units would be integrated into the site planning in a more consolidated setting with a central courtyard/plaza. Although these changes are intended to reduce visual impacts compared to the proposed project and remove all development in the area of Parcel D out of the critical viewshed, the concentration of development and relocated buildings in this area could increase visibility from certain areas of State Route 68.

Mitigation measures identified for the proposed project would apply to Alternative 4. Reducing some of the potential impacts to aesthetics and visual resources, and clustering development to allow for more open space in the subdivision, would have some positive environmental benefits. However, the visual effects of a new State Route 68 interchange to the state designated scenic corridor and county-designated critical viewshed would likely result in a significant and unavoidable impact. Additionally, relocating and concentrating development in the development nodes may increase visual impacts from State Route 68. Therefore, Alternative 4 has the potential to result in a greater degree of impact to aesthetics and visual resources compared to the proposed project.

This page intentionally left blank.

T:\CS\Work\Monterey County of Ferrini Ranch 26-0101\Figures\Section 4-2

Source: Whitson Engineers, 2005



Example of grade-separated interchange.



Example of clustered residential development within development nodes

2005 VESTING TENTATIVE MAP

FIGURE 4-2A
ALTERNATIVE 4 CONCEPTUAL SITE PLAN - WESTERN PARCEL



T:_CS\Work\Monterey County of\Ferrini Ranch\Figures\Section 2.5\Figure 2-5d Vesting Tentative Map.ai, April 2007

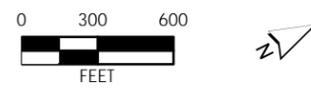
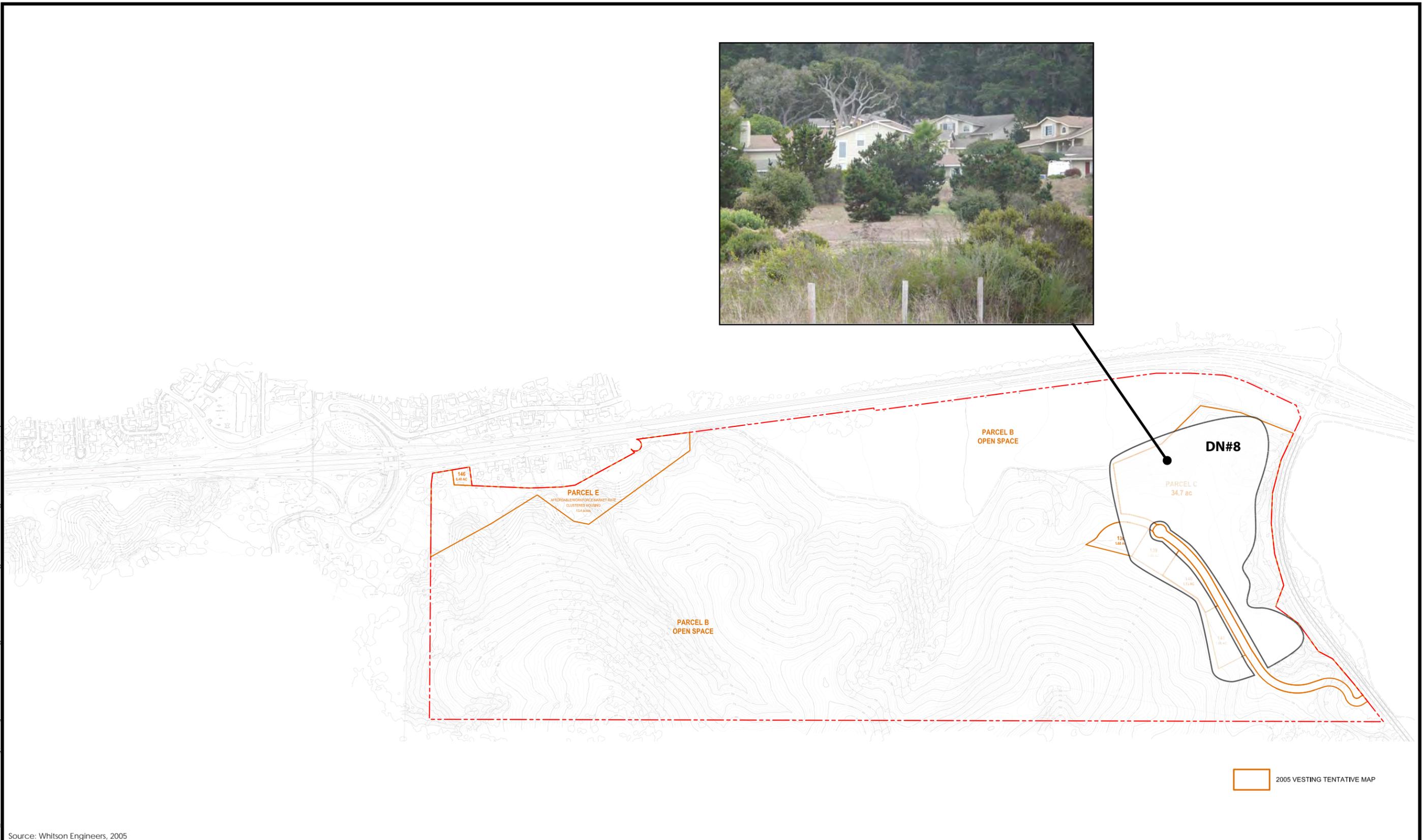


FIGURE 4-2B
ALTERNATIVE 4 CONCEPTUAL SITE PLAN - EASTERN PARCEL



Air Quality (similar)

Under Alternative 4, the amount of grading required for residential development would be slightly reduced compared to the project, resulting in reductions to PM₁₀ emissions. Although development of single-family pads, driveways, and access roads would be eliminated on some lots, that reduction in construction emissions would be offset slightly by more concentrated grading and site clearing within the development nodes. In addition, the reduction in construction emissions associated with the deletion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68 would be more than offset by the construction emissions generated during the construction of the new interchange, which would require the use of more heavy construction equipment and take longer to construct. The reduction in ground disturbance associated with development on Parcel D and DN #8 would slightly reduce short-term construction emissions. Overall, the short-term construction-related air quality emissions associated with this alternative would be relatively similar to slightly more intensive than the proposed project.

The long-term operational emissions would be similar to slightly less based on the reduction in the size of the winery corridor gateway/visitor center. In addition, the mobile source emissions would be slightly reduced due to improved roadway operations and fewer vehicle miles traveled in the subdivision.

All mitigation measures would be applicable to this alternative, which would ensure that the air quality impacts are reduced to a less than significant level. Taking into account the similar to slightly more construction emissions and similar to slightly less operational emissions, this alternative would result in a similar degree of impact to air quality as the proposed project.

Biological Resources (less)

This alternative could result in fewer potential impacts to riparian habitat, California tiger salamander, and wildlife by transferring development from Lots #1 through #16 to DN #1 located away from the riparian corridor on the western parcel and by eliminating the development of the portion of Ferrini Ranch Road that runs through Toro Park and is parallel with and immediately adjacent to State Route 68. This alternative would move development of Lots #1 through #15, and proposed Lots #17 through #30 onto DN #1. Development within the development nodes would need to be carefully sited to avoid identified special-status plant species and wetlands, however. Construction of the project access road off of San Benancio Road would result in some biological and riparian impacts, but less so than in comparison to the proposed project. Concentrated development of the number of lots moved into DN #1 could impact the sensitive plant species (PG Clover and Congdon's Tarplant) located in this area. While the elimination of new lots in close proximity to the riparian area would reduce potential impacts to the wildlife corridor associated with the Toro Creek undercrossing, this type of concentrated development may form a more substantial barrier to wildlife than the larger lot design contained in the proposed project which may provide more open space between homesites. DN #5 would be developed in an area that contains grasslands and some oak trees that were not previously anticipated for development. Although development within DN #5 would result in some additional tree removal, the net effect of concentrating development would likely result in a total reduction of trees removed, which would result in less potential disturbance of nesting raptors. Development on DN #8 would further reduce disturbance of identified wetlands by consolidation of lots in this area.

Deletion of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68 along the project frontage would also result in disturbance of fewer

4.0 ALTERNATIVES TO THE PROJECT

trees and wetland areas. Based on aerial photos, only minimal tree removal would be required for the development of the grade-separated interchange.

Some key biological resources would be avoided by this alternative, and all mitigation measures would be applicable to this alternative, which would ensure that impacts to biological resources are reduced to a less than significant level. Therefore, this alternative would result in a lessened degree of impact to biological resources identified above but development in DN#1 may provide a barrier to the upland wildlife corridor and would also impact the sensitive plant species located in this area.

Cultural Resources (less)

This alternative would relocate development away from identified prehistoric sites. All mitigation measures would remain applicable to this alternative in order to ensure that potential impacts to cultural resource are reduced to a less than significant level. However, overall Alternative 4 would have less impact to cultural resources due to direct avoidance of known resources.

Geology and Soils (greater)

The risk of exposure to structural damage and human safety hazards resulting from slope-failure hazards such as landslides would be slightly reduced through the elimination of development on Lot #142. In addition, clustered development within the development nodes would avoid development on steeper slopes, and the deletion of key roadways would reduce potential for erosion. However, the construction of a grade-separated interchange designed to Caltrans standards would result in significant grading, earth moving, and potential erosion impacts upon a large project footprint. All of the mitigation measures for the proposed project would be applicable to Alternative 4 in order to ensure that impacts associated with erosion, expansive soils, slope failure, and ground shaking are reduced to a less than significant level. The proposed interchange proposal would require significant subsequent environmental review to assess additional impacts. Therefore, this alternative would result in a greater overall degree of impact to geology and soils.

Groundwater Resources and Hydrogeology (slightly less)

Under Alternative 4, the degree of impact to groundwater supply would be slightly reduced and the potential impact for groundwater contamination would be similar compared to the proposed project. This alternative would reduce the size of the winery corridor gateway/visitor center, which would likely result in slightly less water consumption, and would also reduce the cumulative impact on groundwater resources. Mitigation measures identified for the proposed project would be applicable to Alternative 4. Alternative 4 would not increase the degree of impact to water quality and nearby wells compared to the proposed project. Therefore, project-generated and cumulative impacts to groundwater resources and hydrogeology under Alternative 4 would be slightly less compared to the proposed project.

Surface Water Hydrology and Water Quality (slightly less)

Under Alternative 4, the potential impacts associated with increased stormwater runoff and surface water quality would be slightly reduced compared to the proposed project. This alternative would eliminate roadways and consolidate access to lots on the development nodes through the use of common driveways, which would result in a reduction of total impervious surface area. However, the construction of a grade-separated interchange designed to Caltrans standards would result in significant grading, earth moving, and potential erosion impacts upon a large project footprint. Mitigation measures identified for the proposed project would be applicable to Alternative 4 in order to ensure that impacts associated with

erosion are reduced to a less than significant level. This alternative would have greater localized impacts associated with the improvements required in connection with a new grade-separated interchange. Overall, this alternative would not increase the potential for accelerated erosion during construction at the majority of the project area or exposure to flood hazards. Therefore, project-generated and cumulative impacts to surface water hydrology and water quality under Alternative 4 would be slightly reduced compared to the proposed project.

Hazards and Hazardous Materials (similar)

Under Alternative 4, the potential exposure to on-site hazardous materials and asbestos and lead would remain similar compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to Alternative 4. This alternative would not increase risk of exposure to listed hazardous material sites, transportation of hazardous materials, groundwater contamination, septic tanks, or wildland fire hazards. Therefore, project-generated and cumulative impacts associated with hazards and hazardous materials under Alternative 4 would be similar compared to the proposed project.

Land Use, Population, and Housing (similar)

Alternative 4 would be consistent with applicable land use plan policies and would not result in an increase in population compared to the proposed project. Although this alternative does increase the density of development in pockets on the project site, the overall number of residential units would remain the same as the proposed project. Therefore, the gross density would remain consistent with the regional population and housing forecasts, the *Monterey County General Plan*, and the *Monterey County Inclusionary Housing Ordinance* (Ordinance No. 04185). All inclusionary housing opportunities within Parcel E would not change. Therefore, Alternative 4 would have a similar degree of project and cumulative land use, population, and housing impacts as the proposed project.

Public Services and Utilities (less)

Under Alternative 4, the demand on law enforcement, fire protection services, schools, and other public services would be similar compared to the proposed project. This alternative would slightly reduce the demand on utilities, however, due to the reduced size of the winery and related uses and the clustering of development. The increased demand for park facilities would remain the same; however, no "take" of parkland or alterations to park facilities would be necessary due to the new project entrance and interchange location. Therefore, impacts to existing park facilities (including the cross-country trail) would be reduced under Alternative 4. Most mitigation measures identified for the proposed project would be applicable to Alternative 4, except for those pertaining to the "take" of parkland and alteration of park facilities. Overall, project-generated and cumulative impacts to public services and utilities under Alternative 4 would be less compared to the proposed project.

Noise (slightly greater)

Under Alternative 4, potential impacts associated with nearby sensitive receptors and land compatibility would be similar compared to the proposed project. This alternative would redistribute development in the vicinity of San Benancio Middle School; however, noise levels would be similar in this area and mitigation measures identified for the proposed project would also be applicable under Alternative 4. The use of temporary noise barriers adjacent to San Benancio Middle School would likely still be required for the construction DN #1.

4.0 ALTERNATIVES TO THE PROJECT

The reduction of daily trips associated with this alternative would reduce the degree of impact associated with traffic noise along State Route 68 and in Toro Park Estates compared to the proposed project, but probably not to a perceivable level. The most significant difference between this alternative and the project is the construction of a grade-separated interchange. Such a facility would result in greater levels of construction noise in the vicinity of the Toro Park Estates neighborhood, and the operation of ramps and an elevated overcrossing in this area may heighten noise levels in the immediate vicinity. Therefore, project-generated and cumulative noise impacts associated with Alternative 4 may be slightly greater compared to the proposed project.

Transportation and Circulation (slightly less)

Alternative 4 would reduce the degree of impact to operations on the regional and local roadway network, and in the adjacent Toro Park Estates, by providing a new State Route 68 access for that neighborhood. As noted above, the number of dwelling units would remain the same under this alternative; however, the scale of the winery and related development would be reduced, which would reduce the overall daily trips generated under this alternative compared to the proposed project. Under Alternative 4, the trips generated would be similar to Alternative 3, which would result in a reduction of daily trips compared to the proposed project. Under Alternative 4, the reduction of overall daily trips would result in level of service impacts similar or slightly less compared to the proposed project due to the reduction in trips.

Residential units would be shifted throughout the project site, which would eliminate the main project access at Toro County Park and remove the need for portions of various roadways on the project site. The access road along San Benancio Road, near the San Benancio Middle School site, would serve DN #1 and the western portion of the project site. This will create a localized increase in traffic in comparison to the proposed project on San Benancio Road and its intersection with State Route 68; however the total daily trips from the overall project would be reduced.

Compared to the proposed project, the grade-separated interchange would provide more efficient and direct movement of vehicles to and from the site, but not to the level of affecting highway or intersection levels of service. Under Alternative 4, similar to Alternative 3B and Alternative 5, the commuter cut-through phenomenon at Torero Drive would be eliminated. Implementation of the overcrossing improvement would also require reconfiguration/relocation of the parking at the entrance to the BLM land, which could be incorporated into the interchange design. Upon completion of engineered design, the proposed interchange would be subject to subsequent environmental review under the Caltrans design review process. A gated emergency access point would also be provided to the project site along State Route 68, which would provide emergency access similar to other alternatives.

As construction of a major facility such as a grade-separated interchange would require coordination with Caltrans and TAMC to integrate the facility into planned State Route 68 improvements, construction of this facility would serve as project mitigation to improve traffic conditions along the corridor. Widening this section of State Route 68 (in conjunction with the interchange) would reduce the delay along the State Route 68 corridor by approximately 286 seconds during the weekday A.M. and P.M. peak hours; however, the additional trips generated under this alternative would use up some of the reduction of delay. Overall, operations on the local and regional roadway network (and along the State Route 68 corridor) would improve, but remain significant and unavoidable at specific locations. Therefore, Alternative 4 would result in slightly less impacts to traffic and circulation compared to the proposed project.

Greenhouse Gases and Climate Change (slightly greater)

Under the Alternative 4, operational emissions from the project would be similar to the proposed project. To construct a new grade-separated interchange, however, would require a much longer construction schedule, more intensive equipment needs, and more materials and raw resources. The construction requirements for this facility would result in slightly greater emissions overall. The cumulative impacts in this category would remain significant and unavoidable.

Consistency with Project Objectives

This alternative is generally **consistent** with the objectives of the proposed project, as open space and grazing would be retained, the development density and land uses remain similar, and recreational opportunities would be provided.

Alternative 5 – “Reduced Unit Count and Reduced Impact” Subdivision Design

This alternative is a new alternative included as part of this Recirculated Draft EIR. The Alternative 5 site plan concept further modifies and refines Alternative 3 and proposes a reduction in unit count and additional specific modifications to the proposed project as defined by the 2005 Vesting Tentative Map. This Alternative reduces the total unit count from 212 to 185 units, consisting of a total of 168 market-rate lots and 17 below market rate units.

The unit count in Parcel E would be reduced from the 66 total units proposed in the 2005 Vesting Tentative Map (consisting of 43 below market rate and 23 market-rate units) to 17 below market rate single-family lots and one market-rate lot. The market-rate lot would be located on an existing lot of record. The reduction in the unit count is further accomplished by the elimination of Lot #29, #30 and #75 and #139a. Development on Parcel D for the winery is similar to Alternative 3 but with a further reduction in parcel size (from 37.4 under the submitted site plan to 11.8 acres under this alternative). The intent of this alternative is to avoid and lessen the potential environmental impacts to archaeological, biological, geological, traffic and aesthetic resources. Similar to Alternative 3, this alternative reconfigures and reduces lots, increases open space by approximately 101 acres, substantially reduces the total area of potential development, further reduces the size of the winery-related uses, and further adjusts the density and lot pattern across the project site, as shown in **Figures 4-3a and 4-3b**. Specifically, the developable area of Parcel E is reduced from approximately 13 acres to approximately 3.5 acres, Parcel D reduces the winery development parcel from 34.7 acres to 11.8 and development in the vicinity of open space near San Benancio Road (Parcel A-2) is similarly reduced and open space increased as described below.

Alternative 5 Parcel and Lot Configuration Changes

This modified subdivision would result in 185 total units, a reduction in development compared to the proposed project of 212 residential units under the proposed project and Alternative 3. A total of 168 market-rate lots would be distributed throughout the subdivision in a development pattern similar to Alternative 3. However, the density within Parcel E is substantially reduced in Alternative 5 as compared to both Alternative 3 and the proposed project. Parcel E would contain 17 inclusionary (affordable housing) units and one market-rate lot (instead of 66 total units proposed by the project and 42 units proposed under Alternative 3). These 17 affordable units would consist of all moderate-income units (4,000 square foot small-lot detached homes with three or four bedrooms). As compared with the proposed project the overall development area of Parcel E is reduced by nearly 9.5 acres (from approximately 13 acres to approximately

4.0 ALTERNATIVES TO THE PROJECT

3.5 acres). As a result, the open space in the area of Parcel E is increased by a corresponding amount, by approximately 9.5 acres.

Alternative 5 contains two possible options for the development in the area of Parcel E. In addition to the site plan shown on the large scale Alternative 5 site plan (Figure 4-3b) there is a Parcel E, Option B site plan. Both options are fairly similar with the substantive difference being the number of units that have been proposed for the existing lot of record that lies to the west of the existing homes behind the State Route 68 sound wall. Please see Figures 4.3a and 4-3b for Alternative 5 layout and the Parcel E site plans shown in **Attachment 4** for a graphic comparison.

Similar to Alternative 3, there would be a reduction of 13 units near San Benancio Middle School and the Toro Creek undercrossing of State Route 68. The total amount of acreage included in open space under Alternative 5 is increased by approximately 101 acres compared to the proposed project (from approximately 602 acres in the proposed project to approximately 703 acres in Alternative 5) with a corresponding decrease in the total area included in residential lots, recreational areas, Parcels D and E and required area for road right of way.

Alternative 5 also eliminates Lots #29 and 30 that were located at the rear of the westernmost meadow in the vicinity of the Middle School and reduces the footprint of Lot #15 to essentially conform to the existing footprint of the driveway and buildings.

Parcel D and Winery Modifications

Parcel D would be reduced from 34.7 to 11.8 acres. The winery corridor gateway/visitor center proposed on Parcel D would be reduced in size from 110,000 square feet (SF) with 250 parking spaces to 28,500 SF with 100 parking spaces. Conceptually, the facility could include a 5,000 SF office building, an 8,500 SF tasting facility, a 5,000 SF visitor center/museum, and a 10,000 SF boutique winery. The winery corridor gateway/visitor center buildings would be recessed 10 feet into the existing grade and would have a maximum building height of 25 feet (or 15 feet above grade). Along the ridgelines, three landscaped berms that follow the natural contours of the land would be provided as shown on **Figure 4-3b**. The berms would be designed to follow the natural contours of the land and planted with native vegetation to appear indistinguishable from the existing natural hill slopes.

Internal Roadway Alignment Modifications

Similar to Alternative 3, the alignment of various roadways on the western parcel would be slightly modified under this alternative, including an added segment between Lots #62 and #74 in lieu of the segment proposed between Lots #54 and #67. In addition, driveways have been added to access Lots #30a, #30b, #59a, #78a, and #78b. This alternative would slightly realign River Terrace Drive as well. However, River Terrace Drive's point of access at River Road remains unchanged. Access from San Benancio Road would be eliminated, except for a single driveway to access Lot #1a.

Primary Access

Similar to Alternative 3B, the Ferrini Ranch Subdivision Alternative Project Access (as described in the Ferrini Ranch Subdivision Traffic Impact Report) would realign the existing unsignalized Torero Drive intersection approximately 800 feet to the west on State Route 68. The new Torero Drive connection to SR 68 would include a full-access signalized intersection including a new access connection to the Ferrini Ranch Subdivision on the south side of State Route 68. Similar to Alternative 3B, under Alternative 5, this alternative would eliminate the proposed Ferrini Ranch

Road that runs through Toro Park and the associated improvements needed at the park entrance. Under Alternative 5, no portion of the proposed Ferrini Ranch development would be located on park property that is owned and operated by the Monterey County Parks Department.

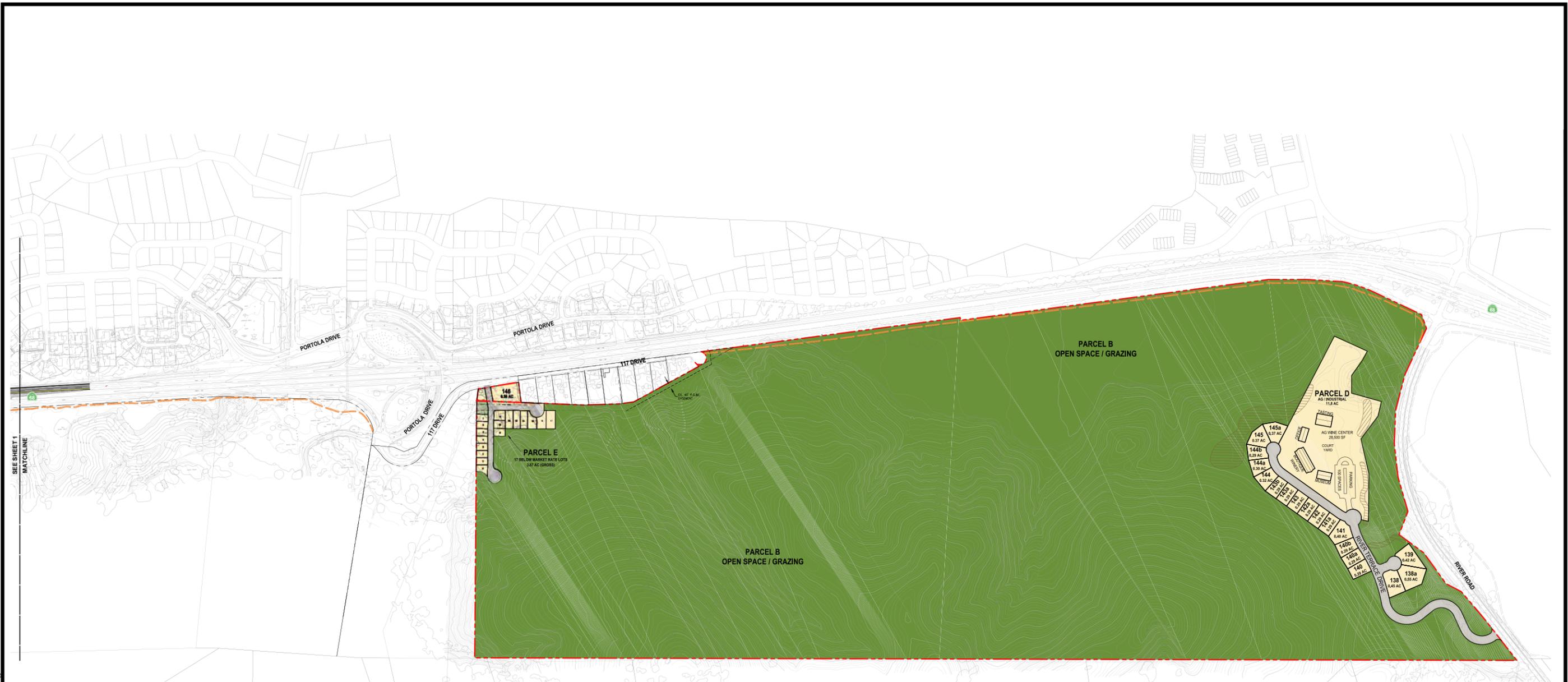
Similar to Alternative 3B, under Alternative 5, the existing Torero Drive (in the Toro Estates neighborhood) would be closed at State Route 68 and traffic diverted to either the new intersection or the existing Portola Drive interchange.

This section analyzes modifications under this alternative; **Figures 4-3a and 4-3b** to illustrate Alternative 5 and include the optional landscaped berm and median highway improvement configurations and the Alternative 5 Parcel E Option B site plan in **Attachment 4**.

This page intentionally left blank.

I:_CS\Work\Monterey County of\Ferrini Ranch 26-0101\Figures\Section 4-3

Source: Whitson Engineers, 2013



LOT SUMMARY

	WEST	EAST	TOTAL
MARKET RATE LOTS	149	19	168
BELOW MARKET RATE UNITS	—	17	17
TOTAL UNITS	149	36	185

LEGEND

- DEVELOPMENT PARCELS (22.0 AC)
- OPEN SPACE PARCELS (323.0 AC)
- ROAD RIGHT-OF-WAY (4.5 AC)
- BICYCLE & PEDESTIAN PATH
- EASEMENT (AS NOTED)
- GRADED BERM FOR VISIBILITY

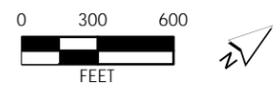
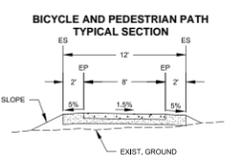
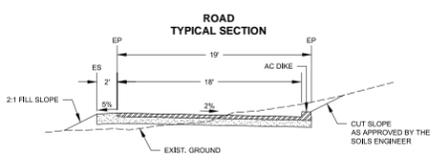
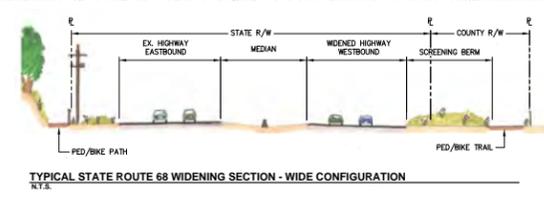
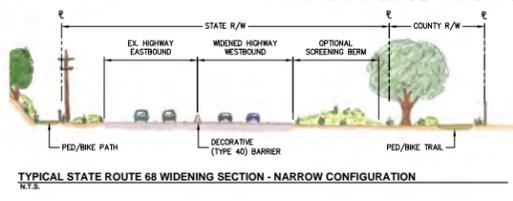


FIGURE 4-3A
ALTERNATIVE 5 SITE PLAN - EAST
PMC



I:\CS\Work\Monterey County of Ferrini Ranch 26-0101\Figures\Section 4-3



LOT SUMMARY

	WEST	EAST	TOTAL
MARKET RATE LOTS	149	19	168
BELOW MARKET RATE LOTS	---	17	17
TOTAL LOTS	149	36	185

Source: Whitson Engineers, 2013

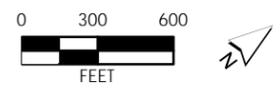


FIGURE 4-3B
ALTERNATIVE 5 SITE PLAN - WEST
PMC

Comparative Analysis

Aesthetics and Visual Sensitivity (less)

Alternative 5 reduces overall development density from 212 units to 185 units and also decreases the developable area of Parcel D and associated winery facilities. Similar to Alternative 3B, this alternative would also slightly increase the density and intensity of development on the western parcel in specific locations. Development of the alternative design considered the potential visual impacts of relocated lots, and existing vegetation and topography. Therefore, both Alternative 3B and Alternative 5 impacts are offset by beneficial changes to the lot configuration, which removes certain lots from prominent view as seen from State Route 68. Alternative 5 further reduces viewshed impacts by reducing the density and development area in Parcel E and eliminating Lots 29, 30, 61 and 75 on the western parcel. These additional lots that have been eliminated under Alternative 5 reduce potential impacts on visibility. Under Alternative 5, the developable portion of Parcel E would be significantly reduced both in size and unit count in comparison to the proposed project. Alternative 5 reduces lots and developable area from the 66 units (43 affordable units and 23 market-rate units) proposed on 13 acres under the proposed project to 17 affordable units (on newly created 4,000 square foot lots) on a total of 3.56 acres and one market-rate unit on an existing lot of record. Additionally, the existing lot of record (Lot #146 in this area) will be reconfigured into a reduced size lot for a single market-rate lot. (The existing lot of record is .70 acres which has been reduced to .55 acres in this area). Under Alternative 5, all of the units within Parcel E and within Parcel E Option B would be located in an area that is visually buffered almost entirely from State Route 68 by an existing concrete block sound/screen wall and existing vegetation.

On the eastern portion of the project site, Alternative 5 eliminates a large 72.38 acre lot (#145) and its associated access drive. Similar to Alternative 3, the developable area of the winery facility would be reduced from 110,000 square feet of buildings on 34.7 acres to a total of 28,500 square feet. In addition, Parcel D has been reduced to 11.8 acres, further reduced from the 13 acres contained in Alternative 3. The residential lots would be reconfigured to increase lot density but the majority of these lots would be located within the developable area from the proposed project site plan. The only lots in this area that are not within the development area under the proposed project are Lots 138, 138A, and 139. These lots have been sited in an area that was determined after additional site visits by County staff to be partially screened from both State Route 68 and River Road by existing topography and vegetation. They will be further screened by the berm that has been proposed in this alternative. While the number of residential lots increases under this alternative (from 8 residential lots to 18 lots), the average lot size decreases (lot sizes would be in the 8,500–10,000 square foot range). The proposed winery uses would also be reduced in scale and the proposed buildings have been sited to avoid or reduce visibility. To minimize the visibility of development on Parcel D and the nearby residential lots, three berms would be constructed along the existing ridges as shown on **Figure 4.3b**. The berms would be designed to follow the natural contours of the land and planted with native vegetation to appear indistinguishable from the existing natural hill slopes. The winery-related uses would be relocated to the southeast corner of the project site, closer to River Road, where future structures would be screened by existing topography, minimizing visibility from the River Road and State Route 68 corridors. Even though the berm construction would result in temporary visual impacts, the degree of impact to scenic vistas, scenic resources, and light and glare would be reduced under Alternative 5 compared to the proposed project due to reduced project visibility.

Under the analysis for Alternative 3, field verification of sight lines found existing dense vegetation will screen views at the proposed locations of the new lots proposed on the western

4.0 ALTERNATIVES TO THE PROJECT

parcel from State Route 68. This is also the case under Alternative 5. The proposed berm, existing sound/screen wall along State Route 68, and natural topography would reduce the visual impacts associated with the additional and modified lots proposed on the eastern parcel under both Alternatives 3 and 5. Additionally, the elimination of Lot 139a in comparison to Alternative 3 and the reduction of developable area for the winery reduce viewshed impacts further. Mitigation measures identified for the proposed project would apply to the new lots proposed under Alternative 5. Similar to Alternative 3B, Alternative 5 eliminates that portion of Ferrini Ranch Road that runs through Toro Park and is parallel with and immediately adjacent to State Route 68. Thus, Alternative 5 reduces to less than significant an otherwise potentially significant and unavoidable effect from the proposed project.

Under Alternative 5, a new at-grade intersection and related grading and improvements would be visible along the State Route 68 corridor. However, the visual impact of constructing Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68 under the proposed project, and the related grading, road cuts and tree removal along that alignment, would be considered to have greater impact.

Air Quality (slightly less)

Alternative 5 would proportionally decrease mobile source and operational emissions of CO related to traffic trips, which would reduce greenhouse gas emissions. However, while this alternative reduces greenhouse gas impacts, the impacts under this category would remain significant and unavoidable.

The short-term construction emissions would be similar compared to the proposed project, while long-term operational emissions would be slightly reduced compared to the proposed project. This alternative would redistribute the residential units and decrease the size of the proposed winery corridor gateway/visitor center facility by 81,500 square feet, which would result in a reduction of approximately 393 daily trips.

Similar to Alternative 3 discussion of project-generated and cumulative impacts on air quality, Alternative 5 would have fewer impacts compared to the proposed project.

Construction of a new at-grade intersection at State Route 68 would require additional grading and land alteration (and resulting particulates). However, this alternative would eliminate the need to construct the length of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68, as well as the lengthy driveway serving Lot 145. The result is slightly less or similar impacts in terms of construction impacts. Mobile source emissions and impacts for the project are assumed to be reduced in comparison to the proposed project due to the reduction in the number of units from 212 to 185 and the substantial reduction in the size of the wine facilities proposed on Parcel D.

Biological Resources (less)

Similar to Alternative 3, seasonal wetlands identified in the biological assessment would be avoided through minor adjustments to the roadway and lot configurations under this alternative. The rare plants Pacific Grove clover and Congdon's tarplant, both List 1B species, have been identified and according to WRA, Inc. would be avoided to a greater extent than under the proposed project (WRA 2009b). Eliminating development of Lots #1 through #12 would minimize intrusion into the riparian areas and preserve the riparian corridor along El Toro Creek and its tributary and increase the size of the open space preserve lot (Parcel A2). Consolidation of Lots #13 through #15 to one lot would also increase the amount of area that wildlife would have to

move to and from the El Toro Creek undercrossing and limiting the construction on this lot to the existing developed area further preserves all biological resources in this area. Under Alternative 5, Lot #16 would be shifted south to add open space and further reduce potential biological impacts. Further, the elimination of Lot #29 and Lot #30 in the field would increase the area for wildlife movement and eliminate developable area to avoid impacts to rare plants on those lot areas.

A substantial reduction in biological impacts results from the elimination of the portion of the Ferrini Ranch access road that was located immediately adjacent to Pond 18 in the northwest portion of the western parcel. Pond 18 has been determined to provide breeding habitat for California tiger salamander. In addition, proposed project Lot 134 has been eliminated which increases the distance between Pond 18 and the closest residential lot by approximately 200 feet. Alternative 5, with a reduced number of lots, the elimination of a major portion of Ferrini Ranch Road that was proposed through Toro Park, and the elimination of Road Y connecting Lots #48 through #65 with Lots #66 through #70 is also likely to result in the removal of fewer trees compared to the proposed project. Therefore, project-generated and cumulative impacts on biological resources under Alternative 5 would be less compared to the proposed project.

Cultural Resources (less)

Similar to Alternative 3, the potential impacts to cultural or archaeological resources resulting from eventual site construction would decrease compared to the proposed project. Under this alternative development, Lots #1 through #12 and Lots #13 through #15 would be consolidated resulting in a smaller development footprint. Lots #1 through #12 would be combined into one 2.56 acre lot (Lot 1a) and Lots #13 through #15 would be combined into one 2.01-acre lot (Lot #15a). Minimizing development in the vicinity of Lots #1 through #12 would reduce potential impacts in the general vicinity of known archaeological resources. Minimizing development in the vicinity of Lots #13 through #15 would further reduce impacts. In addition, under Alternative 5, development within Lot #15a would be limited to the footprint of the existing house and the existing outbuildings so that impacts to archeological resources on this lot are avoided.

Mitigation measures required for the proposed project would also be applicable to Alternative 5, which would ensure that the impacts to cultural resources are reduced to a less than significant impact. Avoidance of cultural resources is the preferred mitigation option, and Alternative 5 avoids resource areas through elimination of development area as described above. The project-generated and cumulative impacts to cultural resources under Alternative 5, which avoids sensitive sites, would therefore be less as compared to the proposed project.

Geology and Soils (slightly less)

Alternative 5 would result in slightly less grading as compared with the proposed project (and Alternative 3). This slight reduction in grading is partially attributable to the reduction of developable area in Parcel's D and E and as well as revised road configurations (elimination of the Ferrini Ranch Road from the Portola intersection, approximately 1,200 foot access road to former Lot 145 and the elimination of Road Y that connected Lots #66 through #70 with Lots #48 through #65). The reduction resulting from the elimination of the above-described roads is partially offset by proposed grading needed for the new at grade intersection and associated roads, estimated to be approximately 20,000 cubic yards.

Under Alternative 5, the potential impacts associated with exposure to risk associated with seismic ground shaking and expansive soils would be similar compared to the proposed project. Construction of additional berms on the eastern parcel will slightly increase erosion potential

4.0 ALTERNATIVES TO THE PROJECT

from exposed earth. However, standard County mitigation measures can minimize or eliminate this potential impact.

Mitigation measures identified for the proposed project would remain applicable to Alternative 5 and would reduce impacts to a less than significant level. This alternative would not increase exposure to liquefaction, lateral spreading, or dynamic compaction. Additionally, the reduction in the number of units and the reduction of development in the area of Parcel D and Parcel E under Alternative 5 create more than 100 acres of additional open space, further reducing project-generated and cumulative impacts to geology and soils. Thus, impacts under Alternative 5 would be slightly less when compared to the proposed project.

Groundwater Resources and Hydrogeology (less)

Under Alternative 5, potential impacts to the 180/400 Foot Aquifer Subbasin of the Salinas Valley Groundwater Basin would be less compared to the proposed project, while potential hazards associated with groundwater contamination would be similar. This alternative would reduce the unit count of the project from 212 to 185 and reduce the size of the winery and related uses, which would result in less water consumption, which would also reduce the cumulative impact on groundwater resources.

The decreased potable water demand would correspondingly decrease the demand on groundwater resources in the subbasins as a whole. The project site would still be located in Zone 2C, and mitigation/conservation measures identified for the proposed project would remain applicable. Alternative 5 would not increase the degree of impact to water quality and nearby wells compared to the proposed project. Therefore, project-generated and cumulative impacts to groundwater resources and hydrogeology under Alternative 5 would be less compared to the proposed project.

Surface Water Hydrology and Water Quality (similar to slightly less)

Under Alternative 5, the potential impacts associated with increased stormwater runoff and surface water quality would be similar to slightly less compared to the proposed project. This alternative would reduce the unit count of the project from 212 to 185 and reduce the size of the winery and related uses, which would result in slightly less impact from increased stormwater runoff and surface water quality due to the reduction of overall development. The reduction in the number of units and the reduction of development in the area of Parcel D and Parcel E under Alternative 5 create approximately 100 acres of additional open space. Mitigation measures identified for the proposed project would be applicable to Alternative 5. This alternative would not increase the potential for accelerated erosion during construction or exposure to flood hazards. Therefore, project-generated and cumulative impacts to surface water hydrology and water quality under Alternative 5 would be very similar to slightly less compared to the proposed project. Drainage and hydrology impacts between the different access points proposed in the proposed project and Alternative 5 would also be similar. The proposed access roads would both require drainage improvements, although drainage improvements required for a new intersection along the state highway may require more extensive facilities and design review by Caltrans. Both access roads would be required to be designed to mitigate impacts from increased storm water runoff consistent with State and County standards. However, the addition of approximately 100 acres of open space would result in an overall reduction in impacts to surface water hydrology and water quality. It should be noted that any approval will be subject to new drainage and water quality requirements that went into effect in March 2014. A Preliminary Storm Water Control Plan for Alternative 5

(Whitson Engineers, April 2014) reflects the new requirements. This plan is included as **Attachment 6**.

Hazards and Hazardous Materials (similar)

Under Alternative 5, the potential exposure to on-site hazardous materials and asbestos and lead would remain similar compared to the proposed project. Mitigation measures identified for the proposed project would be applicable to Alternative 5. This alternative would not increase risk of exposure to listed hazardous material sites, transportation of hazardous materials, groundwater contamination, septic tanks, or wildland fire hazards. Therefore, project-generated and cumulative impacts associated with hazards and hazardous materials under Alternative 5 would be similar compared to the proposed project.

Land Use, Population, and Housing (less)

Alternative 5 would be consistent with applicable land use plan policies and would result in a decrease in population compared to the proposed project. This alternative reduces the number of residential units compared to the proposed project; therefore, the density would be reduced. Overall, the density will remain consistent with the regional population and housing forecasts, the *Monterey County General Plan*, and the *Monterey County Inclusionary Housing Ordinance* (Ordinance No. 04185). Under this alternative, less inclusionary units would be provided onsite than the proposed project. Consistency with the *Monterey County Inclusionary Housing Ordinance* (Ordinance No. 04185) will be maintained by either payment of an in-lieu fee or alternatively, enter into an agreement with a non-profit low income developer or other entity in a form approved by the Board of Supervisors that would facilitate the offsite development of the required number of low and very low income units. Compliance with the ordinance and approval of this approach will be subject to the approval of the Board of Supervisors.

This alternative also eliminates access through Toro County Park, and eliminates potentially significant impacts of private development on public parkland and associated parkland property issues. Project-generated and cumulative land use, population, and housing impacts under Alternative 5 would therefore be reduced compared to the proposed project.

Public Services and Utilities (less)

This alternative would reduce the unit count of the project from 212 to 185 and reduce the size of the winery and related uses, which would result in less overall development. Under Alternative 5, the demand on law enforcement, fire protection services, schools, and other public services would therefore be reduced compared to the proposed project, as the service populations would be reduced. This alternative would reduce the demand on utilities due to the reduced size of the project's residential development and the winery and related uses. Mitigation measures identified for the proposed project would remain applicable to Alternative 5. Overall, project-generated and cumulative impacts to public services and utilities under Alternative 5 would be less compared to the proposed project.

Since impacts to existing park facilities would be reduced, Alternative 5 can be considered more environmentally sensitive in terms of parks and public services in comparison to the proposed project.

4.0 ALTERNATIVES TO THE PROJECT

Noise (slightly less)

Under Alternative 5, potential impacts associated with nearby sensitive receptors and land compatibility would be slightly reduced compared to the proposed project. Noise impacts as discussed in detail under Alternative 3 Version B would be applicable to Alternative 5 due to the similarity in design between these two alternatives. Both of these Alternatives assume reduced development of the winery facility. However, noise impacts associated with Alternative 5 would be slightly less than Alternative 3B due to the elimination of 27 residential lots and the resulting decrease in traffic noise. As the impacts would be only slightly less, as a conservative assumption this EIR will utilize the same noise studies described and referenced in the discussion of Alternative 3B in connection with any required mitigation measures.

Similar to Alternative 3B, this alternative would reduce development in the vicinity of San Benancio Middle School and result in associated reductions in noise. Mitigation measures identified for the proposed project would also be applicable under Alternative 5. The need for temporary sound barriers required adjacent to San Benancio Middle School would be reduced or eliminated. Alternative 5 would not measurably increase ambient noise levels either during the construction phase or the life of the project. The reduction of daily trips associated with this alternative would slightly reduce the degree of impact associated with traffic noise along State Route 68. Under Alternative 5, there would be no increased potential for groundborne vibrations or noise generated from stationary sources. Therefore, project-generated and cumulative noise impacts associated with Alternative 5 would be slightly less compared to the proposed project. Both the project and the alternative would result in secondary noise reduction benefits with implementation of project mitigation, which would widen a portion of State Route 68, reduce queuing, reduce commuter "cut through" trips in the Toro Park Estates neighborhood, and reduce associated noise with those trips.

Noise associated with the project entrance would increase traffic at the new intersection location and next to the existing residential development of Toro Park Estates.

However, the degree of impact has been evaluated and been determined to be less than significant with mitigation as identified under the discussion of Alternative 3B. Refer to the Freytag Noise Report included in **Attachment 2** and the analysis under Noise, Alternative 3B.

Transportation and Circulation (less)

Alternative 5 would reduce the degree of impact to operations on the regional and local roadway network, as well as hazards associated with limited sight distance. As noted above, the total number of dwelling units would be reduced from 212 to 185 under Alternative 5. Also, the winery parcel and related uses would be reduced in size, which would reduce the overall daily trips generated under this alternative compared to the proposed project. Under Alternative 5, approximately 1,862 daily trips would be generated, in comparison with the 2,392 daily trips for the proposed project, with 149 trips during the weekday A.M. peak hour and 204 trips during the weekday P.M. peak hour. This would result in a reduction of approximately 530 daily trips compared to the proposed project. In addition, the residential units would be shifted throughout the project site, which would eliminate the project road access at San Benancio Road/Paseo de Vaqueros (converted to a driveway serving one single family home). A higher percentage of residential traffic would utilize the River Road access, as more lots would be located near Parcel D. It is assumed that all mitigation measures would still be required under this alternative. In addition, the four-lane extension described under 3B would be mitigation under this alternative. Refer to the Traffic Generation Tables included in **Attachment 3**.

Under Alternative 5, the reduction of 530 daily trips would result in a reduction in level of service impacts compared to the proposed project.

Under Alternative 5, the hazards associated with sight distance at the San Benancio Road/Paseo de Vaqueros access point would be eliminated. Operations on the local and regional roadway network would be slightly improved but would remain significant and unavoidable in some locations.

The traffic impacts for the new intersection under Alternative 5 are discussed under Alternative 3B above. Overall, operations on the local and regional roadway network (and along the State Route 68 corridor) would improve, but remain significant and unavoidable at specific locations. This alternative would reduce the unit count of the project from 212 to 185 and reduce the size of the winery and related uses, which would result in less development and traffic compared to the proposed project. Therefore, Alternative 5 would result in less impact to traffic and circulation compared to the proposed project.

Greenhouse Gases and Climate Change (slightly less)

Under the Alternative 5, the short-term construction emissions would be slightly reduced compared to the proposed project, and long-term operational emissions would be slightly reduced compared to the proposed project. Therefore, the greenhouse gas emissions would also be slightly reduced compared to the proposed project. The number of trees to be removed would also be reduced, which would reduce the impacts (or preserve the benefits) associated with carbon sequestration.

The decreased size of the winery corridor gateway/visitor center and reduced unit count of residential development from 212 to 185 units would reduce construction-generated emissions.

In comparison to the proposed project's daily traffic contribution of 2,392 vehicle trips per day on the transportation system, Alternative 5 would result in a decrease of approximately 530 daily trips. Alternative 5 would therefore decrease mobile source emissions, which would result in less long-term air quality impacts compared to the proposed project. This alternative would decrease operational emissions of ROG, NO_x, PM₁₀, SO_x, CO, and diesel-exhaust particulate matter emissions. In addition, the CO emissions generated where unacceptable levels of service exist would also decrease. Overall, the number of sensitive receptors on the project site would be reduced due to the reduced density of the project.

Mitigation measures identified for the proposed project would be applicable to Alternative 5. Under Alternative 5, the short-term construction-generated emissions and the long-term operational emissions of criteria pollutants and toxic air contaminants would be reduced compared to the proposed project.

Impacts from the proposed project on greenhouse gases are shown in Recirculated Draft EIR Table 3.13-8. The proposed project exceeds the threshold of 4.9 CO₂e MT/Service Population/Year. This would be considered a cumulative significant impact. Implementation of Mitigation Measure 13-1 provided in the Recirculated Greenhouse Gases and Climate Change Section would reduce this impact; however, not to a less-than-significant level; therefore, this project impact is considered significant and unavoidable.

This would slightly reduce operational and mobile source emissions of CO, which would reduce greenhouse gas emissions. However, the above described reduction of project related greenhouse gas emissions is not expected to have a material affect on cumulative greenhouse

4.0 ALTERNATIVES TO THE PROJECT

gas emissions. Thus under Alternative 5 the project would still be expected to result in a significant unavoidable cumulative impact.

Consistency with Project Objectives

Alternative 5 meets most of the proposed major project objectives however with a reduced density of 185 units compared to 212. Alternative 5 is considered **consistent** with the majority of the proposed project objectives.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires that the environmentally superior alternative be identified. If the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among other alternatives. In this case, Alternative 5 represents the environmentally superior alternative because, as determined from the above analysis, several areas of impact would be avoided or lessened in terms of degree of impact. Specifically, this alternative (either with the primary Parcel E design or the Parcel E Option B site design) reduces project density and also is effective in reducing or avoiding biological, cultural, and aesthetic impacts compared to the proposed project. Alternative 5 also increases the amount of overall open space within the project by over 100 acres. Alternative 5, which assumes a new signalized intersection on the state highway, would avoid the park and Pond 18 impacts, and would help to further State Route 68 corridor improvements concurrent with the project. For these reasons, Alternative 5 is considered the environmentally superior option. This alternative, by reducing the density from 212 to 185 units, also reduces impacts on public services and utilities and reduces daily traffic in the area by 530 daily trips.

Alternative 2, "Flatland" Subdivision Design" results in greater visual impacts and is not considered environmentally superior in comparison with other alternatives and the proposed project.

Alternative 3, Version A, which proposes a shifted main entrance location through Toro County Park, would result in a series of direct impacts to the park and existing park facilities, as well as planning and processing hurdles associated with the "take" of county parkland. Version A also results in direct visual impacts and greater impacts to Pond 18 from the construction of Ferrini Ranch Road that runs through Toro Park and is parallel and immediately adjacent to State Route 68.

Alternative 3, Version B, which assumes a new signalized intersection on the state highway, would result in direct physical impacts associated with that facility. However, an intersection at this location would avoid the park and pond impacts, and would help to further State Route 68 corridor improvements concurrent with the project.

Alternative 4, the Compact Footprint Alternative, contains several clear environmental merits through the consolidation and concentration of development nodes and eliminating several large lots and related roadways. However, most of the environmental benefits of this option are compromised by potential impacts associated with a site design requiring a significant amount of grading for the concentrated areas of development and the impacts associated with the grade-separated interchange. Additionally, concentrated development on the western parcel impact sensitive plant species and could be a barrier to upland wildlife movement in this area. The redesign and infrastructure of the grade-separated interchange_would result in several acute environmental impacts in its own right (including land disturbance and aesthetic impacts) and would provide additional design and permitting challenges. This alternative proposes 212

4.0 ALTERNATIVES TO THE PROJECT

units, consistent with the proposed project, and thus would not reduce impacts in the areas of transportation, public services and viewshed in comparison with a reduced project alternative.

Alternative 5 reduces the project's unit count, increases the amount of open space, and avoids or reduces impacts in the areas of biological, viewshed, public services, cultural, land use (loss of parkland and land use compatibility) and traffic when compared to the proposed project. For these reasons, Alternative 5 is considered the environmentally superior option.

Table 4-2 compares each considered alternative with the proposed project. Attachment 5 provides a statistical summary of land use for each alternative.

**TABLE 4-2
COMPARISON OF PROJECT ALTERNATIVES TO THE PROPOSED PROJECT**

Environmental Category	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	No Project/ No Development	"Flatland" Subdivision Design	"Reduced Impact" Subdivision Design (ASP Versions A and B)	"Compact Footprint" Subdivision Design	"Reduced Impact/Reduced Density" Subdivision Design
Aesthetics and Visual Sensitivity	Less	Greater	Less	Greater	Less
Air Quality	Less	Less	Slightly Less	Similar	Slightly Less
Biological Resources	Less	Slightly Less	Less	Less	Less
Cultural Resources	Less	Similar	Less	Less	Less
Geology and Soils	Less	Less	Similar	Greater	Slightly Less
Groundwater Resources and Hydrogeology	Less	Less	Slightly Less	Slightly Less	Less
Surface Water Hydrology and Water Quality	Less	Similar	Similar	Slightly Less	Similar/Slightly Less
Hazards and Hazardous Materials	Slightly Less	Slightly Greater	Similar	Similar	Similar
Land Use, Population, and Housing	Slightly Greater	Similar	Similar	Similar	Less
Public Services and Utilities	Less	Less	Similar (A)/ Less (B)	Less	Less
Noise*	Slightly Less	Greater	Slightly Less/Similar	Slightly Greater	Slightly Less/Similar
Transportation and Circulation	Less	Slightly Less	Slightly Less	Slightly Less	Less
Greenhouse Gas/Climate Change	Less	Less	Slightly Less	Slightly Greater	Slightly Less
Consistency with Project Objectives	Less Consistent	Less Consistent	Consistent	Consistent	Consistent

*Noise impacts of *Slightly Less* are for the project site area. See conclusions reached for impacts due to widening of State Route 68 in areas outside the project cited in specific text under each section in analysis above. As noted, Alternatives 3B, 5 and mitigation proposed for the Proposed Project would widen State Route 68 in the area and potentially increase impacts to nearby residences without mitigation imposed. Thus, for these alternatives, the potential increase noise in areas near State Route 68 would be considered to be slightly greater for the Proposed Project and Alternative 3B and Alternative 5 unless sound attenuation is required. Noise analysis conducted for these alternatives indicates potential for greater or less noise impacts with specific noise attenuation.

4.0 ALTERNATIVES TO THE PROJECT

REFERENCES/DOCUMENTATION

Freytag and Associates.

2013a *Traffic Noise Exposure Assessment from Realigned Torero Road*. August 7, 2013.

2013b *State Route 68 Construction Noise Assessment*. August 7, 2013,

2013c *Traffic Noise Exposure Assessment for Ferrini Ranch Area*. June 27, 2013,

Staub Forestry and Environmental Consulting (Staub). 2010. *Supplemental Forester's Report for Ferrini Ranch Alternative Option as Requested in County Letter Dated 12/15/09*. March 17, 2010.

US Census Bureau. 2006. *2005 American Community Survey*. Accessed August 29, 2006.
<http://factfinder.census.gov>.

Whitson Engineers.

2010a *Alternative A1 (3A) with VTM Overlay Ferrini Ranch*. February 22, 2010.

2010b *Alternative A2 (3B) with VTM Overlay Ferrini Ranch*. February 1, 2010.

2014 *Ferrini Ranch Subdivision Preliminary Storm Water Control Plan*. April 7, 2014.

Wood Rodgers Engineers. 2012. *Memorandum Report to Caltrans District 5 (John Olejnik) and Monterey County (David Mack, Raul Martinez), Ferrini Ranch Subdivision, Monterey County, CA – State Route 68 Traffic Analysis*. February 24, 2012.

WRA Environmental Consultants (WRA). 2009. *Ferrini Ranch Development – Proposed Biological Resources Impact and Mitigation Measures*. January 27, 2009.