

# INITIAL STUDY & MITIGATED NEGATIVE DECLARATION

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SCH NUMBER: TBD

## GREENVILLE ROAD SUBDIVISION PROJECT

Prepared For:

Community Development Agency  
224 West Winton Avenue  
Hayward, CA 94544

**COUNTY OF ALAMEDA**



PREPARED BY:

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# Table of Contents

	Page
<b>Introduction .....</b>	<b>1</b>
Purpose of Document .....	1
General Project Information .....	2
Mitigated Negative Declaration.....	8
Proposed Findings .....	20
Lead Agency Determination.....	21
<b>Project Description .....</b>	<b>23</b>
Proposed Uses/Operations.....	23
Requested Actions and Required Approvals .....	27
<b>Initial Study Checklist.....</b>	<b>29</b>
Aesthetics .....	30
Agricultural and Forest Resources .....	33
Air Quality .....	36
Biological Resources .....	43
Cultural and Historic Resources .....	75
Geology and Soils.....	78
Greenhouse Gas Emissions .....	97
Hazards and Hazardous Materials .....	109
Hydrology and Water Quality .....	113
Land Use and Planning.....	125
Mineral Resources .....	128
Noise .....	129
Population and Housing .....	135
Public Services .....	136
Recreation .....	138
Transportation / Traffic .....	139
Utilities and Services .....	145
Mandatory Findings.....	151



# List of Figures

	Page
1. Project Site and Regional Vicinity .....	3
2. Existing Land Uses: Photos 1 through 6 .....	5
3. Existing Land Uses: Photos 7 through 12 .....	6
4. Existing Land Uses: Photos 13 through 18 .....	7
5. Project Site Plan .....	24
6. South Livermore Valley Area Plan .....	35
7. Project Site Habitats, Photos: 1 through 4.....	45
8. Project Site Habitats, Photos: 5 through 7.....	46
9. Project Site Habitats, Photos: 8 through 10.....	47
10 Project Site Habitat Types .....	48
11 Waters of the U.S. ....	51
12 Special Status Species Data.....	53
13 Designated Critical Habitat Areas .....	74
14 Alquist Priolo Special Studies Zones .....	83
15 Liquefaction and Landslide Potential .....	89
16 Pond Embankment Design .....	92
17 Soils Map.....	95
18 On-Site Creek Channel and Existing Culverts .....	115
19 Proposed Creek Realignment .....	121
20 Traffic Distribution.....	141





# List of Tables

1. Potentially Significant Impacts and Mitigation Measures.....	8
2. Earthwork Summary.....	26
3. Pond Summary .....	27
4. BAAQMD Criteria Pollutant Thresholds of Significance.....	39
5. Daily Trip Generation .....	140

# Appendices

Note: Appendices are provided on a CD contained in the rear cover.

## A Air Quality/Greenhouse Gas

URBEMIS2007, Summary Report for Annual Emissions, Tons/Year.

URBEMIS2007, Summary Report for Summer Emissions, Tons/Year.

## B Biological Resources

AES, *Biological Resources Assessment, Greenville Road Property, Alameda County*, August, 2008.

Zander Associates, *Biological Resources Assessment, Greenville Road Subdivision Project, Alameda County*, March 17, 2011.

AES, *Wetland Delineation, Greenville Road Property, Alameda County*, August, 2008.

## C Cultural Resources

AES, *Cultural Resources Assessment, Greenville Road Property, Alameda County*, August, 2008.

## D Hazards/Risk of Upset

EnviroStor Database Hazardous Sites Report.

## E Traffic

Dowling Associates, *Greenville Road Subdivision Project Traffic Memo*, February 2, 2011.





# INTRODUCTION

## PURPOSE OF DOCUMENT

This document serves as the Initial Study and Mitigated Negative Declaration (IS/MND) for the proposed Greenville Road Subdivision Project (Project). Per CEQA Guidelines (Section 15070), a Mitigated Negative Declaration can be prepared to meet the requirements of CEQA review when the Initial Study identifies potentially significant environmental effects, but revisions in the Project would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur.

This document is organized in three sections as follows:

- Introduction and Project Description. This section introduces the document and discussed the Project description including location, setting, and specifics of the lead agency and contacts.
- Mitigated Negative Declaration. This section lists the impacts and mitigation measures identified in the Initial Study and proposed findings that would allow adoption of this document as the CEQA review document for the proposed Project.
- Initial Study. This section discusses the CEQA environmental topics and checklist questions and identifies the potential for impacts and proposed mitigation measures to avoid these impacts.

## Public Review

The Initial Study and Proposed Mitigated Negative Declaration will be circulated for a 30-day public review period. Written comments may be submitted to the following address:

Jana Weldon, Senior Planner  
Alameda County Planning Department  
224 W. Winton Avenue, Room 111  
Hayward, CA 94544  
Telephone: 510/670-5400  
Email: [jana.weldon@acgov.org](mailto:jana.weldon@acgov.org)

Adoption of the Mitigated Negative Declaration does not constitute approval of the Project itself, which is a separate action to be taken by the Alameda County Planning Commission. Approval of the Project can take place only after the Mitigated Negative Declaration has been adopted.



## GENERAL PROJECT INFORMATION

### Project Entitlements

Land use and governmental approvals needed for the Project include approval of a tentative subdivision map for a proposed 8-lot subdivision of the 160-acre property, as well as approval of the Project's proposed grading plan.

### Lead Agency

Alameda County Community Development Agency  
Planning Division  
224 W. Winton Ave., Room 111  
Hayward, CA 94544

### Contact Person

Jana Weldon, Senior Planner  
Alameda County Community Development Agency  
Planning Division  
224 W. Winton Ave., Room 111  
Hayward, CA 94544  
510-670-5400

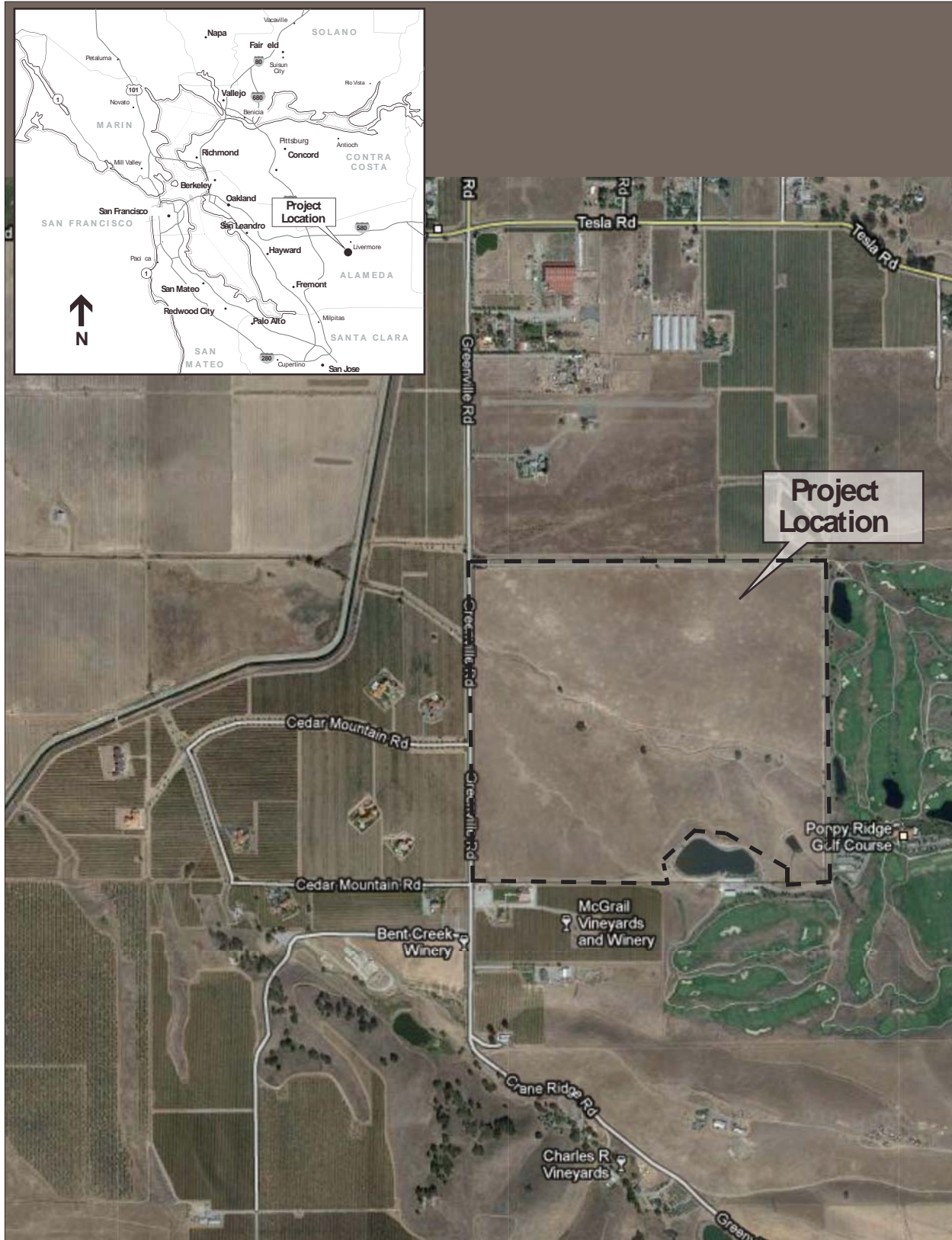
### Project Sponsor

Pete Sandhu  
SBG Development  
2985 Mallorca Way  
Union City, CA 94066

### Project Location and Description

The approximately 160-acre Project site is located in unincorporated eastern Alameda County, southeast of the City of Livermore. The Project involves the subdivision of the site into eight 20-acre parcels, overall site grading, the construction of irrigation ponds to support a proposed olive orchard, the approval of building envelopes or sites on each of the eight lots where construction of single family homes would occur in the future, and construction of a 3,600 foot emergency vehicle access (EVA). The Project location and vicinity is shown in **Figure 1**.





**Figure 1**  
**Project Site and Regional Vicinity**



## Current General Plan Land Use Classifications

Pursuant to the South Livermore Valley Area Plan (SLVAP) and the East County Area Plan, an element of the Alameda County General Plan, the land use designation for the Project site is Large Parcel Agriculture.

## Current Zoning

The Project site is zoned “A/CA”–Agricultural/Cultivated Agriculture Overlay.

## Existing Land Uses

The Project site has been used solely for cattle grazing. There are no structures on the property except for a corral or stock pen that is located near the south center of the property. The property is generally rolling hillsides bisected by an intermittent drainage or arroyo that cuts across the property from the southeast to the northwest. A stock pond is located at the southeast corner of the site near a much larger pond which is owned by and used as irrigation water for the adjacent Poppy Ridge Golf Course. This larger irrigation pond is not part of the Project. Photos of the site are provided in **Figures 2 through 4**.

## **Surrounding Land Uses**

The Project site is located in the South Livermore Valley, the area’s premier wine growing region. Surrounding land uses are primarily agricultural and recreational. North of the Project site is vacant land and a landing strip for private air craft (Meadowlark Field). Northeast of the Project site is vineyard land that is part of the Tri-Valley Conservancy. East and southeast of the Project site is the Poppy Ridge Golf Course. To the south and southwest are several wineries including the McGrail Winery, the Bent Creek Winery, the White Crane Winery and del Arroyo Vineyards. The Wood Family Vineyards is directly west of the Project site. An aerial image showing the Project site and surrounding uses is provided in Figure 1.





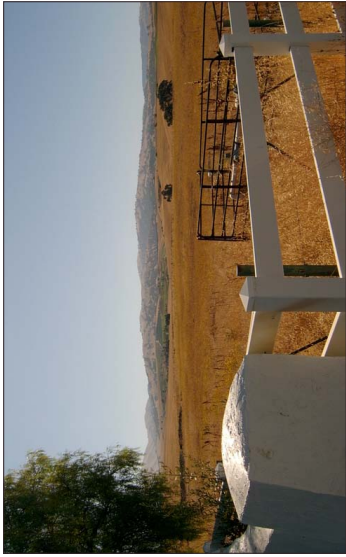


Photo 1: Looking southeast from northwest corner of site



Photo 2: Looking east from western edge of the site



Photo 3: Looking northeast from southwest corner of site



Photo 4: Looking southwest from northeast corner of site

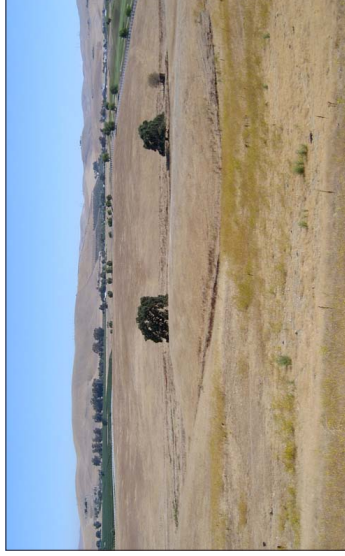


Photo 5: Looking north from southern boundary of site



Photo 6: Looking at southeast corner of site toward golf club, stock pond visible.



**Figure 2**  
**Existing Land Uses, Photos 1 through 6**

Source: Lamphier-Gregory



Photo 7: Stockpond at southeast corner of site

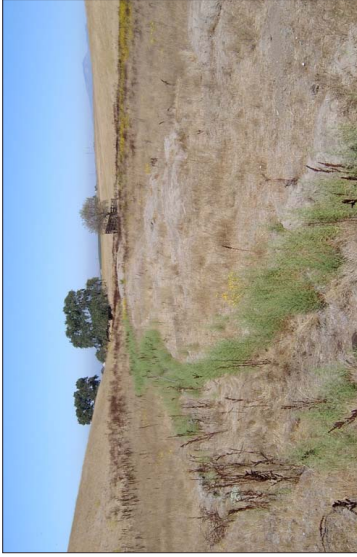


Photo 8: Creek bed at eastern end of site



Photo 9: Creek bed erosion



Photo 10: Creek bed



Photo 11: Remnant ranching equipment and pens



Photo 12: Creek bed near western edge of site



**Figure 3**  
**Existing Land Uses, Photos 7 through 12**

Source: Lamphier-Gregory





Photo 13: Creek terminus at east edge of site

Photo 14: Culverted creek terminus at east edge of site

Photo 15: Culverted creek terminus at west edge of site

Photo 16: Debris pile near western creek terminus

Photo 17: Outfall across road from site boundary

Photo 18: Outfall across road from site boundary



**Figure 4**  
Existing land Uses, Photos 13 through 18

## MITIGATED NEGATIVE DECLARATION

### Project Description, Location, and Setting

This Mitigated Negative Declaration has been prepared for the Greenville Road Subdivision Project in the South Livermore area of unincorporated Alameda County. See the Introduction and Project Description section of this document for details of the Project.

### Potentially Significant Impacts Requiring Mitigation

The following is a list of potentially significant Project impacts and the mitigation measures recommended to reduce these impacts to a less-than-significant level. Refer to the Initial Study Checklist section of this document for a more detailed discussion.

Table 1: Potentially Significant Impacts and Mitigation Measures	
Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
<p><b>Impact Air-1:</b> Construction Dust and Exhaust. Construction activity involves a high potential for the emission of air pollutants. Construction activities would generate exhaust emissions from vehicles/equipment and fugitive dust particles that could affect local air quality.</p>	<p><b>Mitigation Measure Air-1: Basic Construction Management Practices.</b> The Project shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD “Basic Construction Mitigation Measures”.</p> <ol style="list-style-type: none"> <li>1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.</li> <li>2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.</li> <li>3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.</li> <li>4. All vehicle speeds on unpaved roads shall be limited to 15 mph.</li> <li>5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.</li> <li>7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in</li> </ol>



Table 1: Potentially Significant Impacts and Mitigation Measures	
Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
	<p>proper condition prior to operation.</p> <p>8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.</p>
<p><b>Impacts Bio-1:</b> Impacts on Special Status Species. The proposed Project's impacts to special status species are considered potentially significant.</p>	<p><b>Mitigation Measure Bio 1-1: California tiger salamander.</b> To mitigate for the loss of potential upland aestivation habitat, the following three options are recommended:</p> <ol style="list-style-type: none"> <li>1. Conduct protocol-level surveys for CTS to determine presence/absence of the species on the property. Survey methodology is to be developed in cooperation with and approved by the USFWS: OR,</li> <li>2. Consult with the USFWS and CDFG regarding the potential presence of CTS on the property and obtain a letter of concurrence from the USFWS and CDFG that the Project is not likely to result in the take of CTS: OR, 1</li> <li>3. Assume presence and implement avoidance measures during construction. <ol style="list-style-type: none"> <li>a. If CTS are found on the property or presence is assumed, avoidance and minimization measures to be implemented during construction activities could include: <ol style="list-style-type: none"> <li>i. Pre-construction salvage and relocation of CTS within the designated construction areas (this would require USFWS approval);</li> <li>ii. Installation of one-way ramps and exclusionary fencing around the construction zone beginning in the fall prior to initiation of construction. The intent is to allow CTS to move out of construction area during breeding season and not return to aestivate in the spring. Under this scenario, construction would not start until after the following spring (April/May);</li> <li>iii. Training of all construction personnel in the identification of CTS and the required protocol in the event that CTS are encountered during construction activities;</li> </ol> </li> </ol> </li> </ol>

<sup>1</sup> Concurrence of no take or authorization of take of CTS from CDFG applies during the period in which the species is a candidate for listing and if the Fish and Game Commission elects to list the species. If the Fish and Game Commission rejects listing of the species and its candidate status is removed, take authorization from the CDFG is not required.



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
	<ul style="list-style-type: none"> <li>iv. On-site biological monitor present during all ground disturbing construction activities</li> <li>b. If CTS are found on the property or presence is assumed, long term protection and enhancement measures should be developed and could include:               <ul style="list-style-type: none"> <li>i. Placement of the remaining undeveloped lands in a conservation easement to restrict future activities</li> <li>ii. Development of a management plan for the property focused on enhancing breeding and upland habitat for CTS and minimizing potential take associated with operation of the Project</li> </ul> </li> </ul>
	<p><b>MM Bio 1-2: California red-legged frog.</b> Consult with the USFWS regarding the potential presence of CRLF on the property and obtain a letter of concurrence from the USFWS that the Project is not likely to result in the take of CRLF, or obtain take authorization from the USFWS covering all Project activities.</p> <ol style="list-style-type: none"> <li>1. Maintain the agricultural ponds such that they provide habitat for CRLF and discourage colonization by non-native bullfrogs. This could include the following:</li> <li>2. Maintain a natural earthen bottom and minimize the amount of concrete and or riprap</li> <li>3. Allow establishment of emergent aquatic vegetation around the perimeter of the pond if there is sufficient hydrology to support this habitat</li> <li>4. Actively eradicate bullfrogs on an annual basis as needed to control the population in the stock pond and newly created agricultural ponds</li> <li>5. Implement the following avoidance/minimization measures during construction to ensure no take of red-legged frogs occurs.           <ul style="list-style-type: none"> <li>a. Erect exclusionary fencing around proposed construction areas sufficient to keep frogs from moving into these areas and limit construction equipment to the areas protected by exclusionary fencing.</li> <li>b. Train all construction personnel in the identification of CRLF and the required protocol in the event that CRLFs are encountered during construction activities.</li> <li>c. Have a biological monitor present during initial ground disturbing activities.</li> <li>d. Schedule construction of the storm water detention basin in the southwestern portion of the property during the dry season when CRLF are not likely to be moving far from aquatic habitats.</li> <li>e. Implement Best Management Practices during construction to prevent runoff from the construction sites from degrading the water quality in the</li> </ul> </li> </ol>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
	offsite pond. This may include diversion of runoff away from the pond or filtering of runoff to remove additional sediment and/or potential pollutants from the construction site.
	<p><b>MM Bio 1-3: Alameda whipsnake.</b> Implement the following avoidance/minimization measures during construction to ensure no take of Alameda whipsnake occurs.</p> <ol style="list-style-type: none"> <li>1. Erect exclusionary fencing around proposed construction areas sufficient to keep snakes from moving into these areas while construction activities are underway.</li> <li>2. Limit construction equipment to the areas protected by exclusionary fencing.</li> <li>3. Train all construction personnel in the identification of Alameda whipsnake and the required protocol in the event that a whipsnake is encountered during construction activities.</li> <li>4. Have a biological monitor present during initial ground disturbing activities.</li> </ol>
	<p><b>MM Bio 1-4: San Joaquin kit fox.</b> Implement the following avoidance/minimization measures during construction to ensure no take of SJKF occurs.</p> <ol style="list-style-type: none"> <li>1. Conduct pre-construction surveys of the grasslands to confirm that there are no kit fox dens in the area at the time of ground disturbance.</li> <li>2. If an active den is observed on the property during these surveys, consult with USFWS regarding protection measures and next steps prior to initiating ground disturbance.</li> </ol>
	<p><b>MM Bio 1-5: California burrowing owl.</b> Conduct a pre-construction survey for burrowing owls to ensure that construction activities would not harm any individual owls that may have moved on to the site. The survey should be conducted 30 days prior to initiation of any ground-disturbing activities. If the survey occurs during the breeding season (February 1 to August 31) and owls are observed on or within 250 feet of the area of disturbance, a 250-foot buffer should be established around the occupied burrow with construction fencing. The fenced area should remain in place for the duration of the breeding season while construction activities are occurring. If the survey is conducted outside of the breeding season and owls are observed, owl eviction may be allowed if authorized by CDFG</p>
	<p><b>MM Bio-1 6: Other nesting birds.</b> If construction activities are initiated after August 1 and before January 15 (outside of the typical nesting season for the birds-of-prey and migratory birds that may nest in the study area), then pre-construction surveys for active nests should not be necessary. If activities are initiated before August or after January, then pre-construction surveys for active nests within a certain radius of proposed activities are required. If active nests are found and the biologist determines that construction activities would remove the nest or have the potential to</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
	cause abandonment, then those activities should be avoided until the young have fledged as determined through monitoring of the nest. Once the young have fledged, construction activities can resume in the vicinity.
<p><b>Impact Bio 2: Realignment and Fill of Wetlands.</b> The main intermittent channel will be realigned to the south and therefore will only temporarily be affected. The ephemeral channels will be filled. Although this impact could be mitigated through construction of the three ponds proposed as part of the Project, this is considered to be potentially significant if proper permits are not obtained. The stock pond and seasonal wetlands will not be directly affected by the Project; however, without employment of additional Best Management Practices, this is considered to be a potentially significant impact.</p>	<p><b>MM Bio 2-1: Permitting.</b> Prior to issuing a grading permit, the Applicant shall obtain a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB.</p>
	<p><b>MM Bio 2-2: Best Management Practices – Wetland.</b> The following additional measures to protect the stock pond and seasonal wetlands on the property shall be taken:</p> <ol style="list-style-type: none"> <li>1. Temporary fencing shall be erected around the stock pond and adjacent seasonal wetlands to ensure construction activities do not encroach into the area;</li> <li>2. Silt fencing shall be used, as necessary to keep sediment from entering the pond and wetlands</li> </ol>
<p><b>Impact CR-1: Possible Subsurface Cultural or Archaeological Deposits.</b> The Cultural Resources Study prepared for the Project notes that there is a possibility that subsurface cultural or archaeological deposits may exist at the Project site, as archaeological sites may be buried with no surface manifestation. Pre-historic cultural resources or human remains could be encountered</p>	<p><b>MM CR1 1: Discovery of Cultural Resources.</b> Should any buried archeological materials be uncovered during project activities, such activities shall cease within 100 feet of the find. Prehistoric archeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and split lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Lead Agency shall be notified of the discovery and a professional archeologist shall be retained to evaluate the find and recommend appropriate treatment measures. Project-related activities shall not resume within 100 feet of the find until</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

<b>Potentially Significant Impact</b>	<b>Mitigation Measure</b> Reduces Impact to a Less Than Significant Level
during construction activities. Discovery of such resources without proper procedures in place would be considered a potentially significant impact.	all approved mitigation measures have been completed.
	<b>MM CR 1-2: Human Remains.</b> If skeletal remains are encountered, work in the immediate vicinity shall stop and the Alameda County Coroner and Alameda County Planning Department shall be notified immediately. An archaeologist shall also be consulted at the same time to evaluate the situation. If the Coroner determines that remains may be Native American, the California Native American Heritage Commission shall be notified within 24 hours of this identification to arrange at its discretion for qualified Native American or equivalent participation in determining the disposition of such remains.
<b>Impacts Geo-1:</b> Seismic Shaking. For the Maximum Credible Earthquake (MCE) along the Greenville Fault (Richter Magnitude 6.9), the shaking intensity at the Project site would be “strong” to “very strong.” at a Level VII to VIII. , This would be a potentially significant impact.	<b>MM Geo 1-1: Geotechnical Report Required - Grading.</b> Pursuant to Article 5 of the Alameda County Ordinance Code, Section 7-114.2, a soil or geotechnical investigation report shall accompany the Project’s application for a grading permit given that the Project proposes cut and fill exceeding 5 feet in depth and that the slope of the natural ground within thirty feet of the cut and fill exceeds 10% (these conditions are met where the irrigation ponds are proposed and where the stream segments are proposed to be realigned).  Among the required elements of the soil/geotechnical investigation report is the requirement for a geotechnical engineer’s recommendations for mitigating geologic hazards.
	<b>MM Geo 1-2: Conformance with County Building Code Requirements.</b> The Project shall be designed in accordance with all seismic provisions of the Uniform Building Code (UBC, the most currently adopted revision), and with County of Alameda and State of California Standards for seismic construction. These provisions include requirements for submitting information to the building official including, but not limited to the following:  1. a letter of findings by the responsible geotechnical or soils engineer, geologist or engineering geologist as to the adequacy of the site preparation for the designed foundation system,  2. a letter of declaration by the responsible geotechnical or soils engineer, geologist or engineering geologist that all geotechnical and rough grading work was done in accordance with the recommendations contained in the soils/geological investigation report, and  3. a revised soil and/or geologic investigation report accompanied by an updated engineering and geologic opinion as to the safety of the site from the hazards of land slippage, erosion, settlement of seismic activity if actual site conditions vary from what was expected in the original soils/geological investigation report.





**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

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	<p><b>MM Geo 1-3: Soils Report Recommendations.</b> The Justiniano &amp; Associates <i>Preliminary Geotechnical and Geologic Evaluation</i> (January 2010) recommends that for the individual proposed lots of the subdivision, a detailed geotechnical report that presents site specific recommendations for house pad grading, foundation design, retaining wall construction, drainage, and any other geotechnical elements of the proposed improvements, should be prepared.</p>
<p><b>Impact Geo 2: Earthquake-Induced Landslides.</b> Earthquake-induced landslide zone maps identify the areas where the potential for earthquake-induced landslides on the Project site are relatively high. According to these maps, the area underlain by potential landslide-prone soils is south of the proposed new irrigation pond #3 and east of the nearest home site on Lot 1. This landslide potential would be a potentially significant issue for the Project.</p>	<p><b>MM Geo 1-1: Geotechnical Report Required – Grading (see above)</b>  <b>MM Geo 1-2: Conformance with County Building Code Requirements (see above)</b>  <b>MM Geo 1-3; Soils Report Recommendations (see above)</b></p>
<p><b>Impact Geo 3: Construction-Period Soil Erosion.</b> Site disturbance would involve significant grading work and movement of soils on site. Soils exposed during site grading would be subject to erosion during storm events.</p>	<p><b>MM Geo-3: Erosion Control Plan.</b> Prior to issuance of grading and building permits, the applicant/developer shall submit to the Public Works Department an erosion control plan utilizing Best Management Practices to limit erosion during construction of the project. Measures shall include but not be limited to:</p> <ol style="list-style-type: none"> <li>1. Hydroseeding and/or establishment of appropriate plant materials/landscaping</li> <li>2. Placement of straw wattles along slope contours and drainages</li> <li>3. Lining of drop inlets with filter fabric/geotextile</li> <li>4. Establishment of a single destination “wash-out” for construction subcontractors</li> <li>5. Use of siltation fences</li> <li>6. Use of sediment basins</li> </ol>
<p><b>Impact Geo-4: Potential Instability of Pond Embankments.</b> Cuts in excess of 6 feet may be subject to instability if clayey soils are exposed. The side slopes will also be subject to rapid fluctuations in water level</p>	<p><b>MM Geo-4: Additional Geotechnical Explorations and Laboratory Testing.</b> As recommended in the Justiniano &amp; Associates <i>Preliminary Geotechnical and Geologic Evaluation</i> (January 2010), additional geotechnical explorations and laboratory testing will be required as a basis for detailed design of the ponds.</p> <ol style="list-style-type: none"> <li>1. Stability evaluations of the cuts should be performed based on laboratory testing of the materials that will be exposed. If the cuts do not</li> </ol>





**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
<p>which could induce pore pressures and potentially destabilize the slopes.</p>	<p>have an adequate factor of safety, it may necessary to either lay the cuts backs at shallower inclinations, or reconstruct the cuts as engineered fills with adequate subsurface drainage controls.</p> <p>2. Seepage modeling across the embankment will be necessary to evaluate the upstream and downstream embankment stability. The stability analysis should include evaluations under a rapid drawdown scenario. The results of the stability and seepage analyses will determine the need for embankment and foundation designs to maintain acceptable pore pressures within the soil materials for maintaining embankment stability.</p> <p>3. The construction of the pond embankments and sliver fills on the pond perimeter slopes will require embedment and "keying" into firm, non-yielding materials. It is anticipated that over-excavation of soft swale deposits will be required to achieve the proper keying of fills. Detailed geotechnical recommendations for construction, including design recommendations for slope reconstruction and the construction of engineered fill buttresses should be provided on a site specific basis, when building plans and precise building locations are finalized. Site specific recommendations should be based on subsurface exploration to define the depth and extent of soft deposits or other unstable soil materials that will require over-excavations.</p>
<p><b>Impact Geo-5: Potential Failure of On Site Septic Systems.</b> According to the USDA Alameda Soil Survey (1966), both the Positas and Zamora soil series have significant limitations for septic tank and leach field lines because these soils have a generally low permeability rating.</p>	<p><b>MM Geo-5: Compliance with County Requirements for On-Site Septic Systems.</b> The project applicant will be required to demonstrate compliance with the County's requirements and regulations for on-site septic systems as set forth in Chapter 15.18.040.B of the Alameda County General Ordinance Code. These regulations provide minimum standards for the construction and operation of onsite wastewater treatment systems.</p> <p>1. The County's regulation require that onsite wastewater systems be located, designed, constructed and operated in a manner to ensure that sewage effluent does not surface and that percolation of effluent will not adversely affect the public health, safety or welfare, do not contaminate or otherwise be detrimental to the waters of the State of California.</p> <p>2. The regulations require a minimum lot size of 40,000 square feet for parcels supported by a public water supply, and 60,000 square feet if served by a private water supply.</p>
<p><b>Impact Hyd-1: Construction-Period Pollutants.</b> The proposed Project involves significant site grading in order to re-channelize the existing arroyo and create the three irrigation ponds within the arroyo's former alignment. Excavation and construction-related runoff could contain soil and other pollutants, which may</p>	<p><b>MM Hyd-1: Construction General and SWPPP Permit.</b> Obtain Coverage Under the Construction General Permit, Including SWPPP. The Project sponsor shall obtain coverage under the SWRCB Construction General Permit, including implementation of a Storm Water Pollution Prevention Plan (SWPPP).</p> <p>1. The Project sponsor shall ensure that construction practices for the Project comply with practices to prevent water pollution under the provisions of the Construction General Permit. In order to obtain a permit, the Project Applicant must file a Notice of Intent (NOI) with the SWRCB prior to the start of construction.</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
<p>contribute to reduced water quality in local water bodies. Construction equipment would use toxic chemicals (e.g., gasoline, oils, grease, lubricants and other petroleum-based products) that could be released accidentally.</p> <p><b>Impact Hydro 2:Post-Construction Runoff.</b> The active use of the property could result in the generation of post-construction runoff and could increase the potential for polluted runoff off-site. Compliance with the County's post construction regulations pursuant to the Alameda Countywide Municipal NPDES permit would be required.</p>	<p>2. Pursuant to the requirements of the Construction General Permit, the Project sponsor shall prepare and implement a SWPPP. The SWPPP shall be consistent with the terms of the General Permit; the Manual of Standards for Erosion and Sedimentation Control Measures by the Association of Bay Area Governments (ABAG); the Best Management Practices as provided in the California Stormwater Quality Association (CASQA) handbooks; policies and recommendations of the local urban runoff program (County of Alameda); and the Staff Recommendations of the RWQCB. The SWPPP shall incorporate BMPs to reduce the potential for pollutants in runoff waters and to prevent pollutant transport off-site during construction activities. Examples of Best Management Practices include, but are not limited to the following:</p> <p>3. Only clear land which will be actively under construction in the near term (e.g., within the next 6-12 months), minimize new land disturbance during the rainy season, and avoid clearing and disturbing sensitive areas (e.g., steep slopes and natural watercourses) and other areas where site improvements will not be constructed.</p> <p>4. Provide temporary stabilization of disturbed soils whenever active construction is not occurring on a portion of the site through water spraying or application of dust suppressants, and gravel covering of high-traffic areas. Provide permanent stabilization during finish grade and landscape the Project Site.</p> <p>5. Safely convey runoff from the top of the slope and stabilize disturbed slopes as quickly as possible.</p> <p>6. Delineate the Project Site perimeter to prevent disturbing areas outside the project limits. Divert upstream run-on safely around or through the construction. Runoff from the Project Site should be free of excessive sediment and other constituents. Control tracking at points of ingress to and egress from the Project Site.</p> <p>7. Retain sediment-laden waters from disturbed, active areas within the Project Site.</p> <p>8. Perform activities in a manner to keep potential pollutants from coming into contact with stormwater or being transported off site to eliminate or avoid exposure.</p> <p>9. Store construction, building, and waste materials in designated areas, protected from rainfall and contact with stormwater runoff. Dispose of all construction waste in designated areas, and keep stormwater from flowing onto or off these areas. Prevent spills and clean up spilled materials.</p>
	<p><b>MM Hyd-2: Comply with NPDES Permit.</b> Comply With Alameda Countywide NPDES Municipal Stormwater Permit C.3 Provisions. The Project sponsor shall demonstrate compliance with the countywide</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

<b>Potentially Significant Impact</b>	<b>Mitigation Measure</b> Reduces Impact to a Less Than Significant Level
	<p>NPDES permit requirements by preparing a detailed Stormwater Management Plan (SMP), incorporating the most appropriate post-construction source control measures into the Project design. The Stormwater Management Plan shall be prepared during County’s review of project engineering design and shall incorporate the required post-construction (permanent) stormwater quality controls. The SMP should include, but is not limited to demonstration of the following:</p> <ol style="list-style-type: none"> <li>1. The proposed finished grade,</li> <li>2. The storm drainage system including all inlets, pipes, catch basins, overland flows, outlets and water flow directions,</li> <li>3. The permanent stormwater treatment system (soil and landscape-based treatment facilities, filters and separators), including all design details,</li> <li>4. Design details of all source control measures (preventing contact between stormwater and potential sources of pollution) and site design measures (reductions in flow from impervious surfaces) to be implemented,</li> <li>5. Calculations demonstrating that stormwater treatment measures are hydraulically sized as specified by the County’s stormwater permit, and</li> <li>6. An Operations and Management Plan to ensure continued effectiveness of structural BMPs and implementation of non-structural BMPs.</li> </ol>
<p><b>Impact Hydro-3: Alteration of the Existing Drainage Pattern.</b> The proposed Project would realign the existing stream and the natural flow of the intermittent channel will be diverted into the realigned channel. This realigned channel will replace the existing channel in size and function. The ephemeral channels will be filled and permanently removed.</p>	<p><b>MM Hydro 3-1: Permitting.</b> Prior to issuing a grading permit, the Applicant shall obtain a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB.</p> <p><b>MM Hydro 3-2: Best Management Practices.</b> Construction activities shall be required to implement all appropriate construction Best Management Practices, as required under MM Hyd-1, above.</p> <p><b>MM Hydro 3-3: NPDES Permit.</b> Comply With Alameda Countywide NPDES Municipal Stormwater Permit C.3 Provisions. The Project sponsor shall demonstrate compliance with the countywide NPDES permit requirements by preparing a detailed Stormwater Management Plan (SMP), incorporating the most appropriate post-construction source control measures into the Project design.</p> <p><b>MM Hydro 3-4: Construction Season.</b> The existing stream segment is dry for the majority of the year, but construction activities associated with construction of the new irrigation ponds and realignment of the existing stream channel should only occur during the dry season.</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

Potentially Significant Impact	Mitigation Measure Reduces Impact to a Less Than Significant Level
<p><b>Impact Hydro 4: Potential Failure of Irrigation Pond Impoundment</b> New ponds proposed to be constructed under the Project have the potential to expose people or structures to a risk of loss and injury involving flooding as a result a potential failure of a pond embankment.</p>	<p><b>MM Hydro 4-1: County Permits.</b> Pond water impoundment management and diversion will have to be addressed for final permitting of the property, as required by the County.</p> <p><b>MM Hyd-4-2: Pond Overflow Features.</b> Standard engineering practice requires that flows from the 100-year storm event be considered in sizing overflow features. In the event the ponds are full, the diversion ditch would have to accommodate the maximum design flows around the pond facilities. It will be necessary to provide some pond overflow contingencies between the ponds and from the final downstream pond which discharges to the continuing creek to the west of the property. These overflow structures would be in the form of overflow pipes or spillways designed to handle design flows as specified by county regulations,</p> <p><b>MM Hydro 4-3: Pond Design.</b> Pond seepage can be minimized by providing an appropriate liner. A thickness of select, native, clayey materials at the bottom of the ponds can be designed to achieve a suitable barrier so as to mitigate infiltration of water into the subsurface. Pond design should also incorporate the effects of extreme winter and summer conditions as much as practically possible, while preserving the aesthetical pleasing benefits to the proposed property development.</p>
<p><b>Impacts Noise-1: Construction-period noise impacts.</b> Construction activity along the site’s eastern boundary may adversely impact sensitive receptors at the adjacent golf course. As discussed above, excessive construction related noise levels would be temporary and would not be sustained. Nevertheless, unless the mitigation measures provided below are implemented, this is considered a potentially significant impact.</p>	<p><b>MM Noise 1-1: Noise Control Devices.</b> All construction equipment operated at the Project site shall be equipped with manufacturer’s standard noise control devices (i.e., improved mufflers, intake silencers, and/or engine enclosures) to minimize the generation of adverse and/or excessive noise impacts on adjacent land uses. Newer equipment shall be used whenever possible. All construction equipment shall be inspected at periodic intervals to ensure proper maintenance and resulting lower noise levels.</p> <p><b>MM Noise 1-2: Impact Tools.</b> Equipment used for project construction shall have hydraulically or electrically powered impacts tools, such as jack hammers, pavement breakers and rock drills, whenever possible, to avoid noise associated with compressed air exhaust from pneumatically-powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used.</p> <p><b>MM Noise 1-3: Construction Hours.</b> Construction activities that could affect adjacent noise-sensitive uses (i.e., residences) shall be limited to daylight hours between 7:00 AM and 7:00 PM.</p>
<p><b>Impact Traf-1: Construction Period Traffic Impacts.</b></p>	<p><b>MM Traf 1-1: Construction Routing Plan.</b> The Applicant shall develop and submit a precise route of access to the property for construction vehicles for the term of construction. Alternative routes that minimize traffic past local residences and passive recreation area should be used if available.</p>
	<p><b>MM Traf 1-2: Conformance with County Construction Traffic Policy.</b> The Applicant shall conform with all County requirements with regard to</p>



**Table 1:  
Potentially Significant Impacts and Mitigation Measures**

<b>Potentially Significant Impact</b>	<b>Mitigation Measure</b>
	Reduces Impact to a Less Than Significant Level  construction traffic, such as warning signage and flag-person controls, as well as pilot cars / escorts for large loads.



## PROPOSED FINDINGS

The report preparers, in consultation with County of Alameda Community Development Agency staff, have determined that with implementation of mitigation measures identified in this Mitigated Negative Declaration, the proposed Project will not have a significant effect on the environment. If this Mitigated Negative Declaration is adopted by the County of Alameda, the requirements of the California Environmental Quality Act (CEQA) will be considered to have been met by the preparation of this Mitigated Negative Declaration, and the Project will not require the preparation of an Environmental Impact Report. This decision is supported by the following findings:

- a. The Project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate a plant or animal community. It does not reduce the number or restrict the range of a rare or endangered plant or animal. It does not eliminate important examples of the major periods of California history or pre-history, since there is no identified area at the Project site which represents unique examples of California history or prehistory. In addition, the Project is within the scope of use contemplated in the General Plan and the Project does not have any significant, unavoidable adverse impacts. Implementation of specified mitigation measures will avoid or reduce the effects of the Project on the environment and thereby avoid any significant impacts.
- b. The Project does not involve impacts which are individually limited but cumulatively considerable, because the described Project will incorporate mitigation measures to avoid significant impacts of the Project in the context of the South Livermore Valley Area Plan and the East County Area Plan.
- c. The Project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly, because all adverse effects of the Project will be mitigated to an insignificant level.



## LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Albert Lopez, Alameda County Planning Director

Date

9/21/2011





# PROJECT DESCRIPTION

The proposed Project involves the following inter-related elements:

- subdivision of the 160-acre Project site into eight 20-acre parcels;
- realignment of an existing seasonal creek;
- construction of three water storage ponds to be used as irrigation water in support of a proposed olive orchard;
- designation of future home sites on each of the eight subdivided parcels; and,
- future construction of eight single family homes.

The proposed site plan is provided in **Figure 5**

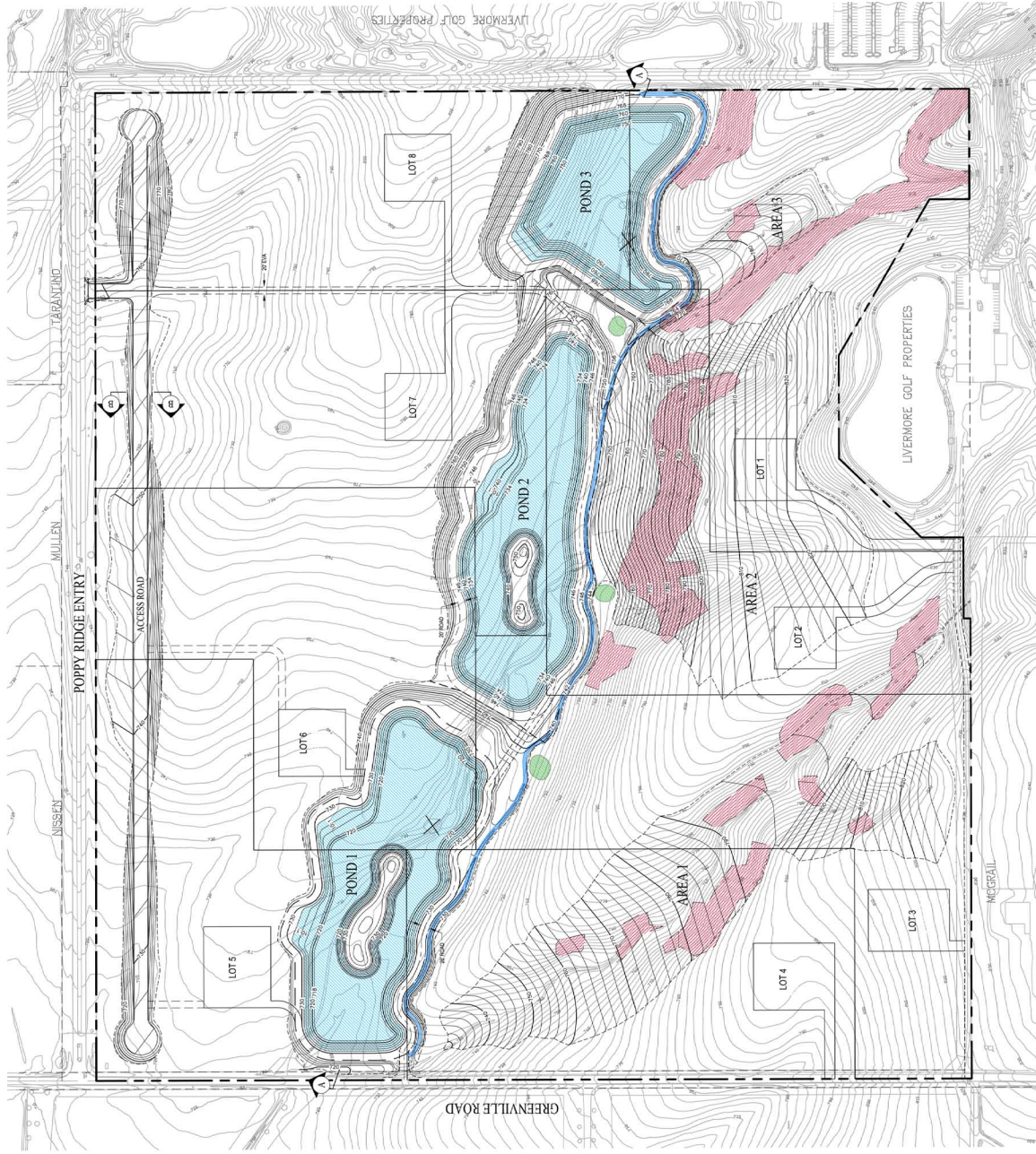
## PROPOSED USES/OPERATIONS

The Project site is located in an unincorporated portion of eastern Alameda County and subject to the policies of the East County Area Plan (ECAP) and the South Livermore Valley Area Plan (SLVAP). The ECAP land use designation for the property requires 100-acre minimum parcel size. However, the SLVAP provides for a zoning overlay that allows for a density bonus of four additional homes per 100 acres (or 1 unit per 20 acres), provided that 90 percent of the parcel being subdivided is planted with cultivated agriculture.

The Applicant proposes to utilize the density bonus allowable in this area to subdivide the approximately 160-acre Project site into eight 20-acre parcels. In order to qualify for the density bonus, the Applicant proposes to plant olive orchards on 90 percent of the acreage of each parcel, and to identify a 1-to 2-acre home site on each parcel where a single family home could be constructed in the future. In accordance with the SLVAP Vineyard Area Policy #5, the Applicant could utilize a portion of the 10% non-orchard area for other compatible commercial uses, including potentially a winery.

A seasonal creek runs roughly east-west across the Project site. The Project proposes to realign the creek channel to the south of its current alignment and to utilize the current alignment for three irrigation ponds of from 4 to 7-acres each (surface area). Once constructed, the realigned streambed would convey seasonal stormwater flows across the site in much the same way as occurs currently. The three proposed water storage ponds would be filled with rainwater collected on site during the rainy season, augmented by on-site wells and with water derived from the cross-site creek channel.





**Figure 5**  
**Project Site Plan**



Source: Carlson Barbee and Gibson

## Site Access, Circulation

The Project site is bounded on the north by the entry roadway to the Poppy Ridge Golf Course (Poppy Ridge Entry). One new intersection along Poppy Ridge Entry would provide access to an internal roadway on the Project site that would stretch across the northerly edge of four of the proposed eight 20-acre lots (Lots 5, 6, 7 & 8). Driveways from the internal roadway would lead to the home sites on each of these lots. The other four subdivision parcels would be accessed either directly from Greenville Road (Lot 4) or from a proposed new roadway that would intersect with Greenville Road along the southerly edge of the Project site (Lots 1, 2 and 3; see Figure 5).

## Construction

Typical construction equipment that would be used during the initial phases of site development (i.e., relocation of the creek, construction of the irrigation ponds and internal roadways, and overall site grading) would include self-loading dirt scrapers, bulldozers, motor graders, compactors, rollers, water trucks, backhoes, excavators, trenchers, loaders, paving machines, tractors, forklifts, and generators. Subsequent construction of single family homes and planting of olive orchards would involve graders, backhoes, forklifts, generators, and various pneumatic and electrically powered tools.

## Utilities

Water supply to serve the proposed Project will be provided from a variety of sources to meet the different water requirements of the Project. Potable water to serve the drinking and other indoor potable water needs of future residents would come from connections to the Crane Ridge Mutual Water Company's water transmission pipelines. This mutual water company was established to provide potable water to the adjacent Crane Ridge development and to the Poppy Ridge Golf Course. The Crane Ridge Mutual Water Company's water supply is obtained from Cal Water. Pursuant to private agreements with property owners fronting along the Crane Ridge water transmission line alignment, the Project site is allowed to obtain up to 80 gallons per minute (gpm) of potable water from this pipeline, or over 14,000 gallons per day, an amount substantially greater than the Project's estimated daily demand for potable water.

Irrigation water for the olive orchards will be derived from a combination of creek flows coming across the site in the relocated creek channel and pumped into the on-site ponds during wet months, and on-site wells. Water pumped into the ponds would be pumped out for irrigation purposes during the dry months. Any runoff from irrigation of the olive orchard would flow back into the ponds or into the relocated creek channel. Excess flows in the creek not needed to sustain the irrigation ponds would ultimately discharge off-site into the culvert under Greenville Road.

Wastewater generated at the new homes would be treated and discharged into individual on-site septic systems.



Electrical, natural gas, telephone, cable TV and other utilities would be provided by existing providers in the area, including Pacific Gas & Electric and AT&T.

Solid waste generated at the site would be transported to licensed Alameda County landfills pursuant to existing service contracts.

## Grading

The Project involves substantial grading to relocate the creek, construct the three irrigation ponds, and to prepare the lots for the olive orchards and for future construction of single family homes. The preliminary grading plan reflects approximately 514,500 cubic yards of cut and 435,800 cubic yards of fill, with the difference (78,700) being distributed across the site, resulting in a balance of cut and fill with no hauling of material off-site. The preliminary estimated earthwork quantities for various elements of the proposed Project are shown below in **Table 2**.

Description	Cut (cubic yards)	Fill (cubic yards)
Access Road	36,800	18,300
Pond 1	147,000	15,700
Pond 2	180,900	8,300
Pond 3	145,500	6,500
Area 1	0	172,100
Area 2	2,800	176,700
Area 3	1,500	38,200
Net Difference	78,700	

Source: Project Sponsor; Carlson, Barbee & Gibson

## Drainage

A major part of the Project would be the construction of the three irrigation ponds as a source of irrigation water for the proposed olive orchard. The ponds would provide a storage volume of approximately 147 acre-feet and would involve a surface area of approximately 17.7 acres, as indicated in **Table 3**. The grading plan is designed so that rainfall would be directed to the storage ponds for use as on-site irrigation water; stormwater not caught by one of the storage ponds would flow into the re-aligned intermittent stream bed which would be connected to the existing storm drain system in Greenville road.



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**TABLE 3: POND SUMMARY**

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Description	Depth (feet)	Surface Area (acre)	Volume (acre-feet)
Pond 1	10	7.13	49.00
Pond 2	10	6.45	49.09
Pond 3	16	<u>4.14</u>	<u>49.12</u>
Total		17.72	147.21

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Source: Project Applicant; Carlson, Barbee & Gibson

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### Landscaping and Site Design

Development plans for future homes on the eight parcels have not been prepared are not available for review within the scope of this Initial Study. At such time as specific homes are proposed in the future, they will be subject to the County's Site Development Review process as required by the South Livermore Valley Area Plan Policy 6, and pursuant to Title 17, Chapter 17.06, Section 17.30.170.G of the County Administrative Code. These policies and regulations require plans for proposed buildings to be submitted for Site Development Review approval prior to obtaining building permits. Proposed landscaping within the 1-acre home sites will also be reviewed as part of the Site Development Review process. The Project proposes to save the few existing trees on the site and design the proposed ponds around them.

### REQUESTED ACTIONS AND REQUIRED APPROVALS

Alameda County planning permits and approvals necessary for implementation of the proposed Project include:

- Approval of the proposed Tentative Subdivision map and ultimate Final Subdivision Map
- Administrative approval of the proposed Grading Permit
- Modification of the Williamson Act contract
- Alameda County Clean Water Program NPDES permit approvals

Other responsible public agencies with subsequent permit or discretionary approval authority over the Project include

- California Department of Fish and Game - Streambed Alteration Agreement
- United States Army Corps of Engineers - Section 404 permit
- Regional Water Quality Control Board - Section 401 Water Quality Certification





# INITIAL STUDY CHECKLIST

## Environmental Factors Potentially Affected

Environmental issues as defined by the California Environmental Quality Act which may be affected by the proposed Project are listed alphabetically below. Issues marked with an “X” in the block () were determined to be potentially affected by the Project, involving at least one impact that has been identified as “Potentially Significant”. Mitigation measures have been identified that would reduce these potentially significant impacts to less than significant levels, as indicated in the Environmental Evaluation Form Checklist and related discussion that follows. Unmarked factors () were determined to not be significantly affected by the Project based on discussion also provided in the Checklist.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agricultural & Forest Resources      | <input checked="" type="checkbox"/> Air Quality             |
| <input checked="" type="checkbox"/> Biological Resources    | <input checked="" type="checkbox"/> Cultural Resources        | <input checked="" type="checkbox"/> Geology/Soils           |
| <input type="checkbox"/> Greenhouse Gas                     | <input type="checkbox"/> Hazards/Hazardous Materials          | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning                  | <input type="checkbox"/> Mineral Resources                    | <input checked="" type="checkbox"/> Noise                   |
| <input type="checkbox"/> Population/Housing                 | <input type="checkbox"/> Public Services                      | <input type="checkbox"/> Recreation                         |
| <input checked="" type="checkbox"/> Transportation/Traffic  | <input checked="" type="checkbox"/> Utilities/Service Systems |   |
| <input type="checkbox"/> Mandatory Findings of Significance |   |   |



## AESTHETICS

	Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I.	AESTHETICS — Would the Project:				
	a) Have a substantial adverse effect on a scenic vista?	[ ]	[ ]	[ ✓ ]	[ ]
	b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	[ ]	[ ]	[ ✓ ]	[ ]
	c) Substantially degrade the existing visual character or quality of the site and its surroundings?	[ ]	[ ]	[ ✓ ]	[ ]
	d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	[ ]	[ ]	[ ✓ ]	[ ]

## Setting

The Project site is located in Alameda County southeast of the City of Livermore within the South Livermore Valley, one of California’s oldest wine-grape growing regions. The Project site is subject to the goals, objectives and policies of the *South Livermore Valley Area Plan* as well as the *East County Area Plan*.

## Scenic Vistas

Would the Project:

- a) Have a substantial adverse effect on a scenic vista?

The Project would not have a substantial adverse effect on a scenic vista.

The *East County Area Plan (ECAP)* requires the protection of sensitive ridgelines, the maintenance of community separators largely in open space, and the protection and maximization of views of prominent visual features. A list of these sensitive ridgelines, community separators and viewsheds is provided in the land use chapter of the *ECAP*. The Project site is not located on a protected ridgeline; the nearest protected ridgelines to the Project site are the ridgelines above the vineyards south of Livermore and south of the Project site. Development of the proposed Project would not affect views of these ridgelines.

The proposed Project would result in the construction of ponds for agricultural irrigation, the establishment of eight new lots of approximately 20-acres each, the construction of new roads on site, and ultimately the construction of up to eight new residential homes. None of this proposed development would have a substantial adverse effect on a scenic vista, including the ridgelines above the South Livermore vineyards. The construction of new homes would require separate development applications and site-specific review with respect to potential impacts on scenic vistas pursuant to the County’s Site





Development Review process. In light of the policy and land use restrictions applicable to the Project site, and the subsequent reviews required for new home development, the proposed Project's impact with respect to scenic vistas would be *less than significant*.

### **Scenic Resources**

Would the Project:

- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no significant scenic resources on the Project site such as rock outcroppings or historic buildings. There is no State scenic highway within the vicinity of the Project site. There are approximately five oak trees on the Project site that would be removed during grading operations, but they are not designated as significant by Alameda County. The Project would not substantially damage any scenic resources on the Project site or immediate vicinity, therefore, this impact is considered *less than significant*.

### **Visual Character and Quality**

Would the Project:

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

The Project would change but not substantially degrade the existing visual character of the site and its surroundings. The Project entails the subdivision of the 160-acre Project site into eight 20-acre parcels, re-channeling an existing creek bed, creating three irrigation ponds that would be linked to the relocated creek. Subsequently, 90 percent of the site would be developed as an olive orchard and, when mature, the olive trees would reach heights typically of 20 feet or more. The final element of the Project would involve the development of a new single family residence on each of the eight lots.

Consequently, the visual character of the Project site would change from its existing undeveloped "natural" state to one eventually of houses situated among irrigation ponds and cultivated olive trees. The SLVAP Policy 6 requires new residential and commercial structures within the "Vineyard Area" of the Plan (which includes the Project site) to undergo site development review that emphasizes the area's existing visual character, including the use of appropriate materials and architectural features; and the careful siting of structures so that they are subordinate to the landscape and do not block public views from adjacent roads. Standards for landscaping are also provided in this policy, and these standards require emphasis of existing visual character with the objective of promoting wine-production and other agricultural products.

The resulting visual character of the site is not considered to be a substantial degradation of the site or its surroundings. The proposed uses – homes situated among agricultural use – is consistent with the SLVAP as well as its surroundings, which feature vineyards with associated vineyard facilities (including homes) and a golf course. As discussed above, landscaping of the proposed irrigation ponds as well as the design and landscaping of the future residences will be required to undergo subsequent design review to ensure they meet the standards outlined in the SLVAP.



In light of the consistency between the elements of the proposed Project, the land use policies and restrictions applicable to the site, and the subsequent reviews required by applicable land use control documents, potential impacts related to visual character and quality are *less than significant*.

### **Light and Glare**

Would the Project:

- d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

The Project site has a *General Plan* designation of Agriculture and is zoned “A/CA” or Agriculture with a Cultivated Agriculture overlay. The intent of the “A” zoning district is to promote agricultural and non-urban uses and to conserve and protect existing agricultural uses. Uses that generate substantial light or glare are not permitted in the “A” zoning district. Generally, the “A” zoning district requires a 100-acre minimum parcel size; however, the “CA” overlay provides for a density bonus that allows 20-acre minimum parcels. The proposed use of Project site for irrigation ponds and an olive orchard over most of the land area would not result in new sources of light or glare. Development of future homes on the lots would result in new sources of light but the site development review process as provided in Title 17, Chapter 17.54, Section 17.54.230 of the County Administrative Code would include a careful review of all interior and exterior lighting against all applicable code restrictions and policies of the SLVAP. The review process can be expected to ensure that residential lighting would not significantly affect day or nighttime views in the area.

The Project does not propose uses that require significant lighting, or that would create a substantial new source of light or glare. Therefore, the lighting or glare impacts of the Project will be *less than significant*.



## AGRICULTURAL AND FOREST RESOURCES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE RESOURCES: Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	[ ]	[ ]	[ ✓ ]	[ ]
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	[ ]	[ ]	[ ✓ ]	[ ]
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production(as defined by Government Code section 51104(g))	[ ]	[ ]	[ ]	[ ✓ ]
d) Result in the loss of forest land or conversion of forest land to non-forest use?	[ ]	[ ]	[ ]	[ ✓ ]
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	[ ]	[ ]	[ ✓ ]	[ ]

### Setting

The Project site is currently vacant and has historically been used for grazing cattle. There are no structures on the site and it remains in its natural state. The site is not forest and there is no forest on nearby lands.

The site has a General Plan land use designation of *Large Parcel Agriculture*, and is zoned “A/CA”– *Agriculture/Cultivated Agriculture Overlay* and is currently under a Williamson Act contract.

### Convert Farmland or Williamson Act Conflict

Would the Project:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?
- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?



The Project involves the conversion of existing cattle grazing land to a more intensive agricultural use, consistent with existing agricultural zoning and with the terms of an existing Williamson Act contract. The Project site has a General Plan designation of Large Parcel Agriculture, with an overlay that allows Cultivated Agriculture. The site is located within the South Livermore Valley Area Plan (SLVAP) area, which provides for a zoning overlay that allows for the development of one residential dwelling per lot provided that 90 percent of the parcel remains in and managed as a viable agricultural use (see **Figure 6**).

The Project would conform to the General Plan and SLVAP. The Project will result in the construction of irrigation ponds to irrigate olive orchards that will be planted in the resulting eight 20-acre lots. Planting of the olive orchards would occur commensurate with the subsequent development of each 20-acre parcel and pursuant to the County's Site Development Review procedures. The ponds that would be constructed as an element of the Project would be intended to support the olive orchard operation.

The Project site is under a Williamson Act contract (see Figure 6) and approval of the Project would not result in conflicts with that contract or other applicable provisions of the California Land Conservation Act of 1965<sup>2</sup> provided that any homes to be developed later are consistent with the limitations set forth in Section 51250 of the Government Code. Compliance with applicable policies and restrictions pursuant to the SLVAP and state law will assure that potential impacts related to the loss of agricultural land or conflicts with a Williamson Act contract would be *less than significant*.

### **Potential Rezoning and/or Loss of Forest or Timberland to Non-Forest Use**

Would the Project:

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))
- d) Result in the loss of forest land or conversion of forest land to non-forest use?

The Project site is not designated forest land or timberland, nor is it currently forested or used for forest resource purposes. There would be *no impact* related to the potential loss of forest or timber resources.

### **Other Changes That Could Result in Farmland Conversion**

Would the Project:

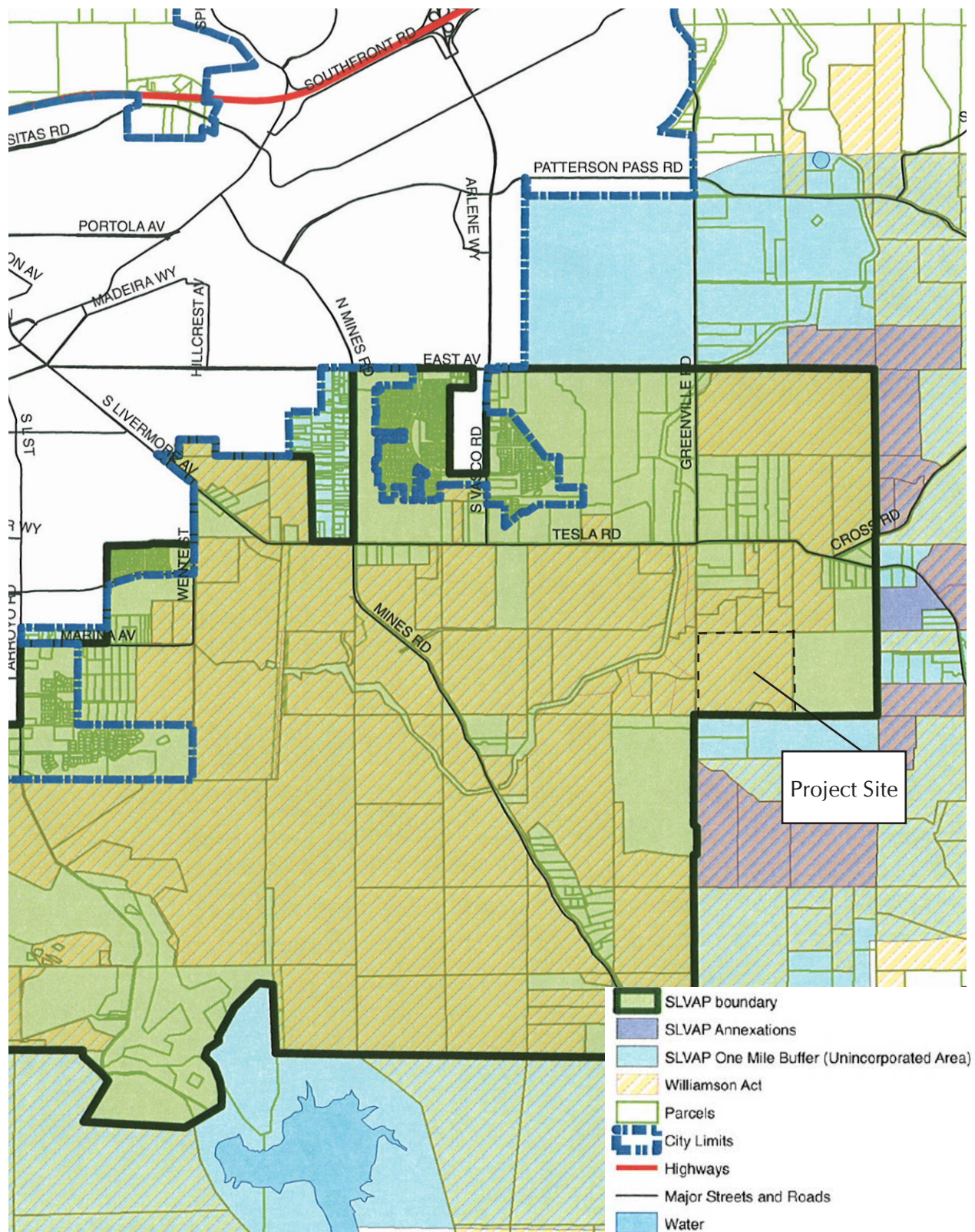
- e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The Project would not involve any other changes that could result in conversion of farmland to a non-agricultural use or forest to non-forest use. This impact is considered *less than significant*.

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<sup>2</sup> California Government Code §51200 et. seq.





**Figure 6**  
**South Livermore Valley Area Plan**



Source: Alameda County CDA, Feb 2009

## AIR QUALITY

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?	[ ]	[ ]	[ ✓ ]	[ ]
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	[ ]	[ ✓ ]	[ ]	[ ]
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	[ ]	[ ]	[ ✓ ]	[ ]
d) Expose sensitive receptors to substantial pollutant concentrations?	[ ]	[ ]	[ ✓ ]	[ ]
e) Create objectionable odors affecting a substantial number of people?	[ ]	[ ]	[ ✓ ]	[ ]

### Setting

The Bay Area Air Quality Management District (BAAQMD) is the regional government agency charged with regulating sources of air pollution in the San Francisco Bay Area to maintain clean air and protect the health of the public and the environment. BAAQMD has identified different climatological sub-regions within the San Francisco Bay Area Air Basin. The Project site is located in the Livermore Valley sub-region.

The Livermore Valley is a sheltered inland valley within the Diablo Range near the eastern border of the District. The western side of the valley is bounded by 1000 to 1500 foot hills with two gaps connecting it to the San Francisco Bay area, the Hayward Pass at the north and Niles Canyon at the south. The eastern side of the valley also has 1000 to 1500 foot hills, the Altamont Hills, with one major passage to the San Joaquin Valley called the Altamont Pass and several secondary passages; Kellogg Creek, Patterson Pass and Corral Hollow. To the north lie the Black Hills and 3849 foot Mount Diablo. A northwest to southeast channel connects the Diablo Valley to the Livermore Valley and splits the Diablo Range into eastern and western sections. The south side of the Livermore Valley rises up to mountains of approximately 3000 to 3500 feet in the Diablo Range.





The Project site is located in the southeastern portion of the Livermore Valley. The Corral Hollow secondary pass to the San Joaquin Valley is located east of the Project site.

For the Livermore Valley, the air pollution potential is high, especially for photochemical pollutants. Dependent upon the meteorology for that particular summer and or fall, the frequency of elevated ozone levels at the BAAQMD's Livermore station can be significant, approaching, reaching or exceeding Santa Clara Valley levels. The valley not only traps locally generated pollutants but can be the receptor of ozone and ozone precursors from San Francisco, Alameda, Contra Costa and Santa Clara counties. This can happen near the end of an ozone episode when the sea breeze regains its strength and carries these pollutants inland. On northeasterly flow days, not uncommon in the early fall, ozone may be advected from the San Joaquin Valley to the Livermore Valley. During the winter, the sheltering effect of the valley, its distance from the moderating marine air and the presence of a strong high pressure system, contribute to the development of a strong, surface based, temperature inversion. Within this stable layer local pollutants from automobiles, fireplaces and agricultural burning can concentrate, raising carbon monoxide and or particulate levels. With a growing population and no additional air quality controls, air pollution problems could become worse.

### **Consistency with Air Quality Plan / CAP**

Would the Project:

- a) Conflict with or obstruct implementation of the applicable Air Quality Plan?

The Project is located within the nine county San Francisco Bay Area Air Basin and therefore within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD enforces rules and regulations regarding air pollution sources and is the primary agency preparing the regional air quality plans mandated under state and federal law.

According to the standards of the federal Clean Air Act, the Bay Area is in attainment with all ambient air quality standards except for state and national ozone standards and national particulate matter ambient air quality standards. The nonattainment status is attributed to the region's development history. Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to result in nonattainment of ambient air quality standards in and of itself. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In 1991, the BAAQMD, MTC and ABAG prepared the Bay Area 1991 Clean Air Plan (CAP). This air quality plan addresses the California Clean Air Act. Updates are developed approximately every three years. The plans were meant to demonstrate progress toward meeting the ozone CAAQS, but also include other elements. The latest update to the plan, which was adopted in September 2010, is called the Bay Area 2010 Clean Air Plan. The plan includes the following:

- Updates the recent Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;



- Provide a control strategy to reduce ozone, particulate matter (PM), TACs, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010-2012 timeframe.

BAAQMD also provides a document titled *California Environmental Quality Act Air Quality Guidelines* (“Guidelines”), which provides guidance for consideration by lead agencies, consultants, and other parties evaluating air quality impacts in the San Francisco Bay Area Air Basin pursuant to CEQA. The document provides guidance on evaluating air quality and GHG impacts of development projects and local plans, determining whether an impact is significant, and mitigating significant impacts.

BAAQMD has recently updated these Guidelines in coordination with adoption of new thresholds of significance on June 2, 2010.<sup>3</sup> The most recent version of the Guidelines is dated June 2010.<sup>4</sup>

The proposed Project would be consistent with both the *East County Area Plan* (ECAP) and *South Livermore Valley Area Plan* (SLVAP) and is not expected to alter population or travel projections used to develop the current clean air plan projections. In addition, the Project would not require a general plan amendment to change the land uses to accommodate this Project. As a result, the Project would not conflict with implementation of the Bay Area’s clean air planning efforts. This is considered to be a *less than significant* impact.

### **Violate Air Quality Standards**

Would the Project:

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Project air quality impacts are divided into two categories: construction-related and operations-related. This discussion provides an analysis of both, based on the *BAAQMD CEQA Guidelines*, produced by the Bay Area Air Quality Management District.<sup>5</sup> The Project would have a significant environmental impact if it would exceed BAAQMD’s emission rate thresholds of any criteria pollutant, as shown in **Table 4**.

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<sup>3</sup> Bay Area Air Quality Management District. June 2, 2010. News Release [http://www.baaqmd.gov/~media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2010/ceqa\\_100602.ashx](http://www.baaqmd.gov/~media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2010/ceqa_100602.ashx) .

<sup>4</sup> Bay Area Air Quality Management District. June 2010. *California Environmental Quality Act Air Quality Guidelines*.

<sup>5</sup> BAAQMD, *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Project and Plans*, December 1999.





**TABLE 4: BAAQMD CRITERIA POLLUTANT THRESHOLDS OF SIGNIFICANCE**

Pollutant Criteria Air Pollutants and Precursors (Regional)	Construction-Related		Operational-Related	
	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	54	10
NOX	54	54	54	10
PM10	82 (exhaust only)	82	82	15
PM2.5	54 (exhaust only)	54	54	10
PM10/PM2.5 (fugitive dust)	Best Management Practices		None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)		

Source: BAAQMD Adopted Air Quality CEQA Thresholds of Significance - June 2, 2010

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project’s individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region’s existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.

Construction Impacts

**Impact Air 1: Construction Dust and Exhaust.** Construction activity involves a high potential for the emission of air pollutants. Construction activities would generate exhaust emissions from vehicles/equipment and fugitive dust particles that could affect local air quality.

Construction-related emissions are generally short-term in duration, but may still cause adverse air quality impacts. Respirable particulate matter (PM<sub>10</sub>) is the pollutant of greatest concern with respect to construction activities, because most construction equipment is powered by diesel motors, which emit soot in addition to carbon monoxide (CO) and ozone precursors. Carbon monoxide and ozone precursors, however, are included in the emission inventory that is the basis for regional air quality plans and are not expected to impede attainment or maintenance of ozone and CO standards in the Bay Area.<sup>6</sup>

Based upon the ultimate residential development of 8 units, the Project is below BAAQMD’s applicable construction-related screening size criterion of 114 dwelling units, but does require quantification of construction-period emissions because of the extensive earth-moving activities proposed.<sup>7</sup>

<sup>6</sup> Ibid., p. 13.

<sup>7</sup> Bay Area Air Quality Management District. June 2010. *California Environmental Quality Act Air Quality*



Construction-period emissions for criteria pollutants and precursors have been calculated using the URBEMIS2007 model (calculation sheets can be found in **Attachment A**). Construction of the Project would result in maximum emissions of 5.75 lbs/day ROG, 48.01 lbs/day NO<sub>x</sub> and construction-period exhaust emissions of 2.42 lbs/day PM<sub>2.5</sub> and 2.63 lbs/day PM<sub>10</sub> (fugitive dust emissions are calculated separately below). These emissions levels are below BAAQMD thresholds presented in **Table 4** and therefore determined to be a *less than-significant* impact.

Demolition and earth-moving activities can result in fugitive dust, which contributes to particulate matter levels. Construction-period dust emissions of 80.21 lbs/day PM<sub>2.5</sub> and 384.05 PM<sub>10</sub> have been calculated using the URBEMIS2007 model (calculation sheets can be found in Attachment A). BAAQMD does not have a threshold of significance for fugitive dust impacts, but instead regards fugitive dust impacts to be less than significant if appropriate management practices are implemented.

BAAQMD recommends implementation of basic construction mitigation measures to reduce construction-related dust and emissions for all projects, regardless of the significance level of construction-period impacts. These basic measures are included in Mitigation Measure Air-1, below and would further reduce already *less than significant* construction-period air quality impacts.

### Operational Impacts

The Project would result in subdividing the site into eight 20-acre lots. Subsequent development of those lots will include planting orchards and construction of one single-family residence per lot. Subsequent development of the lots would occur pursuant to the County's Site Development Review process. The 8 lots proposed would be well below BAAQMD's screening level for single-family home projects, which is 325 dwelling units. Projects below the screening level are assumed to have operational emissions below threshold levels and would be considered *less than significant* without quantification.

### Mitigation Measures

Construction-related fugitive dust and particulate matter impacts are regarded as less than significant if appropriate management practices are taken, therefore, the following control measures for construction emissions of PM<sub>10</sub> will be required:

**MM Air-1: Basic Construction Management Practices.** The Project shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures".

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.



2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

### Resulting Level of Significance

Implementation of MM Air-1 above, requiring compliance with BAAQMD's Basic construction control measures will further reduce already *less than significant* construction-period emission impacts.

### Sensitive Receptors

Would the Project:

- d) Expose sensitive receptors to substantial pollutant concentrations?

The Project site is in the South Livermore Valley, a rural agricultural area of Alameda County. The dominant land use designation in this area of the County is agricultural. There are no schools, hospitals, elderly care facilities or other type of land use in the vicinity of the Project site that would typically attract sensitive receptors. In terms of air quality, construction activities typically have the greatest impact on sensitive receptors; however, the Project would be required to implement the BAAQMD's control measures for construction emissions, as outlined in MM Air-1, above. Therefore, the Project's potential impact to sensitive receptors is *less than significant*.



## **Objectionable Odors**

Would the Project:

- e) Create objectionable odors affecting a substantial number of people?

The land uses proposed under this Project do not have the potential to frequently and significantly expose members of the public to objectionable odors. The Applicant proposes residential use among agricultural uses. Any future agricultural practices with the potential to create objectionable odors would be required to obtain the appropriate permits prior to their application. Furthermore, the Project site is located in a rural/agricultural area of the County where a) agricultural practices similar to those proposed already occur and, b) due to the rural/agricultural surroundings, sensitive receptors are not present in significant numbers. Therefore, impact associated with the Project's potential to create objectionable odors affecting a substantial number of people would be *less than significant*.



## BIOLOGICAL RESOURCES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES — Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	[ ]	[ ✓ ]	[ ]	[ ]
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations; or by the California Department of Fish and Game or US Fish and Wildlife Service?	[ ]	[ ]	[ ✓ ]	[ ]
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	[ ]	[ ✓ ]	[ ]	[ ]
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	[ ]	[ ]	[ ✓ ]	[ ]
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	[ ]	[ ]	[ ]	[ ✓ ]
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	[ ]	[ ]	[ ]	[ ✓ ]

The Project Applicant retained Analytical Environmental Services to prepare a Biological Resource Assessment for the Project site (August, 2008 and updated 2011) based on a query of the California Natural Diversity Database and a reconnaissance-level site visit conducted November 22, 2010. On behalf of the County, Zander Associates conducted a peer-review of the Applicant's Biological Resource Assessment. The full text of each study is provided in **Appendix B** of this Initial Study.



Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), and other resource organizations, including the California Native Plant Society. Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps.), California Regional Water Quality Control Board (RWQCB), and CDFG.

## General Site Characteristics

The property comprises approximately 160 acres in an unincorporated portion of eastern Alameda County, California just southeast of the City of Livermore. The site is bordered by Greenville Road to the west, Poppy Ridge Golf Course to the east and southeast and open land to the north and south. An intermittent drainage, shown as a blue line creek on the Altamont 7.5 minute USGS quadrangle, runs east to west through the center of the property. South of the drainage the topography is composed of moderately sloped rolling hills while to the north, the site is relatively flat. The dominant vegetation consists of non-native annual grassland, which is heavily grazed by cattle. A few valley oak trees occur along the main drainage, otherwise there are no trees or shrubs on the property. Photographs of site are shown in **Figures 7 to 9**.

A relatively large stock pond has been constructed within the main drainage where it enters the southeastern portion of the property. Another large pond constructed for the Poppy Ridge Golf Course lies just south of the property boundary. Analytical Environmental Services identified a minor network of ephemeral drainages in the southern half of the property and two seasonal wetlands near the southeast corner that are fed by culverts from the adjacent golf course.

## Vegetation Community and Wildlife Habitat Types

Six vegetation community types were identified to occur on the Project site (see **Figure 10**): annual grassland, ruderal developed, intermittent drainage, ephemeral drainage, seasonal wetland and a stock pond. The aquatic communities are further discussed in the waters of the U.S. section.

### Annual Grassland

Annual grassland, characterized by annual grasses and forbs, dominates the majority of the Project site. Typical grasses found within the site include: soft brome (*Bromus hordeaceus*), Medusa-head (*Taeniatherum caput-medusae*), wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*) mediterranean barley (*Hordeum marinum*) and ryegrass (*Lolium multiflorum*). Forbs observed during the site visit include: hop clover (*Trifolium campestre*), filaree (*Erodium botrys*), bull thistle (*Cirsium vulgare*), and California poppy (*Eschscholzia californica*). There are a total of five trees, all Valley oaks (*Quercus lobata*), located on the Project site.





**PICTURE 1:**  
The main ephemeral channel looking west towards Greenville Road.



**PICTURE 2:**  
Varying degrees of bank depth along the main channel.



**PICTURE 3:**  
One of the ephemeral drainages that feeds into the main channel.



**PICTURE 4:**  
Main channel running along side of the ranch road looking northwest







**PICTURE 5:**  
Stock pond located at the southeastern corner of the project site looking north.



**PICTURE 6:**  
Looking southeast across the stock pond towards the adjacent golf course.



**PICTURE 7:**  
Stock pond with bullfrogs.







**PICTURE 8**

Existing ranch infrastructure located just south of the ranch road.



**PICTURE 9**

Ground squirrel burrows along an ephemeral drainage on the project site.

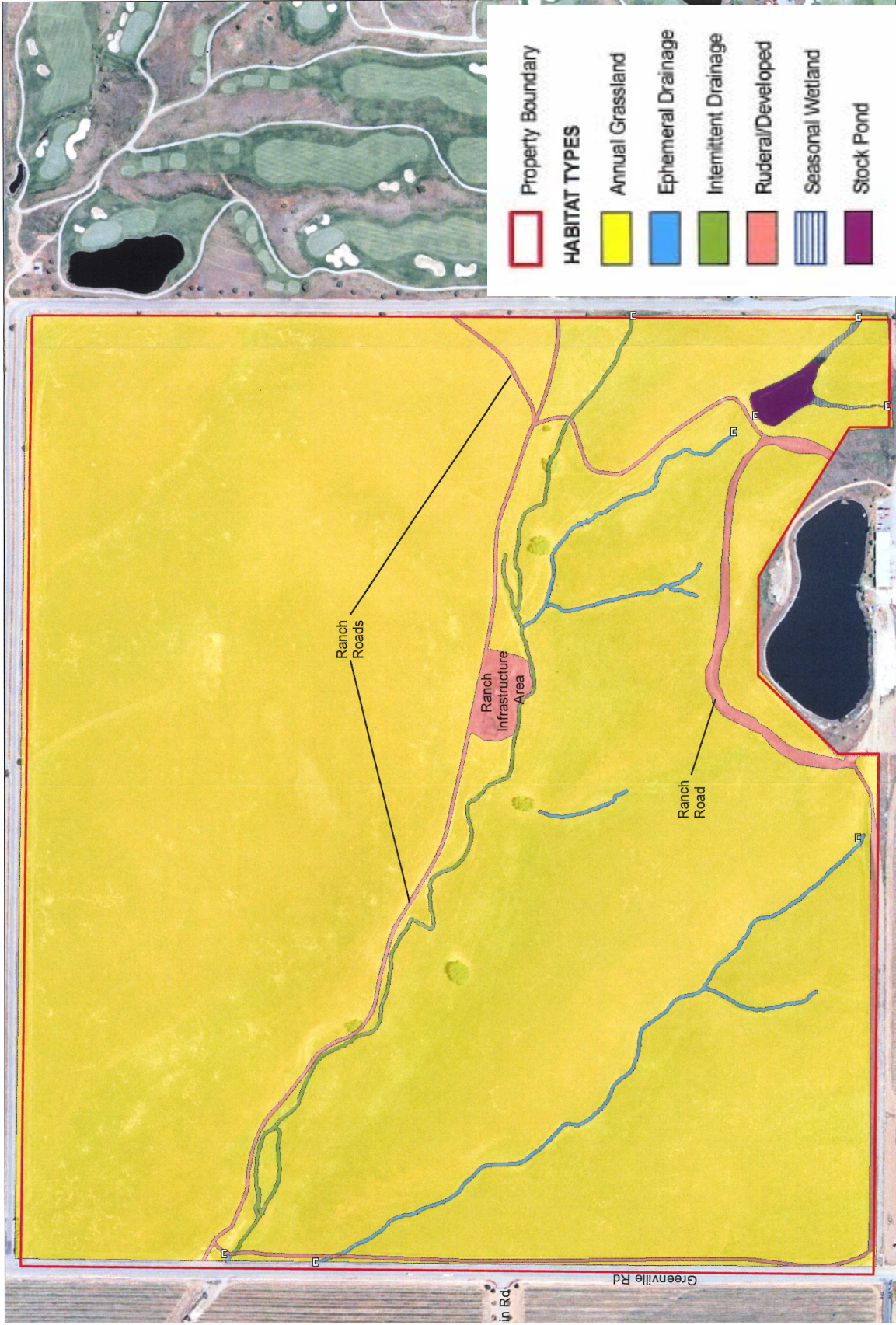


**PICTURE 10**

Ground squirrel burrows present in the grassland habitat.







**Figure 10**  
**Project Site Habitat Types**



### Ruderal/Developed

A small portion of the Project site is developed with a ranch road and an area with existing ranch infrastructure. The ranch road is a ten-foot wide dirt road that runs across the Project site from west to east along the main channel as well as along the west and southern boundaries of the site. The ranch infrastructure area lies on the south side along the ranch road in about the middle of the Project site. Photographs of the ruderal/developed areas are shown in Figure 9.

### Intermittent Drainage

One main intermittent drainage runs from east to west across the Project site. Dominant vegetation observed in the vicinity of the drainage includes: toad rush (*Juncus bufonius*), seaside barley (*Hordeum marinum*), fiddle dock (*Rumex pulcher*) and Fitch's tarweed (*Hemizoniajitchii*). Photographs of the intermittent drainage are shown in Figure 7: Photos 1, 2 and 4.

### Ephemeral Drainage

Six ephemeral drainages occur along the southern side of the main intermittent drainage. Dominant vegetation observed in the vicinity of the ephemeral channels includes: toad rush, barley, fiddle dock, Fitch's tarweed, and pennyroyal (*Mentha pulegium*). Photographs of the ephemeral drainages are shown in Figure 7: Photo 3 and Figure 9: Photo 9.

### Seasonal Wetland

Two seasonal wetlands are located at the southeast corner of the Project site. These two wetlands receive water through culverts that are located at the edge of the property boundary. One culvert is located south along the fence and the second culvert is located at the southeastern part of the property. Dominant vegetation observed in the seasonal wetlands include: Italian thistle (*Carduus pycnocephalus*), fiddle dock, pennyroyal and Bermuda grass (*Cynodon dactylon*). Photographs of the seasonal wetlands are shown in Figure 8: Photo 5.

### Stock Pond

One stock pond occurs at the southeast corner of the Project. Dominant vegetation observed in the vicinity of the pond includes: parrot feather watermilfoil (*Myriophyllum aquaticum*) and fiddle dock and pennyroyal lining the perimeter of the pond. Photographs of stock pond are shown in Figure 8: Photos 5, 6 and 7.

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

An informal delineation of the Project site was conducted by AES biologists to determine the presence of potentially jurisdictional Waters of the U.S. and isolated wetland features. This report is located in **Appendix B** Aerial photographs, topographic maps and satellite imagery were reviewed prior to the



wetland delineation field work to assure that all depressional areas with the potential to hold, convey or pond water were assessed. One perennial stock pond with two small branching tributaries, a minor network of ephemeral drainages and a main ephemeral channel were delineated on the southern half of the Project site (see **Figure 11**).

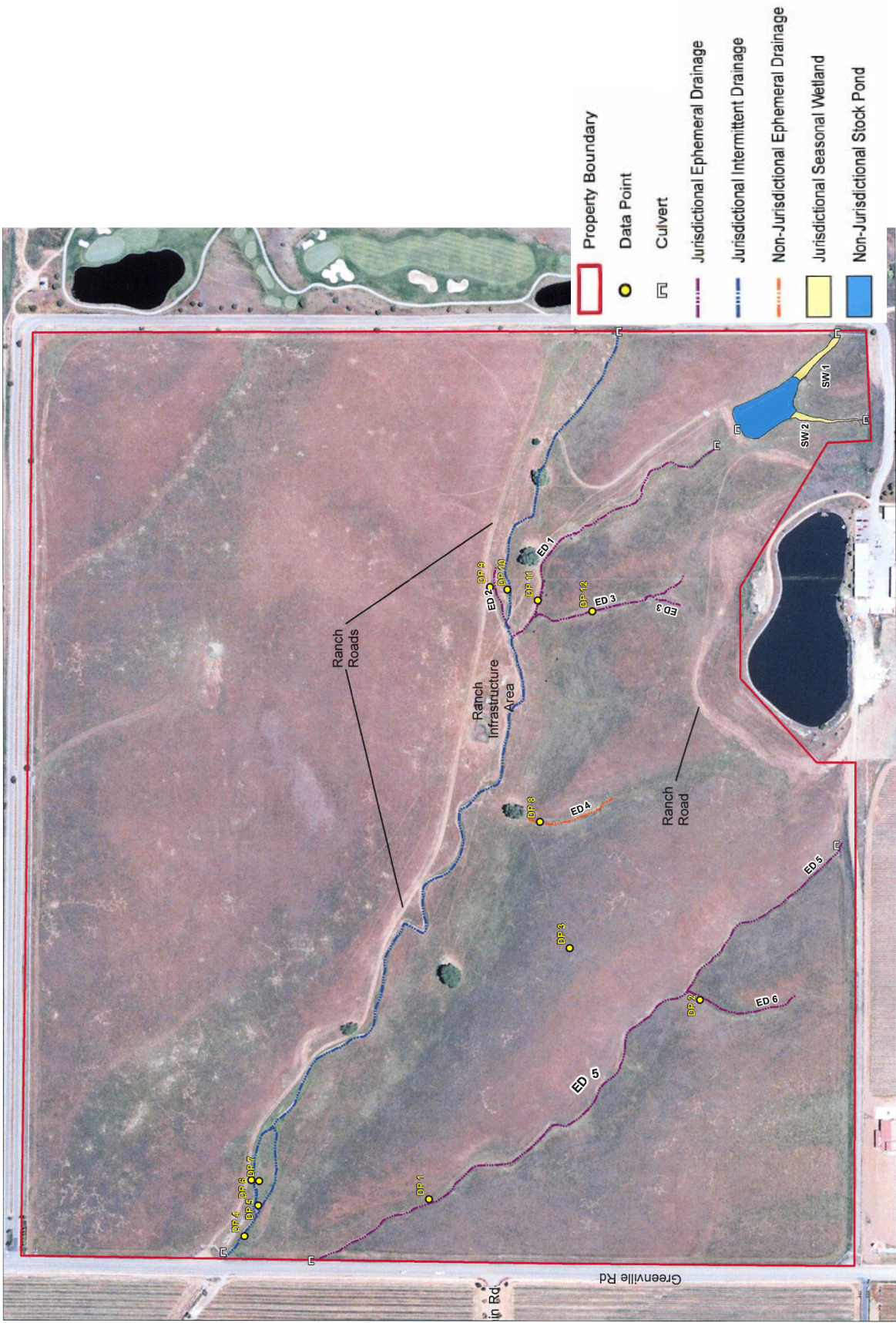
The Project site is bisected from the southeastern corner of the property to the northwestern corner by a well-defined ephemeral channel that conveys a majority of the sites overland runoff, as well as a substantial volume of offsite flow. This arterial channel receives runoff from the neighboring golf course at two points. A culvert enters the eastern property boundary conveying offsite waters into the main channel approximately 500 feet north of the southeastern site boundary. At this southeast corner of the site water also enters via two culverts that feed the small braches of the existing stock pond. This stock pond, when full, conveys water through a culvert into the easternmost ephemeral branch of the main channel.

The southern half of the property is dominated by rolling hills with moderate slopes. These hills are separated by three additional ephemeral drainages to the west that convey most of the overland flow in this area. Two of these significantly smaller ephemeral drainages drain down into the middle of the main channel in this area. The westernmost drainage onsite crosses the southwestern quadrant of the property and discharges offsite before connecting offsite to the main channel. The main ephemeral channel is well-defined until it reaches the western property boundary; where it then branches out and reconnects prior to exiting the site via a culvert under Greenville Road. The northern half of the site is mildly sloped from the eastern site boundary towards the west and supports no wetland features. Dominant plants species observed in the ephemeral features consist of but are not limited to: seaside barley, fiddle dock and slender tarweed.

These features have the potential to be considered jurisdictional Waters of the U.S., and may be subject to US Army Corps of Engineers (USACE) regulation under Section 404 of the Clean Water Act. The features may also be subject to DFG regulation under Sections 1600 - 1616 of the Fish and Game Code. Photographs of the ephemeral drainages and channel are shown in Figures 6 through 8. Further analyses of these features are discussed in the Waters of the United States Delineation Report provided in Appendix B.







**Figure 11**  
Waters of the U.S.

## Special-Status Species

Based on the CNDDDB special-status species five-mile radius search described above (see **Figure 12**), the biological habitats onsite were determined to have the potential to support twelve special-status plant species and seventeen special-status animal species. The name, regulatory status, distribution, habitat requirements, and period of identification for these species are identified in Table 1 of the Biological Resources Assessment prepared by AES and located in Appendix B of this document.

### Special-Status Plants

The Project site contains habitat for twelve special-status plant species. Suitable habitat for the following species is present in or adjacent to the Project site.

Big-scale Balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*); Federal Status: None; State Status: None; Other: CNPS List IB

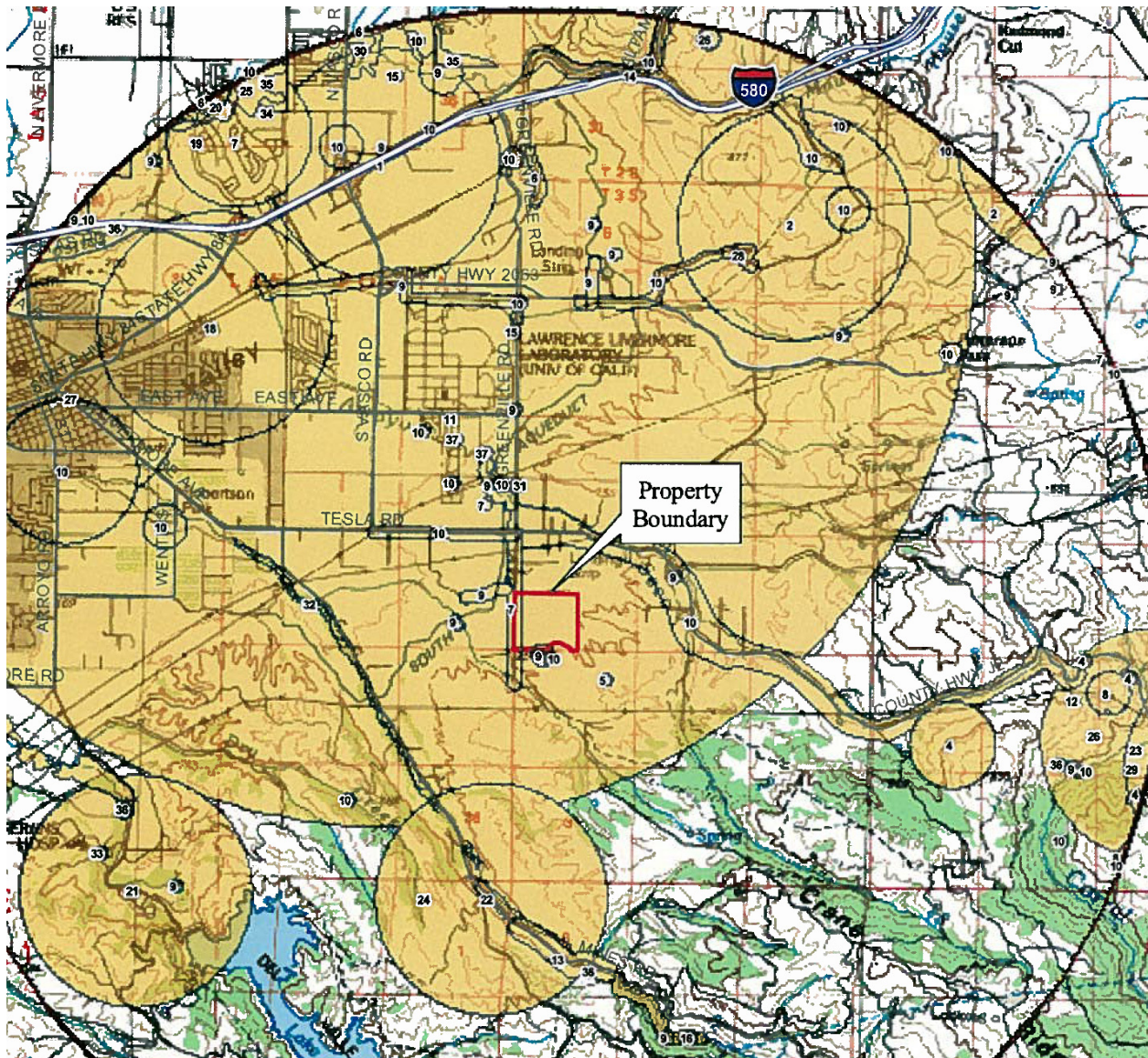
Big-scale balsamroot is a fleshy tap-rooted perennial herb that occurs in chaparral, cismontane woodland, and valley and foothill grassland. It sometimes occurs on serpentine substrates. Big-scale balsamroot occurs at elevations that range from 90-1,400 meters above mean sea level (msl). This species blooms from March through June. The known range of big-scale balsamroot includes Alameda, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Solano, Sonoma, and Tehama counties. The nearest documented occurrence of this species is located approximately 0.5 mile southeast of the site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Big-scale balsamroot was not observed within the site during the bloom season surveys.

Big Tarplant (*Blepharizonia plumosa*); Federal Status: None; State Status: None; Other: CNPS List 1B

Big tarplant is a strongly-scented annual herb that occurs in valley and foothill grasslands exclusively. It occurs at elevations that range from 30 to 505 meters above msl. This species blooms from July through October. The known range of big tarplant includes Alameda, Contra Costa, San Benito, San Joaquin, San Luis Obispo, Solano, and Solano counties, though it may be extirpated from Solano County. The nearest documented occurrence of big tarplant is located approximately three miles east of the site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Big tarplant was not observed within during the bloom season surveys.







- |                                  |   |                                  |                                 |
|----------------------------------|---|----------------------------------|---------------------------------|
| 1 - alkali milk-vetch            | 11 - caper-fruited tropidocarpum        | 21 - hoary bat                   | 31 - San Joaquin whipsnake      |
| 2 - American badger              | 12 - chaparral ragwort                  | 22 - Hospital Canyon larkspur    | 32 - Sycamore Alluvial Woodland |
| 3 - bald eagle                   | 13 - coast (California) homed lizard    | 23 - Lemmon's jewelflower        | 33 - Townsend's big-eared bat   |
| 4 - big tarplant                 | 14 - curved-foot hygrotus diving beetle | 24 - pallid bat                  | 34 - Valley Sink Scrub          |
| 5 - big-scale balsamroot         | 15 - ferruginous hawk                   | 25 - palmate-bracted bird's-beak | 35 - vernal pool fairy shrimp   |
| 6 - brittlescale                 | 16 - foothill yellow-legged frog        | 26 - round-leaved filaree        | 36 - western pond turtle        |
| 7 - burrowing owl                | 17 - golden eagle                       | 27 - saline clover               | 37 - western spadefoot          |
| 8 - California horned lark       | 18 - hairless popcorn-flower            | 28 - San Joaquin kit fox         |                                 |
| 9 - California red-legged frog   | 19 - heartscale                         | 29 - San Joaquin pocket mouse    |                                 |
| 10 - California tiger salamander | 20 - hispid bird's-beak                 | 30 - San Joaquin spearscale      |                                 |

Stockton, CA." USGS 100K Topographic Quadrangle; California Natural Diversity Data Base, 8/2008

**Figure 12**  
Special Status Species Data



Source: AES 2008

Bent-flowered Fiddleneck (*Amsinckia lunaris*); Federal Status: None; State Status: None; Other: CNPS 1B

The bent-flowered fiddleneck is an annual herb from the *Boraginaceae* family. The flowers are bright orange trumpet shaped, situated on a one sided coil, with a five-petal calyx. Habitat for this species is coastal scrub, valley foothill grasslands, and cismontane woodlands at elevations between 50-500 meters. Blooming periods are from March-June. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Bent-flowered fiddleneck was not observed within the Project site during the bloom season surveys.

Caper-fruited *Tropidocarpum* (*Tropidocarpum capparideum*); Federal Status: None; State Status: None; Other: CNPS List 1B

Caper-fruited *tropidocarpum* is an annual herb that occurs exclusively in valley and foothill grassland. It has an affinity for alkaline hilly soils. This species occurs at elevations that range from 1 to 455 meters above msl and it blooms from March through April. The known range of caper-fruited *tropidocarpum* includes Alameda, Contra Costa, Fresno, Glenn, Monterey, Santa Clara, San Joaquin, and San Luis Obispo counties. Although the status and/or identity of the documented occurrences within Alameda, Contra Costa, Glenn, Santa Clara, and San Joaquin counties is uncertain. The nearest documented occurrence of this species is located approximately 1.5 miles northwest of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Caper-fruited *tropidocarpum* was not observed within the site during the bloom season surveys.

Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*); Federal Status: None; State Status: None; Other- CNPS 1B

An annual member of the sunflower (*Asteraceae*) family, Congdon's tarplant has yellow ray and dish flowers with yellow anthers (as opposed to other members of the *Centromadia parryi* species, which have black anthers). It generally occurs in alkaline soils in valley and foothill grassland habitats and blooms from May to October. In Alameda County, this species generally occurs in annual grassland habitat, sometimes in grazed fields. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. This species was not observed within the Project site during the bloom season surveys.

Contra Costa Goldfields (*Lasthenia conjugens*); Federal Status: Endangered; State Status: None; Other: CNPS 1B

Contra Costa goldfields are distributed along the North (Marin, Mendocino and Sonoma Counties), Central (Monterey County), and South (Santa Barbara County) Coasts; San Francisco Bay Area (Alameda, Contra Costa, Napa and Santa Clara Counties); and southern Sacramento Valley (Solano County) near the Delta. This member of the composite family (*Asteraceae*) occurs in vernal pools,





woodland, grassland, and alkaline playas, up to about 500 meters. Its blooming period extends from March to June. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. This species was not observed within the Project site during the bloom season surveys.

Hispid Bird's-beak (*Cordylanthus mollis* ssp. *hispidus*); Federal Status: None; State Status: None; Other: CNPS List 1B

Hispid bird's-beak is an annual parasitic herb that occurs in meadows and seeps, playas, and valley and foothill grassland habitats, especially on alkaline soils. It occurs at elevations that range from 1 to 155 meters above msl. Hispid bird's-beak blooms from June through September. The known range of this species includes Alameda, Fresno, Kern, Merced, Placer, and Solano counties. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Hispid bird's-beak was not observed within the Project site during the bloom season surveys.

Large Flowered Fiddleneck (*Amsinckia grandiflora*); Federal Status: Endangered; State Status: Endangered; Other: CNPS List 1B

Large flowered fiddleneck is an annual herb that occurs in cismontane woodland and valley and foothill grassland habitats. It occurs at elevations that range from 275 to 550 meters above msl. Large flowered fiddleneck blooms from April through May. The known range of this species includes Alameda, Contra Costa, and San Joaquin counties. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Large flowered fiddleneck was not observed within the Project site during the bloom season surveys.

Lemmon's Jewel Flower (*Caulanthus coulteri* var. *lemmonii*); Federal Status - None; State Status - None; Other - CNPS List 1B

Lemmon's jewel flower is an annual herb that occurs in pinyon and juniper woodland and valley and foothill grassland. This species occurs at elevations that range from 80 to 1,220 meters above msl. It blooms from March through May. The known range of Lemmon's jewel flower includes Alameda, Fresno, Kings, Kern, Merced, Monterey, Santa Barbara, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Ventura counties, though it may be extirpated from Alameda County. The nearest documented occurrence of this species is located approximately 4.75 miles east of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for Lemmon's jewel flower. This species was not observed within the site during the bloom season surveys.

Mount Diablo Fairy-lantern (*Calochortus pulchellus*); Federal Status: Species of Local Concern; State Status: None; Other-CNPS 1B

Until recently, Mt. Diablo fairy lantern was thought to be restricted to the area around Mt. Diablo in Contra Costa County. It has been, in recent years, documented in Solano County. A member of the Lily



family (*Liliaceae*), this species occurs in chaparral, wooded slopes, and grassland, up to about 840 meters. Its blooming period ranges from April to June. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Mt. Diablo Fairy-lantern was not observed within the Project site during the bloom season surveys.

Most Beautiful Jewel Flower (*Streptanthus albidus* ssp. *peramoenus*); Federal Status: None; State Status: None; Other- CNPS List 1B

Most beautiful jewel flower is an annual herb that occurs in chaparral, cismontane woodland, and valley and foothill grassland habitats. It has an affinity to serpentine soil types. This species occurs at elevations that range from 94 to 1,000 meters above msl. Most beautiful jewel flower blooms from April through September and occasionally blooms into the months of March and October. The known range of this species includes Alameda, Contra Costa, Monterey, Santa Barbara, Santa Clara, San Luis Obispo, and Stanislaus counties. This species has not been documented within a five-mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the Project site is suitable for this species. Most beautiful jewel flower was not observed within the Project site during the bloom season surveys.

Saline Clover (*Trifolium depauperatum* var. *hydrophilum*); Federal Status: None; State Status: None; Other: CNPS List 1B

Saline clover is a fleshy annual herb that occurs in marshes and swamps, vernal pools, and valley and foothill grassland. Within grassland habitats it has an affinity to alkaline soils or mesic areas. This species occurs at elevations that range from 0 to 300 meters above msl. Saline clover blooms from April through June. The known range of this species includes Alameda, Colusa, Monterey, Napa, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Solano, and Sonoma counties, although the status and/or identity of the occurrences in Colusa County are uncertain. The nearest documented occurrence of saline clover is located approximately four miles northwest of the Project site (CDFG, 2003). The annual grassland within the site is suitable habitat for this species. Saline clover was not observed within the Project site during the bloom season surveys.

### Special-Status Invertebrates

The Project site contains habitat for two special-status invertebrate species.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*); Federal Status: Threatened; State Status: None; Other-None

Vernal pool fairy shrimp inhabit vernal pools of the Central Valley and Coast Ranges from elevations that range from 10 to 290 meters. Vernal pool fairy shrimp are found most commonly in small swales, earth slumps, or basalt-flow depression basins with grassy or muddy bottoms in unplowed soils, and occasionally in clear in depressions less than 1.0-meter diameter, in sandstone outcrops surrounded by foothill grasslands. Vernal pool fairy shrimp occur in waters between 4.5 and 23°C, with low to moderate



total dissolved solids (48 to 481 parts per million (ppm), and a pH between 6.3 and 8.5 (Syr Dahl, 1993; Eriksen and Belk, 1999). When the vernal pools fill with rainwater, fairy shrimp hatch from cysts (shell-covered dormant embryos) present in the soil from previous years of breeding. Eggs normally hatch in waters less than 10°C fills vernal pools, reach maturity approximately 18 days under conditions when daytime temperatures reach 20°C, but 41 days are more typical if water remains near 15°C (Gallagher, 1996; Helm, 1998). This species was listed as threatened by the USFWS in September of 1994 (59 Federal Register 4813648153) and is discussed in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS, 2005). Originally, this species likely occurred in vernal pools throughout the Central Valley in California and as far north as southern Oregon. Currently, this species is known to occur in 28 counties throughout the Central Valley and Coast Ranges of California, but its populations are generally small and relatively spread out. Suitable habitat consists of vernal pools in a variety of habitats. Based on recorded occurrences, this species is not likely to occur in large vernal pools or playas. It appears to prefer smaller vernal pools, though these pools may be part of a larger vernal pool complex. (USFWS, 2005) There are two documented occurrences of this species within five miles of the Project site (CDFG, 2003). The Project site does not support vernal pool habitat suitable for the potential occurrence of this species. Critical habitat for vernal pool tadpole shrimp is located approximately 4 miles northwest of the Project site. This species was not observed on the Project site during the biological surveys.

Vernal Pool Tadpole shrimp (*Lepidurus packardii*); Federal Status: Endangered; State Status: None

The vernal pool tadpole shrimp (*Lepidurus packardii*) is a small crustacean in the family *Triopsidae*. It has compound eyes, a large shield-like carapace (shell) that covers most of the body, and a pair of long cercopods (appendages) at the end of the last abdominal segment. Vernal pool tadpole shrimp adults reach a length of 2 inches in length. This animal inhabits vernal pools containing clear to highly turbid water, ranging in size. The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is re-established from cysts that lie dormant in the dry pool sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons (USFWS, 2003). Due to the extensive loss of vernal pools in the Central Valley, the USFWS listed the vernal pool tadpole shrimp as threatened in 1994 pursuant to FESA. There are no documented occurrences of this species within five miles of the Project site (CDFG, 2003). The Project site does not support vernal pool habitat suitable for the potential occurrence of this species. This species was not observed on the Project site during the biological surveys. Critical habitat for vernal pool tadpole shrimp is outside of the five-mile radius of the Project site.

Special-Status Amphibians

The Project site contains habitat for four special-status amphibian species.



California Red-legged Frog (*Rana aurora draytonii*); Federal Status: Threatened; State Status: Species of Concern

California red-legged frog (CRLF) is primarily an aquatic species, though it may use adjacent upland habitat during the non-breeding season. Aquatic habitat consists of low-gradient freshwater bodies, including ponds, marshes, lagoons, seeps, springs, and backwaters within streams and creeks. While CRLF can occur in either ephemeral or perennial streams or ponds, populations generally cannot be maintained in ephemeral streams in which surface water disappears before metamorphosis (July to September). Adults seek waters with dense shoreline vegetation such as willows (*Salix* sp.) and cattails. During the non-breeding season, frogs may use upland habitat that provides shade, moisture, and cooler temperatures, such as spaces under boulders and organic debris. CRLF may utilize small mammal burrows on the banks of water features for up to 100 meters from the water at any time of the year, as well as small ephemeral bodies of water in a variety of upland settings (USFWS, 2005). There are five documented occurrences of CRLF within a one mile radius of the site. This species has been documented to occur within a polygon on the Project site (CNDDDB Record Occurrence Number 256). J. Dreier heard the calls of a single individual on December 7, 1997. Access to the pond, where the calls were coming from was restricted, so no actual frogs were observed (CDFG, 2003). The stock pond within the Project site is considered suitable aquatic breeding habitat. Surrounding annual grassland areas within 100 meters of the stock pond provide suitable upland habitat for this species. The Project site does not fall within either of the Alameda County CRLF designated critical habitat units. CRLF were not observed on the Project site during the biological surveys.

California Tiger Salamander (*Ambystoma californiense*); Federal Status: Threatened; State Status: Species of Concern

California tiger salamanders (CTS) require suitable aquatic habitat for breeding and upland habitat for aestivation. Aquatic breeding habitat includes vernal pools, and seasonal and perennial ponds in grassland and oak savannah plant communities from sea level to approximately 3,600 feet. Aquatic breeding ponds are almost always found in grassland habitats. CTS spend most of their lives in upland habitats. In general, breeding occurs between December and March. Upland habitat consists of grassland and oak savannah with burrows of small mammals such as California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*). They cannot dig or maintain their own burrows, and consequently require the presence of burrowing mammals for burrow construction and maintenance. There are four documented occurrences of CTS within a one mile radius of the Project site. CNDDDB Occurrence Number 499 is located within the immediate vicinity of the site and due to the inherent margin of error may have actually occurred within the Project site boundary. Wetlands Research Associates (WRA) observed four CTS during surveys they conducted in 1994 and observed ten CTS in 1996 within their study area. Their study area was a parcel, approximately 3.5-acres in size, which was composed of non-native annual grassland habitat with numerous ground squirrel burrows. Their study area contained one small seasonal pond fed by an ephemeral drainage and one larger seasonal pond is mentioned west of their study site (CDFG, 2003). The stock pond within the Project site is considered suitable breeding habitat for CTS while the annual grassland habitat and numerous ground squirrel burrows within the site are considered suitable aestivation habitat for this species. CTS were not observed



within the site during the surveys. Critical habitat has been designated for this species and Unit 18 is within Alameda County (USFWS, 2005). However, the Project site does not fall within this CTS designated critical habitat unit.

Foothill Yellow Legged Frog (*Rana boylei*); Federal Status: None; State Status: Species of Concern

The foothill yellow-legged frog ranges from Oregon south through the Coast Ranges to the Transverse Mountains in Los Angeles County, California, and through the western slope of the Sierra Nevada from Oregon south to Kern County, California. The majority of healthy populations in California are in coastal counties of northern California (CDFG, 2002; NatureServe, 2006). This species requires shallow, flowing water and appears to prefer small- to moderate-sized streams that have at least some cobble-sized substrate. Egg-laying occurs between late March and early June, after the high flows of winter and spring (Jennings and Hayes, 1994). Foothill yellow-legged frogs are active all year in warmer locations, and may hibernate in colder areas. Unlike the California red-legged frog, the foothill yellow-legged frog is rarely found far from permanent water. It spends most of its time in or near streams in all seasons. Tadpoles require water for at least three or four months before developing into terrestrial frogs. During periods of inactivity, foothill yellow-legged frogs seek cover under rocks in streams or within a few meters of water. Significant migrations or other seasonal movements from breeding areas have not been reported (CDFG, 2002). There is one documented occurrence of this species approximately three miles south of the Project site (CDFG, 2003). The Project site does not support habitat suitable for the potential occurrence of this species. This species was not observed on the Project site during the biological surveys.

Western Spade-foot Toad (*Spea hammondi*); Federal Status: None; State Status: Species of Concern

The western spade-foot toad occurs throughout the Central Valley and adjacent foothills (including the Sierra foothills). It also occurs in the Southern Coast Range from Santa Barbara County to the Mexican border. This species primarily inhabits lowlands, including such features as washes, floodplains of rivers, alluvial fans, playas, and alkali flats. The toad is almost completely terrestrial, entering water only to breed. Preferring areas of short grasses, where soil is sandy or gravelly, it can be found in valley and foothill grasslands, open chaparral, and pine-oak woodlands. Though some surface activity may occur in any month between October and April, it typically becomes surface-active following relatively warm rains in late winter-spring and fall. The western spade-foot toad breeds in temporary pools, such as vernal pools, or pools in ephemeral waterways. In order for young to successfully metamorphose, breeding pools must lack exotic predators, such as fishes, bullfrogs, and crayfishes. Breeding occurs between January and May (CDFG, 2005; Stebbins 2003). There is one documented occurrence of this species approximately one mile north of the Project site (CDFG, 2003). The Project site does support habitat suitable for the potential occurrence of this species. This species was not observed on the Project site during the biological surveys.

Special-Status Reptiles

The Project site contains habitat for four special-status reptile species.



Western Pond Turtle (*Actinemys marmorata*); Federal Status: None; State Status: Species of Concern

The western pond turtle (*Actinemys marmorata*) occurs in suitable habitats throughout California. Suitable habitat consists of any permanent or nearly permanent water body or stream with suitable refuges, basking sites, and nesting sites. Refuge sites can be submerged logs or rocks or mats of floating vegetation. Basking sites can be partially submerged rocks or logs, as well as shallow-sloping banks with little or no cover. This species constructs nests in sandy banks if present, or in soils up to 100 meters away from aquatic habitat as at least ten centimeters deep. The nests must have a relatively high humidity in order for the hatchlings to avoid desiccation. This species eats a variety of organisms, including aquatic plants, beetles, fish, and frogs. (CDFG, 2005) The northwestern pond turtle (*Actinemys marmorata marmorata*) is one of two subspecies of the western pond turtle. This subspecies occurs from Washington State south to the Central Valley of California. It is found in Pacific-slope drainages to an elevation of approximately 4,700 feet, and has the same habitat requirements as the species. This subspecies generally leaves the aquatic site only to reproduce and to hibernate. Hibernation typically takes place from October or November to March or April. Egg-laying typically occurs in May and June (Jennings and Hayes, 1994; CDFG, 2002; Stebbins, 2003). Northwestern pond turtles intergrade with southwestern pond turtles (*Actinemys marmorata pallida*) in California's Central Valley and San Francisco Bay Area (NatureServe, 2008). It differs from the northwestern pond turtle both in geographical range and in physical characteristics (poorly developed inguinal scutes and color of the throat [NatureServe, 2008]). This subspecies has the same habitat requirements as the western and northwestern pond turtles. There are five documented occurrences of this species within five miles of the site (CDFG, 2003). The stock pond onsite is suitable habitat for the potential occurrence of this species. This species was not observed on the Project site during the biological surveys.

San Joaquin Whipsnake (*Masticophis flagellum ruddocki*); Federal Status: None; State Status: Species of Concern

The San Joaquin whipsnake, also known as the San Joaquin coachwhip, is a large, smooth-scaled, large eyed, slender snake. Its range stretches from Colusa County in the Sacramento Valley to Kern County in the San Joaquin Valley, with an isolated population occurring in the Sutter Buttes. This species is diurnal and maintains a high activity level when on the surface. Similar to other *M. flagellum* subspecies, it voluntarily maintains a higher active body temperature than most other snakes. As a result emergence tends to be relatively late in the season (usually April to early May) and later in the morning (ca. 1000-1100 hr), although some evidence exists that smaller (younger) individuals emerge earlier in the day and the season than larger (older) snakes. This species occurs in open, dry, vegetative associations with little or no tree cover. In the western San Joaquin Valley, it occurs in valley grassland and saltbush scrub associations and is known to climb bushes such as *Atriplex* ssp. for viewing prey and potential predators. It uses mammal burrows for refuge and oviposition (CDFG, 2006). There is one documented occurrence of this species within one mile of the Project site. The Project site does support habitat suitable for the potential occurrence of this species. This species was not observed on the Project site during the biological surveys.



Alameda Whipsnake (*Masticophis lateralis euryxanthus*); Federal Status: Federally Threatened; State Status: State Threatened

Typically found in chaparral, northern coastal sage scrub, and coastal sage scrub communities. This species also occurs in adjacent habitats including annual grassland, oak savannah, and oak-bay woodland. Found primarily in the foothills requiring rock outcrops, vegetation or burrows for retreat and access to prey species. They are generalists that prey on frogs, birds, mammals, and insects and primarily on spiny lizards. They occur at elevations ranging from 0-153 meters. There are no documented occurrences of this species within five miles of the site (CDFG, 2003). The Project site does support habitat suitable for the potential occurrence of this species. Nearest critical habitat for Alameda whipsnake is located approximately 1.85 miles southeast of the Project site. This species was not observed on the Project site during the biological surveys.

California Coast Horned Lizard (*Phrynosoma coronatum frontale*); Federal Status: None; State Status: Species of Concern

The California Coast horned lizard is a large, dorso-ventrally flattened lizard with five backwardly projecting head spines and two parallel rows of pointed scales fringing each side of the body. The dorsal color is highly variable, but typically gray, tan, reddish-brown, or whitish, and usually resembles the prevailing soil color. The flat profile of the California Coast horned lizard helps prevent shadows that might be detected by an observant predator, such as a hawk flying overhead or a coyote patrolling the ground. Most predators would have difficulty grabbing these lizards because of their horns. This reptile is endemic to California and occurs in several habitat types, ranging from areas with an exposed gravelly sandy substrate containing scattered shrubs, clearings in riparian woodlands, chaparral, annual grassland with scattered perennial seepweed or saltbush; it is most common in sandy washes. Ants constitute 50% of the diet of a horned lizard; this species also consumes honeybees and a variety of insects. The reproductive season for the coast horned lizard varies from year to year and geographically depending on local conditions. Egg-laying typically extends from late May through June with clutch size ranging from 6-13 eggs, where hatching probably occurs after two months. The coast horned lizard is apparently unique among lizards in using a belly-to-belly position during copulation. The California Coast horned lizard has disappeared from approximately 35% of its range in central and northern California and extant populations are becoming increasingly fragmented with continued development of this region. There is one documented occurrence of this species approximately 2.5 miles south of the Project site (CDFG, 2003). There is suitable habitat onsite that may support the potential occurrence of this species. This species was not observed within the Project site during the surveys.

Special-Status Birds

The Project site contains habitat for four special-status bird species.



Loggerhead shrike (*Lanius ludovicianus*); Federal Status: None; State Status: Species of Concern

The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. They are a year-round resident and breed from March to August. Nest sites are usually well concealed and can be up to 50 feet above ground. Perches are used to hunt insects, reptiles, and amphibians; although they will hunt small mammals and birds. A unique characteristic of the shrike's hunting technique is the skewering of prey on a sharp object. The shrike then either feeds or uses this method to catch additional prey. There are no known occurrences of this species within a five mile radius of the Project site (CDFG, 2003). The annual grassland habitat within the site may be suitable foraging habitat for this species. This species was not observed within the Project site during the surveys.

Northern harrier (*Circus cyaneus*); Federal Status: None; State Status: Species of Concern

Northern harriers occur year-round in the Central Valley, along the coast, in the Sierra Nevada, and in northeastern California. It winters throughout California in suitable habitat. In general, occurs in meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands, and very occasionally in wooded areas. Suitable foraging habitat consists of open areas, such as grassland or agricultural fields, where it can fly close to the ground. This species eats small mammals (such as voles), birds, frogs, small reptiles, crustaceans, insects, and rarely fish. The northern harrier roosts on the ground in tall grasses or emergent wetland species such as cattails. Nesting habitat is generally in marshes or emergent wetlands or along rivers or lakes. However, this species is known to nest in grasslands, grain fields, or on sagebrush flats. Nests are built on the ground using a mound of sticks, and nesting season occurs from April to September. (CDFG, 2005) There are no documented occurrences of this species within five miles of the Project site, yet the species was observed flying over the site on the August 13, 2008 site visit. There is high potential for the occurrence of this species to forage or nest on the Project site.

Swainson's hawk (*Buteo swainsoni*); Federal Status: None; State Status –Threatened

Swainson's hawk is a Neotropical migrant, leaving California in September and October for Mexico and South America, returning in the spring (March-May). Breeding activities peak from May to July with an average clutch size of three. Nesting sites are primarily composed of sticks, leaves, and bark. Usually located near water, the nests can be at elevations of 4-100 feet above the ground. They typically forage from high to low elevations in search of small mammals, fish, reptiles, and amphibians. Habitats for foraging include: open desert, grassland, or croplands containing intermittent tree stands. Summer breeding range along the Pacific Coast, extends west to central Washington and Oregon into the extreme northeast of California, disjunctly in the Sacramento and San Joaquin Valleys and valleys of the Sierra Nevada in Inyo and Mono counties. A portion of their winter range includes the Sacramento-San Joaquin River delta in the north central part of California. Historical breeding populations in California have been extirpated from Southern California along the coast, due to most likely urban development, as well as from the central Coast Ranges, where suitable nesting and foraging habitat remains, and essentially extirpated from the Mojave Desert in southern California. Transient birds formerly common in northern





Baja California are now rarely observed. Previously unrecorded winter population of approximately 30 individuals reported annually since the 1990-1991 winter in Sacramento-San Joaquin River delta (Cornell, 2008). There are no documented occurrences of this species within five miles of the Project site (CDFG 2003). The Project site does support potential foraging habitat for this species. This species was not observed within the Project site during the biological surveys.

Western Burrowing Owl (*Athene cunicularia*); Federal Status: None; State Status: California Species of Concern

Burrowing owls occur in open grasslands, especially prairie, plains, and savannah. They nest and roost in burrows dug by mammals, particularly in association with ground squirrels. They spend much time on the ground or on low perches such as fence posts or dirt mounds in search of prey that consists of insects, small mammals, and birds. Nest activity can be identified by the presence of feather lining, pellets, debris, and grass in and around a burrow entrance. This species is largely diurnal. They often take cover during the warmest part of the day. There are two documented occurrences of burrowing owl within a one mile radius of the Project site, with one of these occurrences located along the western boundary of the site. CNDDDB Occurrence Number 50 documents several sightings of burrowing owls along Greenville Road between 1972 and 1979. This record was last updated in 1988 and includes observance data from B. Johnson (CDFG, 2003). AES staff observed a single burrowing owl on the Project site during two of the field surveys.

Special-Status Mammals

The Project site contains habitat for two special-status mammal species.

Pallid Bat (*Antrozous pallidus*); Federal Status: None; State Status: Species of Concern

Pallid bat occurs from British Columbia to Texas south to Baja California and central Mexico (Smithsonian National Museum of Natural History, 2007). In California, pallid bat occurs throughout the state except in the high Sierra Nevada Range from Shasta County to Kern County. The pallid bat is most commonly found in dry, open habitats with rocky areas for roosting. This species has three different roosts: the day roost is usually in a warm horizontal opening such as in attics or rock cracks; the night roost is usually in the open, near foliage; and the hibernation roost, which is often in buildings, caves, or cracks in rocks (CDFG, 2002). There is one documented occurrence of this species approximately 2.5 miles south of the site. The Project site lacks sufficient roosting habitat that would support the occurrence of this species. This species was not observed within the Project site during the surveys.

San Joaquin Kit Fox (*Vulpes macrotis mutica*); Federal Status: Endangered; State Status: Threatened

The San Joaquin kit fox occurs in grasslands or grassy openings in shrubland. Historically, the San Joaquin kit fox occurred in several San Joaquin Valley native plant communities. In the southernmost portion of the range, these communities included valley sink scrub, valley saltbush scrub, upper Sonoran subshrub scrub, and annual grassland. Currently, this species occurs in grassland and other open habitats



from Contra Costa County south through the San Joaquin Valley. Suitable foraging habitat includes any open habitat such as grassland or open scrub. Diet varies geographically, seasonally and annually, based on abundance of prey. In the northern portion of the range (San Joaquin, Alameda and Contra Costa counties), kit foxes primarily prey on California ground squirrels, but will also feed on black-tailed hares, San Joaquin antelope squirrels, desert cottontails, ground-nesting birds and insects. Suitable burrowing habitat includes an open, flat area with loose (generally sandy or loamy) soils. Critical habitat has not yet been designated for this species, though it is included in a multi-species recovery plan titled Recovery Plan for the Upland Species of the San Joaquin Valley, California (USFWS, 1998). The nearest documented occurrence of San Joaquin kit fox is located approximately three miles northeast of the site (CDFG, 2003). The Project site supports suitable habitat for the potential occurrence of this species. This species was not observed within the Project site during the surveys.

### **Wildlife or Plant Species**

Would the Project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The AES Biological Resources Assessment was reviewed by biologist Leslie Zander of Zander Associates. This discussion is based on her review.

AES identified 12 special status plant species and 17 special status animal species with potential to occur on the Project site. AES biologists conducted site visits on March 31, April 8, June 9, and August 13, 2008. Zander Associates' review agreed that these site visits were appropriately timed to be within the identification period for all 12 special status plant species evaluated. None of the targeted plant species were observed on the site during these surveys and therefore they are presumed absent from the site.

Of the 17 special status animal species that AES evaluated, one was observed on the property during surveys – California burrowing owl – and potential habitat was identified for 11 other species.

AES addressed each of these species in its report and for each, stated that the species was not observed on the Project site during field surveys. However, species such as the California tiger salamander (CTS), California red-legged frog (CRLF), Alameda whipsnake (AWS), and San Joaquin kit fox (SJKF) have specific survey protocols that require more in-depth methods than just walking the property. Nighttime surveys are typically required for CRLF, CTS and SJKF, and trapping studies are required to determine presence/absence of AWS. Also, surveys often need to be pre-approved by the resource agencies in order to ensure negative findings are accepted. Zander Associates review determined none of these in-depth surveys have been conducted on the property. Consequently, the potential presence of these species cannot be dismissed.

### **California tiger salamander**

The stock pond in the southeastern portion of the property could be suitable breeding habitat for CTS. Additionally, approximately 10 CTS were found just to the south of the property during surveys



conducted in 1996 (CNDDDB Occurrence # 499). If CTS breed in the stock pond or in offsite ponds that have no substantial barriers between the pond and the uplands on the Project site, then the entire property could be considered suitable aestivation habitat because it is within one mile of the breeding ponds, it consists primarily of annual grassland, and it has ground squirrel burrows suitable for CTS aestivation. Because CTS is a federally listed and state listed species, it is protected under the Federal Endangered Species Act (ESA), and the California Endangered Species Act (CESA). As a fundamental element of this protection, Section 9 of the ESA and Section 2080 of the CESA prohibit killing, harming, or otherwise “taking” listed animal species. Taking includes destruction or significant alteration of habitat such that it actually kills or injures listed animals.

While the permanent loss of about 20 acres of potential upland habitat for CTS may not have a substantial adverse effect on CTS in the area, especially considering that most of the remaining 140 acres on the property would continue to provide this habitat, any take of individual animals during construction is prohibited under Section 9 of the ESA and Section 2080 of the CESA. Take of CTS would be considered a significant impact.

#### California red-legged frog

The stock pond on the property may not be suitable breeding habitat for CRLF since it is perennial and could have a large population of bullfrogs, which predate on CRLF larvae. However, there are several recorded occurrences of CRLF to the south, west and east of the Project site and there are no substantial barriers between these areas and the Project site. If CRLF are breeding in the onsite pond or other ponds nearby, they could disperse onto the Greenville Road property during the winter and spring months, when the grasslands are moist and there may be water in the main drainage. The new ponds to be constructed as part of the Project are intended to be perennial and therefore may not provide suitable breeding habitat for CRLF unless the bullfrog population is controlled and aquatic emergent vegetation is allowed to establish.

None of the proposed lots will come within 300 feet of the stock pond and the Project will not substantially reduce the extent of dispersal habitat for CRLF or erect barriers that would prevent movement of dispersing frogs. The proposed lots will be generously spaced and the main intermittent drainage will remain open thereby providing a travel corridor for dispersing frogs.

There is potential for take of CRLF during construction. As with the CTS, take of CRLF is prohibited under Section 9 of the ESA and would be considered a significant impact.

#### Alameda whipsnake

The Project site provides marginal habitat for the Alameda whipsnake and there are no documented occurrences within five miles. Consequently, the potential occurrence of this species is low. Nevertheless, if the Alameda whipsnake were to use the property for forage and dispersal, there is a potential for take of individual snakes during Project construction. Once built, the Project is not likely to prohibit snakes from foraging on or moving through the property. No barriers will be constructed that could prevent this movement. Any take of individual Alameda whipsnakes would be considered a significant impact and potential violation of the ESA and CESA.



### San Joaquin kit fox

The Project site is within the range of SJKF, although they are generally found more to the east in the Altamont Hills. It seems unlikely that SJKF would establish dens on the site due to the amount of human disturbance in the vicinity; however they could forage on and travel through the property. The Project would not have a substantial adverse effect on SJKF because it would not result in the removal of a large portion of potential denning or foraging habitat. Because SJKF are relatively mobile, it is likely individual foxes can be avoided during construction activities unless there are young pups unable to leave a den that may be in harm's way. Because SJKF is a federally listed and state listed species, any take of individual foxes would be a significant impact and a potential violation of the ESA and CESA.

### California burrowing owl

The Project will result in the removal of approximately 20 acres of grassland that could provide habitat for the California burrowing owl. However, the remainder of the grassland (about 140 acres) will continue to provide habitat for the species. Therefore, loss of this potential habitat is not considered significant. If owls move onto the site prior to initiation of construction and have established nests, then avoidance measures are required to avoid harming individual owls or causing nest abandonment as a result of construction activities. Burrowing owls and their nests, eggs, and young are protected by the Migratory Bird Treaty Act (16 USC 703) and Section 3503.5 of the California Fish and Game Code.

### Swainson's hawk

There are no active Swainson's hawk nests recorded within a ten-mile radius of the Project site (CNDDDB 2011). Consequently, the potential for Swainson's hawks to forage on the property is low and the Project is not subject to the mitigation guidelines established by CDFG for development within Swainson's hawk breeding territory (within a 10-mile radius of an active nest). As a result, the Project is not expected to have an adverse effect on the Swainson's hawk.

### Other Species

The western spadefoot toad, coast horned lizard, western pond turtle, and San Joaquin whipsnake are all Species of Special Concern that could be present on the property. The Project is not expected to have a substantial adverse effect, either directly or through habitat modifications, on any of these species. The spadefoot toad, horned lizard and San Joaquin whipsnake could forage on the property. Each of these species is relatively mobile and would be expected to avoid construction vehicles but it is possible that individuals may be killed if unable to move out of harm's way. There is no take prohibition for these animals and loss of a few individuals would not have an adverse effect on the species overall, therefore, potential impacts during construction would not be significant.

The northern harrier and loggerhead shrike may forage and potentially nest on the property. Active nests of these species are protected under the Migratory Bird Treaty Act and the California Fish and Game Code. 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. As used in the act,



the term “take” is defined as meaning, “to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires.” Most native bird species within the study area are covered by this act. The California Fish and Game Code (Section 3511) also provides protection for certain species as listed in the Section. 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.

Potential nesting sites for birds-of-prey and other migratory birds exist in the few large trees along the main drainage. Additionally, the grasslands could provide nesting areas for the northern harrier, as well as the California burrowing owl (as discussed above). If there is an active nest in any of the trees on the property or in the grasslands at the time of construction, there is a potential that construction activities would disturb the birds resulting in abandonment of the nest.

**Impact Bio-1: Potential Impacts to Special Status Species.** The proposed Project’s impacts to special status species are considered *potentially significant*.

### Mitigation Measures

**MM Bio 1-1: California tiger salamander.** To mitigate for the loss of potential upland aestivation habitat, the following three options are recommended:

1. Conduct protocol-level surveys for CTS to determine presence/absence of the species on the property. Survey methodology is to be developed in cooperation with and approved by the USFWS: OR,
2. Consult with the USFWS and CDFG regarding the potential presence of CTS on the property and obtain a letter of concurrence from the USFWS and CDFG that the Project is not likely to result in the take of CTS: OR,<sup>8</sup>
3. Assume presence and implement avoidance measures during construction.
  - a. If CTS are found on the property or presence is assumed, avoidance and minimization measures to be implemented during construction activities could include:
    - i. Pre-construction salvage and relocation of CTS within the designated construction areas (this would require USFWS approval);

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<sup>8</sup> Concurrence of no take or authorization of take of CTS from CDFG applies during the period in which the species is a candidate for listing and if the Fish and Game Commission elects to list the species. If the Fish and Game Commission rejects listing of the species and its candidate status is removed, take authorization from the CDFG is not required.



- ii. Installation of one-way ramps and exclusionary fencing around the construction zone beginning in the fall prior to initiation of construction. The intent is to allow CTS to move out of construction area during breeding season and not return to aestivate in the spring. Under this scenario, construction would not start until after the following spring (April/May);
  - iii. Training of all construction personnel in the identification of CTS and the required protocol in the event that CTS are encountered during construction activities;
  - iv. On-site biological monitor present during all ground disturbing construction activities.
- b. If CTS are found on the property or presence is assumed, long term protection and enhancement measures should be developed and could include:
- i. Placement of the remaining undeveloped lands in a conservation easement to restrict future activities
  - ii. Development of a management plan for the property focused on enhancing breeding and upland habitat for CTS and minimizing potential take associated with operation of the Project

**MM Bio 1-2: California red-legged frog.** Consult with the USFWS regarding the potential presence of CRLF on the property and obtain a letter of concurrence from the USFWS that the Project is not likely to result in the take of CRLF, or obtain take authorization from the USFWS covering all Project activities.

1. Maintain the agricultural ponds such that they provide habitat for CRLF and discourage colonization by non-native bullfrogs. This could include the following:
2. Maintain a natural earthen bottom and minimize the amount of concrete and or riprap
3. Allow establishment of emergent aquatic vegetation around the perimeter of the pond if there is sufficient hydrology to support this habitat
4. Actively eradicate bullfrogs on an annual basis as needed to control the population in the stock pond and newly created agricultural ponds
5. Implement the following avoidance/minimization measures during construction to ensure no take of red-legged frogs occurs:



- a. Erect exclusionary fencing around proposed construction areas sufficient to keep frogs from moving into these areas and limit construction equipment to the areas protected by exclusionary fencing.
- b. Train all construction personnel in the identification of CRLF and the required protocol in the event that CRLFs are encountered during construction activities.
- c. Have a biological monitor present during initial ground disturbing activities.
- d. Schedule construction of the storm water detention basin in the southwestern portion of the property during the dry season when CRLF are not likely to be moving far from aquatic habitats.
- e. Implement Best Management Practices during construction to prevent runoff from the construction sites from degrading the water quality in the offsite pond. This may include diversion of runoff away from the pond or filtering of runoff to remove additional sediment and/or potential pollutants from the construction site.

**MM Bio 1-3:** **Alameda whipsnake.** Implement the following avoidance/minimization measures during construction to ensure no take of Alameda whipsnake occurs.

1. Erect exclusionary fencing around proposed construction areas sufficient to keep snakes from moving into these areas while construction activities are underway.
2. Limit construction equipment to the areas protected by exclusionary fencing.
3. Train all construction personnel in the identification of Alameda whipsnake and the required protocol in the event that a whipsnake is encountered during construction activities.
4. Have a biological monitor present during initial ground disturbing activities.

**MM Bio 1-4:** **San Joaquin kit fox.** Implement the following avoidance/minimization measures during construction to ensure no take of SJKF occurs.

1. Conduct pre-construction surveys of the grasslands to confirm that there are no kit fox dens in the area at the time of ground disturbance.
2. If an active den is observed on the property during these surveys, consult with USFWS regarding protection measures and next steps prior to initiating ground disturbance.

**MM Bio 1-5:** **California burrowing owl.** Conduct a pre-construction survey for burrowing owls to ensure that construction activities would not harm any individual owls that may have





moved on to the site. The survey should be conducted 30 days prior to initiation of any ground-disturbing activities. If the survey occurs during the breeding season (February 1 to August 31) and owls are observed on or within 250 feet of the area of disturbance, a 250-foot buffer should be established around the occupied burrow with construction fencing. The fenced area should remain in place for the duration of the breeding season while construction activities are occurring. If the survey is conducted outside of the breeding season and owls are observed, owl eviction may be allowed if authorized by CDFG.

**MM Bio 1-6: Other nesting birds.** If construction activities are initiated after August 1 and before January 15 (outside of the typical nesting season for the birds-of-prey and migratory birds that may nest in the study area), then pre-construction surveys for active nests should not be necessary. If activities are initiated before August or after January, then pre-construction surveys for active nests within a certain radius of proposed activities are required. If active nests are found and the biologist determines that construction activities would remove the nest or have the potential to cause abandonment, then those activities should be avoided until the young have fledged as determined through monitoring of the nest. Once the young have fledged, construction activities can resume in the vicinity.

#### Resulting Level of Significance

Implementation of MMs Bio-1 through Bio-6 above would satisfactorily reduce any potentially significant impacts to special status species and other nesting birds to a level considered *less than significant*.

#### Riparian Habitat / Sensitive Natural Communities

Would the Project:

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations; or by the California Department of Fish and Game or US Fish and Wildlife Service?

Neither AESs nor Zander Associates identified riparian habitat or other sensitive natural community on the Project site. As described above, most of the site area is comprised of annual grassland. There are two potential wetlands on the Project site, which are discussed below; however, construction activities will not impact them. There is no riparian habitat or other sensitive community identified in local or regional plans or policies, or by any regulatory agency with jurisdiction over the Project site. Therefore, this impact is considered *less than significant*.



## Wetlands / Waters of the US

Would the Project:

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The main intermittent drainage, six ephemeral drainages, stock pond, and two seasonal wetlands on-site are likely subject to U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act and to California Department of Fish and Game (CDFG) jurisdiction under Section 1602 of the Fish and Game Code. As described above, an informal wetland delineation was prepared by AES and reviewed by Zander Associates (see **Appendix B**).

The southern half of the property supports multiple ephemeral drainage features as well as a stock pond in the southeast corner. The main ephemeral channel has a defined bed and bank for the major length of the Project site as it flows from east to west. However, in places the bed and bank would better be described as a shallow swale bordered by rolling uplands. The channel bed generally has little vegetative cover and is comprised of rocks from 2-20 cm in diameter. The southern creek banks generally have shallow slopes (<20%) and the northern banks generally steeper slopes (>20%). Creek bank height is generally less than 1.5 meters. Historically, the channel may have had more substantial and predictable flows, however, currently the creek does not support any significant flow and does not have a flow in most years. The creek pools water for a short time after significant rain events and with back to back large events likely has a limited flow.

The hydrology of the creek has been disrupted by the construction of Poppy Ridge Golf Course in its headwaters. Historically, the creek may have had a nexus to navigable waterways through Arroyo Mocho and eventually into San Francisco Bay. Currently, with development, agriculture, the City of Livermore, Greenville Road, and the South Bay Aqueduct there is no nexus to a navigable waterway.

The proposed Project plans to create three ponds covering an area totaling approximately 17.72 acres within the main ephemeral channel that runs across the Project site. The creation of these channels would require a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB. The ponds would be filled with upstream storm water flows that would be diverted from the streambed channel and from ground water and will not require a water right. None of the ponds are large enough to require approval from the Division of Dam Safety. The natural flow of the intermittent channel will be diverted into a realigned channel that will run along the edge of the three ponds. This realigned channel will replace the existing channel in size and function. Islands will be created in the middle of the two ponds with trees and other vegetation planted on the islands and surrounding the ponds. The AES biological resources assessment determined that the overall effect of this Project will be a habitat enhancement and the creation of three permanent water sources on the property, an assertion Zander Associates agrees with.

Best Management Practices will be required to be employed during construction activities; however, additional measures to protect the stock pond and seasonal wetlands on the property should also be taken.



Temporary fencing should be erected around these features to ensure construction activities do not encroach into the area and silt fencing should be used, as necessary to keep sediment from entering the pond and wetlands. Drainages on the Project site do not support aquatic or riparian vegetation and only carry flows during storm events.

**Impact Bio 2: Realignment and Fill of Wetlands.** The main intermittent channel will be realigned to the south and therefore will only temporarily be affected. The ephemeral channels will be filled. Although this impact could be mitigated through construction of the three ponds proposed as part of the Project, this is considered to be potentially significant if proper permits are not obtained. The stock pond and seasonal wetlands will not be directly affected by the Project; however, without employment of additional Best Management Practices, this is considered to be a *potentially significant* impact.

### Mitigation Measures

**MM Bio 2-1: Permitting.** Prior to issuing a grading permit, the Applicant shall obtain a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB.

**MM Bio 2-2: Best Management Practices – Wetland.** The following additional measures to protect the stock pond and seasonal wetlands on the property shall be taken:

1. Temporary fencing shall be erected around the stock pond and adjacent seasonal wetlands to ensure construction activities do not encroach into the area
2. Silt fencing shall be used, as necessary to keep sediment from entering the pond and wetlands.

### Resulting Level of Significance

Satisfactory implementation of MMs Bio 2-1 and Bio 2-2 provided above would reduce any potentially significant impacts to wetlands or other Waters of the US to a level considered *less than significant*.

### Movement of Species

Would the Project:

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species. The discussion of sensitive species above includes mitigation measures that will ensure that potential impacts to special status species are kept to a less than significant level. No other portion of the Project has the potential to interfere with the movement of species. Therefore, this impact is considered *less than significant*.



## **Local Policies / Tree Ordinance**

Would the Project:

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Project would not conflict with any other local policy or ordinance for the protection of biological resources. There is ***no impact*** in this regard.

## **Conservation Plan**

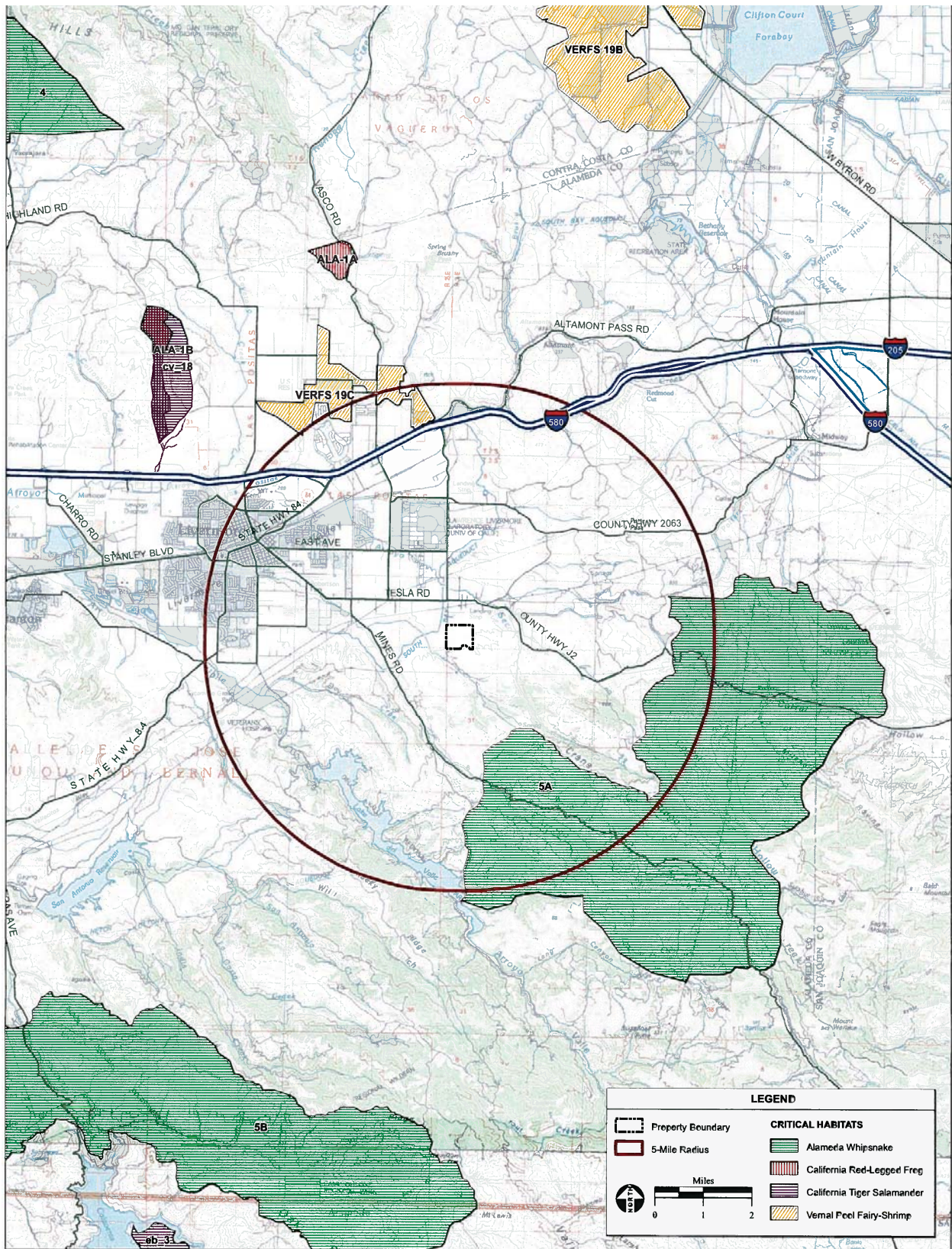
Would the Project:

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

The Project site is not under the provisions of an adopted local, regional or state habitat conservation plan. As shown on **Figure 12**, the Project site is not located with a designated critical habitat area for any special status species. Therefore, there would be ***no impact*** in this regard.







"Stockton and San Jose, CA" USGS 100K Topographic Quadrangle; USFWS 2006

**Figure 13**  
Designated Critical Habitat Area



Source: AES 2008

## CULTURAL AND HISTORIC RESOURCES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES — Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	[ ]	[ ]	[ ✓ ]	[ ]
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	[ ]	[ ✓ ]	[ ]	[ ]
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	[ ]	[ ✓ ]	[ ]	[ ]
d) Disturb any human remains, including those interred outside of formal cemeteries?	[ ]	[ ✓ ]	[ ]	[ ]

### Setting

This cultural resources evaluation is based upon the Cultural Resources Study prepared for the proposed Project by Analytical Environmental Services, Damon Haydu, principal investigator. The evaluation included an archival research at the Northwest Information Center of the California Archaeological Site Inventory, Native American consultation, an evaluation of the potential historical significance of the property, and a pedestrian surface reconnaissance.

### Historical Resources

Would the Project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

The Project site is largely vacant, save for some livestock facilities. No potential historical cultural resources were noted on the Project site during the field reconnaissance. Furthermore, a search of ethnographic and historical literature, including the *California Inventory of Historic Resources*, the *California Register of Historical Resources* and the *National Register of Historic Places* did not reveal records of historic cultural resources within one-half mile radius of the Project site. The records search did identify several previously recorded historic-period resources within one mile of the Project Site. These include the Livermore Canal Bridge and several features associated with the South Bay Aqueduct. The records search also revealed that 283 acres adjacent the Project site was previously surveyed in 1993 by Basin Research Associates (Banet et al., 1993). No cultural resources were identified as part of that study.



The Sacred Lands file of the California Native American Heritage Commission (NAHC) was reviewed in March 2008 for information on Native American cultural resources on the Project site. The NAHC has no record of sacred sites within the Project Area. Further, seven Native American individuals were sent letters and received follow-up phone calls requesting any additional information about Native American cultural resources on the Project site. No response to these efforts was received.

Based on the site reconnaissance that did not identify potentially significant historical resources and the fact that no previously recorded resources were identified in the records search, the Project would not result in a substantial adverse change in the significance of an historical resource. Therefore, this impact is considered to be less than significant.

**Impact CR 1: Possible Subsurface Cultural or Archaeological Deposits.** The *Cultural Resources Study* prepared for the Project notes that there is a possibility that subsurface cultural or archaeological deposits may exist at the Project site, as archaeological sites may be buried with no surface manifestation.

For this reason, MM CR-1 is provided below to address such a possibility, which will ensure that Project impacts to historic cultural resources remains *less than significant*.

### **Archaeological & Paleontological Resources and Human Remains**

Would the Project:

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

There are no unique paleontological resources on the site. There would be *no impact* in this regard.

No prehistoric cultural resources were noted during the field reconnaissance of the Project site. The archival background search of the Project site and its vicinity was conducted to determine if any known prehistoric or historic resources were reported in and around the site. The archival research revealed that there are no recorded archaeological sites within the proposed Project area or within one-half mile radius of the Project area. Additionally, the archival research revealed that one earlier survey was conducted by Basin Research in 1993 on 283 acres adjacent to the Project site that did not reveal the presence of cultural resources.

The Cultural Resource Study prepared by Analytical Environmental Services concluded that, based on the negative results of their investigation, it is unlikely there are cultural deposits within the Project area and that “no further cultural resources work” on the Project site is recommended.”<sup>9</sup>

**Impact CR 2: Pre-Historic Cultural Resources or Human Remains.** Pre-historic cultural resources or human remains could be encountered during construction activities.

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<sup>9</sup> Analytical Environmental Services, *Greenville Road: Cultural Resources Study*, May 2008, p. 18





Discovery of such resources without proper procedures in place would be considered a *potentially significant* impact.

To ensure that no unknown cultural resources are adversely impacted as a result of this Project, the following mitigation measures shall be incorporated as a condition of Project approval:

#### Mitigation Measures

**MM CR 1-1: Discovery of Cultural Resources.** Should any buried archeological materials be uncovered during project activities, such activities shall cease within 100 feet of the find. Prehistoric archeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and split lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Lead Agency shall be notified of the discovery and a professional archeologist shall be retained to evaluate the find and recommend appropriate treatment measures. Project-related activities shall not resume within 100 feet of the find until all approved mitigation measures have been completed.

**MM CR 1-2: Human Remains.** If skeletal remains are encountered, work in the immediate vicinity shall stop and the Alameda County Coroner and Alameda County Planning Department shall be notified immediately. An archaeologist shall also be consulted at the same time to evaluate the situation. If the Coroner determines that remains may be Native American, the California Native American Heritage Commission shall be notified within 24 hours of this identification to arrange at its discretion for qualified Native American or equivalent participation in determining the disposition of such remains.

#### Resulting Level of Significance

Implementation of MMs CR-1 and CR-2 above will ensure that discovery of previously unknown or unanticipated cultural resources during Project construction and excavation activities is properly addressed, reducing the associated potential impact to a *less than significant* level.



## GEOLOGY AND SOILS

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS — Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	[ ]	[ ]	[ ✓ ]	[ ]
ii) Strong seismic ground shaking?	[ ]	[ ✓ ]	[ ]	[ ]
iii) Seismic-related ground failure, including liquefaction?	[ ]	[ ✓ ]	[ ]	[ ]
iv) Landslides?	[ ]	[ ✓ ]	[ ]	[ ]
b) Result in substantial soil erosion or the loss of topsoil?	[ ]	[ ✓ ]	[ ]	[ ]
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of roadway improvements, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	[ ]	[ ✓ ]	[ ]	[ ]
d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (1994), creating substantial risks to life or property?	[ ]	[ ✓ ]	[ ]	[ ]
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	[ ]	[ ✓ ]	[ ]	[ ]

### Setting

A geotechnical investigation of the proposed Project site has been conducted and the results of that study serve as the basis for the analysis and conclusions set forth in this section. The discussion below is also supported by geologic information obtained from publically available published sources. Cited sources include:



- Henry Justiniano & Associates, *Preliminary Geotechnical and Geologic Evaluation*, January 15, 2010
- *Evaluation Report For Liquefaction Hazard in the Altamont 7.5-Minute Quadrangle*, Alameda County, California by Anne M. Rosinski, Department Of Conservation, California Geological Survey
- *Evaluation Report For Earthquake-Induced Landslide Hazard in the Altamont 7.5-Minute Quadrangle*, Alameda County, California by Florante G. Perez and Wayne D. Haydon, Department Of Conservation, California Geological Survey
- *Ground Shaking Assessment for the Altamont 7.5-Minute Quadrangle, Alameda County, California: Using the 2002 Probabilistic Seismic Hazard Assessment Model*; by Charles R. Real and Marvin Woods, Department Of Conservation, California Geological Survey

The California Geologic Survey reports were prepared pursuant to the Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Division 2), which directs the California State Geologist to compile maps that identify *Seismic Hazard Zones* consistent with requirements and priorities established by the California State Mining and Geology Board (SMGB; California Department of Conservation, 1997). The Act requires that site-specific geotechnical investigations be performed for most urban development projects situated within seismic hazard zones before lead agencies can issue the building permit. The Act also requires sellers of real property within these zones to disclose that fact at the time such property is sold.

## **Regulatory Setting**

### Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting to structures for human occupancy.<sup>10</sup> The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the city or county with jurisdiction must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active or potentially active faults.

### California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690-2699.6) addresses seismic hazards other than surface fault rupture, such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may

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<sup>10</sup> California Division of Mines and Geology, DMG Special Publication 42: *Fault-Rupture Hazard Zones in California*, revised 1997.



withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

### California Building Code

Published by the International Conference of Building Officials (ICBO), the Uniform Building Code is a widely adopted model building code in the United States. The California Building Code incorporates by reference the 1997 Uniform Building Code (UBC) with necessary California amendments. These amendments include significant building design criteria that have been tailored for California earthquake conditions (CBSC, 2001). The California Building Code is contained in Title 24 of the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code (CBSC, 2005). Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards.

### **Local Regulations and Policies**

#### Alameda County East County Area Plan

The Alameda East County Area Plan (*ECAP*) establishes policies to minimize the risks to lives and property due to seismic and geologic hazards. The County delineates areas within East County where the potential for geologic hazards (including seismic hazards, landslides, and liquefaction) warrants preparation of detailed site specific geologic hazard assessments. Areas are delineated based on data from published sources and field investigations.

The Project site does not warrant a site specific geologic hazards assessment; however, the following policies are relevant to the Project:

**Policy 309:** The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.

**Policy 310:** The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.

**Policy 313:** The County shall require development in hilly areas to minimize potential erosion and disruption of natural slope stability which could result from grading, vegetation removal, irrigation, and drainage.



**Policy 314:** The County shall prohibit the construction of any structure intended for human occupancy within 50 feet on either side of the Calaveras, Greenville, or Verona earthquake fault zones as defined by the Alquist-Priolo Earthquake Fault Zoning Act.

### County Grading Ordinance

The County Grading Ordinance is found in Chapter 9 of the Alameda County Ordinance Code, Articles 1 through 9. The purpose of the Grading Ordinance is to regulate grading on private property to safeguard life, health, property and public welfare; to avoid pollution of watercourses; and to ensure that the intended use of a graded site is consistent with the General Plan, specific plans and the zoning ordinance. Except for specific exemptions, no grading activities are permitted within the County without obtaining a valid grading permit from the County Public Works Department. Grading permits are only issued when the Director determines that final grading plans as submitted satisfy the provisions of the ordinance and any of the conditions imposed.

Pursuant to Article 9, Section 7-114.2 of the Grading Ordinance, a soils or geologic investigation report is required to accompany applications for grading permits under the following circumstances:

- When the proposed grading includes a cut or fill exceeding five feet in depth and any point and the slope of the natural ground within 30 feet of the cut or fill exceeds ten percent
- When highly expansive soils are present
- In areas of known or suspected geological hazards, including landslide hazards and hazards of ground failure stemming from seismically induced ground shaking.

Given the preliminary grading plan as proposed under the Project, a soils or geologic investigation report will be required to be approved by the County pursuant to the Project's application for a grading permit.

### County Building Code

Chapter 15.08 of the Alameda County Ordinance Code as amended in November of 2010 adopts the 2010 Edition of the California Building Code for regulating the construction of new structures within unincorporated Alameda County. Pursuant to Section 15.08.260 of that Code, the following requirements must be submitted and approved by the County Building Department upon completion of rough grading at the building site and prior to the approval of a foundation for any proposed building or structure:

- A complete record of all geotechnical tests prepared by the responsible geotechnical engineer or soils engineer, geologist or engineering geologist including but not limited to the location and elevation of all field density tests, and a summary of all field and laboratory tests,
- A letter of findings by the responsible geotechnical or soils engineer, geologist or engineering geologist as to the adequacy of the site preparation for the designed foundation system,



- A letter of declaration by the responsible geotechnical or soils engineer, geologist or engineering geologist that all geotechnical and rough grading work was done in accordance with the recommendations contained in the soils/geological investigation report, as approved by the building official, and in conformance with the approved plans and specifications.
- Where the actual soils or geologic conditions encountered in the grading operation are different than those anticipated in the soils and/or geologic investigation report, or where such conditions warrant changes in the soils and/or geologic investigation report, a revised soil and/or geologic investigation report shall be submitted to the building official for approval. Any such revised report must be accompanied by an updated engineering and geologic opinion as to the safety of the site from the hazards of land slippage, erosion, settlement of seismic activity.

### **Exposure to Fault Rupture and Seismic Ground Shaking**

Would the Project:

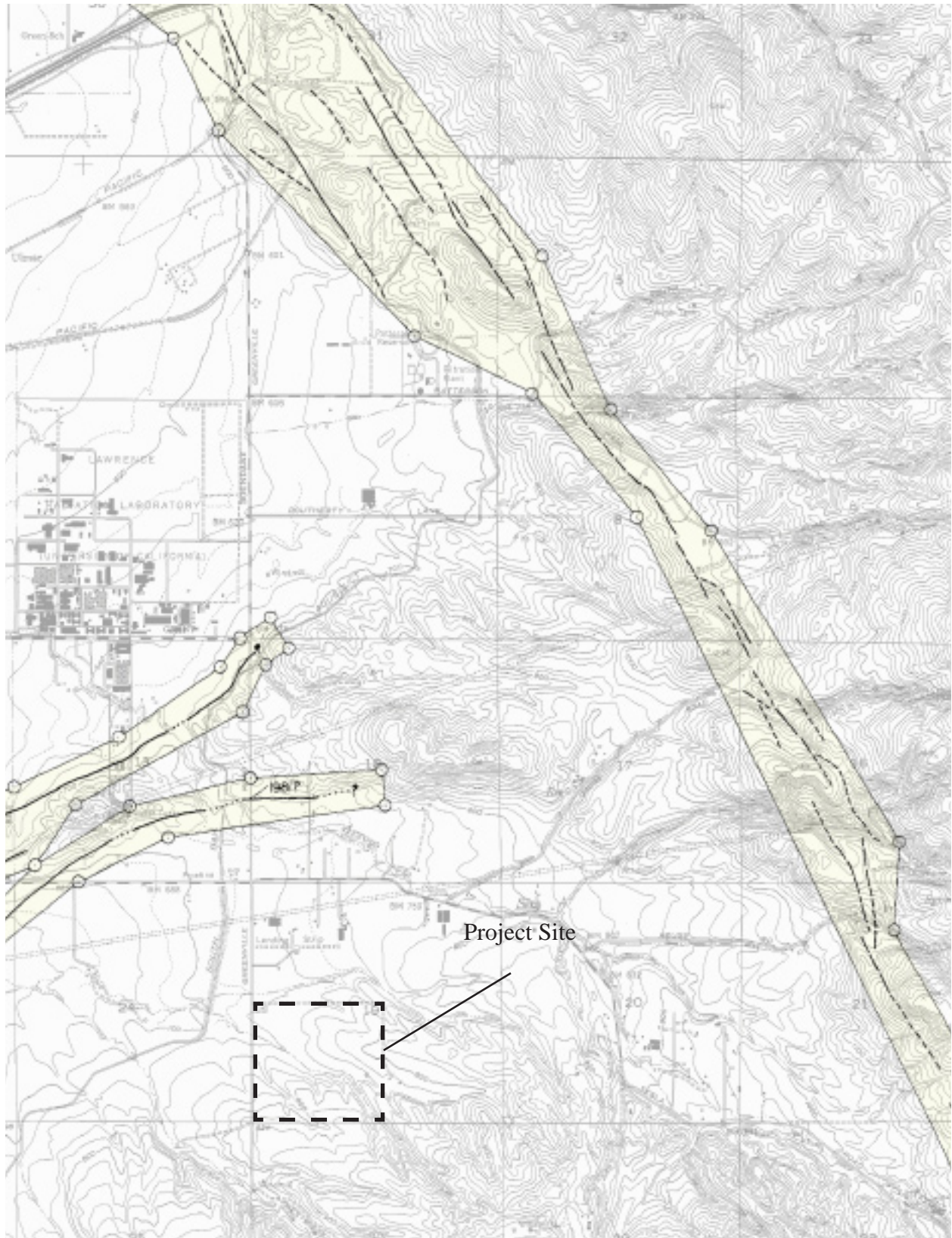
- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42§2690 et. seq.?
  - ii) Strong seismic ground shaking?

### **Geologic Structure**

The Project site is located within the Altamont Quadrangle as mapped by the California Geologic Survey, an area within in a tectonically active region associated with movement along the boundary of the Pacific and North American plates. Stresses built up by plate motion are periodically released predominantly by strike slip movement along the San Andreas Fault system, which in the San Francisco Bay Area includes the San Andreas, Hayward, Calaveras, and Greenville faults. In turn, differential movement of these faults causes thrust faulting and folding of intervening rocks. The Livermore Valley is a product of tectonism, formed as synclinal basin bounded on the west by the Calaveras Fault and on the east by the Greenville Fault. Basin rocks and sediments are also cut by several westerly-trending thrust faults.

Holocene active faults extend through or are contained within the surrounding area: these include the Greenville and the North and South Las Positas faults. The Greenville Fault, which forms the eastern boundary of Livermore Valley, crosses from the northwest to the southeast, east of the Project site. The northwest-trending Las Positas and South Las Positas Faults flank the west-southwest- to east-northeast-trending, triangular shaped uplands to the north of the Project site (see **Figure 14**). The California Geological Survey, under the Alquist-Priolo Earthquake Fault Zoning Act, has identified some of the strands of these faults as “Earthquake Fault Zones”. The Greenville Earthquake Fault Zone within the Altamont quadrangle is marked by a roughly 1 km wide zone of discontinuous surface fault traces. The mapped extents of the Las Positas and South Las Positas Earthquake Fault Zones form a groundwater barrier with shallower groundwater on the south side where the Las Positas Fault crosses Holocene alluvium west of the intersection of Tesla Road and Vasco Road.





**Figure 14**  
**Alquist Priolo Special Studies Zones**



Source: Cal. Dept. of Conservation, Special Studies  
Zones 1982



### Fault Rupture

As shown in Figure 14, the site is approximately 3,500 feet distant from the nearest Special Studies Zone associated with the Las Positas Fault, and nearly 2 miles southwest of the active Greenville Fault Zone. The site is not located within 50 feet of an Alquist-Priolo Earthquake Fault Zone. The risk of fault rupture at the site is low given the distance of the Project site from known fault lines and therefore considered to be *less than significant*.

### Ground Shaking

The Project site would likely encounter ground shaking in the event of an earthquake along any of the Bay Area's major faults. Estimates of ground shaking intensity at a particular location are made according to the Modified Mercalli Intensity Scale, which accounts for variables such as the size and distance from the earthquake. For the Project site, Mercalli Intensity estimates indicate that earthquake-shaking intensity would vary depending upon where the seismic event originates.

**Impact Geo 1: Seismic Shaking.** For the Maximum Credible Earthquake (MCE) along the Greenville Fault (Richter Magnitude 6.9), the shaking intensity at the Project site would be “strong” to “very strong.” at a Level VII to VIII.<sup>11, 12</sup> This would be a *potentially significant impact*.

### Mitigation Measures

To reduce the effect of seismic groundshaking the following mitigation measure shall be implemented:

**MM Geo 1-1: Geotechnical Report Required - Grading.** Pursuant to Article 5 of the Alameda County Ordinance Code, Section 7-114.2, a soil or geotechnical investigation report shall accompany the Project's application for a grading permit given that the Project proposes cut and fill exceeding 5 feet in depth and that the slope of the natural ground within thirty feet of the cut and fill exceeds 10% (these conditions are met where the irrigation ponds are proposed and where the stream segments are proposed to be realigned).

Among the required elements of the soil/geotechnical investigation report is the requirement for a geotechnical engineer's recommendations for mitigating geologic hazards.

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<sup>11</sup> Association of Bay Area Governments, internet site, 2002, <http://www.abag.ca.gov/bayarea/eqmaps/pickcity.html>, Assessed May 31, 2011

<sup>12</sup> Justiniano, 2010, p. 4/



**MM Geo 1-2: Conformance with County Building Code Requirements.** The Project shall be designed in accordance with all seismic provisions of the Uniform Building Code (UBC, the most currently adopted revision), and with County of Alameda and State of California Standards for seismic construction. These provisions include requirements for submitting information to the building official including, but not limited to the following:

1. a letter of findings by the responsible geotechnical or soils engineer, geologist or engineering geologist as to the adequacy of the site preparation for the designed foundation system,
2. a letter of declaration by the responsible geotechnical or soils engineer, geologist or engineering geologist that all geotechnical and rough grading work was done in accordance with the recommendations contained in the soils/geological investigation report, and
3. a revised soil and/or geologic investigation report accompanied by an updated engineering and geologic opinion as to the safety of the site from the hazards of land slippage, erosion, settlement of seismic activity if actual site conditions vary from what was expected in the original soils/geological investigation report.

**MM Geo 1-3: Soils Report Recommendations.** The Justiniano & Associates *Preliminary Geotechnical and Geologic Evaluation* (January 2010) recommends that for the individual proposed lots of the subdivision, a detailed geotechnical report that presents site specific recommendations for house pad grading, foundation design, retaining wall construction, drainage, and any other geotechnical elements of the proposed improvements, should be prepared.

#### Resulting Level of Significance

Pursuant to MM Geo 1-1, Geo 1-2 and Geo 1-3, the Project applicant shall be required to submit a detailed soils report along with detailed engineering drawings to the County Public Works Department prior to excavation, grading or construction activities on the site. The required submittals will ensure that grading activities are conducted in compliance with sound engineering recommendations, and that the buildings at the site are designed and constructed in conformance with the requirements of all applicable building code regulations. The risks of injury and structural damage from seismic ground shaking and seismic ground failure would be reduced through implementation of the requirements found in MM Geo 1-1, Geo 1-2 and Geo 1-3 to a level of *less than significant*.



## Liquefaction & Landslides

Would the Project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - iii) Seismic-related ground failure, including liquefaction?
  - iv) Landslides?

### Liquefaction Susceptibility

Liquefaction susceptibility reflects the relative resistance of a soil to loss of strength when subjected to ground shaking. Physical properties of soil such as sediment grain-size distribution, compaction, cementation, saturation, and depth from the surface govern the degree of resistance to liquefaction. Soils that lack resistance (susceptible soils) typically are saturated, loose, and granular. Soils resistant to liquefaction include all soil types that are dry, cohesive, or sufficiently dense.

Areas underlain by materials susceptible to liquefaction during an earthquake are mapped as liquefaction zones based on criteria developed by the Seismic Hazards Mapping Act Advisory Committee and adopted by the California Department of Conservation. Under those criteria, liquefaction zones are areas meeting one or more of the following:

- Areas known to have experienced liquefaction during historical earthquakes
- All areas of un-compacted artificial fill that are saturated, nearly saturated, or may be expected to become saturated
- Areas where sufficient existing geotechnical data and analyses indicate that the soils are potentially liquefiable
- Areas where existing subsurface data are not sufficient for quantitative evaluation of liquefaction hazard. Within such areas, zones may be delineated by geologic criteria as follows:
  - Areas containing soil deposits of late Holocene age (current river channels and their historic floodplains, marshes and estuaries), where the M7.5-weighted peak acceleration that has a 10 percent probability of being exceeded in 50 years is greater than or equal to 0.10 g and the anticipated depth to saturated soil is less than 40 feet; or
  - Areas containing soil deposits of Holocene age (less than 11,000 years), where the M7.5-weighted peak acceleration that has a 10 percent probability of being exceeded in 50 years is greater than or equal to 0.20 g and the anticipated depth to saturated soil is less than 30 feet; or
  - Areas containing soil deposits of latest Pleistocene age (11,000 to 15,000 years), where the M7.5-weighted peak acceleration that has a 10 percent probability of being exceeded in 50 years is greater than or equal to 0.30 g and the anticipated depth to saturated soil is less than 20 feet.



Application of the above criteria allows compilation of *Zones of Required Investigation* for liquefaction hazard, which are useful for preliminary evaluations, general land-use planning and delineation of special studies zones. The California Geologic Society has completed a liquefaction hazard evaluation for the area within the Altamont quadrangle, within which the Project site is located. According to this evaluation and as shown on **Figure 15**, the Project site is not delineated as a *Zone of Required Investigation*, or an area where the risks of liquefaction is considered to be high. The nearest area where there is a significant risk of liquefaction is immediately to the northwest of the Project site, along the Arroyo Seco.

### Landslide Hazards

Factors that contribute to the potential for landslides include earthquake ground-shaking estimates, geologic material-strength characteristics and slope gradient. Earthquake ground-shaking is addressed above, so the following discussion addresses the issues of geologic material strength and slope.

### Geologic Material Strength

Like much of the Livermore Valley, the majority of the Project site is underlain by pre-Quaternary bedrock buried beneath Quaternary sediments. These bedrock units have high strength characteristics and are unlikely to be susceptible to landslides. However, roughly one third of the Project site is covered by early to middle Pleistocene alluvium, which consists of alluvial sediment shed from the foothills of the surrounding hillsides and deposited along the base of the hills adjacent to the upstream portions of Arroyo Seco. These alluvial deposits have lower strength characteristics than the surrounding bedrock.

### Slope Gradient

The northern half of the site is mildly sloped from the eastern site boundary towards the west. The southern half of the property is dominated by rolling hills with moderate slopes, though there are areas in the southern half of the site with existing slopes exceeding 29%. These hills are separated by three ephemeral drainages that convey most of the overland flow to the center of the site, where the main ephemeral channel (crossing the site in generally an east-west direction) crosses the property, exiting the site via a culvert under Greenville Road. Portions of the ephemeral channel contain incised channel banks with steep slopes.

### Earthquake-induced Landslide Zones

Earthquake-induced landslide zones have been delineated by the California Department of Conservation (2000) using criteria adopted by the California State Mining and Geology Board. Under these criteria, earthquake-induced landslide hazard zones are defined as areas that meet one or both of the following conditions:

- Areas that have been identified as having experienced landslide movement in the past, including all mappable landslide deposits and source areas as well as any landslide that is known to have been triggered by historic earthquake activity.



- Areas where the geologic and geotechnical data and analyses indicate that the earth materials may be susceptible to earthquake-induced slope failure.

While no portions of the Project site were identified as having experienced landslide movement in the past, the criteria does indicate that portions of the ephemeral stream channel which crosses the Project site does contain earth materials that may be susceptible to earthquake-induced slope failure (see **Figure 15**), with the controlling factor being steep slopes.

**Impact Geo 2: Earthquake-Induced Landslides.** Earthquake-induced landslide zone maps identify the areas where the potential for earthquake-induced landslides on the Project site are relatively high. According to these maps, the area underlain by potential landslide-prone soils is south of the proposed new irrigation pond #3 and east of the nearest home site on Lot 1. This landslide potential would be a *potentially significant* issue for the Project.

### Mitigation Measures

CGS earthquake-induced landslide zone maps are intended to prompt more detailed, site-specific geotechnical investigations. Such investigations are required pursuant to the County's Grading Ordinance and Building Code. To reduce the effect of potential landslide hazards, the following mitigation measures shall be implemented:

**MM Geo 1-1: Geotechnical Report Required – Grading** (see above)

**MM Geo 1-2: Conformance with County Building Code Requirements** (see above)

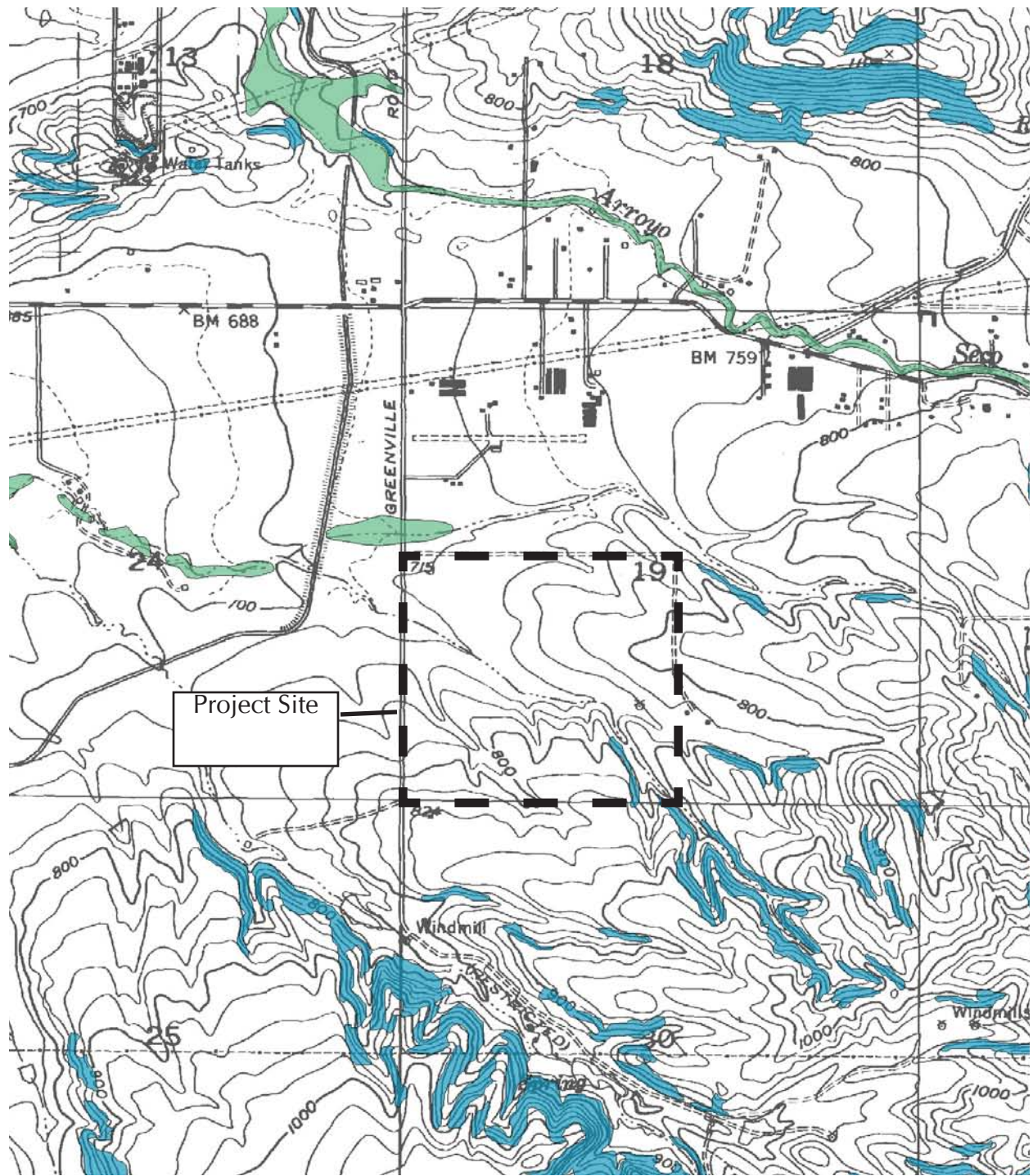
**MM Geo 1-3 Soils Report Recommendations** (see above)

### Resulting Level of Significance

Pursuant to MM Geo 1-1, Geo 1-2 and Geo 1-3, the Project applicant shall be required to submit a detailed soils and geologic/geotechnical report along with detailed engineering drawings to the County Public Works Department and Building Services Department prior to excavation, grading or construction activities on the site. The required submittals will ensure that grading and construction activities are conducted in compliance with sound engineering recommendations, and that the buildings at the site are designed and constructed in conformance with the requirements of all applicable building code regulations. The risks of injury and structural damage from seismically induced liquefaction and landslides would be reduced through implementation of the requirements found in MM Geo 1-1, Geo 1-2 and Geo 1-3 to a *level of less than significant*.

Based upon the results of the Justiniano & Associates *Preliminary Geotechnical and Geologic Evaluation* (January 2010), it is their conclusion that there are no geologic constraints that would preclude consideration of the proposed Project with the building envelope locations and the three ancillary ponds as proposed. From their limited geotechnical investigation evaluation, they judge the site as offering stable characteristics and adequate native materials for the proposed site improvements.





- Liquefaction
- Earthquake-Induced Landslides

**Figure 15**  
**Liquefaction and Landslide Potential**



Source: Justiniano Assoc. 2008, from California Seismic Hazards Zones, Cal. Dept. of Conserv., 2003

## Soil Erosion and Loss of Topsoil

Would the Project:

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

The Project would involve a substantial amount of grading in order to construct the proposed irrigation ponds and re-align the stream segment. As described in the Project Description, preliminary estimated earthwork quantities include a total of 514,500 cubic yards of cut and 435,800 cubic yards of fill, the difference of which will be balanced on site.

The Air Quality analysis recommends implementation of Mitigation Measure Air-1, which requires implementation of Best Management Practices to reduce particulate matter and fugitive dust. These measures will also help to reduce soil erosion. However, Best Management Practices have also been established specifically to reduce soil erosion.

**Impact Geo 3: Erosion.** Without implementation of proper soil erosion BMPs implemented during grading and construction, erosion hazards would be considered a *potentially significant* impact, requiring the following mitigation measure:

### Mitigation Measure

**MM Geo 3: Erosion Control Plan.** Prior to issuance of grading and building permits, the applicant/developer shall submit to the Public Works Department an erosion control plan utilizing Best Management Practices to limit erosion during construction of the project. Measures shall include but not be limited to:

1. Hydroseeding and/or establishment of appropriate plant materials/landscaping
2. Placement of straw wattles along slope contours and drainages
3. Lining of drop inlets with filter fabric/geotextile
4. Establishment of a single destination “wash-out” for construction subcontractors
5. Use of siltation fences
6. Use of sediment basins

### Resulting Level of Significance

Proper implementation of MM Geo-3 above will address any potentially significant soil erosion and loss of topsoil impacts. Additionally, the Hydrology and Water Quality analysis later in this Initial Study recommends MM Hyd-1 requiring Project construction activities to obtain coverage under the State Construction General Permit and includes the requirement for preparation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce the potential for on- and off-site erosion during construction





activities. MM Geo 3 above, in addition to the implementation of MM Hyd-1 provided in the Hydrology and Water Quality Analysis, will ensure that the proposed Project's potential to result in substantial soil erosion or the loss of topsoil is *less than significant with mitigation*.

### **Unstable Geologic Unit and Expansive Soils**

Would the Project:

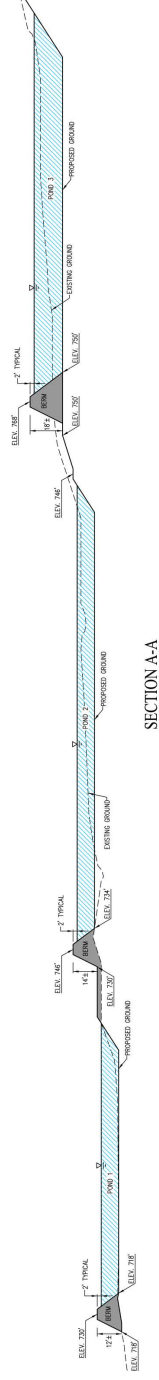
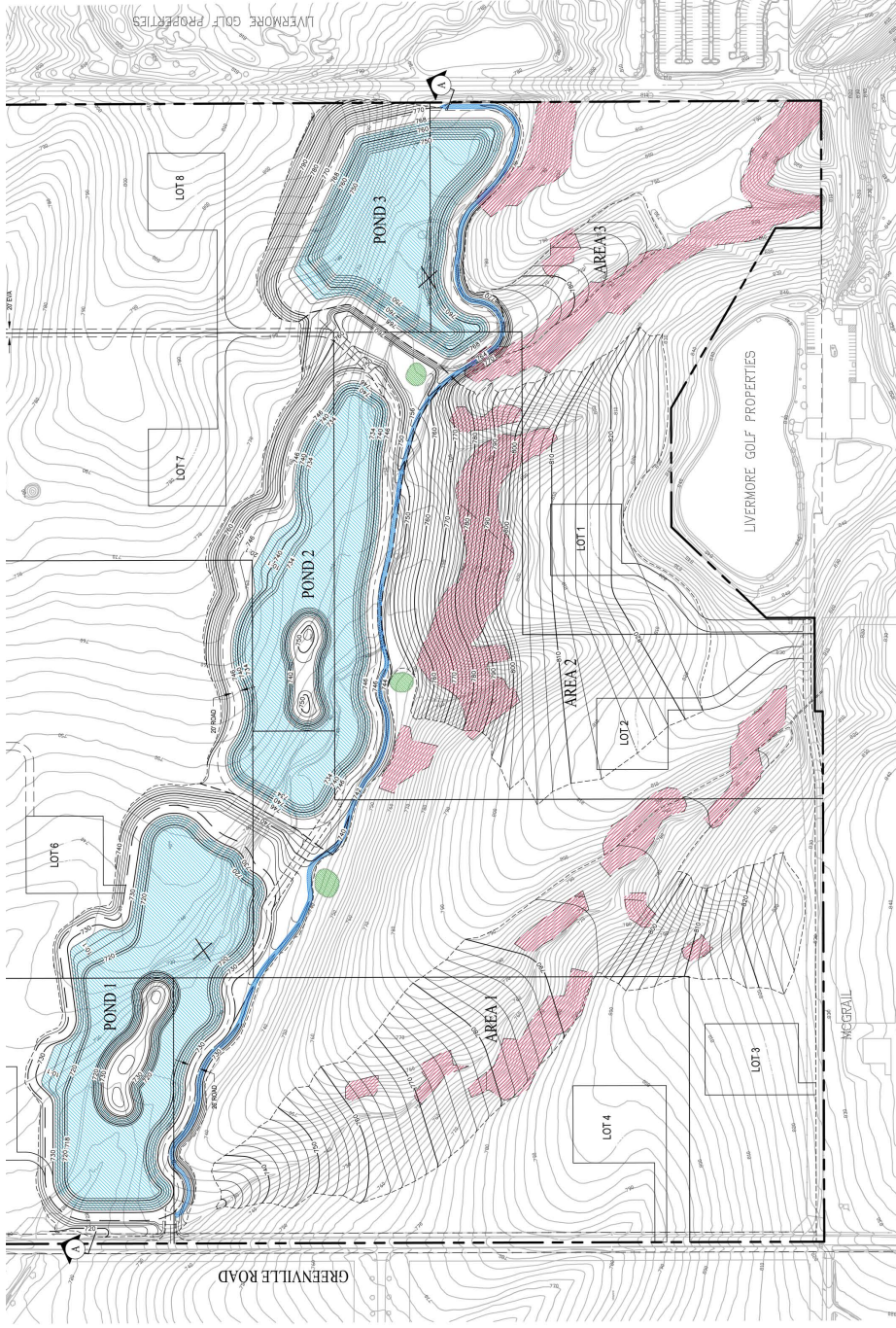
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of roadway improvements, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2006, as it may be revised), creating substantial risks to life or property?

### **Pond Embankments**

The pond embankment heights will vary between 12 and 18-feet (see **Figure 16**). Based on a preliminary assessment of the on-site native materials, it is anticipated that suitable soil strength and permeability is available. However, the configuration of the slopes extending along the perimeter of the proposed new irrigation ponds will require deep cuts into the adjacent hillsides of up to 40-feet in depth. The cuts are proposed at a 3 horizontal to 1 vertical gradient (3:1) and include a 20-foot wide access road bench across the top. Cuts in excess of 6 feet may be subject to instability if clayey soils are exposed. The side slopes will also be subject to rapid fluctuations in water level which could induce pore pressures and potentially destabilize the slopes.

**Impact Geo 4: Pond Embankment Construction.** Cuts in excess of 6 feet may be subject to instability if clayey soils are exposed. The side slopes will also be subject to rapid fluctuations in water level which could induce pore pressures and potentially destabilize the slopes.





**Figure 16**  
Pond Embankment Design



## Mitigation Measures

From a geotechnical engineering perspective, the ponds and embankments will require additional design to address embankment stability for various water level conditions likely to be encountered during the life of the ponds.

**MM Geo 4: Additional Geotechnical Explorations and Laboratory Testing.** As recommended in the Justiniano & Associates *Preliminary Geotechnical and Geologic Evaluation* (January 2010), additional geotechnical explorations and laboratory testing will be required as a basis for detailed design of the ponds.

1. Stability evaluations of the cuts should be performed based on laboratory testing of the materials that will be exposed. If the cuts do not have an adequate factor of safety, it may necessary to either lay the cuts backs at shallower inclinations, or reconstruct the cuts as engineered fills with adequate subsurface drainage controls.
2. Seepage modeling across the embankment will be necessary to evaluate the upstream and downstream embankment stability. The stability analysis should include evaluations under a rapid drawdown scenario. The results of the stability and seepage analyses will determine the need for embankment and foundation designs to maintain acceptable pore pressures within the soil materials for maintaining embankment stability.
3. The construction of the pond embankments and sliver fills on the pond perimeter slopes will require embedment and "keying" into firm, non-yielding materials. It is anticipated that over-excavation of soft swale deposits will be required to achieve the proper keying of fills. Detailed geotechnical recommendations for construction, including design recommendations for slope reconstruction and the construction of engineered fill buttresses should be provided on a site specific basis, when building plans and precise building locations are finalized. Site specific recommendations should be based on subsurface exploration to define the depth and extent of soft deposits or other unstable soil materials that will require over-excavations.

## Resulting Level of Significance

The mitigation measures recommended above require further detailed geotechnical explorations and laboratory testing as a basis for detailed design of the ponds. Recommendations from these further explorations and test will need to be followed to ensure a sound engineering basis for detailed designs of the ponds and their embankments. Compliance with these recommendations will ensure that the ponds and embankments are stable, and potential impacts reduced to a level of *less than significant with mitigation*.



## Septic Tanks or Alternative Waste Water Disposal Systems

Would the Project:

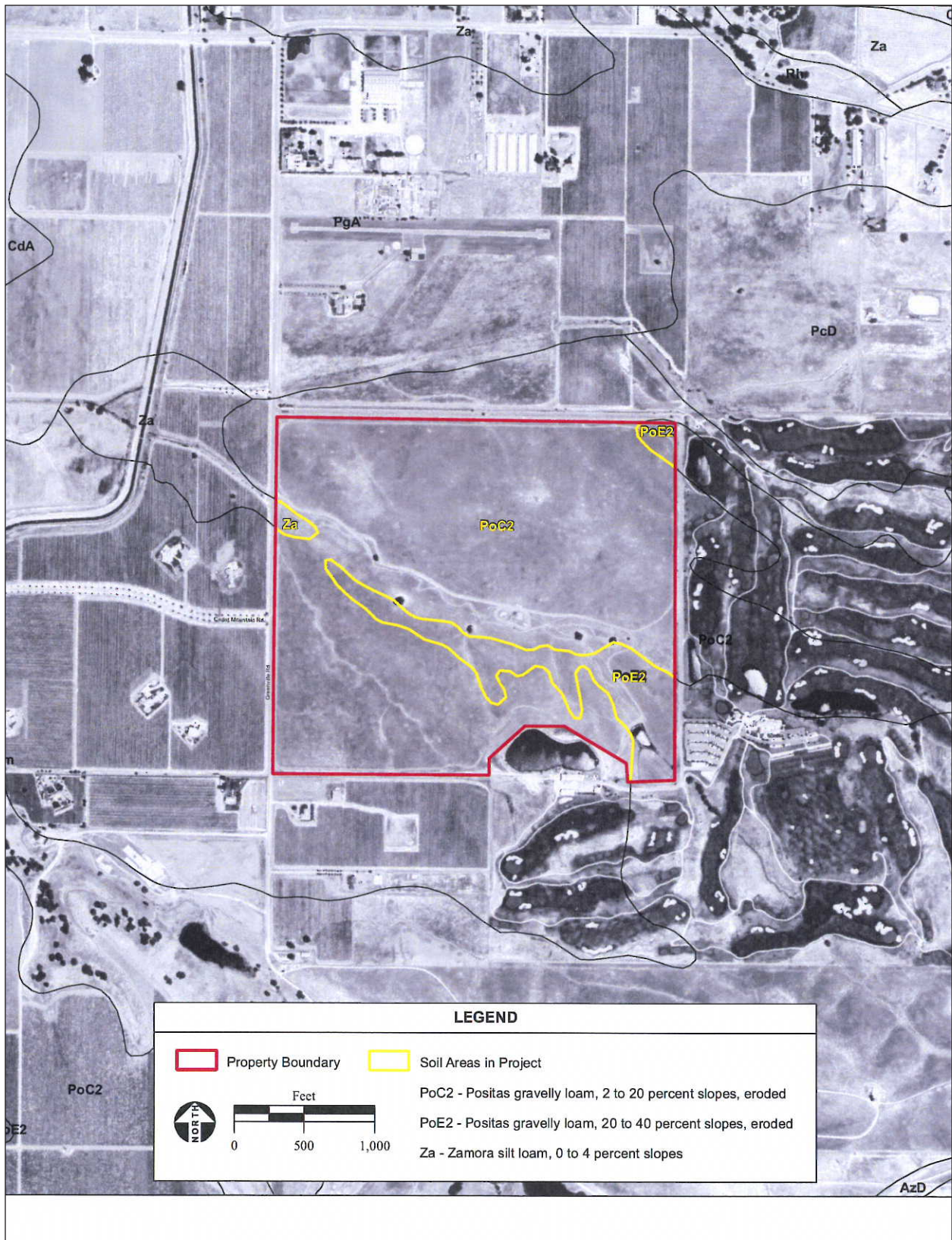
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Eventual construction of up to eight single family residences on the property would require the installation of septic tanks or other alternative waste water disposal systems. The on-site soils will need to be capable of accommodating septic tanks and leach field lines. Mapped soil types in the Project site were determined using the online Web Soil Survey (NRCS, 2007), the Custom Soil Resource Report (NRCS, 2008) and the Alameda Soil Survey (USDA, 1966). Three soil types occur on the Project site (see **Figure 17**) and are described below.

- Positas gravelly loam, 2 to 20 percent slopes, eroded (PoC2). The vast majority of the Project site is underlain with Positas gravelly loam, 2 to 20 percent slopes, eroded (PoC2). Most of this soil is in large bodies on smooth, gently sloping to strongly sloping high terraces. In places the texture of the surface soil is gravelly sandy loam, gravelly loam or loam. The parent material consists of alluvium derived from sandstone and shale. Some areas have coarse pebbles or cobbles throughout the profile. In some places the underlying material is weakly consolidated, yellowish calcareous silt. This well-drained soil has very slowly permeable subsoil. Before the surface soil is saturated, the soil absorbs water readily. Runoff is slow medium and available water holding capacity is low. This soil is not flooded, it is not ponded. Root penetration is shallow. Cultivation is somewhat difficult and fertility is low. The erosion hazard is slight to moderate on cultivated areas. This soil is used for pasture, range, dry-farmed grain, and grain hay.
- Positas gravelly loam, 20 to 40 percent slopes, eroded (PoE2). Within the existing stream channel, the soil type transitions into a similar Positas gravelly loam soil type, but more typical of steeper slopes. The parent material consists of alluvium derived from sandstone and shale. It occurs on hilly to steep terraces. The soil is well-drained to somewhat excessively-drained. The erosion hazard is severe and tillage is difficult. Runoff is rapid. This soil is not flooded, it is not ponded. This soil is used mainly for pasture and range, although a few fields are used for dry-farmed grain and grain hay.
- Zamora silt loam, 0 to 4 percent (Za). At the point where the existing stream channel exits the site through a culvert under Greenville Road at the western edge of the site, soils transition into the Zamora series. The Zamora series consists of well-drained, very deep, loamy soils on nearly level flood plains east of Livermore. The soils were formed in alluvium from sedimentary rock. The vegetation on uncultivated areas consists of annual grasses. The substratum is massive, moderately alkaline clay loam. This soil occurs mostly in large bodies of water on or nearly level flood plains. The texture ranges from heavy silt loam or silty clay loam to clay loam. The parent material consists of alluvium derived from sandstone and shale. This soil is well-drained. Permeability is moderately slow. Runoff is slow and the available water holding capacity is high. Root penetration is very deep. This soil is not flooded, it is not ponded. Cultivation is easy and fertility is moderate. The erosion hazard is slight in cultivated areas. A few small areas have slopes steeper than 4 percent. The soil is used for irrigated row crops, alfalfa, grain and grain hay.







USDA Soil Survey of Alameda County, 2004

**Figure 17**  
**Soils Map**



Source: Justiniano 2008

**Impact Geo 5: Soils Limitations for Septic Systems.** According to the USDA Alameda Soil Survey (1966), both the Positas and Zamora soil series have significant limitations for septic tank and leach field lines because these soils have a generally low permeability rating.

#### Mitigation Measures

**MM Geo 5: Compliance with County Requirements for On-Site Septic Systems.** The project applicant will be required to demonstrate compliance with the County's requirements and regulations for on-site septic systems as set forth in Chapter 15.18.040.B of the Alameda County General Ordinance Code. These regulations provide minimum standards for the construction and operation of onsite wastewater treatment systems.

1. The County's regulation require that onsite wastewater systems be located, designed, constructed and operated in a manner to ensure that sewage effluent does not surface and that percolation of effluent will not adversely affect the public health, safety or welfare, do not contaminate or otherwise be detrimental to the waters of the State of California.
2. The regulations require a minimum lot size of 40,000 square feet for parcels supported by a public water supply, and 60,000 square feet if served by a private water supply.

#### Resulting Level of Significance

Compliance with the County's regulations would ensure that the soils would be capable of supporting the use of on-site wastewater systems and that any potential impacts would be *less than significant*.



## GREENHOUSE GAS EMISSIONS

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS -- Would the project:				
a). Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	[ ]	[ ]	[ ✓ ]	[ ]
b). Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	[ ]	[ ]	[ ✓ ]	[ ]

### Setting

In August 2007, the Senate passed SB 97 requiring the State Office of Planning and Research to prepare and submit guidelines to the State Resources Agency by July 1, 2009 for the analysis and mitigation of greenhouse gas emissions in CEQA documents. The Resources Agency must adopt the regulations by January 1, 2010. It is likely that these prospective Guidelines will provide needed guidance on significance criteria and how to reconcile AB 32 (the Global Warming Solutions Act) rollback provisions with CEQA's mandate that CEQA documents are not required to mitigate existing pre-project conditions. Until such time as Guidelines become available, the following analysis is the County's best effort to address this important issue given the current available information.

### Environmental Setting

In addition to the air pollutants discussed in the Air Quality section, other emissions may not be directly associated with adverse health effects but are suspected of contributing to "global warming" or "climate change." Global warming has occurred in the past as a result of natural processes, but the term is often used now to refer to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases (e.g., carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone and water vapor).

Naturally occurring and anthropogenic-generated (generated by humankind) atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide, can have an effect on global temperatures.<sup>13</sup>

<sup>13</sup> IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change\_(Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Avery, M. Tignor and H.L. Miller (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: <http://www.ipcc.ch/>.





Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Solar radiation enters the earth's atmosphere from space, and a portion of the radiation is absorbed at the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect maintains a habitable climate. Natural processes and human activities emit GHGs. Emissions from human activities, such as electricity production, motor vehicle use and agriculture are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the earth's natural climate, known as global warming or climate change. Other than water vapor, the GHGs contributing to global warming include the following gases:

- Carbon dioxide, primarily a byproduct of fuel combustion.
- Nitrous oxide is a byproduct of fuel combustion and also associated with agricultural operations such as fertilization of crops.
- Methane is commonly created by off gassing from agricultural practices (e.g. keeping livestock) and landfill operation.
- Chlorofluorocarbons that were widely used as refrigerants, propellants and cleaning solvents, however their production has been mostly reduced by international treaty.
- Hydrofluorocarbons are now used as a substitute for chlorofluorocarbons in refrigeration and cooling.
- Perfluorocarbons and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself absorbs outgoing radiation. Indirect effects occur when gases cause chemical reactions that produce other GHGs or prolong the existence of other GHGs. The Global Warming Potential (GWP) concept is used to compare the ability of each GHG to trap heat in the atmosphere relative to carbon dioxide (CO<sub>2</sub>), which is the most abundant GHG. CO<sub>2</sub> has a GWP of 1, expressed as CO<sub>2</sub>E. Other GHGs, such as methane and nitrous oxide are commonly found in the atmosphere but at much lower concentrations. However, the GWP for methane is 21, while nitrous oxide has a GWP of 310. Other trace gases, such as chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs), which are halocarbons that contain chlorine, have much greater GWPs. Fortunately these gases are found at much lower concentrations and many are being phased out as a result of global efforts to reduce destruction of stratospheric ozone. In the United States, CO<sub>2</sub> emissions account for about 85 percent of the CO<sub>2</sub>E emissions, followed by methane at about 8 percent and nitrous oxide at about 5 percent.<sup>14</sup>

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<sup>14</sup> Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2006. U.S. EPA. April 15, 2008.



The world's leading climate scientists have reached consensus that global climate change is underway, is "very likely" caused by humans, and hotter temperatures and rises in sea level "would continue for centuries," no matter how much humans control future emissions. A report of the Intergovernmental Panel on Climate Change (IPCC) - an international group of scientists and representatives concludes that "The widespread warming of the atmosphere and ocean, together with ice-mass loss, support the conclusion that it is extremely unlikely that global climate change of the past 50 years can be explained without external forcing, and very likely that it is not due to known natural causes alone."<sup>15</sup>

Human activities have exerted a growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying vegetation. The concentration of carbon dioxide in the atmosphere has increased from the burning of coal, oil, and natural gas for energy production and transportation and the removal of forests and woodlands around the world to provide space for agriculture and other human activities. Emissions of other greenhouse gases, such as methane and nitrous oxide, have also increased due to human activities. Since the Industrial Revolution (i.e., about 1750), global atmospheric concentrations of CO<sub>2</sub> have risen about 36 percent, due primarily to the combustion of fossil fuels<sup>16</sup>.

The IPCC predicts a temperature increase of between two and 11.5 degrees Fahrenheit (F) (1.1 and 6.4 degrees Celsius) by the end of the 21<sup>st</sup> century under six different scenarios of emissions and carbon dioxide equivalent concentrations.<sup>17</sup> Sea levels are predicted to rise by 0.18 to 0.59 meters (seven to 23 inches) during this time, with an additional 3.9 to 7.8 inches possible depending upon the rate of polar ice sheets melting from increased warming. The IPCC report states that the increase in hurricane and tropical cyclone strength since 1970 can likely be attributed to human-generated greenhouse gases.

### National Emissions

The U.S. EPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases. This inventory is periodically updated with the latest update being 2008.<sup>18</sup> EPA reports that total U.S. emissions have risen by 14.7 percent from 1990 to 2006, while the U.S. gross domestic product has increased by 59 percent over the same period. A 1.1 percent decrease was noted from 2005 to 2006, which is reported to be attributable to: (1) climate conditions, (2) reduced use of petroleum products for transportation, and (3) increased use of natural gas over other fuel sources. The inventory notes that the transportation sector emits about 33 percent of CO<sub>2</sub> emissions, with 60 percent of

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<sup>15</sup> Climate Change 2007 - The Physical Science Basis Contribution of Working Group I to the Fourth Assessment Report of the IPCC. February 2, 2007. (<http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>)

<sup>16</sup> IPCC. 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. (<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>)

<sup>17</sup> Ibid.

<sup>18</sup> Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2006. U.S. EPA. April 15, 2008.



those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 20 percent of CO<sub>2</sub> emissions.

As a part of U.S. EPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, EPA compared trends of other various U.S. data. Over the period between 1990 and 2006, GHG emissions grew at a rate of about 0.9 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption were more closely related at 1.0 percent. GDP and energy generation grew at much higher rates.

It is estimated that the United States contributes up to 35 percent of the world's CO<sub>2</sub> equivalent emissions.

### State Emissions

The effects of climate change on California, in terms of how it would affect the ecosystem and economy, remain uncertain. The State has many areas of concern regarding climate change with respect to global warming. According to the 2006 Climate Action Team Report the following climate change effects and conditions can be expected in California over the course of the next century:<sup>19</sup>

- A diminishing Sierra snowpack declining by 70 percent to 90 percent, threatening the state's water supply;
- Increasing temperatures from eight to 10.4 degrees Fahrenheit (F) under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution levels are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a four-to-33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased challenges for the state's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

California emissions of GHG gases or CO<sub>2</sub> equivalent emissions was estimated at 484 million metric tons of equivalent CO<sub>2</sub> emissions (MMTCO<sub>2</sub>E), which is about seven percent of the emissions from the entire United States.<sup>20</sup> Transportation is the largest source of greenhouse gas emissions in California, followed

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<sup>19</sup> California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. ([http://www.climatechange.ca.gov/climate\\_action\\_team/reports/2006-04-03\\_FINAL\\_CAT\\_REPORT.PDF](http://www.climatechange.ca.gov/climate_action_team/reports/2006-04-03_FINAL_CAT_REPORT.PDF))

<sup>20</sup> California Air Resources Board. 2008. *Climate Change Draft Scoping Plan*. June.



by industrial sources and electric power generation.<sup>21</sup> On a per-person basis, greenhouse gas emissions are lower in California than most other states; however, California is a populous state and the second largest emitter of greenhouse gases in the United States and one of the largest emitters in the world.<sup>22</sup>

CARB staff has estimated the 1990 statewide emissions level to be 427 MMTCO<sub>2</sub>E. Under a “business as usual” scenario, emissions of GHG in California are estimated to increase to approximately 600 MMTCO<sub>2</sub>E by 2020.

### Bay Area Emissions

In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of the Bay Area’s GHG emissions, accounting for just over half of the Bay Area’s 85 million tons of GHG emissions in 2002. Industrial and commercial sources were the second largest contributors of GHG emissions with about one-fourth of total emissions. Domestic sources (e.g., home water heaters, furnaces, etc.) account for about 11 percent of the Bay Area’s GHG emissions, followed by power plants at seven percent. Oil refining currently accounts for approximately six percent of the total Bay Area GHG emissions.<sup>23</sup>

### **Regulatory Setting**

Global climate change resulting from GHG emissions is an emerging environmental concern being raised and discussed at the international, national and statewide level. At each level, agencies are considering strategies to control emissions of gases that contribute to global warming.

### Federal Actions

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, the Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012. To date, the U.S. EPA has

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<sup>21</sup> California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. ([http://www.climatechange.ca.gov/climate\\_action\\_team/reports/2006-04-03\\_FINAL\\_CAT\\_REPORT.PDF](http://www.climatechange.ca.gov/climate_action_team/reports/2006-04-03_FINAL_CAT_REPORT.PDF))

<sup>22</sup> California Legislative Analyst’s Office. 2006. *Analysis of the 2006-07 Budget Bill (Governor’s Climate Change Initiative)*. ([http://www.lao.ca.gov/analysis\\_2006/resources/res\\_04\\_anl06.html](http://www.lao.ca.gov/analysis_2006/resources/res_04_anl06.html))

<sup>23</sup> BAAQMD, *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2002*, Available on the internet at: [http://www.baaqmd.gov/pln/ghg\\_emission\\_inventory.pdf](http://www.baaqmd.gov/pln/ghg_emission_inventory.pdf), November 2006.



not regulated GHGs under the Clean Air Plan, even though a 2007 Supreme Court ruling held that the U.S. EPA can regulate GHG emissions.<sup>24</sup>

In May 2009, President Obama announced a new national policy aimed at both increasing fuel economy and reducing GHG emissions from new cars and trucks sold in the United States. The new standards would apply to new vehicles sold beginning in 2012 and ultimately require an average fuel economy standard of 35.5 miles per gallon (mpg) in 2016. This surpasses the previous standard of 35 mpg for 2020 model vehicles established in 2007.

### State Actions

The State of California is concerned about GHG emissions and their effect on global climate change. The State recognizes that “there appears to be a close relationship between the concentration of greenhouse gases in the atmosphere and global temperatures” and that “the “evidence for climate change is overwhelming.”

### State of California Executive Order S-3-05

In 2005, in recognition of California’s vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gases (GHG) would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

### Assembly Bill (AB) 32 - California Global Warming Solutions Act of 2006

This legislation requires CARB to establish a program for statewide greenhouse gas emissions reporting and monitoring/enforcement of that program. CARB recently published a list of discrete greenhouse gas emissions reduction measures that can be implemented immediately. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions. CARB’s Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions.

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<sup>24</sup> On April 2, 2007, the United States Supreme Court issued a 5-4 decision in *Massachusetts v. EPA*, which holds that the U.S. Environmental Protection Agency has authority, under the Clean Air Act, to regulate greenhouse gas emissions from new vehicles. The U.S. EPA had previously argued it lacked legal authority under the Clean Air Act to regulate greenhouse gases. The majority opinion of the Supreme Court decision noted that greenhouse gases meet the Clean Air Act’s definition of an “air pollutant,” and the EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.



Much of the measures to reduce GHG emissions from transportation will come from CARB. AB 1493, the Pavley Bill, directed CARB to adopt regulations to reduce emissions from new passenger vehicles. CARB's AB32 Early Action Plan released in 2007 included a strengthening of the Pavley regulation for 2017 and included a commitment to develop a low carbon fuel standard (LCFS). In April 2009, CARB adopted the new LCFS aimed at diversifying the variety of fuels used for transportation. This regulation is designed to increase the use of alternative fuels, replacing 20 percent of the fuel used by cars in California with clean alternative fuels by 2020. These fuels include electricity, biofuels, and hydrogen.

CARB is also targeting other sources of emissions. The main measures to reduce GHG emissions are contained in the AB32 Scoping Plan. The Scoping Plan was approved in December 2008. This plan includes a range of GHG reduction actions. Central to the draft plan is a cap and trade program covering 85 percent of the state's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a third of their energy from renewable sources such as wind, solar and geothermal, and proposes to expand and strengthen existing energy efficiency programs and building and appliance standards. The plan also includes full implementation of the Pavley standards to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. It also calls for development and implementation of the low carbon fuel standard, which will require oil companies to make cleaner domestic-produced fuels. Most of the measures in this Scoping Plan will be implemented through the full rulemaking processes at ARB or other agencies. With the exception of Discrete Early Actions, which will be in place by January 1, 2010, other regulations are expected to be adopted by January 1, 2011 and take effect at the beginning of 2012.

#### Senate Bill 97 - Modification to the Public Resources Code

Pursuant to Senate Bill 97, and as noted above, the Governor's Office of Planning and Research (OPR) is in the process of developing CEQA guidelines addressing GHGs. In June 2008, OPR issued interim guidance for addressing climate change through CEQA. OPR recommends that each agency develop an approach to addressing GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level. At this time, neither the County of Alameda nor the BAAQMD has identified significance thresholds for GHG emissions. OPR released Draft CEQA Guideline Amendments for Greenhouse Gas Emissions in April 2009 for public comment.

At the direction of OPR, CARB is currently developing statewide interim thresholds of significance for GHG emissions. CARB is focusing on common project types that, collectively, are responsible for substantial GHG emissions – specifically industrial, residential, and commercial projects. Several workshops have been planned to discuss further development of concepts introduced in its Preliminary Draft Staff Proposal on Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (CEQA).



California's Energy Efficiency Standards for Residential Buildings, Title 24, Part 6, of the California Code of Regulations

The *Energy Efficiency Standards for Residential Buildings* were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2005 Standards went into effect October 1, 2005. Projects that apply for a building permit on or after this date must comply with the 2005 Standards. The 2008 Standards are currently being developed and will go into effect in 2009.

California Green Building Standards Code, Title 24, Part 11 of the California Code of Regulations

The 2008 California Green Building Standards Code was first adopted in July 2008 as part of the official compilation and publication of the adoptions, amendments and regulations known as the *California Building Standards Code*, which itself comprises Title 24 of the *California Code of Regulations*. The purpose of the *California Building Standards Code* is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive impact and encouraging sustainable construction practices. The *California Building Standards Code* were adopted as part of the 2007 California Standards Code supplement and became effective August 1, 2009.

Senate Bill 375 - California's Regional Transportation and Land Use Planning Efforts

Recently, California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl through changes in the way land use and transportation planning is done in California. SB 375 provides incentives for local governments and developers to implement new conscientiously planned growth patterns (i.e., Sustainable Communities Strategies). This includes incentives for creating attractive, pedestrian-friendly and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA for projects that are consistent with the new Sustainable Community Strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency to develop regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its greenhouse gas reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

California's Heavy Duty Vehicle GHG Emissions Reduction Measure

On December 12, 2008 (one day after adopting the AB32 Climate Action Plan), CARB adopted the Heavy Duty Vehicle Greenhouse Gas Emission Reduction measure that requires long-haul truckers to





install fuel-efficient tires and aerodynamic devices on their trailers. This measure will reduce GHG emissions through improved fuel economy.

## Regional Actions

### Bay Area Air Quality Management District

In April 2009, the Bay Area Air Quality Management District (BAAQMD) issued a draft report on CEQA thresholds of significance, as part of a planned update of BAAQMD's CEQA Guidelines, which were last updated in 1999. The existing BAAQMD CEQA Guidelines contain no thresholds of significance for GHGs. The April 2009 report identifies two potential approaches for determining the significance of GHG emissions, one based on AB 32 emission reduction goals, and the second based on thresholds currently being developed by CARB. The BAAQMD report identifies the following three options for proceeding under the AB 32 approach: establishment of a project-specific numerical threshold; establishment of a performance standard equal to the emissions reduction required to meet the AB 32 target; or a combination of performance standard and numerical threshold. Under the CARB approach, a project would generally be found to have a less-than-significant effect with respect to GHGs if it were to implement a series of performance standards and, potentially, have emissions at an amount less than a quantitative threshold (yet to be established for most types of projects), or if the project were consistent with a CARB-approved Sustainable Communities Strategy (SCS), which is a regional plan for GHG reduction to be developed by the applicable metropolitan planning organization (in the Bay Area, the Metropolitan Transportation Commission) (see discussion of SB 375, above).

## Alameda County

### Cool Counties Initiative

In July 2007, Alameda County joined 12 other counties across the United States, along with the Sierra Club, to launch the Cool Counties Initiative (Initiative). The Initiative mobilizes county governments to catalyze bold regional and federal action to address climate change. The Initiative commits the County to work with its communities to reduce countywide greenhouse gas emissions by 80 percent by 2050. In joining the Initiative, Alameda County signed the Cool Counties Declaration, which consists of three commitments:

- A commitment to reduce County operational greenhouse gas (GHG) emissions by creating an inventory of their local emissions and then planning and implementing policies and programs to achieve significant, measurable and sustainable reductions.
- A commitment to work closely with regional and state governments and others to reduce regional GHG emissions to 80 percent below current levels by 2050. The idea is to engage the metropolitan planning organizations to develop regional GHG emissions inventories and create regional implementation plans that establish short-, mid-, and long-term emissions reduction targets. The goal



is to stop the increase in emissions by 2010, and to achieve average reductions of 10 percent every five years thereafter through to 2050.

- A commitment to urge Congress and the Obama Administration to enact a multi-sector national program of market-based limits and incentives for reducing GHG emissions to 80 percent below current levels by 2050, and to urge Congress and the Administration to strengthen standards by enacting legislation such as a Corporate Average Fuel Economy (“CAFE”) standard that achieves at least 35 miles per gallon (mpg) within 10 years for cars and light trucks.

### Green Building and Construction Debris Management

Pursuant to Chapter 4.38, Title 4 of the County Administrative Code, County projects must divert construction debris from landfills and incorporate Green Building Practices. The relevant sections of the Administrative Code include:

4.38.030: Construction and demolition debris management.

The construction and demolition debris generated by county projects initiated on or after July 1, 2003, shall be diverted from landfill as follows:

A. County projects (except traditional public works projects) with a total estimated cost of construction of one hundred thousand dollars (\$100,000) or greater and county projects consisting primarily of demolition with a total estimated cost of twenty five thousand dollars (\$25,000) or greater shall meet the following diversion requirements:

1. At least fifty (50) percent of the total debris generated by the project shall be diverted from landfill via reuse or recycling.

4.38.040: Green Building Practices.

A. All county projects initiated on or after July 1, 2003, except traditional public works projects, shall meet a minimum LEED™ “Silver” rating under the LEED rating system, or a county-approved equivalent.

### Greenhouse Gas Emissions

Would the Project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Project-related construction and operational activities would emit greenhouse gasses, primarily through consumption of energy for transportation and energy usage.



## Construction Period Emissions

Based upon the ultimate residential development of 8 units, the Project is below BAAQMD's applicable construction-related screening size criterion of 114 dwelling units. However, because of the extensive earth-moving activities as described in the Air Quality section above, the construction-period GHG emissions have been quantified.<sup>25</sup>

BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions, though recommends quantification using URBEMIS for proposed land use development projects and a determination regarding significance in relation to meeting AB 32 goals. Though construction-period emissions would be temporary only, BAAQMD's operational GHG emissions threshold of more than 1,100 metric tons per year of CO<sub>2</sub>e is used as a conservative construction-period threshold of significance for this analysis.<sup>26</sup>

Temporary construction-related exhaust would be an additional source of GHG emissions that could contribute to regional greenhouse gas emissions. Sources of construction-related GHGs only include exhaust, for which the CO<sub>2</sub>e emissions have been calculated using the URBEMIS2007 model with the same inputs used to calculate emissions of air pollutants and precursors. Construction-period CO<sub>2</sub>e would total 66.30 metric tons<sup>27</sup> (calculation sheets can be found in Attachment A) and would span an approximately 6 week construction period only. This level of emissions is well below the threshold of significance of 1,100 metric tons per year and the impact would be *less than significant*.

## Operational GHG Emissions

The Project would result in subdividing the site into eight 20-acre lots. Subsequent development of those lots will include planting orchards and one single-family residence per lot. The 8 lots proposed would be below BAAQMD's screening level for single-family home projects (which is 56 dwelling units). Projects below the screening level are assumed to have emissions below threshold levels and would be considered *less than significant* without quantification.

## Greenhouse Gas Reduction Plan Consistency

Would the Project:

- b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

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<sup>25</sup> Bay Area Air Quality Management District. June 2010. *California Environmental Quality Act Air Quality Guidelines*, p. 3-5.

<sup>26</sup> *Ibid*, p. 8-7.

<sup>27</sup> URBEMIS short tons output was converted to metric tons using the standard conversion factor of 0.907 and to CO<sub>2</sub>e using a factor of 100/95 (because CO<sub>2</sub> generally makes up 95% of the GHGs in vehicle emissions).



Project-related construction and operation will contribute incrementally to cumulative increases in GHG emissions. However, no aspect of the Project would conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gas.

### Waste Diversion

The proposed Project would be required to comply with all applicable local, state, and federal regulations associated with the reduction, diversion and recycling of construction waste. In particular, construction of the proposed Project would be required to comply with California Building Code, Title 24, Part 11, Chapter 7, Section 708, *Construction Waste Reduction Disposal and Recycling*, as well as the requirements of pertinent City policies intended to divert waste from landfills.

Section 708 of the 2008 *California Green Building Standards Code* requires the establishment of a construction waste management plan for diverted materials and the recycle and/or salvage for re-use of a minimum of 50 percent of the non-hazardous construction and demolition materials. Also pursuant to Title 4, Chapter 4.38 of the County Administrative Code, consistent with Section 708 of the 2008 *California Green Building Standards Code*, all new County projects initiated after July 2003 are required to achieve a minimum diversion of 50 percent of construction and demolition debris. The County will prepare a Waste Diversion and Reduction Plan for the Project that will be required to meet this 50 percent diversion goal.

Both the County and State would require the preparation of a Waste Diversion and Reduction plan. The Project's impact related to potential conflicts with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gas would be ***less than significant***.



## HAZARDS AND HAZARDOUS MATERIALS

	Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VIII.	HAZARDS AND HAZARDOUS MATERIALS — Would the Project:				
	a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	[ ]	[ ]	[ ✓ ]	[ ]
	b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	[ ]	[ ]	[ ✓ ]	[ ]
	c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	[ ]	[ ]	[ ✓ ]	[ ]
	d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	[ ]	[ ]	[ ]	[ ✓ ]
	e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	[ ]	[ ]	[ ✓ ]	[ ]
	f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	[ ]	[ ]	[ ✓ ]	[ ]
	g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	[ ]	[ ]	[ ]	[ ✓ ]
	h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	[ ]	[ ]	[ ✓ ]	[ ]

### Setting

The Project site is largely vacant of physical improvements and has been used primarily for cattle grazing. There is currently a stock pond and unpaved access road on the site. A search of the California State



Department of Toxic Substances Control database indicates no known hazardous conditions exist at the site. There are no schools nearby the site and it is not located within an area governed by an airport land use plan. A private landing strip for small aircraft is located on property approximately ¼ mile north of the Project site.

### **Public Hazard Through the Routine Use of, or Resulting From Accidental Release of Materials**

Would the Project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The Project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials; nor would it result in a public hazard resulting from accidental release of hazardous materials.

The Project involves the development of the site as a producing olive orchard that would be managed either by future owners or occupants of homes on the property or by an off-site agricultural manager. The agricultural operations would likely use a number of fertilizers, herbicides and potentially other products that could be considered hazardous materials but would not require special permits or use authorization.

Construction activities would require the use and transport of potentially hazardous materials such as oils and combustible fuels; however, significant quantities of hazardous material would not be stored on-site.

Potential impacts related to the use, transportation or accidental release of potentially hazardous materials are reduced to a *less than significant* level with the implementation of normal operating practices and procedures or standard preventative and protective measures.

### **Hazards Near Schools**

Would the Project:

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The closest school is approximately 3 miles northwest of the Project site. As discussed above, the proposed use would not involve the handling or transportation of significant amounts of hazardous materials. Moreover, the Project site is in a rural and sparsely populated agricultural area south of Livermore. An accidental release of any hazardous materials that may be present at the site would have a *less than significant* effect.

### **Hazards From a Listed Hazardous Site**

Would the Project:

- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?



A search of the California State Department of Toxic Substances Control EnviroStor Database, the statewide hazardous materials database, determined that neither the Project site, nor any other parcels in the Project site's vicinity, is included.<sup>28</sup> The results of this search are shown in **Appendix D** of this document. There is *no impact* in this regard.

### **Proximity to Airport Plan or Private Air Strip**

Would the Project:

- e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?
- f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

The Project site is not located within an airport land use plan or within two miles of a public or public use airport. However, the Project is within one-quarter mile of a private airstrip, Meadowlark Field, that has been in active use since 1962.<sup>29</sup> Meadowlark Field is located on the property immediately to the north of the Project site. The orientation of the Meadowlark Field air strip is east-west, reflecting the direction of prevailing winds in the area. Given that the Project site is to the south and not under the take-off or landing pattern of Meadowlark Field, potential safety hazards for future residents of the Greenville Road Subdivision Project would be *less than significant*.

### **Emergency Response**

Would the Project:

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

None of the Project's proposed activities or proposed uses would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed subdivision Project, including development of 8 single family homes and planting of new olive orchards would impair the implementation of or physically interfere with an adopted emergency response or evacuation plan. Therefore, there would be *no impact*.

### **Wildland Fire Hazards**

Would the Project:

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

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<sup>28</sup> <http://www.envirostor.dtsc.ca.gov/>

<sup>29</sup> <http://www.city-data.com/airports/Meadowlark-Field-Airport-Livermore-California.html>





The Project is located in a rural agricultural area on open land with few trees and far from the nearest wildland area. It is not near a wildland fire hazard zone. The Alameda County Fire Department (ACFD) does not have current maps delineating the Urban Wildland Interface; therefore, at this time it is undeterminable whether the Project would be located within this zone.<sup>30</sup> Construction of future homes on the Project site would be subject to the issuance of County building permits and the regulations of Chapter 7A of the *California Building Code* pertaining to urban wildland fire interface. Compliance with these regulations would ensure that the Project conforms to the standard construction practices for the urban wildlife interface. Doing so will ensure that the Project does not expose people or structures to a significant risk of loss, injury or death involving wildland fires and therefore the risk of loss involving wildland fires is considered *less than significant*.

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<sup>30</sup> Robert Snodgrass, Alameda County Fire Department, personal conversation, 9/25/09.



## HYDROLOGY AND WATER QUALITY

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY — Would the Project:				
a) Result in a significant increase in pollutant discharges to receiving waters (marine, fresh and/or wetlands) during or following construction (considering water quality parameters such as temperature, dissolved oxygen, turbidity, and typical stormwater pollutants, e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash)?	[ ]	[ ✓ ]	[ ]	[ ]
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	[ ]	[ ]	[ ✓ ]	[ ]
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	[ ]	[ ✓ ]	[ ]	[ ]
d) Substantially increase the rate or amount of surface runoff (e.g., due to increased impervious surfaces) in a manner what would result in flooding on-or off-site?	[ ]	[ ]	[ ✓ ]	[ ]
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems due to changes in runoff flow rates?	[ ]	[ ]	[ ✓ ]	[ ]
f) Result in an increase in any pollutant for which a water body is listed as impaired under Section 303(d) of the Clean Water Act?	[ ]	[ ]	[ ]	[ ✓ ]
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	[ ]	[ ]	[ ]	[ ✓ ]



Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	[ ]	[ ]	[ ]	[ ✓ ]
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	[ ]	[ ]	[ ]	[ ✓ ]
j) Inundation by seiche, tsunami, or mudflow?	[ ]	[ ]	[ ]	[ ✓ ]

## Setting

The Project site is virtually unaltered and in a relatively natural hydrologic state. The part of the site that has experienced the most active human use is the cattle pen or corral adjacent to the intermittent drainage in the central-southern part of the site. Overall, the property has been heavily grazed in many areas by cattle, which were observed during the field surveys.

The Project site is bisected diagonally by a well-defined intermittent channel that conveys overland storm water runoff across the property and discharges to a culvert at Greenville Road. This arterial channel receives runoff from the neighboring Poppy Ridge Golf Course at two points. A culvert enters the eastern property boundary conveying offsite waters into the main intermittent drainage approximately 500 feet north of the southeastern corner of the site. At this southeast corner of the site water also enters via two culverts that feed two small wetland branches of the existing stock pond (see **Figure 18**). This stock pond, when full, conveys water through a culvert into the easternmost ephemeral branch of the main channel.

The southern half of the property is characterized by moderately rolling hills. The hills are separated by three additional ephemeral drainages to the west that convey most of the overland flow in this area. Two of these significantly smaller ephemeral drainages drain down into the middle of the main intermittent drainage in this area. The westernmost drainage onsite crosses the southwestern quadrant of the property and discharges offsite before reconnecting to the main drainage. The main intermittent channel is well-defined until it reaches the western property boundary where it branches out and reconnects prior to exiting the site via a culvert under Greenville Road. The northern half of the site is mildly sloped from east to west and supports no wetland features. The entire project site is dominated by nonnative annual grassland supporting a few large Valley oak trees along the main intermittent drainage.

An unpaved ranch road runs from the western property boundary along the main creek channel where it reaches the stock pond at the southeast corner of the site. This road continues along the southern property boundary until it reaches the western property boundary, parallel to Greenville Road, where it then reconnects to the main entrance.

The last significant rainfall in the region, prior to the field surveys, occurred in February 2008. Due to lack of rainfall, nearly all aquatic features onsite were dry (i.e. drainages) or at low water levels (i.e. stock ponds) during site investigations related to the preparation of this environmental assessment.





**Picture 5:** Culvert at the southeastern boundary of the project site where SW 2 receives offsite waters from the adjacent Poppy Ridge Golf Course.



**Picture 6:** Culvert at the western end of the project site where ED 5 terminates and flows under Greenville Road.



**Picture 7:** Culvert at the southern end of the project site where ED 5 originates.



## Degradation of Water Quality/Violation of Standards

Would the Project:

- a) Result in a significant increase in pollutant discharges to receiving waters during or following construction?
- f) Result in an increase in any pollutant for which a water body is listed as impaired under Section 303(d) of the Clean Water Act?

Potential water quality impacts under this topic fall into two categories, short-term and long-term. Short-term impacts may be due to construction activities. Long-term impacts may occur due to Project operation of the proposed olive orchard and the irrigation ponds, the proper functioning of the relocated ephemeral creeks and potential drainage and water quality impacts resulting from the development of rural residential houses (i.e., post-construction).

### Potential Short-Term Construction Impacts

**Impact Hydro 1: Construction-Period Pollutants.** The proposed Project involves significant site grading in order to re-channelize the existing arroyo and create the three irrigation ponds within the arroyo's former alignment. Excavation and construction-related runoff could contain soil and other pollutants, which may contribute to reduced water quality in local water bodies. Construction equipment would use toxic chemicals (e.g., gasoline, oils, grease, lubricants and other petroleum-based products) that could be released accidentally.

In 1999, the State Water Resources Control Board (SWRCB) adopted a Construction General Permit (General Permit). The General Permit is a National Pollution Discharge Elimination System (NPDES) permit that implements section 402(p)(2)(B) of the federal Clean Water Act. Construction activities on one acre or more are regulated by the State Water Quality Control Board (SWQCB), and are subject to the permitting requirements of the General Permit. The SWQCB established the General Construction Permit program to reduce surface water impacts from construction activities. The General Construction Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP must be prepared before the construction begins. The SWPPP must include specifications for best management practices (BMPs) to be implemented during project construction. BMPs are measures undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. This General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs). For the project area, the applicable regional board is the San Francisco Bay Regional Water Quality Control Board.

### Potential Post-Construction Impacts

The Project proposes to construct three irrigation ponds in the alignment of the existing ephemeral creek, and to realign the creek channel immediately south of the ponds. Approximately 90 percent of the site would be planted and improved for use as an actively managed olive orchard. One-acre building envelopes on each lot would eventually be developed with single family homes; in accordance with



Vineyard Area Policy #5 in the South Livermore Valley Area Plan, and subject to the County's site development review process, the Project could also utilize the non-orchard 10% area for a winery.

**Impact Hydro 2: Post-Construction Runoff.** The active use of the property could result in the generation of post-construction runoff and could increase the potential for polluted runoff off-site. Compliance with the County's post construction regulations pursuant to the Alameda Countywide Municipal NPDES permit would be required.

### Mitigation Measures

**MM Hydro -1: Construction General and SWPPP Permit.** Obtain Coverage Under the Construction General Permit, Including SWPPP. The Project sponsor shall obtain coverage under the SWRCB Construction General Permit, including implementation of a Storm Water Pollution Prevention Plan (SWPPP).

1. The Project sponsor shall ensure that construction practices for the Project comply with practices to prevent water pollution under the provisions of the Construction General Permit. In order to obtain a permit, the Project Applicant must file a Notice of Intent (NOI) with the SWRCB prior to the start of construction.
2. Pursuant to the requirements of the Construction General Permit, the Project sponsor shall prepare and implement a SWPPP. The SWPPP shall be consistent with the terms of the General Permit; the Manual of Standards for Erosion and Sedimentation Control Measures by the Association of Bay Area Governments (ABAG); the Best Management Practices as provided in the California Stormwater Quality Association (CASQA) handbooks; policies and recommendations of the local urban runoff program (County of Alameda); and the Staff Recommendations of the RWQCB. The SWPPP shall incorporate BMPs to reduce the potential for pollutants in runoff waters and to prevent pollutant transport off-site during construction activities. Examples of Best Management Practices include, but are not limited to the following:
3. Only clear land which will be actively under construction in the near term (e.g., within the next 6-12 months), minimize new land disturbance during the rainy season, and avoid clearing and disturbing sensitive areas (e.g., steep slopes and natural watercourses) and other areas where site improvements will not be constructed.
4. Provide temporary stabilization of disturbed soils whenever active construction is not occurring on a portion of the site through water



spraying or application of dust suppressants, and gravel covering of high-traffic areas. Provide permanent stabilization during finish grade and landscape the Project Site.

5. Safely convey runoff from the top of the slope and stabilize disturbed slopes as quickly as possible.
6. Delineate the Project Site perimeter to prevent disturbing areas outside the project limits. Divert upstream run-on safely around or through the construction. Runoff from the Project Site should be free of excessive sediment and other constituents. Control tracking at points of ingress to and egress from the Project Site.
7. Retain sediment-laden waters from disturbed, active areas within the Project Site.
8. Perform activities in a manner to keep potential pollutants from coming into contact with stormwater or being transported off site to eliminate or avoid exposure.
9. Store construction, building, and waste materials in designated areas, protected from rainfall and contact with stormwater runoff. Dispose of all construction waste in designated areas, and keep stormwater from flowing onto or off these areas. Prevent spills and clean up spilled materials.

**MM Hydro 2:** **NPDES Permit.** Comply With Alameda Countywide NPDES Municipal Stormwater Permit C.3 Provisions. The Project sponsor shall demonstrate compliance with the countywide NPDES permit requirements by preparing a detailed Stormwater Management Plan (SMP), incorporating the most appropriate post-construction source control measures into the Project design. The Stormwater Management Plan shall be prepared during County's review of project engineering design and shall incorporate the required post-construction (permanent) stormwater quality controls. The SMP should include, but is not limited to demonstration of the following:

1. The proposed finished grade,
2. The storm drainage system including all inlets, pipes, catch basins, overland flows, outlets and water flow directions,
3. The permanent stormwater treatment system (soil and landscape-based treatment facilities, filters and separators), including all design details,





4. Design details of all source control measures (preventing contact between stormwater and potential sources of pollution) and site design measures (reductions in flow from impervious surfaces) to be implemented,
5. Calculations demonstrating that stormwater treatment measures are hydraulically sized as specified by the County's stormwater permit, and
6. An Operations and Management Plan to ensure continued effectiveness of structural BMPs and implementation of non-structural BMPs.

### Resulting Level of Significance

Compliance with the State Construction General Permit and its associated SWPPP, as stipulated by MM Hyd-1 would minimize the generation of polluted runoff, reduce potential on- and off-site erosion and siltation, and reduce the potential for water quality degradation during construction to less than significant levels. This is further complimented through mandatory compliance with County building and construction code requirements ensuring grading activities do not result in substantial sedimentation or siltation hazards. Implementation of MMs Hyd-1 and Hyd-2 above, requiring the Project to prepare and implement a SWPPP and comply with the Alameda Countywide NPDES Permit, will reduce any potential impacts to water quality to a level considered *less than significant*.

### Groundwater Supplies and Recharge

Would the Project:

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The Project will result in the construction of three irrigation ponds that would be used to irrigate and support the proposed olive orchard operation. Source water for the irrigation ponds will be obtained from the upstream flow of stormwater that currently crosses the project site, from east to west, and that currently flows through the previously described ephemeral creek channel. In addition, the Project applicant intends to supplement surface water flows with on-site wells. As discussed in the Utilities section of this Initial Study, there would be sufficient groundwater resources to support the proposed olive orchard operation and on this basis the potential impact on groundwater resources is considered *less than significant*.

### Alteration of the Existing Drainage Pattern

Would the Project:

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?



The southern half of the property supports multiple ephemeral drainage features as well as a stock pond in the southeast corner. The main ephemeral channel has a defined bed and bank for the major length of the Project site as it flows from east to west. However, in places the bed and bank are less defined and consist of a shallow swale bordered by rolling uplands. The channel bed generally has little vegetative cover and is comprised of rocks from 2-20 cm in diameter. The southern creek banks generally have shallow slopes (<20%) and the northern banks generally steeper slopes (>20%). Creek bank height is generally less than 1.5 meters.

Historically, the channel may have had more substantial and predictable flows. However, the creek does not currently support any significant flow and does not have any flow in dry years. The creek's original course has been substantially altered by prior development of lands to the southeast and northeast of the site. The Poppy Ridge Golf Course was constructed over the alignment of the headwaters of the original stream's alignment, and a vineyard was constructed along the stream's original alignment to the northwest. The stream segment that bisects the Project site is connected to a storm drainage system via culverts on both the western and eastern site boundaries. Currently, the creek pools water for a short time after significant rain events, and with back-to-back large events likely has a limited flow. Drainages on the Project site do not support aquatic or riparian vegetation and only carry flows during storm events.

The proposed Project would construct three irrigation ponds along the stream's existing alignment and would re-align the stream just south of its current alignment (see **Figure 19**). The re-channelized stream would serve to drain the site and convey storm water flows across the site. The ponds would be filled with upstream storm water flows that would be diverted from the streambed channel. The natural flow of the intermittent channel will be diverted into the realigned channel that will run along the edge of the three ponds. This realigned channel will replace the existing channel in size and function. The ephemeral channels will be filled and permanently removed.

The existing stock pond and its associated seasonal wetlands to the south of the Project site would not be directly affected by the Project

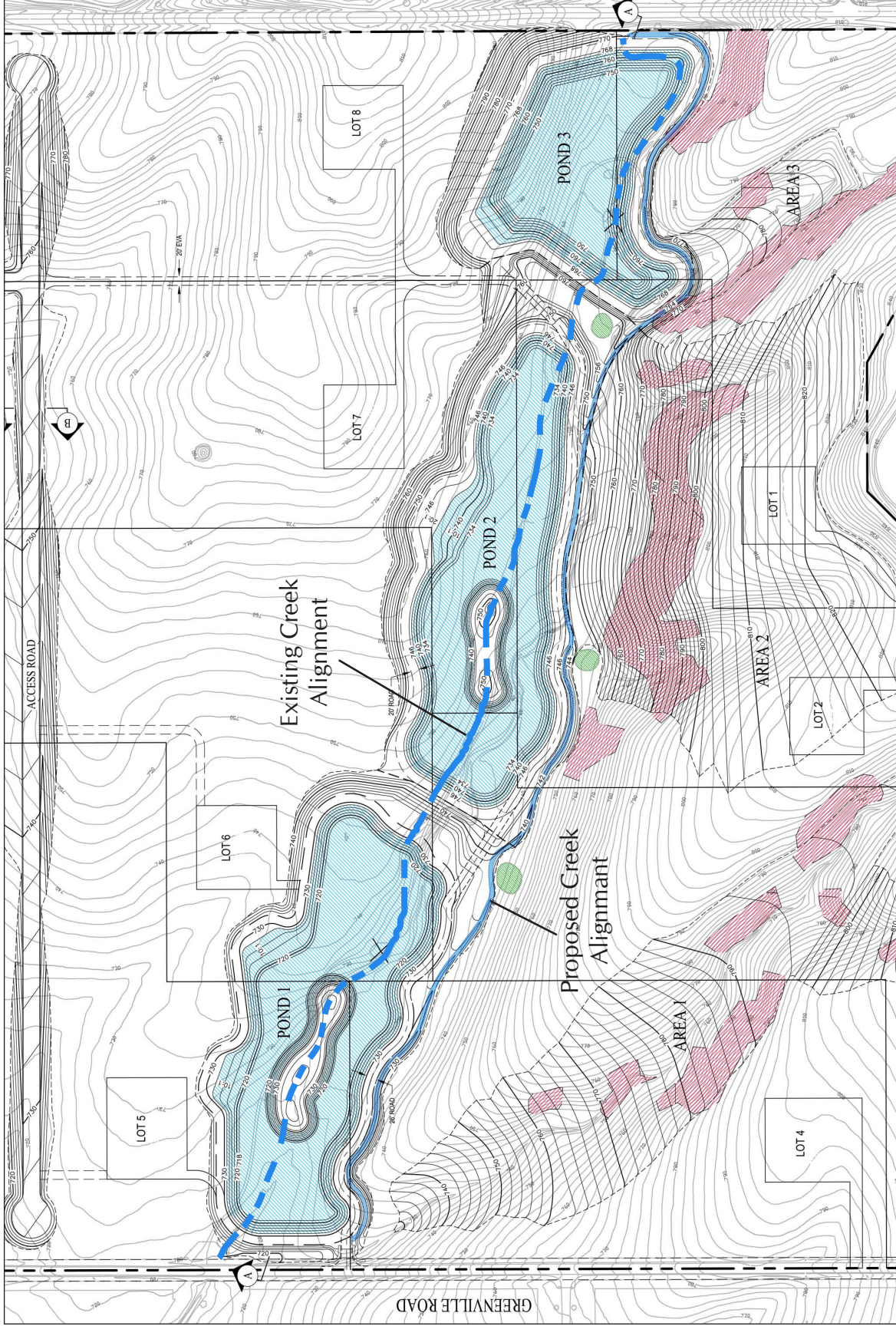
**Impact Hydro 3: Alteration of the Existing Drainage Pattern.** The proposed Project would re-align the existing stream and the natural flow of the intermittent channel will be diverted into the realigned channel. This realigned channel will replace the existing channel in size and function. The ephemeral channels will be filled and permanently removed

### Mitigation Measures

The creation of the new stream channel will require a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB. Best Management Practices will be required to be employed during construction activities. These requirements are identified as Mitigation Measures Hydro 3-1 and are recommended to address water quality issues, as well as biological resource issues. The following additional mitigation measures are also recommended:

**MM Hydro 3-1: Permitting.** Prior to issuing a grading permit, the Applicant shall obtain a Streambed Alteration Agreement (SAA) from CDFG, a 404 permit from the USACE and a 401 Water Quality Certification from the RWQCB.





**Figure 19**  
**Proposed Creek Realignment**



Source: Carlson Barbee and Gibson

**MM Hydro 3-2: Best Management Practices.** Construction activities shall be required to implement all appropriate construction Best Management Practices, as required under MM Hyd-1, above.

**MM Hydro 3-3: NPDES Permit.** Comply With Alameda Countywide NPDES Municipal Stormwater Permit C.3 Provisions. The Project sponsor shall demonstrate compliance with the countywide NPDES permit requirements by preparing a detailed Stormwater Management Plan (SMP), incorporating the most appropriate post-construction source control measures into the Project design.

**MM Hydro 3-4: Construction Season.** The existing stream segment is dry for the majority of the year, but construction activities associated with construction of the new irrigation ponds and realignment of the existing stream channel should only occur during the dry season.

### Resulting Level of Significance

The construction activities would be required to implement all appropriate construction Best Management Practices during construction activities, as required under MM Hyd-1 which would reduce the possibility of significant erosion and siltation during construction activities. Moreover, to the extent practicable, the project would also be required to implement post-construction measures pursuant to MM-Hyd-2 to further ensure significant erosion does not occur as a result of the operation of the irrigation ponds, the irrigation of the olive orchard, or in relation to the construction and occupancy of future homes. Properly implemented, post-construction mitigation requirements would ensure against erosion or siltation impacts off site. The proposed Project would have a *less than significant* impact with respect to the potential to significantly alter the site's drainage pattern in a manner that would result in significant erosion or siltation on- or off-site.

### Exceed Storm Drainage Capacity and Flooding

Would the Project:

- d) Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems due to changes in runoff flow rates?

Would the Project:

- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map that would impede or redirect flood flows?
- h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Would the Project:



j) Inundation by seiche, tsunami, or mudflow?

### Flooding, Tsunami, etc.

The Project is not located within a 100-year flood zone nor is it subject to flooding as a result of levee or dam failure. Additionally, no structures are proposed to be constructed as a result of this Project. For this reason, there would be *no impact* in these regards. The Project site is distant from any bodies of water that could result in a seiche or tsunami; therefore, there is *no impact*.

### Storm Drainage

The Project would not increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. The proposed home sites would occupy only 1 to 2 acres of each 20-acre lot (less than 10% cover), and the proposed EVA will be surfaced with compacted gravel. This will not significantly affect the overall rate or quantity of runoff from the site. As described above, the implementation of Best Management Practices for reducing erosion and siltation will be required to be implemented during construction activities. These measures will also ensure that construction-related runoff does not result in flooding on or offsite.

It is likely that the rate and amount of surface runoff leaving the site would decrease as a result of the Project's use of runoff as a source of olive orchard irrigation. As described above, the re-channelized stream will continue to collect site runoff after construction activities are complete, but post construction runoff would not exceed the capacity of existing or planned storm water drainage systems due to changes in runoff flow rates. Therefore, this impact is considered *less than significant*.

### Impoundment Water Management

The management of impounded waters within the irrigation ponds will be critical to safety and beneficial water use of the pond facilities. Several influential factors will control the design and management of these ponds. The proposed new drainage ditch along the southern pond perimeters is planned to intercept and divert excess flows from the upstream ponds on the neighboring property to the east. The adjacent golf course irrigation activity during the summer months will consume significant volumes of their impounded waters, which would be replenished during the winter months.

**Impact Hydro 4: Impounded Waters.** New ponds proposed to be constructed under the Project have the potential to expose people or structures to a risk of loss and injury involving flooding as a result a potential failure of a pond embankment.

### Mitigation Measures

**MM Hydro 4-1: County Permits.** Pond water impoundment management and diversion will have to be addressed for final permitting of the property, as required by the County.

**MM Hydro 4-2: Pond Overflow Features.** Standard engineering practice requires that flows from the 100-year storm event be considered in sizing overflow features. In the event the





ponds are full, the diversion ditch would have to accommodate the maximum design flows around the pond facilities. It will be necessary to provide some pond overflow contingencies between the ponds and from the final downstream pond which discharges to the continuing creek to the west of the property. These overflow structures would be in the form of overflow pipes or spillways designed to handle design flows as specified by county regulations,

**MM Hydro 4-3: Pond Design.** Pond seepage can be minimized by providing an appropriate liner. A thickness of select, native, clayey materials at the bottom of the ponds can be designed to achieve a suitable barrier so as to mitigate infiltration of water into the subsurface. Pond design should also incorporate the effects of extreme winter and summer conditions as much as practically possible, while preserving the aesthetical pleasing benefits to the proposed property development.

#### Resulting Level of Significance

Implementation of Mitigation measure Hydro-4 through -6 above would ensure that operation of the on-site irrigation ponds and by-pass channel would operate in a manner that would not result in on- or off-site flooding, or that would exceed the capacity of existing downstream drainage facilities. These potential effects would be mitigated to a level of *less than significant*.



## LAND USE AND PLANNING

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING — Would the Project:				
a) Physically divide an established community?	[ ]	[ ]	[ ]	[ ✓ ]
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	[ ]	[ ]	[ ]	[ ✓ ]
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	[ ]	[ ]	[ ]	[ ✓ ]

### Setting

Land use on the Project site is governed by the *East County Area Plan (ECAP)* and the *South Livermore Valley Area Plan (SLVAP)*. As described in the Project Description, the site has a General Plan designation of Large Parcel Agriculture and is zoned “A/CA”—Agricultural/Cultivated Agricultural Overlay.

As described under Agriculture, the Project site is also under a Williamson Act contract.

The ECAP requires 100-acre minimum parcel size; however, the SLVAP provides for a zoning overlay that allows for a density bonus of four additional homes per 100 acres, provided 90 percent of the parcel being subdivided is planted with cultivated agriculture.

### Physical Division of Community / Land Use Compatibility

Would the Project:

- a) Physically divide an established community?

The proposed Project would not physically divide an established community. The 160-acre Project site is located in the South Livermore Valley, which is characterized largely by agricultural uses. The Project site is adjacent to estate vineyards on two sides, and by a golf course on the east and south. The site itself is undeveloped, and is used only for open cattle grazing. The proposed subdivision would be consistent with scale of the surrounding winery properties. No established community will be physically divided as a result of this Project; therefore, there is *no impact* in this regard.

### Land Use Plan or Policy Conflict

Would the Project:





- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect?

### East County Area Plan and Measure D

The land use of the Project site is governed by the *East County Area Plan (ECAP)*, which provides the General Plan goals and policies for this area of Alameda County and describes the General Plan Land Use Categories. In 1999, citizens passed a County-wide initiative known as “Measure D” to “preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds and the beautiful open spaces of Alameda County from excessive, badly located and harmful development.”<sup>31</sup> Measure D established a County Urban Growth Boundary by, among other methods, amending the *ECAP*. The Project site is located on a site within this ECAP area and has a “Large Parcel Agriculture” land use designation.

### South Livermore Valley Area Plan

The Project site is also located within the *South Livermore Valley Area Plan (SLVAP)* area, an approximately 14,000-acre area located at the south edge of the City of Livermore in East Alameda County. The SLVAP provides the policy framework for the County to work with local entities to preserve the South Livermore Valley as a premier wine-producing region.

The Project site is located in the Vineyard Area of the SLVAP. A Cultivated Agriculture overlay district is established within this area, which allows a density bonus of up to four additional home sites per 100 acres (or a fraction thereof) if 90% of the lot’s resulting acreage will be planted in cultivated agriculture.<sup>32</sup>

### Alameda County General Ordinance Code Title 17–Zoning

The Project site has a zoning designation of “A”—Agriculture. According to the County’s zoning code, the intent of the “A” zoning designation is to:

“[E]stablish and promote implementation of general plan land use proposals for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.”<sup>33</sup>

Permitted uses within the “A” zoning designation include one single-family dwelling and “crop, vine or tree farms.”<sup>34</sup> Also, in accordance with Vineyard Area Policy #5 in the South Livermore Valley Area

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<sup>31</sup> Alameda County, CA., Measure D–Save Agriculture and Open Space Lands, Section 1.

<sup>32</sup> Alameda County, CA, South Livermore Valley Area Plan, p 14.

<sup>33</sup> Alameda County General Ordinance Code, *Title 17 Zoning*, Sec. 17.06.010.

<sup>34</sup> *Ibid*, Sec. 17.06.030.



Plan, and subject to the County's site development review process, the Project could also utilize the non-orchard 10% area of a 20-acre parcel for a winery.

The proposed Project is the construction of a series of irrigation ponds, re-channelization of a creek, the construction of an EVA, and the subdivision of the 160-acre site into eight 20-acre lots. The subdivision of the 160 acres into eight 20 acre lots is consistent with both the ECAP and the SLVAP because the site is being subdivided for the purpose of planting orchards with one single family dwelling per lot (or possibly a winery), and the site's "Cultivated Agriculture" overlay permits a density bonus allowing for four single family units per 100 acres, or 20-acre lot sizes.

There would be *no impact* in this regard.

### **Conservation Plan**

Would the Project:

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

The Project site is not subject to a habitat conservation plan or a natural community conservation plan. There is *no impact* in this regard.



## MINERAL RESOURCES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES — Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	[ ]	[ ]	[ ]	[ ✓ ]
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	[ ]	[ ]	[ ]	[ ✓ ]

### Mineral Resources

Would the Project:

- a) Result in the loss of availability of a known mineral resource?
- b) Result in the loss of availability of a locally important mineral resource?

Alameda County General Plan does not identify any regionally or locally-important mineral resources on the Project site or within its vicinity. Geology and soils at the site do not indicate the potential for valued mineral resources to be present. Therefore, there is ***no impact*** in this regard.



## NOISE

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. NOISE — Would the Project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	[ ]	[ ✓ ]	[ ]	[ ]
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	[ ]	[ ✓ ]	[ ]	[ ]
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	[ ]	[ ]	[ ✓ ]	[ ]
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	[ ]	[ ✓ ]	[ ]	[ ]
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	[ ]	[ ]	[ ✓ ]	[ ]
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	[ ]	[ ]	[ ✓ ]	[ ]

Noise is defined as unwanted sound. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Most of the sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor,  $L_{dn}$  (day/night average sound level), was developed. The  $L_{dn}$  divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average, which includes both an evening and nighttime weighting.



## Setting

The Project Area is located in the South Livermore Valley area of Alameda County which has a distinctly rural, low density character and is sparsely populated by full time residents. The surrounding noise environment is typically quiet, broken up by the occasional vehicle or the use during the day by tractors and other agricultural equipment or construction activities. In general, the area enjoys minimal noise levels.

## Regulatory Setting

As a guideline, the State of California Department of Health Services has identified “community noise equivalent levels” or “CNEL” values of 60 dBA or less as normally acceptable outdoor levels for residential use. The applicable local standard is set forth in the Noise Element of the Alameda County General Plan and in the Health and Safety section of the Alameda General Ordinance Code. The General Plan Noise Element, states that noise generated by new projects shall meet the acceptable exterior noise levels standards of the Noise and Land Use Compatibility Guidelines. Of these standards, the levels for residential use are the lowest with a limit not to exceed 65 dB  $L_{dn}$  for one minute during the day (7 a.m. to 10 p.m.) or 60 dB  $L_{dn}$  for one minute during the evening (10 p.m. to 7 a.m.).

## California Environmental Quality Act

The State CEQA guidelines address how to evaluate the significance of effects of environmental noise attributable to a proposed project. The CEQA guidelines ask the following questions relevant to the proposed Mill Modernization project.

Would the project result in the exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels.

Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

CEQA does not define what noise level increase would be considered substantial. Typically in high noise environmental (i.e., greater than 60 dBA,  $L_{dn}$ ), an increase by more than 3 dB  $L_{dn}$  due to the project would be considered a significant impact. Where the existing noise levels are less than 60 dBA,  $L_{dn}$ , a greater than 5 dB,  $L_{dn}$  increase would be considered a significant impact.

## East County Area Plan

Measure D, adopted by the voters of Alameda County in November 2000, amended the County’s East County Area Plan to establish more restrictive land use controls over the extensive unincorporated areas north and south of Livermore. The overall purpose of Measure D Amendments to the ECAP was stated as follows: “...to preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds and the beautiful open space of Alameda County from excessive, badly located and harmful development.” Specific goals, policies and implementation measures related to



the preservation of an acceptable noise environment in the East County area were included in the Measure D amendments to the ECAP and are restated here:

**Goal:** *To minimize East County residents' and workers' exposure to excessive noise.*

Policy 288: The County shall endeavor to maintain acceptable noise levels throughout East County.

Policy 289: The County shall limit or appropriately mitigate new noise-sensitive development in areas exposed to projected noise levels exceeding 60 Db based on the *California Office of Noise Control Land Use Compatibility Guidelines*.

Policy 290: The County shall require noise studies as part of development review for projects located in areas exposed to high noise levels and in areas adjacent to existing residential or other sensitive land uses. Where noise studies show that noise levels in areas of existing housing will exceed "normally acceptable" standards (as defined by the *California Office of Noise Control Land Use Compatibility Guidelines*), major development projects shall contribute their prorated share to the cost of noise mitigation measures such as those described in Program 104.

Program 104: The County shall require the use of noise reduction techniques (such as buffers, building design modifications, lot orientation, soundwalls, earthberms, landscaping, building setbacks, and real estate disclosure notices) to mitigate noise impacts generated by transportation-related and stationary sources as specified in the *California Office of Noise Control Land Use Compatibility Guidelines*.

Noise impacts associate with the Project would involve construction-related noise and permanent noise from the agricultural and residential activities that would be on-going at full build-out of the Project.

### **Construction Noise**

Would the Project:

- a) Result in exposure of persons to or generation of noise levels in excess of local standards?
- b) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- d) Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Proposed grading and construction of the Project would result in temporary noise increases due to the operation of heavy equipment. Construction noise sources range from about 76 to 85 dBA ( $L_{eq}$ ) at 50 feet for most types of construction equipment with slightly higher levels of about 88 to 91 dBA ( $L_{eq}$ ) at 50 feet for certain types of earthmoving equipment.

The potential for construction-related noise increases to adversely affect nearby residential receptors depends on the location and proximity of construction activities to nearby residential receptors or other receptors sensitive to noise. The Project site is a rural area; the site and its surrounding parcels are minimum 100 acres, which means that there is sufficient distance between adjacent residences to buffer most acute noise impacts. The nearest residences and other land uses to the Project site are shown in



aerial image in Figure 1. The nearest residence to the south is located approximately 500 feet from the site boundary, and portions of the golf course where sensitive receptors could be present are also approximately 500 feet from the Project site's eastern and southern boundaries; however, the majority of construction activities on the site will occur in the interior of the site, between 1,000 and 2,000 feet away from any potential sensitive receptors.

The *ECAP* has a stated goal of minimizing East County residents' and workers' exposure to excessive noise. Normally acceptable noise exposure for residential areas is typically between 50-60 dB.<sup>35</sup> Considering that the Project site is in a rural agricultural area, and the 100-acre (or, with the density bonus, 20-acre) minimum lot size results in a very low density, it is likely that noise exposure in the vicinity is, at most times, lower than 60 dB. Policy 289 of the *ECAP* requires the County to limit or appropriately mitigate new noise-sensitive development in areas exposed to projected noise levels exceeding 60 db.<sup>36</sup>

In the context of this analysis, construction activity is considered to be a noise-intensive activity that would result in noise levels in excess of 60 dB. As described above, construction noise sources range from about 76 to 85 dBA ( $L_{eq}$ ) at 50 feet for most types of construction equipment with slightly higher levels of about 88 to 91 dBA ( $L_{eq}$ ) at 50 feet for certain types of earthmoving equipment. However, at a distance of 500 feet there would be a drop by approximately 20 decibels. At 500 feet, only the loudest types of construction equipment would exceed 60 dB.<sup>37</sup> Based on this analysis, earthmoving activities along the eastern boundary of the site adjacent to the golf course may on occasion exceed the 60 dB threshold. This would be intermittent and not sustained, however, and does not pose a significant impact. As construction activities move into the interior of the site, the distance to the nearest sensitive receptor increases, thereby decreasing the overall noise impact on the surroundings.

**Impact Noise 1: Construction Noise.** Construction activity along the site's eastern boundary may adversely impact sensitive receptors at the adjacent golf course. As discussed above, excessive construction related noise levels would be temporary and would not be sustained. Nevertheless, unless the mitigation measures provided below are implemented, this is considered a *potentially significant* impact.

The following mitigation measures are required.

#### Mitigation Measures

**MM Noise 1-1: Noise Control Devices.** All construction equipment operated at the Project site shall be equipped with manufacturer's standard noise control devices (i.e., improved mufflers, intake silencers, and/or engine enclosures) to minimize the generation of adverse and/or excessive noise impacts on adjacent land uses. Newer equipment shall

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<sup>35</sup> California Office of Noise Control, *Land Use Compatibility Guidelines*.

<sup>36</sup> Alameda County, *East County Area Plan*, p. 70.

<sup>37</sup> Attenuation rates determined using online calculator at: [www.mcsquared.com/dbframe.htm](http://www.mcsquared.com/dbframe.htm).





be used whenever possible. All construction equipment shall be inspected at periodic intervals to ensure proper maintenance and resulting lower noise levels.

**MM Noise 1-2: Impact Tools.** Equipment used for project construction shall have hydraulically or electrically powered impacts tools, such as jack hammers, pavement breakers and rock drills, whenever possible, to avoid noise associated with compressed air exhaust from pneumatically-powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used.

**MM Noise 1-3: Construction Hours.** Construction activities that could affect adjacent noise-sensitive uses (i.e., residences) shall be limited to daylight hours between 7:00 AM and 7:00 PM.

### Resulting Level of Significance

Satisfactory implementation of MMs Noise-1 through -3 above will ensure that the Project impacts remain *less than significant* regarding construction noise.

### Operational Noise

Would the Project:

- a) Result in exposure of persons to or generation of noise levels in excess of local standards?
- c) Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

The Project operations would not result in exposure or generation of noise levels in excess of local standards. At full buildout of the eight residential homes and the irrigation ponds, noise levels from the operation of these activities would be consistent with other low density scattered site residential uses in the area and with local vineyard and other agricultural activities. Project noise levels from operations would be not result in the exposure people to or generation of noise levels in excess of local standards, or result in a permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. Therefore, this impact is considered *less than significant*.

### Airport or Private Airstrip

Would the Project:

- e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?
- f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

The Project site is not within an airport land use plan, within two miles of a public or public use airport, but, as noted earlier, is within one-quarter mile of a private airstrip (Meadowlark Field). The air strip at Meadowlark Field is oriented east-west, reflective of the prevailing wind pattern in the area, whereas the



Project site and potential home sites are located south of the air strip. As a consequence, none of the future home sites would be within the over flight pattern of private planes using the nearby air strip. Given the low level of flight activity at the Meadowlark Field, and the distance from it, the potential for exposing future residents or workers to excessive noise levels from Meadowlark Field would be ***less than significant***.



## POPULATION AND HOUSING

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING — Would the Project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	[ ]	[ ]	[ ✓ ]	[ ]
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[ ]	[ ✓ ]
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[ ]	[ ✓ ]

### Population Inducement

Would the Project:

- a) Induce substantial population growth in a manner not contemplated in the General Plan?

The proposed Project would result in eight 20-acre lots and eventual development of one single-family residence per lot (or possibly a winery). The potential to build eight single-family homes (and/or a winery) on the Project site would be permitted under the ECAP and the SLVAP and, therefore, would not exceed ABAG growth projections for this section of Alameda County. This impact is considered *less than significant*.

### Displacement of Housing and/or People

Would the Project:

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?
- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?

The Project site is currently vacant and development of the proposed Project would not displace existing housing or people. *No impact*.



## PUBLIC SERVICES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES —				
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	[ ]	[ ]	[ ✓ ]	[ ]
ii) Police protection?	[ ]	[ ]	[ ✓ ]	[ ]
iii) Schools?	[ ]	[ ]	[ ✓ ]	[ ]
iv) Parks?	[ ]	[ ]	[ ✓ ]	[ ]
v) Other public facilities?	[ ]	[ ]	[ ✓ ]	[ ]

Fire protection in this area is provided by Alameda County Fire Department. The nearest station is Station 8 located in Livermore at 1617 College Avenue, approximately 5 miles northwest of the Project site.

Law enforcement in the Project vicinity is provided by the Alameda County Sherriff's Department from the Pleasanton Substation located at 5672 Stoneridge Drive, Pleasanton, CA. Assistance is also provided by the City of Livermore Police Dept. located at 1110 South Livermore Avenue, Livermore, CA

### Public Services

Would the Project:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:
- i) Fire protection?
  - ii) Police protection?
  - iii) Schools?
  - iv) Parks?
  - v) Other public facilities?



Subdivision of the 160-acre property into 20-acre lots and the potential addition of eight new rural homes would result in a minor increase in the demand for police, fire and other public services but would not significantly affect the ability of service providers to maintain current levels of service or to create a need for new physical facilities. Impacts of the Project on public services would be *less than significant*.



## RECREATION

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION —				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	[ ]	[ ]	[ ]	[ ✓ ]
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	[ ]	[ ]	[ ]	[ ✓ ]

### Accelerated Physical Deterioration of Facilities

Would the Project:

- a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The Project would not result in a substantial increase of existing neighborhood and regional parks due to the potential for increasing the local housing stock in the South Livermore Valley area by eight rural houses. Proposed agricultural activities on the Project site would have no effect on recreational resources including neighborhood or regional parks. ***No impact.***

### Effect of New or Expanded Facilities

Would the Project:

- b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The Project does not include recreational facilities, nor would it require the construction or expansion of recreational facilities. Therefore, there would be ***no impact.***



## TRANSPORTATION / TRAFFIC

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC — Would the Project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	[ ]	[ ]	[ ✓ ]	[ ]
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	[ ]	[ ]	[ ✓ ]	[ ]
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location which results in substantial safety risks?	[ ]	[ ]	[ ]	[ ✓ ]
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	[ ]	[ ]	[ ✓ ]	[ ]
e) Result in inadequate emergency access?	[ ]	[ ]	[ ]	[ ✓ ]
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	[ ]	[ ]	[ ]	[ ✓ ]

The analysis in this section of the Initial Study is based on the traffic memo prepared for the proposed Project by Dowling Associates, Inc. The traffic memo provides an assessment of potential traffic and transportation impacts that could result from the Greenville Road Subdivision Project. Trip generation and distribution were estimated and presented, based on available data provided by the Project sponsor. A copy of the traffic study is provided in **Appendix E** of this document.



## Setting – Existing Conditions

The proposed Project would be located in a rural area of Alameda County approximately five miles southeast of the City of Livermore. The Project is bounded to the west by Greenville Road, a 35-mph north-south two-lane road. The Project is bounded to the north by the entrance road to the Poppy Ridge golf course. Greenville Road currently serves several rural homes and small wineries, in addition to the golf course and the Project site. Based on observations, there are low volumes on Greenville Road. Since Greenville Road is a two-lane road, the capacity is approximately 15,000 vehicles per day.

## Traffic Load & Capacity and Level of Service (LOS)

Would the Project:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The proposed Project consists initially of construction activities, followed by the operation of the proposed olive orchard and occupancy of up to eight rural residential homes. The traffic impact assessment evaluated both short-term construction-related trips and longer-term Project-related trips.

## Construction-Related Impacts

In order to conduct grading operations and build homes on the site, large construction vehicles would be required to transport materials and equipment to the site. Access to the area is limited primarily to Greenville Road. The presence of large construction vehicles entering and exiting onto Greenville Road and Poppy Ridge Entry from the Project site may pose a temporary impact to operations at intersections and on roadways in the vicinity.

The summary of the Project’s daily trip generation during site grading and construction of the irrigation ponds is shown in **Table 5**. **Figure 20** provides an illustration of Project trip distribution, which was based on an evaluation of available City of Livermore travel demand model data developed for the El Charro Specific Plan project.

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**TABLE 5: DAILY TRIP GENERATION**

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Trip Generation	Quantity	Trips	
		Daily	Peak Hour (AM and PM)
Construction Workers	6	18	6

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Assumptions:

1. Daily trips are estimated on ITE Trip Generation (8th Edition) General Industrial Use (110)
  2. Peak hour trips are estimated based on the assumption that all construction workers would drive alone to and from the site.
- 





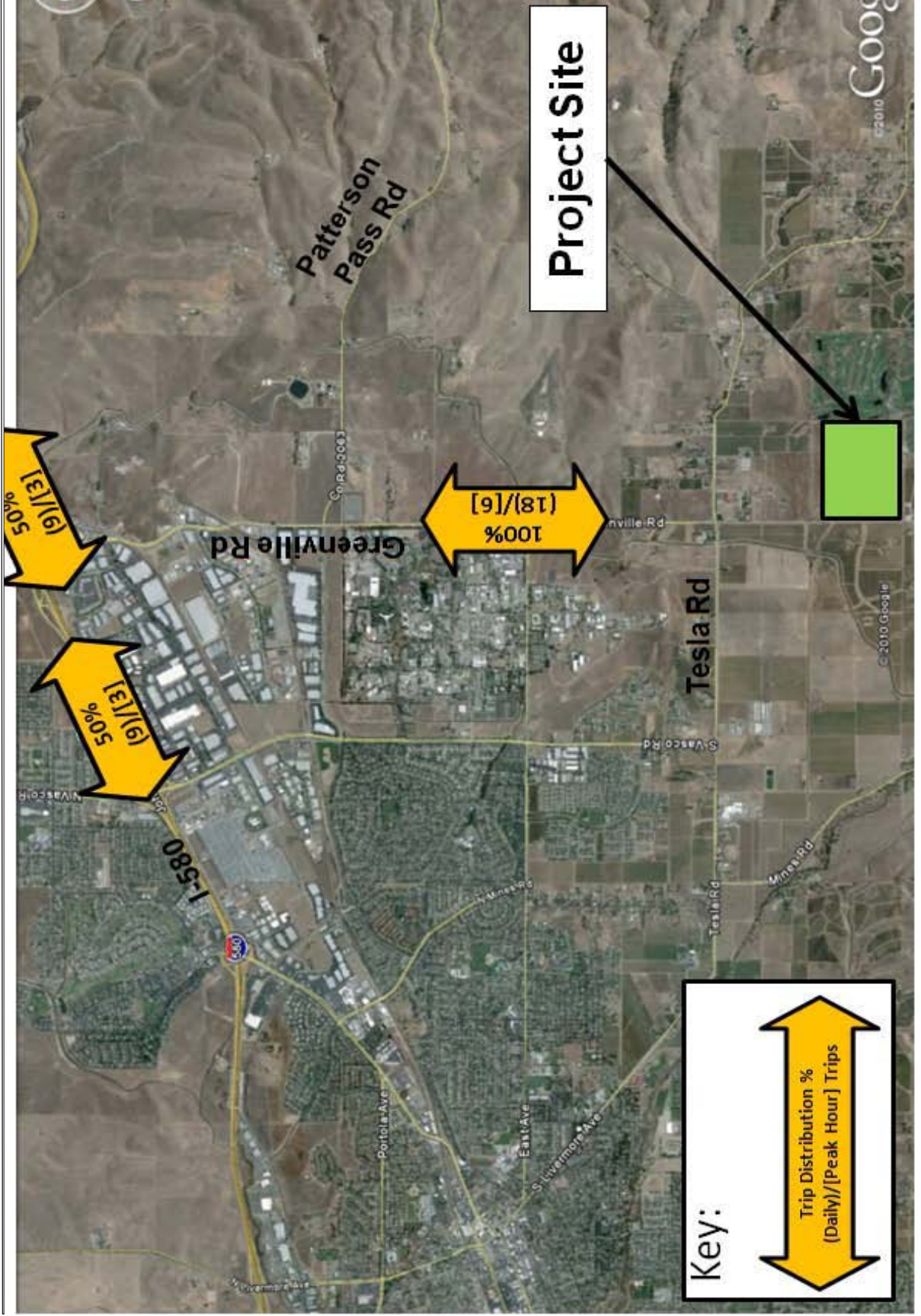


Figure 20  
Traffic Distribution



Based on the trip generation rates, it is estimated that the maximum number of daily trips to and from the project site during the construction period would be 18. Based on observations, Greenville Road experiences low traffic volumes, reflecting the low-density character of the area. Greenville Road is a two-lane road with a capacity of approximately 15,000 vehicles per day. Greenville Road would be capable of accommodating the additional 18 daily trips that the proposed Project would generate during construction. Therefore, in terms of trip generation, the Project would not cause a substantial increase in construction-related traffic in relation to the existing traffic load and capacity of the street system, nor would it exceed, either individually or cumulatively, a level of service standard established by the County Congestion Management Agency for designated roads and highways.

### Operational Traffic Impacts

The Project is expected to add 8 new single-family homes to the area. The average weekday trip generation rate for one single-family detached home is approximately ten trips. The Project is expected to generate an average of 80 new vehicle trips per day. Greenville Road would be the primary road providing access in and out of the Project area, and Greenville Road is a two-lane road with a capacity of approximately 15,000 vehicles per day. This road would be capable of accommodating the additional 80 daily trips that the proposed Project would generate during operations. Therefore, in terms of trip generation, the Project would not cause a substantial increase in operational traffic in relation to the existing traffic load and capacity of the street system, nor would it exceed, either individually or cumulatively, a level of service standard established by the County Congestion Management Agency for designated roads and highways. The impact to congestion on surrounding street systems resulting from the Project would be considered *less-than-significant*.

### Mitigation Measures

Even though the Project's construction traffic would have a less than significant impact on the capacity of surrounding roadways, the following mitigation measures are recommended to further reduce the impact of construction traffic:

- MM Traf 1-1: Construction Routing Plan.** The Applicant shall develop and submit a precise route of access to the property for construction vehicles for the term of construction. Alternative routes that minimize traffic past local residences and passive recreation area should be used if available.
- MM Traf 1-2: Conformance with County Construction Traffic Policy.** The Applicant shall conform with all County requirements with regard to construction traffic, such as warning signage and flag-person controls, as well as pilot cars / escorts for large loads.



## Resulting Level of Significance

Compliance with these requirements would ensure that construction equipment access to the site would be a *less-than-significant* impact on traffic nearby the Project Area.

## Air Traffic Patterns

Would the Project:

- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location which results in substantial safety risks?

The Project would not result in a change in air traffic patterns. There is *no impact*.

## Site Access, Circulation and Hazards

Would the Project:

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- e) Result in inadequate emergency access?

Access to the Project would be from Greenville Road, a rural 2-lane roadway with a design capacity of 15,000 vehicles per day. The roadway is straight as it approaches and leaves the project frontage, affording excellent sight distance in both directions. Access to specific lots would be from either the access road to the Poppy Ridge golf course, from Greenville Road itself, or from a proposed roadway that would be aligned with the southerly boundary of the property, intersecting at a 90° angle with Greenville Road. The low level of activity anticipated on the Project site, even with full build-out of eight home sites, would result in only minimal change from existing conditions and would not increase hazards due to a design feature or use of farm equipment. The proposed driveways and on-site service road for the irrigation ponds would improve vehicular access to all parts of the property and result in improved emergency access compared with existing conditions.

The Project would have no effect on the performance or safety of such facilities. Potential traffic-related impacts to hazards would be *less than significant* and with regard to emergency access, there would be *no impact*.

## Alternative Transportation and Transit

Would the Project:

- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The proposed Project would not conflict with any adopted policies, plans, or programs supporting alternative transportation. The Project site is located in a rural area, consistent with applicable plans and policies for land use and transportation in that part of Alameda County. Therefore, there would be *no*



*impact* with regard to conflicts with adopted plans and policies or programs related to public transit, bicycle or pedestrian facilities.



## UTILITIES AND SERVICES

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS — Would the Project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	[ ]	[ ✓ ]	[ ]	[ ]
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[ ]	[ ]	[ ✓ ]	[ ]
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[ ]	[ ]	[ ✓ ]	[ ]
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	[ ]	[ ✓ ]	[ ]	[ ]
e) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	[ ]	[ ✓ ]	[ ]	[ ]
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	[ ]	[ ]	[ ✓ ]	[ ]
g) Comply with federal, state, and local statutes and regulations related to solid waste?	[ ]	[ ]	[ ]	[ ✓ ]

### Wastewater Collection, Treatment and Disposal

Would the Project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments?

The Project will generate wastewater flows from the eight (8) new residential homes pursuant to the proposed subdivision. No public sewer system is available in proximity to the site, and the Project will rely on individual on-site wastewater treatment systems (i.e., septic tanks and leach fields) for wastewater treatment and disposal.



Alameda County regulates installation and operation of on-site wastewater treatment system under the authority of the Alameda County General Ordinance Code, Chapter 15.18.040.B. These regulations provide minimum standards for the construction and operation of on-site wastewater treatment systems, and are in addition to the requirements of the State Water Quality Control Board and other local agencies such as the Zone 7 Water Agency. Included as part of these regulations are requirements regarding how such systems must be located, designed, constructed, and operated in a manner to ensure that sewage effluent does not surface and that percolation of effluent will not adversely affect the public health, safety or welfare.

**Impact Util 1: Septic Systems.** If not properly located, designed, constructed, and operated, the proposed septic system's sewage effluent could adversely affect the public health, safety and welfare.

### Mitigation Measures

**MM Util-1: Compliance with the County's On-Site Wastewater Treatment System Requirements.** In order to comply with the County's On-Site Wastewater Treatment System ordinance and its implementing requirements, the Project applicant shall submit the following information to the County for their review and approval prior to constructing the proposed on-site wastewater systems:

1. For Standard on-site wastewater treatment systems, plans submitted to the County must include, but are not limited to the following information:
  - a. Plan view drawings showing the location, size and dimensions of tanks, pumps and sumps, all pipes, trenches, diversion valves, distribution boxes, other valves and fittings and dual leach fields.
  - b. Details necessary to assure compliance with the current Alameda County Plumbing Code, including the kind and grade of materials and methods of assembly and installation.
  - c. Results of soil profile investigations
  - d. Results of soil percolation tests.
2. For Advanced on-site wastewater treatment systems, additional information including but not limited to the following, is also required:
  - a. Detail page showing the application rate, number of bedrooms, daily design sewage flow, wastewater application area, trench or bed length or area, and all relevant calculations.
  - b. Calculations for sizing and laying out the system, pump sizing, including pump curves, dose volume and frequency.



- c. Spacing, sizing of the orifices and laterals
- d. Elevations (cross-sectional views) with dimensions of septic tank, treatment units, pump tanks, performance and monitoring wells, valves, dispersal trenches or beds, lateral risers, inspection pipes, dose counter, alarm systems, equipment specifications
- e. A complete description of the wastewater and the treatment and dispersal processes, including wastewater sources, flows (peak and daily average), and strength (BOD, TSS, TN, other parameters as appropriate); hydraulic and organic loading for the treatment process, and for the effluent discharge to soil; means for handling and disposal of solids; means for monitoring system performance; relevant calculations and supporting references.
- f. An Operation and Maintenance Manual to be provided to the Department and to the property owner.
- g. A Deed Restriction must be recorded with the County Recorder, binding on the current owner and all future owners. This recording may be delayed until the recording of the Final Map in the case of a newly created subdivision with no parcel number yet.

### Resulting Level of Significance

Pursuant to Mitigation Measure MM-Util-1, the Project will be required to demonstrate compliance with the County's On-Site Wastewater Treatment System ordinance and its implementing requirements, and effects on wastewater collection, treatment and disposal would be reduced to a level of *less than significant*.

### Water Supply

Would the Project:

- d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

Water supply to serve the proposed Project will be provided from a variety of sources to meet the different water requirements of the Project:

Potable water to serve the drinking and other indoor potable water needs of future residents will come from connections to the Crane Ridge Mutual Water Company's water transmission pipelines. This mutual water company was established to provide potable water to the adjacent Crane Ridge development and the Poppy Ridge Golf Course. The Crane Ridge Mutual Water Company's water supply is obtained from Cal Water under a separate agreement. In addition to Cal Water's more than 17,000 customer connections in the Livermore area, they also serve 25 customer connections through Crane Ridge. Pursuant to private agreements with property owners fronting along the Crane Ridge water transmission alignment, the



Project site is allowed to obtain up to 80 gallons per minute (gpm) of potable water from this pipeline (or over 14,000 gallons per day) of potable water flow. Assuming an average daily indoor water demand of approximately 70 gallons per day per capita, a per-unit population of 3.5 people per home (on average) and 8 new homes, the Project's estimated potable water demand would approximate 1,960 gallons per day. This water supply would be more than adequate to serve the indoor potable water demands of the Project.

Irrigation water for the olive orchards would be derived from a combination of captured runoff from the on-site stream channel, augmented with on-site well water. Actual irrigation demand for the orchards is difficult to estimate because of a large number of variables including the density of planting, expected/desired crop yield, soil type, rainfall quantity and regularity, evaporation and transpiration rates, and the characteristics of the irrigation system. However, some rough approximations can be calculated, as follows:

- Project site = 160 acres, approximately 20 acres in proposed ponds. 140 remaining acres, 90% planted with olive orchards = 125 acres of olive orchard
- 1 acre of olive orchard needs approximately 1.05 million gallons of total water (rainfall and irrigation combined) per year<sup>38</sup>
- 125 acres would need approximately 132 million gallons of total water per year (or approximately 405 acre-feet per year)
- Annual average rainfall in Livermore is approximately 22 inches per year, supplying approximately 115 acre-feet of annual water over the 125 acres
- Residual water demand via irrigation sources would be approximately 260 acre-feet per year over the 125 acres of orchards.

One source of irrigation water will be from on-site stream flows. Although the on-site the creek does not currently support any significant flow and does not have any flow in dry years, the creek does pool water for a short time after significant rain events and does have flows following back-to-back large rainfall events. The Project intends to construct three irrigation ponds along the stream's existing alignment and would re-align the stream just south of its current alignment. The re-channelized stream would serve to drain the site and convey storm water flows across the site. The ponds would be filled with upstream storm water flows (as available) that would be diverted from the streambed channel. The amount of water derived from this source will be dependent upon rainfall conditions and upstream flows. During wet seasons when the creek does convey stormwater, the water available in these flows will be retained in the ponds for irrigation use during the dryer seasons.

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<sup>38</sup> "International research concludes that one acre of a mature olive orchard will need between 2.4 and 4 megalitres of water (rainfall and irrigation combined) per year." One (1) megalitre = 264, 172 US gallons, and 4 megalitres = 1,056,688 US gallons. Source: <http://www.santacruzolive.com/planting.asp?page=irrigation>.





Because the stream flow source will be intermittent, irregular and unpredictable, additional irrigation water will be derived from on-site wells. Each of the 8 proposed lots would have one well to be used for irrigation purposes. Under the California Water Code, all property owners above a common aquifer possess a mutual right to reasonable and beneficial use of a groundwater resource on land overlying the aquifer from which the water is taken. Overlying rights are correlative (related to each other), and overlying users of a common water source must share the resource on a pro-rata basis in times of shortage. A property overlying use takes precedence over all non-overlying uses. The Project site is located with the Mocho I sub-basin. Both unconfined and confined aquifers exist in the water-bearing sediments. Waters from this sub-basin are of fair to excellent quality, with some instances of elevated boron and sodium ions. The recent alluvium ranges in thickness from approximately 10–50 feet. The alluvium overlies the Livermore Formation. The Upper Aquifer is exposed at the surface in much of the area. Well production in this sub-basin (primarily by Cal Water) ranges up to 950 gpm with specific capacities of 2 to 50 gpm per foot of drawdown.

**Impact Util 2: Groundwater Supply.** Under “worst-case” dry year conditions assuming that little to no stormwater flows have been able to be stored in the irrigation ponds, well water supplies would need to provide the primary source of irrigation water. If on-site wells are capable of producing up to 950 gpm, or approximately 4 acre-feet per day (as do other wells in this sub-basin), then the wells would need to pump as much as 65 days per year to generate adequate supply to meet estimated irrigation demand.

### Mitigation Measures

**MM Util-2: Well Production Requirements.** In order to demonstrate an adequate, safe and reliable sustained supply of irrigation water to support the proposed Project, the applicant shall conduct groundwater well monitoring and tests to determine well production and well drawdown characteristics for the on-site well. Well production yields must be adequate to satisfy the full agricultural water demands of the proposed olive orchards, in the event that no surface water supplies from the stream channel are available in a given dry year.

### Resulting Level of Significance

Upon demonstration of adequate, safe and reliable sustained well yields as required pursuant to MM Util-1 above, the combination of water supply sources for both domestic and irrigation purposes can satisfy water demands, and this impact is considered *less than significant*.

### Storm Drainage Facilities

Would the Project:

- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The Project site is currently drained by the existing stream segment that bisects the Project site. This segment drains to the western boundary of the Project site and connects to the existing storm drain system



in Greenville Road. Post-construction, run-off will be directed to the newly re-channelized stream bed, which will also be connected to the existing storm drainage system in Greenville Road. No new storm water drainage facilities or expansion of existing facilities would be required as a result of this Project; therefore, this impact is considered *less than significant*.

### **Solid Waste Management**

Would the Project:

- f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects?
- g) Comply with federal, state, and local statutes and regulations related to solid waste?

Alameda County is served by three active permitted landfills: the Altamont Sanitary Landfill, the Vasco Road Sanitary Landfill and the Tri-Cities Recycling and Disposal Facility in Fremont. The total remaining permitted capacity for all three landfills is over 110 million cubic yards. The Project would add approximately 28 new residents to the area. Pursuant to California Integrated Waste Management Board estimates, the average annual per capita residential solid waste disposal rate in Alameda County is 0.42 tons. Given a typical waste density of 80 pounds per cubic yard, the per capita disposal rate is 12.75 cubic yards per year, or approximately 350 total cubic yards per year for the Project. The impact of the Project in relation to the total remaining permitted capacity of Alameda County landfills is considered to be *less-than-significant*. Additionally, the Project would comply with all Federal, State and Local statutes and regulations related to solid waste, resulting in *no impact* to waste disposal law violations.



## MANDATORY FINDINGS

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	[ ]	[ ]	[ ✓ ]	[ ]
b) Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)	[ ]	[ ]	[ ✓ ]	[ ]
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	[ ]	[ ]	[ ]	[ ✓ ]

### Quality of the Environment

Would the Project:

- a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The proposed Project would be constructed in a portion of Alameda County that supports sensitive wildlife species. The biological resources analysis identified potentially significant impacts to special-status species. However, mitigation measures are provided that would reduce any potentially significant impacts to special status species to a level considered less than significant. For this reason, the Project would not substantially degrade the quality of the environment. There are no important examples of major periods of California’s history or prehistory identified on the Project site. However, the Cultural Resources analysis provides mitigation measures that would address the inadvertent discovery of significant cultural resources. Implementation of these measures will ensure that no important examples



of the major periods of California history or prehistory are eliminated. This is a *less than significant* impact.

### **Cumulatively Considerable Impacts**

Would the Project:

- b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)

The Project would have an incremental cumulative impact on GHG levels. The GHG analysis determined that these impacts will be less than significant. Therefore, when viewed in connection with the effects of past projects and other current projects, these effects are considered *less than significant*.

### **Adverse Affects on Human Beings**

Would the Project:

- c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

The Project would not result in any environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. *No impact*.



## Sources

Alameda County Zoning Ordinance, as amended.

Alameda County, *East County Area Plan*, revised by initiative, 2000.

Alameda County, *South Livermore Valley Area Plan*, 1993, as amended.

Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans*, updated June 2010.

California, State of, California Environmental Quality Act (CEQA), 1970, as amended.

California, State of, Public Resources Code, as amended.

Department of Toxic Substance Control (DTSC), EnviroStor database, accessed 4/25/11.

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## APPENDICES