# Draft
# INITIAL STUDY/
# MITIGATED NEGATIVE DECLARATION

## for the

# Tesla Road
# Winery
**ALAMEDA COUNTY**
**CALIFORNIA**

**Prepared for:**

ALAMEDA COUNTY
Community Development Agency
Alameda County CDA
Planning Division

**Prepared by:**

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**July 31, 2015**

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# MITIGATED NEGATIVE DECLARATION

**Project: Tesla Road Winery**

**Lead Agency: Alameda County**

## PROJECT DESCRIPTION

This Mitigated Negative Declaration (MND), supported by the attached Initial Study (IS), evaluates the environmental effects of a proposed multi-use wine facility at the northeast corner of the Greenville Road and Tesla Road intersection outside of Livermore, within unincorporated Alameda County, California. The applicant, RAO Company, is proposing the construction of a new 19,944 square foot (sq. ft.) building on the the property. The building's primary function would be to provide space for wine tasting, tours, and special events, and administrative offices for employees. The building would provide a dedicated space to process wine, serve customers, and hold events.

Alameda County is the lead agency for this project and has prepared this MND.

## FINDINGS

An IS has been prepared to assess the projects potential effects on the environment and the significance of those effects. Based on the Initial Study, it has been determined that the proposed project would not have any significant effects on the environment once mitigation measures are implemented. This conclusion is supported by the following findings:

1. The proposed project would have no impact related to greenhouse gas emissions, aesthetics, agricultural resources, hazards/hazardous materials, land use/planning mineral resources, population/housing, public services, and recreation.
2. The proposed project would have a less-than-significant impact on, air quality, biological resources, cultural resources, hydrology/water quality, noise, transportation and traffic, and utilities/service.systems
3. Mitigation is required to reduce potentially significant impacts related to Air Quality, biological resources, cultural resources, geology and soils, hydrology and water quality, noise, traffic, and utilities and service systems. Mitigation measures would clearly reduce all significant impacts to a less-than-significant level. The applicant has agreed to implement all required mitigation.

Following are the mitigation measures that will be implemented by the applicant to avoid or minimize environmental impacts.

**AIR QUALITY**

**Mitigation Measure AIR-1. Best Management Practices**

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All stockpiles of debris, soil, sand and any other material that can be windblown shall be covered. Trucks transporting these materials shall be covered.
- All paved construction areas and adjacent streets shall be damp swept daily.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways.
- Vegetation shall be replanted in disturbed areas as soon as possible after completion of construction.

- All haul trucks transporting soils, sand, or other loose material off-site shall be covered.
- All visible mud or dirt tracks on 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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- 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.
- Construction equipment shall be shut off when not in use to minimize idling times. Signage shall be placed for construction workers at all access points onto the site.
- 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.
- A publicly visible sign shall be posted at the site with the telephone number and person to contact at the Lead Agency regarding dust complaints. This contact 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.

**BIOLOGICAL RESOURCES**

**Mitigation Measure BIO-1:** A qualified biologist will conduct an Environmental Sensitivity Training for the construction crew prior to any construction activities. A qualified biologist will meet with the construction crew at the onset of construction at the project site to educate the construction crew on the following: 1) the appropriate access route(s) in and out of the construction area and review project boundaries; 2) how a biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the Service and Department; and 6) the proper procedures if a special-status species is encountered within the project site.

**BIO-2:** Protective fencing will be placed prior to and during construction as to keep construction equipment and personnel from impacting vegetation outside of work limits. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact.

**BIO-3:** Following construction, disturbed areas will be restored to pre-project contours to the maximum extent possible and revegetated using locally-occurring native species and native erosion control seed mix, per the recommendations of a qualified biologist.

**BIO-4:** Grading, excavating, and other activities that involve substantial soil disturbance will be planned and carried out in consultation with a qualified hydrologist, engineer, or erosion control specialist, and will utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation (pre-, during, and post-construction). Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used. Acceptable substitutes include coconut coir matting or tackified hydroseed compounds.

**BIO-5:** No pets, hunting, firearms, or open fires not required by the project will be allowed on the project site at any time.

**BIO-6:** All food-related and other trash will be disposed of in closed containers and removed from the project area at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel will not feed or otherwise attract wildlife to the area.

**BIO-7:** Pipes, culverts, and similar materials greater than four inches in diameter will be stored so as to prevent special-status wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.

**BIO-8:** Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no special-status wildlife species are trapped. Earthen ramps will be installed at intervals prescribed by a qualified biologist.

***Berkeley Kangaroo Rat, San Joaquin Pocket Mouse, San Joaquin Whipsnake, and Western Spadefoot Toad***

Implementation of mitigation measures BIO-1 to BIO-8 shall be implemented to reduce impacts to

Berkeley kangaroo rat, San Joaquin pocket mouse, San Joaquin whipsnake, and western spadefoot toad resulting from construction of the project.

***American Badger, Western Burrowing Owl, and Western Pond Turtle***

**BIO-8:** To avoid and reduce impacts to the American badger, the project applicant will retain a qualified biologist to conduct focused pre-construction surveys for badger dens in all suitable habitat proposed for construction, ground disturbance, or staging no more than two weeks prior to construction. If no potential badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential significant impacts to the American badger:

a) If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

b) If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three to five day period. After the qualified biologist determines that badgers have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

**BIO-9:** In order to avoid impacts to active western burrowing owl nests, a qualified biologist will conduct pre-construction surveys in suitable habitat within the construction footprint and within 250 feet of the footprint prior to construction. The survey shall conform to the Department's 1995 Staff Report protocol. If no western burrowing owls are found, no further mitigation is required. If it is determined that western burrowing owls occupy the site during the non-breeding season (September 1 through January 31), then a passive relocation effort (e.g., blocking burrows with one-way doors and leaving them in place for a minimum of three days) may be necessary to ensure that the owls are not harmed or injured during construction. Additionally a construction-free buffer of 150 feet will be established around all active owl nests. Once it has been determined that the owls have vacated the site, the burrows can be collapsed, and ground disturbance can proceed. If western burrowing owls are detected within the construction footprint or immediately adjacent lands (i.e. within 250 feet of the footprint) during the breeding season (February 1 to August 31), a construction-free buffer of 250 feet will be established around all active owl nests. The buffer area will be enclosed with temporary fencing, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. After the breeding season, passive relocation of any remaining owls may take place as described above.

**BIO-10:** A qualified biologist will survey suitable habitat no more than 48 hours before the onset of work activities for the presence of western pond turtle. If pond turtles are found and these individuals are likely to be killed or injured by work activities, the biologist will be allowed sufficient time to move them from the site before work activities begin. The biologist will relocate the pond turtles the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the project.

***Nesting Migratory Bird Species and California Horned Lark***

**BIO-11:** Construction activities that may directly (e.g., vegetation removal) or indirectly (e.g., noise/ground disturbance) affect protected nesting avian species will be timed to avoid the breeding and nesting season. Specifically, vegetation removal can be scheduled after September 16 and before January 31. Alternatively, a qualified biologist will be retained by the project applicant to conduct pre-construction surveys for protected nesting avian species within 500 feet of proposed construction activities if construction occurs between February 1 and September 15. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, surveys for nesting birds may be required to continue during construction to address new arrivals, and because some species breed multiple times in a season. The necessity and timing of these continued surveys will be determined by the qualified biologist based on

review of the final construction plans and in coordination with the Service and Department, as needed.

If active nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place (generally 300 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

***CTS, CRLF, and San Joaquin Kit Fox***

To mitigate for potential impacts to CTS, CRLF, and San Joaquin kit fox, the following three options are recommended:

1. Conduct protocol-level surveys for each species to determine presence/absence within the project site with the approval of the Service and Department (as appropriate); or
2. Consult with the Service and Department (as appropriate) regarding the potential presence of each species on the property and obtain a letter of concurrence that the project is not likely to result in take of these species; or
3. Assume presence.

**BIO-12:** If it is determined or assumed that CTS, CRLF, and/or SJKF are present within the project site, the project shall comply with ESA and CESA. In doing so, a letter of concurrence that the project is not likely to result in take of CTS, CRLF, and/or SJKF shall be obtained from the Service and/or Department prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service and/or Department for CTS, CRLF, and/or SJKF prior to the initiation of ground disturbance.

***Callippe Silverspot Butterfly***

**BIO-13:** A qualified biologist should be retained to conduct survey(s) for the host plant species (Johnny jump-ups) during the appropriate blooming period (February-April), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the Service shall be contacted prior to construction in order to determine the need for focused surveys for Callippe silverspot butterflies.

**BIO-14:** If it is determined or assumed that Callippe silverspot butterflies are present within the project site, the project shall comply with ESA. In doing so, a letter of concurrence that the project is not likely to result in take of Callippe silverspot butterflies shall be obtained from the Service prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service for Callippe silverspot butterflies prior to the initiation of ground disturbance.

***Large-Flowered Fiddleneck***

Implementation of the mitigation measure BIO-1 and the following measures are recommended to reduce or avoid impacts of project actions to large-flowered fiddleneck:

**BIO-15:** A qualified biologist should be retained to conduct survey(s) for large-flowered fiddleneck, during the appropriate blooming period (April-May), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the project shall comply with ESA and CESA. In doing so, the Service and Department shall be contacted prior to construction in order to develop an appropriate avoidance, minimization, and mitigation strategy for impacts to this species, and obtain a letter of concurrence that the project is not likely to result in take of large-flowered fiddleneck, or a take statement or take permit.

***Special-Status Plants***

Implementation of the mitigation measure BIO-1 and the following measures are recommended to reduce or avoid impacts of project actions to special-status plant species:

**BIO-16:** A qualified biologist should be retained to conduct survey(s) for the CNPS RPR 1B plant species identified above, during the appropriate blooming period(s), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a

description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the following measures shall be implemented:

a. Individuals shall be avoided to the maximum extent possible.
b. If avoidance is not feasible, species shall be replaced at a 1:1 success ratio for the acreage or individuals impacted (depending on species impacted) and a Rare Plant Restoration Plan shall be prepared by a qualified biologist and implemented. The plan shall include, but is not limited to, the following:

a description of the baseline conditions of the habitats within the area of impact, including the presence of any special-status species, their locations, and densities;
procedures to control non-native species invasion and elimination of existing non-native species within the area of impact;
provisions for ongoing training of facility maintenance personnel to ensure compliance with the requirements of the plan;
a detailed description of on-site and off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications, including, if required by the Department, increased planting ratio to ensure the 1:1 success ratio; and
a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

***Non-Native Invasive Species Control***

**BIO-17:** The following measures will be implemented to reduce the introduction and spread of non-native, invasive species:
Any landscaping or replanting required for the project will not use species listed as noxious by the California Department of Food and Agriculture (CDFA).
Bare and disturbed soil will be landscaped with CDFA recommended seed mix or plantings from locally adopted species to preclude the invasion on noxious weeds in the project site.
Any straw used for erosion control will either be rice straw or weed-free straw.
Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds, before mobilizing to arrive at the construction site and before leaving the construction site.
All non-native, invasive plant species will be removed from disturbed areas prior to replanting.

**CULTURAL RESOURCES**

**Mitigation and Best Management Practices CUL-1a:**
Construction Crew Cultural Resource Training. Prior to the beginning of construction, the applicant shall engage a qualified professional archaeologist to conduct a cultural resources training session for construction crew members. Information should be provided to construction personnel about the legal requirements relating to the discovery of buried cultural resources or buried human remains, as well as information useful in identifying historic and prehistoric cultural material, and the procedures to follow should cultural resources or buried human remains be encountered during Project excavations.

**CUL-1b:**Construction Activity, Evaluate Find and Implement Mitigation. In accordance with CEQA Guideline §15064.5 (f), should any previously unknown paleontological, historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood or similar debris, be discovered during grading, trenching, or other onsite excavation(s), earthwork within 100 feet of these materials shall be stopped until a qualified professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s), as determined necessary to protect the resource, as detailed below.
(A) According to CEQA Section 15126.4 avoidance is the preferred mitigation. Since CEQA provisions regarding the preservation of historic sites direct that adverse effects to historic sites shall be avoided, if feasible, the resource shall be protected from damaging effects through avoidance.
(B) Avoidance can include, but is not limited to, the following options:

1. Planning construction to avoid the historic site.
2. Incorporation of sites within parks, green space, or other open space.
3. Capping the historic site with a layer of chemically stable soil before construction. Capping the historic site would include installation of a water permeable protective barrier that is covered with a 3-ft.-thick layer of chemically stable soil before constructing non-intrusive facilities on the site. Excavation for landscaping, irrigation or any other purpose shall be limited to the soil layer above the water permeable protective barrier. If the soil layer cannot accommodate all planned underground utilities, a thicker soil layer may be used to cover the site.
4. Deeding the site into a permanent conservation easement.

(C) If avoidance of any previously undiscovered site is not feasible, data recovery shall be conducted in accordance with an approved Archaeological Data Recovery Plan (ADRP) to mitigate adverse effects to the significance of the site – the area of data recovery being limited to the area of adverse effect. This would fulfill CEQA requirements that the mitigation measure must be "roughly proportional" to the impacts of the Project. Data recovery shall be conducted by a professional archaeologist in compliance with CEQA Guideline Section §15064.5. Once the site has been properly tested, subject to data recovery, or preserved to the satisfaction of the professional archaeologist in compliance with CEQA Guideline §15064.5, the site can be further developed.

**CUL-1c:**Observation During Ground-Disturbing Activities. If the consulting archaeologist considers it necessary or appropriate, he or she shall be present during all preliminary grading or excavation work to observe soil materials being removed or excavated or respond to any discovery of human or cultural resource remains discovered by construction crews. In the event of any discovery of such resources, the archaeologist shall follow the procedures outlined in Mitigation Measure Cultural-1a.

**CUL-1d:**Halt Construction Activity, Evaluate Remains and Take Appropriate Action. Section 7050.5(b) of the California Health and Safety code will be implemented in the event that human remains, or possible human remains, are located during Project-related construction excavation. Section 7050.5(b) states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission within 24 hours. The Commission has various powers and duties, including the appointment of Most Likely Descendant (MLD) to the Project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains

**GEOLOGY AND SOILS**

**Mitigation Measure GEO-1.** The proposed facility must complete application requirements and obtain approved waste discharge requirements (WOR) from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) to manage domestic and winery process wastewater generated at the facility for the project. Domestic and winery wastewater disposal system design and approvals must also be obtained from Zone 7 and County of Alameda. Refer to Mitigation Measures, Section Q, Utilities & Service Systems.

**HYDROLOGY AND WATER QUALITY**

**Mitigation Measure SW-1** Stormwater Pollution Protection Plan. A site-specific SWPPP shall be prepared as part of the NPDES General Construction Activities Stormwater Permit. It will require the construction contractor to incorporate the SWPPP's Best Management Practices (BMP) measures into all aspects of the Project. The BMPs will include measures for management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. These measures address procedures for controlling erosion and sedimentation and management all aspects of the construction to ensure control of potential water pollution sources.

Construction phase BMPs will include: dust control; minimal use of water for dust control (only as much as needed); dry sweeping and/or storm drain inlet control measures (e.g. sandbags, filter fabric, fiber rolls, etc.); install silt barriers around sensitive areas and wherever earthwork activities might result in erosion and sediment transport; stabilize stockpiled soils (if any). Post-construction BMPs will also be included to minimize off site runoff and control pollutants to storm runoff. These include minimal use of water for system washing (only as much as needed), and timing of sprinkler system to maximize infiltration. The measures included in the SWPPP will be monitored regularly for effectiveness. If a measure is found to be ineffective, it will be redesigned or replaced.

**NOISE**

**Mitigation Measure NSE-1** The following measures shall be implemented during construction:

- Construction will be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday for any on site or off-site work within 500 feet of any residential unit. Construction will not occur on holidays.

- The contractor shall use construction equipment with noise shielding and muffling devices. All internal combustion engines used on the Project Site shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poor maintained engines or other components.

- Stationary noise generating equipment shall be located as far as possible from sensitive receptors. Staging areas shall be located a minimum of 200 feet from noise sensitive receptors.

**TRANSPORTATION**

**Mitigation Measure TRAF-1** Improve and pave the driveways and the shoulders adjacent to the driveways to provide adequate area for drivers to safely accelerate or decelerate off of the actual traveled way.
Tesla Road driveway approaches and the shoulders adjacent to the driveways should provide safe and adequate bicycle movements and appropriate signage for motorists and bicyclists.

**UTILITIES AND SERVICE SYSTEMS**

**Mitigation Measure UTIL-1** The following measures shall be implemented during construction:

- All applicable waste discharge requirements and permits from the San Francisco RWQCB shall be secured for the existing process waste water treatment facility.

    - The proposed septic system location, design and capacity shall be approved by Alameda County.
    - All appropriate permits shall be obtained for the construction and installation of the proposed septic system.
    - All approvals from Zone 7 shall be obtained.

**AGREEMENT BY PROJECT SPONSOR**

Applicant, whose name is undersigned, understands the mitigation measures set forth above and agrees to be bound by them if they are adopted as a result of project approval.

*Applicant's Signature*

8/3/2015
*Date*

MOHAN R RAVULAPATI
*Applicant's Printed Name*

Questions or comments regarding this Mitigated Negative Declaration and Initial Study may be addressed to:

Mr. Damien Curry
Senior Planner
Alameda County
224 W. Winton Avenue, Room 111
Hayward, CA 94544-1215
PH: (510) 670-6684
e-mail: damien.curry@acgov.org

After comments are received from the public and reviewing agencies, the County may (1) adopt the MND and approve the proposed project; (2) undertake additional environmental studies; or (3) disapprove the project. If the project is approved, the applicant may proceed with detailed design and construction.

## 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.

*Damien Curry, Planner*

8-4-2015

*Date*

# Table of Contents



**List of Figures**



**List of Tables**



**Appendices**

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# Chapter 1. Background Information

## PROJECT DATA

1. **Project Title**: Tesla Road Winery

2. **Lead Agency Name and Address:** Alameda County Planning Division, 224 W. Winston Ave. Rm 111 Hayward, CA 94544

3. **Project Proponent:** RAO Company, 4364 W. Ruby Hill Road, Pleasanton, CA 94588

4. **Project Location:** An approximately 20 acre property located at the northeast corner of the Greenville Road and Tesla Road intersection outside of Livermore, California, within an unincorporated portion of Alameda County.

5. **Project Description Summary:** Construction of a 19,944 square foot multi-use wine facility.

6. **General Plan Designation**: Large Parcel Agriculture

7. **Zoning Designation**: Planned Development, 2055 Zoning Unit (PD-ZU2055)

8. **Surrounding Land Uses**: Grazing land to the north; rural residences to the east; residence and equestrian center to the south; wine grape vines to the southeast; and winery, event center and county facility to the northwest.

## PUBLIC REVIEW PROCESS

This Initial Study/Mitigated Negative Declaration (IS/MND or MND) will be circulated to local, state and federal agencies, interested organizations and individuals who may wish to review and provide comments on the project description, the proposed mitigation measures or other aspects of the report. The publication will commence a minimum 30-day public review period consistent with CEQA Guidelines §15105(b) beginning on August 10th, 2015 and ending on September 11th, 2015. The draft IS/MND and all supporting documents are available for review at the following location:

- Alameda County Planning Division, 224 W. Winston Ave. Rm 111 Hayward, CA 94544

The County of Alameda will consider all comments and make any necessary changes to the document prior to adoption of the final Mitigated Negative Declaration.

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# Chapter 2. Project Description

## PROJECT LOCATION AND DESCRIPTION

The Proposed Project is located at the northeast corner of the intersection of Tesla Road and Greenville Road in Livermore Valley in unincorporated Alameda County as seen in Figure 1. The site is bounded by Tesla Road to the south, Greenville Road to the west, agricultural uses to north and a rural residential property to the east. The property is located on Assessor's Parcel (APN) 99A-1625-17 and is approximately 20 acres. An aerial photograph of the Project Site and surrounding area is presented in Figure 2. The Project includes approximately two acres of developed land that is proposed for the winery facility and associated parking and driveways. The remaining 18 acres of the parcel are expected to be utilized for wine grapes. Primary access to the Project's parking lot is proposed from Tesla Road with an additional access drive proposed from Greenville Road. Development of the multi-use facility proposes a total of 113 parking spaces.

Building Features

A site plan for the Project is presented in Figure 3. The Project proponent is proposing a 19,944 square foot (sq. ft.) multi-purpose facility that would include a wine tasting room, wine manufacturing area, café, event space, kitchen, restrooms and office space. Building elevations are presented in Figure 4. The building envelope areas will be 83,347.69 sq. ft. Specific square footages of each the proposed features are provided below[1]:

| Room | Square Footage |
|---|---|
| Banquet Rooms (3)/Event Space | (6,720 sq. ft.) |
| Banquet Kitchen | (1,728 sq. ft.) |
| Tasting Room | (2,400 sq. ft.) |
| Café | (2,012 sq. ft.) |
| Café Kitchen | (1,296 sq. ft.) |
| Offices | (425 sq. ft.) |
| Services | (1,101 sq. ft.) |
| Bride/Grooms Rooms | (408 sq. ft. each) |

Project Operations

Upon Project completion, it is anticipated that the facility would generate 20,000-25,000 cases of wine annually. The facility will have a total of seven full-time employees working in the café, event center, wine tasting room and office. The café will operate seven days a week during lunch and dinner hours and have 78 seats. The tasting room will be open, daily, from 10:00 a.m. to 6:00 p.m. The wine tasting room will operate seven days a week and it is estimated that it will serve 30 visitors daily. The event space is anticipated to have five events with up to 400 people annually and 12 smaller events of up to 150 annually.

*Wine Production*

As discussed above, the Project includes space for wine processing. The processing space will be 2,232 sq. ft. and will contain space for processing of wine grapes and bottling of wine. Wine production will be limited to 20,000-25,000 cases produced annually from the proposed grapes to be grown on site. Wine processes include grape cleaning, crushing, stemming, pressing, fermenting, barreling and bottling. Normal production

[1] Richard Larson, *Multipurpose Winery Site Plan,* 2014.

operations will occur Monday through Sunday, 8:00 a.m. to 5:00 p.m., year-round. Harvest season occurs between August and October and would increase seasonal winery workers during this period.

*Tasting Room*
The proposed 2,232 sq. ft. tasting room would be open to the public daily from the hours of 10:00 a.m. to 6:00 p.m. year-round. Food served in association with wine tasting would be prepared onsite and would be limited to small appetizers to compliment the wine. One full time employee would be hired to work in the wine tasting room.

*Events*
The Project includes approximately 10,000 sq. ft. of event space. As discussed above, the three banquet rooms will provide event space throughout the year. The event space is anticipated to have five events with up to 400 people annually with 12 smaller events of up to 150 annually. The banquet rooms and will provide space for a wide variety of events ranging from corporate meetings to weddings. Larger events at the facility will be a maximum of four to five hours in duration.

Project Construction

A definitive construction schedule has not been developed. Estimates for project construction anticipate construction activities would occur over 12 months. Initial project grading and site preparation is anticipated to occur over the initial one to two first two months while construction activities will occur over the remaining months. A project grading plan is provided in Figure 6.

Wastewater Facilities

All wastewater production from the proposed facility would be handled through an onsite advanced septic systems that treat both domestic sewage as well as the process wash water from wine production. Winery operations will result in the generation of process wastewater (e.g., water to clean bottles, rinse down facilities, and remove spilled product) and domestic sewage.

It is anticipated that both sources of wastewater will be combined as allowed in the Alameda County Regulations for wineries of this anticipated wine volume or that each source will be treated in two separate treatment and dispersal systems based on efficiencies of design and possible requirements from agencies. It is anticipated that peak design flow of domestic wastewater will be as high as 7,600 gallons per day if all highest uses occur on a single days while the average daily design flow is anticipated to be 2,600 gallons. High intensity uses could be limited, such as no wine crushing on large event days or closure of the café on large event days, to reduce the maximum daily design flow. Wine production process water will be approximately 97,920 gallons per year, based on the anticipated 20,000-25,000 cases of wine produced annually, which is an average of 268 gallons per day with a peak flow in crush of approximately 1,600 gallons (Kennedy Jenks, 2015).

A proprietary pre-treatment system is proposed that will remove a minimum of 50% total nitrogen from wastewater before it is introduced into the soil dispersal system, due to the high level of nitrates in the shallow surface water. Subsurface dispersal is expected to be accomplished through shallow trench pressure distribution or shallow drip lines.

Water Supply

Water will also be supplied for domestic use from California Water Service Company's (Cal Water's) Livermore District for drinking water for staff and visitors, general housekeeping and limited irrigation of surrounding landscape, lawns and vineyards. The applicant also proposes to install a rainwater catchment and harvesting system for irrigation of the landscaping surrounding the buildings.

There is one existing agricultural well on the property. Water for the winery would be provided by the existing onsite well or a combination with California Water. Winery production water would be used throughout the facility for winemaking processes including cleaning, sanitation, grape crushing, barrel and equipment rinsing, racking, filtering and bottling.

## PROJECT SCHEDULE

Development of the site and occupancy is dependent on permitting and construction scheduling. No anticipated start date or construction schedule has been developed. Once permits are received and initial site development occurs, it is estimated that construction activities would occur over approximately 12-months.

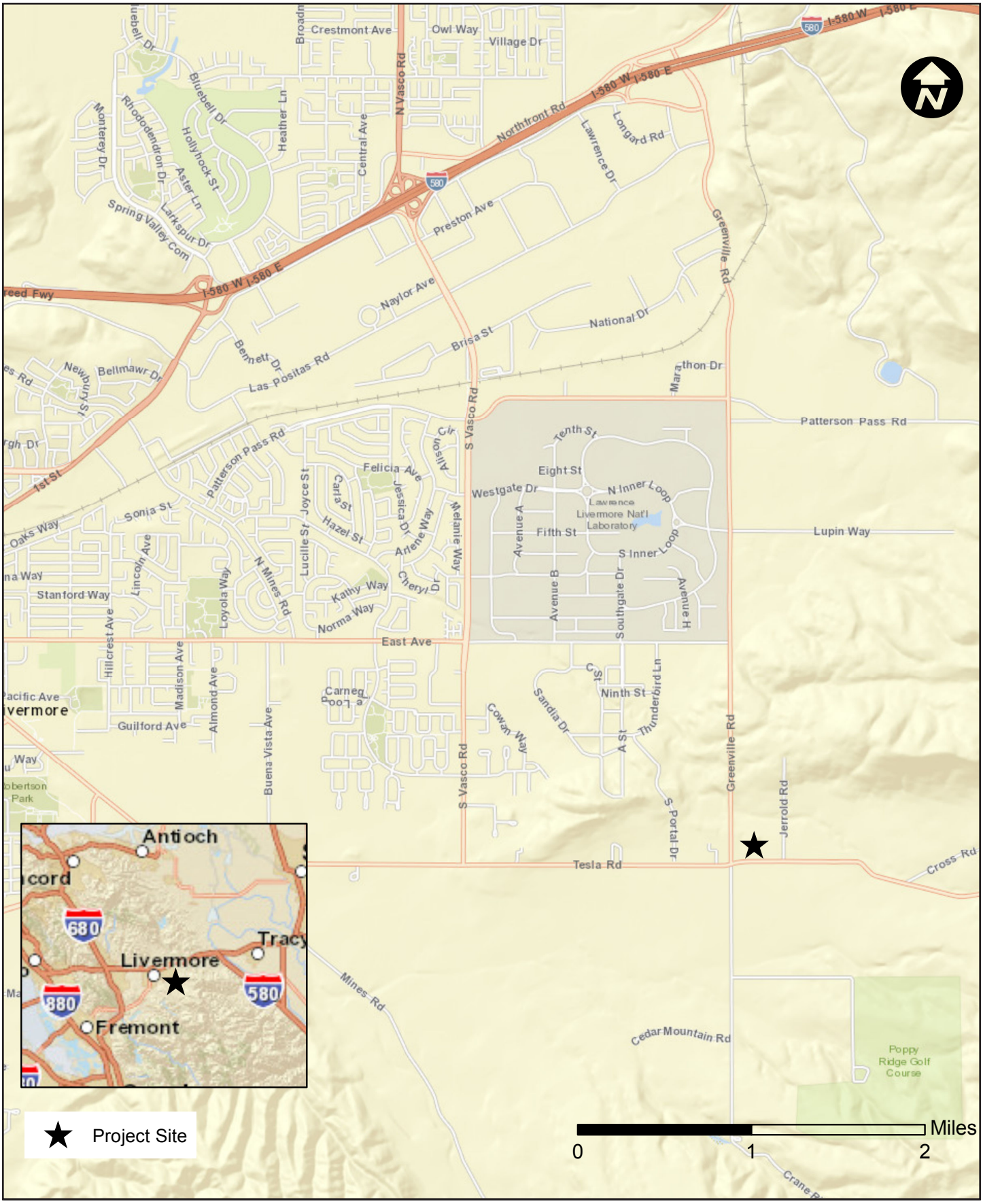
## PROJECT OBJECTIVES

The objective of the Project is to construct a 19,944 sq. ft. multi-use wine facility with tasting room, event space, office, café, and kitchen with approximately 18 acres of vineyards to support the production of wine onsite. The Project will provide visitor-serving uses that promote wine and viticulture in the South Livermore Valley.

## PROJECT APPROVALS

The CEQA review process is intended to provide responsible agencies with an opportunity to provide input into the project in order to assist with their responsibilities. Responsible agencies are those that have some responsibility or authority for carrying out or approving a project. In many instances these public agencies must make a discretionary decision to issue a permit, provide right-of-way, funding or resources to the project.

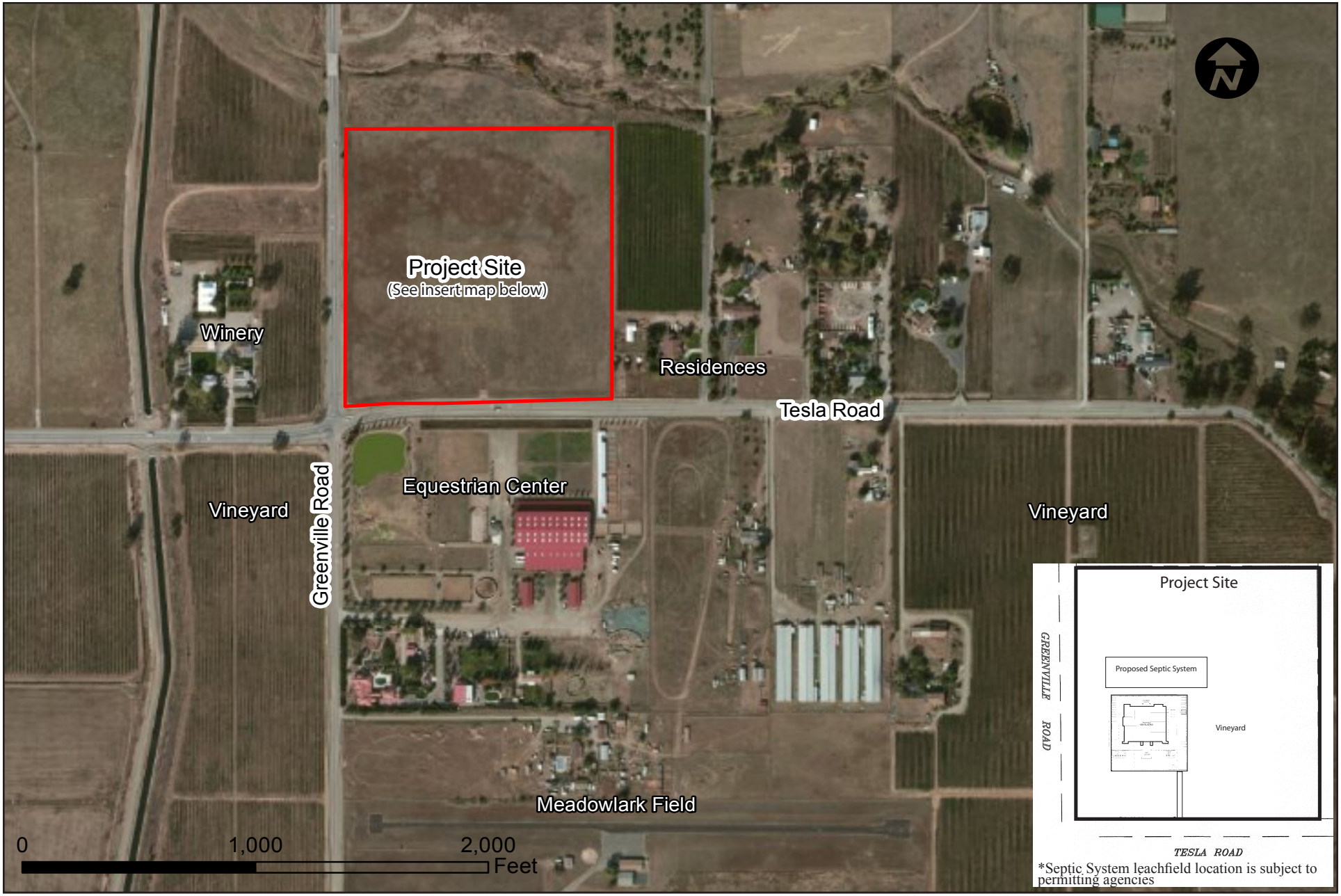
The County of Alameda, as lead agency, will consider the project permit application for the winery facility. The proposed facility also needs approval for waste discharge requirements from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) to manage domestic and winery process wastewater generated at the facility for the project to move forward. In addition to approval from the CRWQCB, Alameda County Health Department and Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7 Water Agency) approvals are required. Consistent with State regulations, the applicant would be required to obtain a General National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities from the State Water Resources Control Board (SWRCB). Additional agency consultation and permitting includes US Fish and Wildlife Service and California Department of Fish and Wildlife.




# Location Map

Figure 1

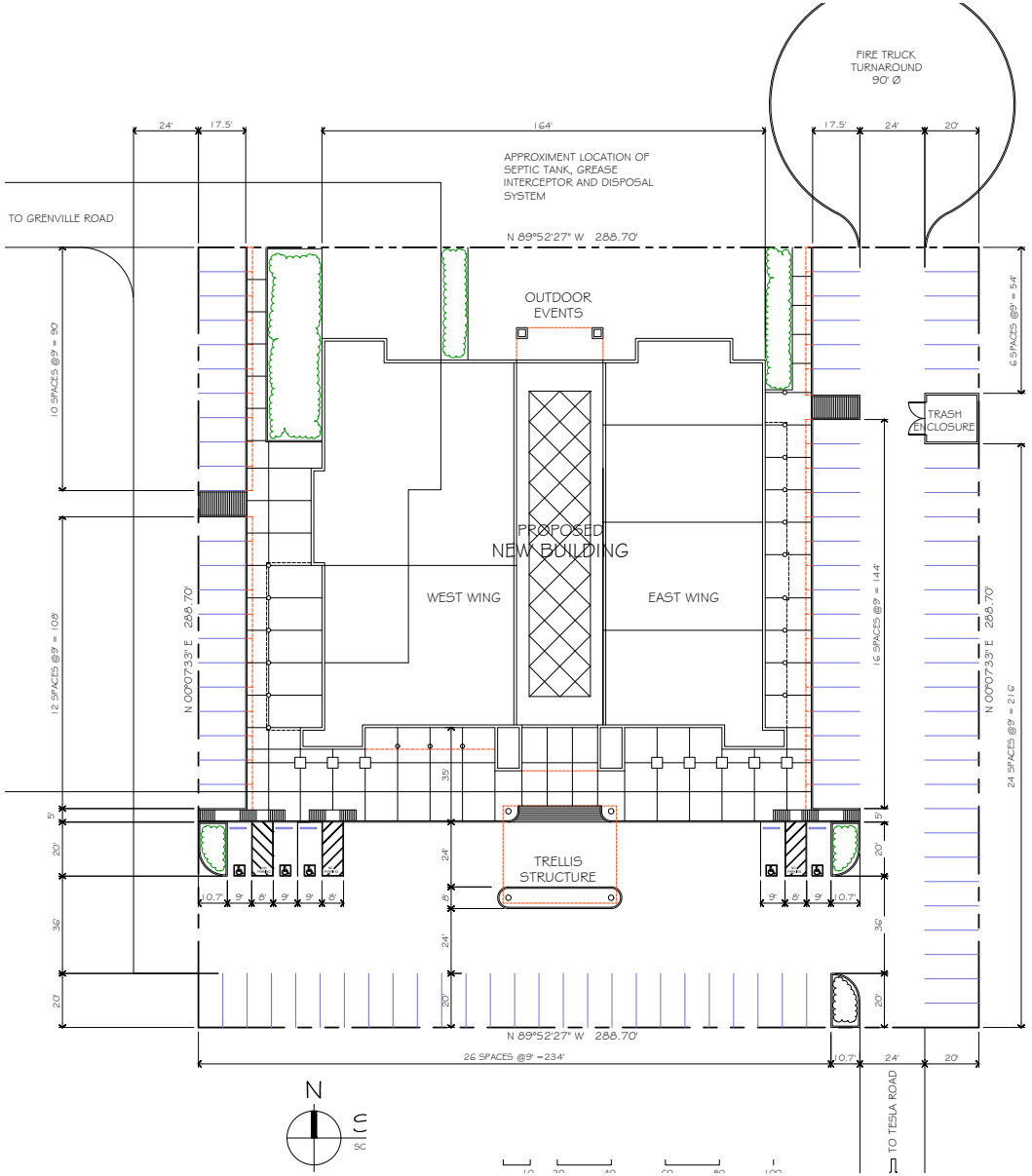
Tesla Road Winery
Initial Study

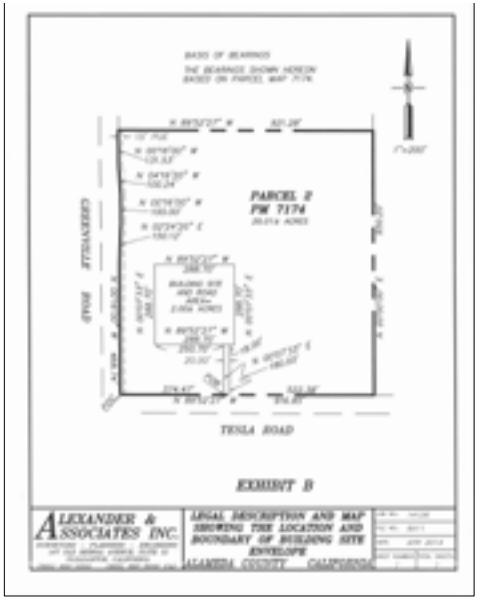



# Aerial

Tesla Road Winery
Initial Study

Figure
2




PROJECT DATA

BUILDING ENVELOPE AREA: 83,347.69 SQ. FT.

BUILDING AREA: 19,944 SQ. FT.

| | |
|---|---|
| BANQUET 1 | 2220 SQ. FT. |
| BANQUET 2 | 2280 SQ. FT. |
| BANQUET 3 | 2220 SQ. FT. |
| BANQUET KITCHEN | 1728 SQ. FT. |
| TASTING ROOM | 2400 SQ. FT. |
| CAFÉ | 735 SQ. FT. |
| CAFÉ KITCHEN | 1152 SQ. FT. |
| BRIDE'S ROOM | 408 SQ. FT. |
| GROOM'S ROOM | 408 SQ. FT. |
| OFFICES | 425 SQ. FT. |
| WINERY | 3715 SQ. FT. |
| SERVICES | 1101 SQ. FT. |
| ENTRIES | 1152 SQ. FT. |

PARKING SPACES REQUIRED: 95

| | |
|---|---|
| BANQUET | 6720 SQ. FT./100 = 68 |
| CAFÉ | 735 SQ. FT./60 = 13 |
| TASTING ROOM | 2400 SQ. FT./300 = 8 |
| WINERY | 3715 SQ. FT./1000 = 4 |

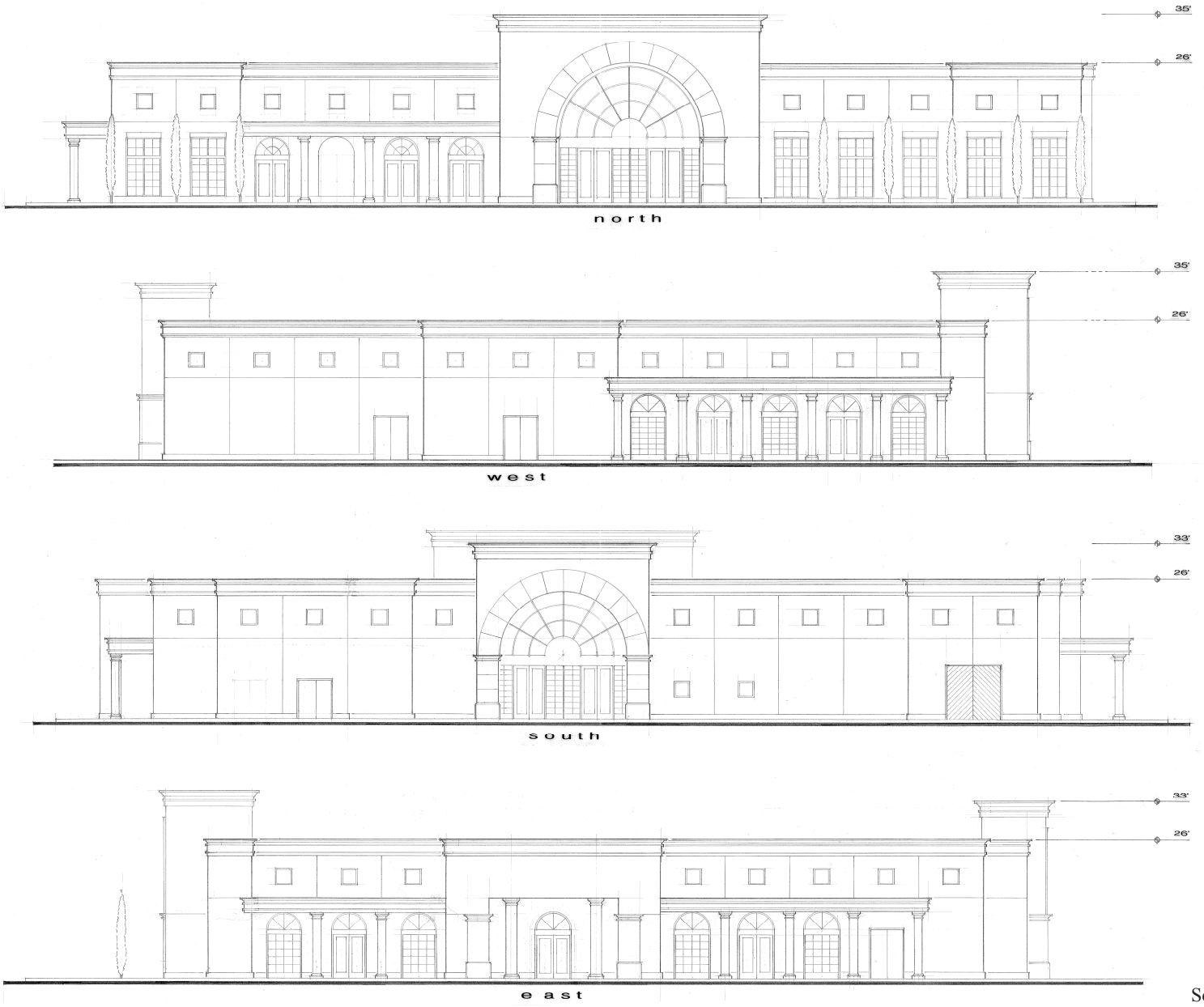
PARKING SPACES PROVIDED 105

Source: Richard Larson, 2014

# Site Plan

Tesla Road Winery
Initial Study

Figure
3

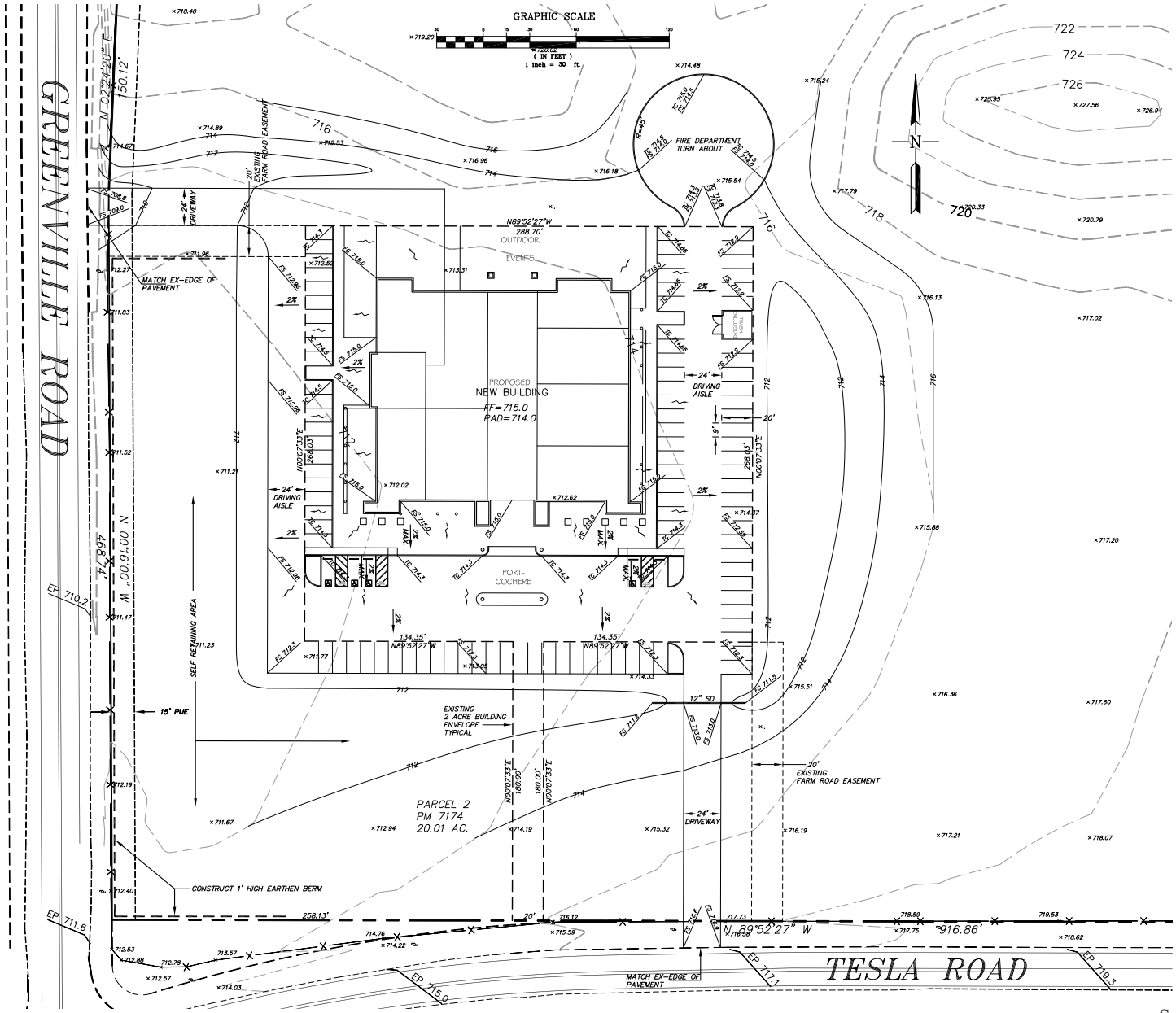



Source: Richard Larson, 2014

# Elevations

Tesla Road Winery
Initial Study

Figure
4




Source: Alexander & Associates, Inc., 2014

# Grading Plan

Tesla Road Winery
Initial Study

Figure
5

**Photo 1**. View of site looking north from Tesla Road.


**Photo 2**. View of site looking southwest from Greenville Road.


**Photo 3**. View of site looking northeast from the Tesla Road and Greenville Road intersection.

**Photo 4**. View from site looking northwest.

# Site Photos

Tesla Road Winery
Initial Study

Figure
6

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# Chapter 3. Environmental Evaluation

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors identified below are discussed within Chapter 3, Environmental Evaluation. Sources used for analysis of environmental effects are cited in parenthesis after each discussion, and are listed in Chapter 4, References.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agricultural Resources | ☒ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☒ Geology/Soils |
| ☐ Greenhouse Gas Emissions | ☐ Hazards/Hazardous Materials | ☒ Hydrology/Water Quality |
| ☐ Land Use/Planning | ☐ Mineral Resources | ☒ Noise |
| ☐ Population/Housing | ☐ Public Services | ☐ Recreation |
| ☒ Transportation/Traffic | ☒ Utilities/Service Systems | ☒ Mandatory Findings of Significance |

## DETERMINATION

On the basis of this initial evaluation:

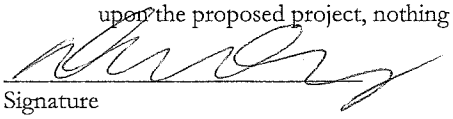
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ 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

7-30-2015

date

Damien Curry

Printed Name

## EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on project-specific screening analysis).

2. All answers must take into account the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

a) The significance criteria or threshold, if any, used to evaluate each question; and

b) The mitigation measure identified, if any, to reduce the impact to less than significance.

Chapter 3, Environmental Evaluation includes the following sections:

A. Aesthetics
B. Agricultural and Forest Resources
C. Air Quality
D. Biological Resources
E. Cultural Resources
F. Geology and Soils
G. Greenhouse Gas Emissions
H. Hazards and Hazardous Materials
I. Hydrology and Water Quality
J. Land Use
K. Mineral Resources
L. Noise
M. Population and Housing
N. Public Services
O. Recreation
P. Transportation
Q. Utilities & Service Systems
R. Mandatory Findings of Significance

## ENVIRONMENTAL SETTING AND IMPACTS

The following section describes the environmental setting and identifies the environmental impacts anticipated from implementation of the Proposed Project. The criteria provided in the CEQA environmental checklist were used to identify potentially significant environmental impacts associated with the Project. Sources used for the environmental analysis are cited in the checklist and listed in Chapter 4 of this Initial Study.

### A. AESTHETICS

#### Setting

The Project is located in Livermore Valley in eastern Alameda County, just outside the City of Livermore. The Project Site is currently vacant and the visual character of area is dominated by agriculture and viticulture related activities. The property currently consists of flat undeveloped land with a water well. Photos of the site are presented in Figure 6. Property surrounding the vineyards includes grazing land to the north, event center and county facility to the northwest, residence and horse ranch to the south, vineyards to the southeast and several residences along Jerrold Road to the east. Views of the Project Site from the surrounding areas include the following:

- **North:** Due to the gradual slope and minimal vegetation obscuring views of the site, the site is most visible from the north. Views of the site from the north along Greenville Road include vineyards on the right and rolling hills in the distance.
- **South:** Views toward the site from the south are mostly obscured by the Greenville Equestrian Center and vegetation on the property. Rows of wine grapes from a nearby property are also visible from south of the Project Site.
- **East:** Views of the site from the east of the site along Tesla Road consist of existing residences in the foreground and associated trees and vegetation partially blocking direct views of the Project Site.
- **West:** Views of the site from the west along Tesla Road primarily consist of wine grapes in the foreground, along both sides of Tesla Road, and trees partially blocking direct views of the Project Site.

#### Impacts and Mitigation

**Thresholds Per CEQA Checklist**

| Would the project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ■ | ☐ | 1,2,7 |
| b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☐ | ■ | 1,2,7 |

| Would the project: | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| c) | Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ■ | ☐ | 1,2,7 |
| d) | Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ■ | ☐ | 1,2,7 |
| e) | Increase the amount of shade in public or private open space on adjacent sites? | ☐ | ☐ | ☐ | ■ | 1,2,7 |

**Explanation**

a) **Less than Significant Impact.** The South Livermore Valley Area Plan does not include any specific policies protecting specific viewsheds or scenic vistas. However, it includes specific goals and objectives that include preserving the region's unique rural and scenic qualities. The Project will introduce additional viticulture. The Project's vineyard use supports Livermore Valley Area Plan policies to promote the area as a wine producing region while preserving prominent ridgeline views. The land use section of the East County Area Plan (ECAP) includes a list of visually-sensitive ridgelines to be preserved in Eastern Alameda County. The Project Site is not located on any sensitive ridgelines and the closest to the site are those located above the vineyards south of Livermore. In addition, the Project Site is located on land that is relatively flat so the Project will not obscure views of the ridgelines. While the Project does not involve development on sensitive ridgelines, it would involve the development of a 23,081 square foot two-story facility on vacant land. The proposed building pad and facility would be located a minimum of 100 feet from the roadways in accordance with the site plan (See Figure 3), accessed through driveways. The facilities would be sited approximately 150 feet from the entrance on Tesla Road and the building areas of the approximately 20 acre parcel would be surrounded by vineyards. The overall character of the site would not be substantially different than that found throughout the area. As such, the Project would not have a substantial impact on a scenic vista and this would be a less than significant impact.

b) **No Impact.** The Project Site is not located within any city or state-designated scenic routes or highways and would not damage scenic resources including trees, outcroppings, and historic buildings. The Project Site does not contain any scenic resources including rock outcroppings or historic buildings. The Project would not damage any scenic resources in the vicinity of, or on the Project Site.

c) **Less than Significant Impact.** The Proposed Project would alter the existing visual character of the site and its surroundings by developing a multi-use wine facility on undeveloped land in the Livermore Valley. The Project will introduce a 23,081 square foot, maximum 35 foot building and associated structures onto the property (see Figure 3 and 4). While the Project will alter the existing visual character of the undeveloped site, the winery and associated wine operations will be consistent with the surrounding viticulture-related activities that occur in the area. In addition, the Project will be consistent with County policies encouraging viticulture in the South Livermore Valley. Visual effects would be minimized by conformance with the County's design standards and would conform

to the rural character of the area. Overall, the Proposed Project would not substantially degrade the existing visual character or quality of the site because it would be developed in a manner consistent with rural character along the Tesla Road corridor and the Livermore Valley. Due to the relatively flat topography within the site and in the surrounding area, views of the facility would be available to travelers along Tesla Road and Greenville Road from north, east and west of the Project Site. Views of the site from eastbound travelers on Tesla Road, west of the Greenville Road intersection would be partially obscured by trees at the Garré Vineyard and Winery until travelers approach the intersection. In addition, views from northbound traffic along Greenville Road, south of the Tesla Road intersection are dominated by views of trees and the Greenville Equestrian Center. The Project would not substantially alter views of the site from offsite areas or block views of surrounding hillside areas including the Altamont Pass.

d) **Less than Significant Impact.** Exterior lighting will be provided for the multi-use wine facility and associated parking and access road in accordance with County Policy 115 which states "to the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located." The Project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

e) **No Impact.** The Proposed Project will be two stories in height and range from 26 feet to 35 feet tall. The Project will generate a new source of shade on the Project Site; however, it will not substantially increase the amount of shade or result in any shade impacts on adjacent public or private open space areas.

## B. AGRICULTURAL AND FOREST RESOURCES

### Setting

In California, agricultural land is given consideration under CEQA. According to Public Resources Code §21060.1, "agricultural land" is identified as prime farmland, farmland of statewide importance, or unique farmland, as defined by the U.S. Department of Agriculture land inventory and monitoring criteria, as modified for California. CEQA also requires consideration of impacts on lands that are under Williamson Act contracts[2]. The Project area is identified as "Grazing Land" on the Alameda County Important Farmlands Map[3]. CEQA requires the evaluation of forest and timber resources where they are present. The Project Site is located in an urban area that has been historically used for agricultural, commercial, residential uses. The site does not contain any forest land as defined in Public Resources Code section 12220(g)[4], timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g)[5].

[2] The Land Conservation (Williamson) act: http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx
[3] Alameda County Important Farmlands Map: http://redirect.conservation.ca.gov/dlrp/fmmp/product_page.asp
[4] Public Resources Code section 12220(g) http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=12001-13000&file=12220
[5] Government Code section 51104(g)[5]: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=51001-52000&file=51100-51104

## Impacts and Mitigation

### Thresholds per CEQA Checklist

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

| | **Would the Project:** | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ■ | ☐ | 3 |
| b) | Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ■ | 2 |
| 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))? | ☐ | ☐ | ☐ | ■ | 2 |
| d) | Result in the loss of forest land or conversion of forest land to non-forest uses? | ☐ | ☐ | ☐ | ■ | 2 |
| 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? | ☐ | ☐ | ■ | ☐ | 2 |

### Explanation

a) **Less than Significant Impact.** The project involves the conversion of existing grazing land, as designated by the Important Farmlands Map for Alameda County, to a more intensive agricultural use that includes the planting of a vineyard on the Project Site. The Project Site has a general plan designation of Large Parcel Agriculture and is located within the South Livermore Valley Area Plan (SLVAP) area, which encourages the expansion of viticulture and wine-related facilities in the South

Livermore Valley. The Project would be consistent with each of these plans. The site does not contain any prime farmland, unique farmland, or farmland of statewide importance. As such, development of the Proposed Project would not conflict with existing zoning for agricultural use or a Williamson Act contract and this impact would be less than significant.

b) **No Impact.** The Project Site is zoned as Planned Development and does not contain lands under Williamson Act contract; therefore, no conflicts with agricultural uses will occur.

c) **No Impact.** No other changes to the environment will occur from the Project that will result in a conversion of farmland to non-agricultural uses.

d) **No Impact.** The Project area is not forested. The Project will not impact forest resources since the site does not contain any forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g). No impact would occur.

e) **Less than Significant Impact.** The Proposed Project is consistent with land use policies of the East Alameda County General Plan and adopted zoning designations. In addition, the Project would introduce viticulture operations to the site, which is encouraged in the South Livermore Valley Area Plan. The Project does not include residential development which could result in conflicts that could encourage the conversion of existing farmland to non-agricultural uses. No forest land or timberland exists on or in the vicinity of the Project Site and the Proposed Project does not include components that would result in the conversion of forest land to non-forest use. Therefore, the Proposed Project would have a less than significant impact related to conversion of farmland or forest land to a non-agricultural/non-forest use.

## C. AIR QUALITY

### Setting

The Project is located in Alameda County, which lies within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the local agency authorized to regulate stationary air quality sources in the Bay Area. The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides ($NO_X$), particulate matter ($PM_{10}$), sulfur dioxide ($SO_2$), and lead (Pb). Secondary criteria pollutants include ozone ($O_3$), and fine particulate matter.

The BAAQMD is primarily responsible for assuring that the federal and state ambient air quality standards are attained and maintained in the Bay Area. In 2012, the BAAQMD revised the CEQA Air Quality Guidelines, which outline BAAQMD recommended procedures for evaluating regional air pollutants including criteria air pollutants, greenhouse gases (evaluated in a following section), local risk and hazards (from toxic air contaminants and fine particulate matter), carbon monoxide, odor, and air pollutants associated with construction activities. The Guidelines include screening criteria to determine if a project is below, meets, or exceeds the Guidelines' thresholds of significance established by BAAQMD.

The BAAQMD's 2012 CEQA Guidelines provide recommendations for evaluating air pollution emissions, including BAAQMD's CEQA Thresholds Options and Justification Report (2009). Alameda County relies

on the thresholds of significance and screening criteria established by the BAAQMD. The BAAQMD screening levels are based on project size for air pollutant emissions.

The BAQQMD's thresholds of significance are shown in Table 1.

**TABLE 1: BAAQMD CRITERIA POLLUTANT THRESHOLDS OF SIGNIFIGANCE**

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

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

The BAAQMD, along with other regional agencies (e.g., ABAG and MTC), develop plans to reduce air pollutant emissions. The BAAQMD adopted and implements the Bay Area 2010 Clean Air Plan (CAP). The 2010 CAP is a multi-pollutant air quality plan that addresses four categories of air pollutants:

- Ground-level ozone and the key ozone precursor pollutants (reactive organic gases and $NO_x$)
- Particulate matter, primarily $PM_{2.5}$, as well as the precursors to secondary $PM_{2.5}$
- Toxic air contaminants
- Greenhouse gases

In addition, the One Bay Area Plan was developed by a joint initiative comprised of four of the Bay Area's regional government agencies: the Association of Bay Area Governments (ABAG), the BAAQMD, the Bay Conservation and Development Commission (BCDC), and the Metropolitan Transportation Commission (MTC). Under Senate Bill (SB) 375, California's 18 metro areas must plan jointly for transportation, land use, and housing with the ultimate goal of reducing greenhouse gas emissions for cars and light-duty trucks. State law requires that Plan Bay Area develop a Sustainable Communities Strategy (SCS) that accomplishes the three following principal objectives:

- Identify areas to accommodate all the region's population associated with Bay Area economic growth, including all income groups, for at least the next 25 years;
- Develop a Regional Transportation Plan that meets the needs of the region; and
- Reduce greenhouse gas emissions from automobiles and light trucks.

The BAAQMD defines sensitive receptors as facilities where sensitive population groups are located, including residences, schools, childcare centers, convalescent homes, and medical facilities. Land uses such as schools and hospitals are considered to be more sensitive than the general public to poor air quality because of an increased susceptibility to respiratory distress within the populations associated with these uses. The existing residences located east of the Project Site are existing sensitive receptors in the Project vicinity. The nearest residence is located approximately 510 feet east of the Project Site.

The Project Site is located in the Livermore Valley within the Diablo Range near the Eastern border of the BAAQMD. The western side of the Livermore 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. Mount Diablo and the Black Hills are located north of the Livermore Valley. The south side of the Valley rises up to 3000 to 3500 feet mountains in the Diablo Range.

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

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:** | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ■ | ☐ | 1, 2, 4 |
| b) Violate any air quality standard or contribute to an existing or projected air quality violation? | ☐ | ■ | ☐ | ☐ | 1, 2, 4 |
| 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)? | ☐ | ☐ | ■ | ☐ | 1, 2, 4 |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ■ | ☐ | 1, 2, 4 |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ■ | ☐ | 1, 2 |

**Explanation**

a) **Less than Significant Impact.** The Proposed Project involves a 19,944 square foot multi-use winery that is consistent with policies established in the East County Area Plan, South Livermore Valley Area Plan and County Zoning Code. The Proposed Project would not increase population growth or cause significant changes in vehicle travel that would adversely affect implementation of the Bay Area Clean Air Plan. The Project would generate an incremental increase in traffic trips to and from the site during operation.

Temporary construction activities would result in an average employment of 12 construction workers over the 12 month construction period with a maximum of 20 during peak construction. The Project would generate additional employment opportunities and it is anticipated that the site will employ seven full time employees, which would be an increase from the current conditions on the undeveloped site. The Project would not significantly alter the amount of development projected in the East Alameda County Area Plan and it would be consistent with the population growth and

VMT projections contained in the BAAQMD's Air Quality Attainment Plan. The Project would not interfere with the region's ability to attain or maintain state and national ambient air quality standards. Implementation of the Proposed Project would not conflict with or obstruct implementation of any air quality planning efforts. As a result, this impact would be less than significant.

b) **Less than Significant with Mitigation for Construction.** Project construction is anticipated to last 12 months and would consist of typical construction activities for facilities of this type including grading, filling, development of the building, and application of architectural coatings. Exhaust emissions associated with construction equipment and activities would be generated during construction. In addition to exhaust emissions, emissions of fugitive dust would also be generated by project construction activities associated with earth disturbance, and travel on unpaved project driveways and roads. With regard to fugitive dust emissions, the BAAQMD recommends that lead agencies focus on implementation of dust control measures to insure that impacts would be less than significant rather than comparing estimated levels of fugitive dust to quantitative significance thresholds. Therefore, BAAQMD basic control measures (BAAQMD, 2012) are recommended for every construction project (see below), would be implemented to ensure that impacts associated with fugitive dust emissions during construction would be reduced to a less-than-significant level.

**Less than Significant for Operation:** The Proposed Project will not generate any long-term air pollutant emissions that will exceed the BAQQMD's thresholds, as shown in Table 1. Project operations will increase vehicular traffic but not include operation of diesel equipment. BAAQMD Guidelines and thresholds of significance in Table 1 were reviewed and compared with project construction, operations and development of project of similar size and/or nature. Based upon the project size and operation, and a review of quality modeling prepared for area projects, and since other projects of similar nature and scale have not resulted in an exceedance of applicable thresholds or standards, the would not violate any air quality standard or contribute to an existing or projected air quality violation. This represents a less than significant impact.

c) **Less than Significant Impact.** Alameda County is designated as nonattainment for the 1-hour state ambient air quality standard and the 8-hour state and national ambient air quality standards. Alameda County is designated as unclassified for the national $PM_{10}$ and is designated as nonattainment for the state and national $PM_{2.5}$ standards. The Project is located within two miles of two projects designated as current development projects by Alameda County. The Greenville Road Subdivision Project is located within a quarter mile of the Project Site and involves the subdivision of the site into 8 20-acre parcels. In addition, the Concannon Vineyard Warehouse Building Project involves the construction of additional storage space on an existing winery. Although designated as nonattainment for a criteria pollutant, the Project would not result in a cumulative considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

d) **Less than Significant Impact.** The Project Site is located in the South Livermore Valley, an area dominated by agricultural activities with few sensitive receptors in the area. The closest sensitive receptors are residences located approximately 510 feet east of the Project Site. The Proposed Project will generate an incremental increase in pollutant concentrations during project construction and operation. Construction related activities will generate temporary pollutants associated with heavy machinery and vehicle trips to and from the site for construction workers. Construction emissions will be minor and temporary in nature. The Project will generate an incremental increase in operational pollutants associated with vehicle trips to and from the site and for wine-related activities and visitor-serving uses. As discussed above in b), projects of similar scale and nature did not result in a substantial amount of emissions and as such, project emissions will not be substantial. Inclusion

of the best management practices recommended by BAAQMD described below would minimize any potential air quality impacts to nearby sensitive receptors. Therefore, the Project's potential to impact sensitive receptors is less than significant.

**Mitigation**

**AIR-1. Best Management Practices**

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All stockpiles of debris, soil, sand and any other material that can be windblown shall be covered. Trucks transporting these materials shall be covered.
- All paved construction areas and adjacent streets shall be damp swept daily.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways.
- Vegetation shall be replanted in disturbed areas as soon as possible after completion of construction.
- All haul trucks transporting soils, sand, or other loose material off-site shall be covered.
- All visible mud or dirt tracks on 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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- 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.
- Construction equipment shall be shut off when not in use to minimize idling times. Signage shall be placed for construction workers at all access points onto the site.
- 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.
- A publicly visible sign shall be posted at the site with the telephone number and person to contact at the Lead Agency regarding dust complaints. This contact 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.

e) **Less than Significant Impact.** The Proposed Project would not create any new sources of odor. During construction, use of diesel powered vehicles and equipment could temporarily generate localized odors, which would cease upon project completion. This represents a less than significant impact.

## D. BIOLOGICAL RESOURCES

**Setting**

A biological resources evaluation was prepared for the Project and the results of the evaluation were described in the biological resources report contained in Appendix C (DD&A, 2015). The biological resources report describes existing biological resources within and surrounding the Project Site. Specifically, the biological resources report identifies any special-status species and sensitive habitats known to occur, or with the potential to occur, within the Project Site; assesses the impacts that could occur as a result of the project; and identifies avoidance, minimization, and mitigation measures. The report also presents an

overview of applicable federal, state, and local regulations and the regulatory and responsible agencies with jurisdiction over sensitive resources within the Project Site. A biological survey was conducted at the Project Site on December 29, 2014 by a DD&A biologist.

One habitat type is present within the project site: non-native annual grassland. This habitat is not listed as sensitive on the California Department of Fish and Wildlife's (Department's) California Natural Diversity Data Base (CNDDB) working list of high priority and rare natural communities. No other sensitive habitats were identified within the project site.

The project site consists completely of non-native annual grassland. At the time of the survey, the dominant species within the project site were not easily discernible, as the site has been mowed previously and the plants were just beginning to sprout. However, it appears that ripgut brome (*Bromus diandrus*) and filaree (*Erodium* sp.) may be the dominant plant species based on the presence of a few early sprouters and remnant filaree seeds. As such, it is likely that the *Manual of California Vegetation* (Sawyer et.al., 2009) classification for the site is Annual Brome Grasslands (*Bromus diandrus, hordeaceus-Brachypodium distachyon* Semi-Natural Herbaceous Stands), which is not identified as rare on the CNDDB list of high priority and rare natural communities (Department, 2010). Although this vegetation type is dominated by non-native grass and forb species, some native species may also be present, including some special-status plant species.

Non-native annual grasslands provide habitat to a number of wildlife species, such as the Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), northern pacific rattlesnake (*Crotalus oreganus* ssp. *oreganus*), gopher snake (*Pituophis catenifer catenifer*), fence lizard (*Sceloporus* sp.), western meadowlark (*Sturnella neglecta*), and western kingbirds (*Tyrannus verticalis*). Raptors and black-tailed deer (*Odocoileus hemionus columbianus*) are also known to forage in this habitat. Several special-status wildlife species may also utilize non-native annual grasslands, such as CTS, CRLF, western burrowing owl, and other species.

Several special-status species have the potential to occur within the project site based on presence of appropriate habitat and known occurrences within the vicinity. Please refer to Appendix C for an analysis of each species within the project site. All other species are assumed "unlikely to occur" for the species-specific reasons presented and are not discussed within the document.

The following special-status wildlife species have the potential to occur within or immediately adjacent to the project site:

- Pallid bat (*Antrozous pallidus*) – CSC[6]
- Townsend's big-eared bat (*Corynorhinus townsendii* ) – CSC
- Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*) – CNDDB
- Hoary bat (*Lasiurus cinereus*) - CNDDB
- San Joaquin pocket mouse (*Perognathus inornatus*) – CNDDB
- American badger (*Taxidea taxus*) – CSC
- San Joaquin kit fox (*Vulpes macrotis mutica*) – FE/ST

[6] FE: Federally Endangered; FT: Federally Threatened; SE: State Endangered; ST: State Threatened; CSC: California Species of Special Concern; CNDDB: species on the Department's "Special Animals" list; MBTA: Protected under the Migratory Bird Treaty Act (MBTA); 1B: CNPS Rare Plant Rank 1B species – rare, threatened, or endangered in California and elsewhere.

- Tricolored blackbird (*Agelaius tricolor*) – CSC/MBTA
- Golden eagle (*Aquila chrysaetos*) - CFP/MBTA
- Western burrowing owl (*Athene cunicularia*) – CSC/MBTA
- Ferruginous hawk (*Buteo regalis*) – CNDDB/MBTA
- Swainson's hawk (*Buteo swainsoni*) - ST/MBTA
- Northern harrier (*Circus cyaneus*) - CSC/MBTA
- White-tailed kite (*Elanus leucurus*) – CFP/MBTA
- California horned lark (*Eremophila alpestris actia*) – CNDDB/MBTA
- Prairie falcon (*Falco mexicanus*) - CNDDB/MBTA
- American peregrine falcon (*Falco peregrinis anatum*) – CFP/MBTA
- Loggerhead shrike (*Lanius ludovicianus*) - CSC/MBTA
- California tiger salamander (CTS; *Ambystoma californiense*) – FT/ST
- Western pond turtle (*Emys marmorata*) – CSC
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*) - CSC
- California red-legged frog (CRLF, *Rana draytonii*) – FT/CSC
- Western spadefoot toad (*Spea hammondii*) – CSC
- Callippe silverspot butterfly (*Speyeria callippe callippe*) - FE

The following special-status plant species have the potential to occur within the project site:

- Large-flowered fiddleneck (*Amsinckia grandiflora*) – FE/SE/ 1B
- Big-scale balsamroot (*Balsamorhiza macrolepis*) – 1B
- Big tarplant (*Blepharizonia plumose*) – 1B
- Round-leaved filaree (*California macrophylla*) – 1B
- Mount Diablo fairy-lantern (*Calochortus pulchellus*) – 1B
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) – 1B
- Recurved larkspur (*Delphinium recurvatum*) – 1B
- Diamond-petaled California poppy (*Eschscholzia rhombipetala*) – 1B
- Diablo helianthella (*Helianthella castanea*) – 1B
- Showy golden madia (*Madia radiata*) – 1B
- Shining navarretia (*Navarretia nigelliformis* ssp. *radians*) – 1B
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*) – 1B

**Regulatory Setting**

*Federal*

**Federal Endangered Species Act**

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally listed threatened or endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by the Service or National Oceanic and Atmospheric Administration Marine Fisheries Service (NOAA Fisheries). In general,

NOAA Fisheries is responsible for the protection of ESA-listed marine species and anadromous fish, whereas other listed species are under Service jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the fish or wildlife…including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

**Critical Habitat**

Critical habitat is a term defined and used in the ESA. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the Service publishes a proposed federal regulation in the Federal Register and then public comments are received and considered on the proposal. The final boundaries of the critical habitat area are also published in the Federal Register. Federal agencies are required to consult with the Service on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. In this way, a critical habitat designation protects areas that are necessary for the conservation of the species.

**Recovery Plans**

The ultimate goal of the ESA is the recovery (and subsequent conservation) of endangered and threatened species and the ecosystems on which they depend. A variety of methods and procedures are used to recover listed species, such as protective measures to prevent extinction or further decline, consultation to avoid adverse impacts of federal activities, habitat acquisition and restoration, and other on-the-ground activities for managing and monitoring endangered and threatened species. The collaborative efforts of the Service and its many partners (federal, state, and local agencies, tribal governments, conservation organizations, the business community, landowners, and other concerned citizens) are critical to the recovery of listed species.

One recovery plan has been prepared for listed species known or with the potential to occur within the project site:

- Recovery Plan for the California Red-Legged Frog (Service, 2002a)

**Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (16 USC 651 Et Seq.) requires all federal agencies to consult with and give strong consideration to the views of the Service, the NMFS, and state wildlife agencies regarding the fish and wildlife impacts of projects that propose to impound, divert, channel, or otherwise alter a body of water.

**Migratory Bird Treaty Act**

The MBTA of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or

temporary possession of a protected species constitute violations of the MBTA. The Service is responsible for overseeing compliance with the MBTA and implements Conventions (treaties) between the United States and four countries for the protection of migratory birds – Canada, Mexico, Japan, and Russia. The Service maintains a list of migratory bird species that are protected under the MBTA, which was updated in 2010 to: 1) correct previous mistakes, such as misspellings or removing species no longer known to occur within the United States; 2) add species, as a result of expanding the geographic scope to include Hawaii and U.S. territories and new evidence of occurrence in the United States or U.S. territories; and 3) update name changes based on new taxonomy (Service, 2010a).

**Executive Order 13112-Invasive Species**

Executive Order 13112 - Invasive Species requires the prevention of introduction and spread of invasive species. Invasive species are defined as "alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Each federal agency whose actions may affect the status of invasive species on a project site shall, to the extent practicable and permitted by law, subject to the availability of appropriations, use relevant programs and authorities to: 1) prevent the introduction of invasive species; 2) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; 3) monitor invasive species populations accurately and reliably; 4) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; 5) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and 6) promote public education on invasive species and the means to address them. A national invasive species management plan was prepared by the National Invasive Species Council and the Invasive Species Advisory Committee (ISAC) that recommends objectives and measures to implement the Executive Order.

*State*

**California Endangered Species Act**

The CESA was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered endangered or threatened by the state. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." A Section 2081 Incidental Take Permit from the Department may be obtained to authorize "take" of any state listed species.

**California Fish and Game Code**

Birds: Section 3503 of the Fish and Game Code states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

Fully Protected Species: The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time

and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Species of Special Concern: As noted above, the Department also maintains a list of animal "species of special concern." Although these species have no legal status, the Department recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as endangered in the future.

**Native Plant Protection Act**

The CNPPA of 1977 directed the Department to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in the state." The CNPPA prohibits importing rare and endangered plants into California, taking rare and endangered plants, and selling rare and endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA.

*Local*

**East Alameda County Conservation Strategy**

The East Alameda County Conservation Strategy (EACCS) is intended to provide an effect framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects. The EACCS focuses on impacts to 19 special-status species and several sensitive habitats and enables local projects to comply with state and federal regulatory requirements within a framework of comprehensive conservation goals and objectives using consistent and standardized mitigation requirements. The EACCS does not include permits, but instead serves as guidance for project-level permits. However, the Service issued a Programmatic Biological Opinion (BO) on the issuance of permits for projects under the U.S. Army Corps of Engineers (ACOE) jurisdiction that are utilizing the EACCS under Section 404 of the CWA.

**Impacts and Mitigation**

## Thresholds per CEQA Checklist

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ■ | ☐ | ☐ | 1, 2 |

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| 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? | ☐ | ☐ | ■ | ☐ | 1 |
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| 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? | ☐ | ☐ | ☐ | ■ | 1 |

**Explanation**

a) **Less than Significant with Mitigation Measures.** Several special-status species have the potential to occur within the project site. Federally endangered or threatened species with the potential to occur include San Joaquin kit fox, CTS, CRLF, and large-flowered fiddleneck. San Joaquin kit fox, CTS, and large-flowered fiddleneck are also listed as state endangered or threatened species, as is Swainson's hawk. California red-legged frog is also listed as a Department species of special concern. Other Department species of special concern that have the potential to occur within the project site include pallid bat, Townsend's big-eared bat, American badger, western burrowing owl, northern harrier, loggerhead shrike, western pond turtle, San Joaquin whipsnake, and western spadefoot toad. Several species listed as California fully protected species may also occur within the project site, including golden eagle, white-tailed kite, and American peregrine falcon. Additionally, species on the Department's "Special Animals" list with the potential to occur includes Berkeley kangaroo rat, San Joaquin pocket mouse, tricolored blackbird, ferruginous hawk, California horned lark, and prairie falcon. The large-flowered fiddleneck is also a CNPS RPR 1B species. Other CNPS RPR 1B species that may occur within the project site includes big-scale balsamroot, big tarplant, round-leaved filaree,

Mount Diablo fairy-lantern, Congdon's tarplant, recurved larkspur, diamond-petaled California poppy, Diablo helianthella, showy golden madia, shining navarretia, and caper-fruited tropidocarpum.

Although the special-status species identified above have the potential to occur within the project site, not all species have the potential to be impacted by the project. Highly mobile bat and raptor species that may forage, but do not have the potential to breed within the project site, would likely avoid the project site during construction and forage in other open space areas in the vicinity. As such, the project will result in no effect to the pallid bat, Townsend's big-eared bat, hoary bat, tricolored blackbird, golden eagle, ferruginous hawk, Swainson's hawk, northern harrier, white-tailed kite, prairie falcon, American peregrine falcon, or loggerhead shrike.

Impacts to special-status species may include direct and indirect impacts associated with heavy equipment and construction activities that could result in direct mortality of individuals, soil compaction, dust, vegetation removal/loss of habitat, disturbance and harassment of individuals, erosion, destruction or disturbance of nests, and introduction and spread of non-native, invasive species. These are considered potentially significant impacts that can be reduced to a less-than-significant level with implementation of the mitigation measures identified below.

**Mitigation:**

**BIO-1:** A qualified biologist will conduct an Environmental Sensitivity Training for the construction crew prior to any construction activities. A qualified biologist will meet with the construction crew at the onset of construction at the project site to educate the construction crew on the following: 1) the appropriate access route(s) in and out of the construction area and review project boundaries; 2) how a biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the Service and Department; and 6) the proper procedures if a special-status species is encountered within the project site.

**BIO-2:** Protective fencing will be placed prior to and during construction as to keep construction equipment and personnel from impacting vegetation outside of work limits. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact.

**BIO-3:** Following construction, disturbed areas will be restored to pre-project contours to the maximum extent possible and revegetated using locally-occurring native species and native erosion control seed mix, per the recommendations of a qualified biologist.

**BIO-4:** Grading, excavating, and other activities that involve substantial soil disturbance will be planned and carried out in consultation with a qualified hydrologist, engineer, or erosion control specialist, and will utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation (pre-, during, and post-construction). Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used. Acceptable substitutes include coconut coir matting or tackified hydroseed compounds.

**BIO-5:** No pets, hunting, firearms, or open fires not required by the project will be allowed on the project site at any time.

**BIO-6:** All food-related and other trash will be disposed of in closed containers and removed from the project area at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel will not feed or otherwise attract wildlife to the area.

**BIO-7:** Pipes, culverts, and similar materials greater than four inches in diameter will be stored so as to prevent special-status wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.

**BIO-8:** Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no special-status wildlife species are trapped. Earthen ramps will be installed at intervals prescribed by a qualified biologist.

***Berkeley Kangaroo Rat, San Joaquin Pocket Mouse, San Joaquin Whipsnake, and Western Spadefoot Toad***

Implementation of mitigation measures BIO-1 to BIO-8 shall be implemented to reduce impacts to Berkeley kangaroo rat, San Joaquin pocket mouse, San Joaquin whipsnake, and western spadefoot toad resulting from construction of the project.

***American Badger, Western Burrowing Owl, and Western Pond Turtle***

**BIO-8:** To avoid and reduce impacts to the American badger, the project applicant will retain a qualified biologist to conduct focused pre-construction surveys for badger dens in all suitable habitat proposed for construction, ground disturbance, or staging no more than two weeks prior to construction. If no potential badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential significant impacts to the American badger:

a) If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

b) If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three to five day period. After the qualified biologist determines that badgers have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

**BIO-9:** In order to avoid impacts to active western burrowing owl nests, a qualified biologist will conduct pre-construction surveys in suitable habitat within the construction footprint and within 250 feet of the footprint prior to construction. The survey shall conform to the Department's 1995 Staff Report protocol. If no western burrowing owls are found, no further mitigation is required. If it is determined that western burrowing owls occupy the site during the non-breeding season (September 1 through January 31), then a passive relocation effort (e.g., blocking burrows with one-way doors and leaving them in place for a minimum of three

days) may be necessary to ensure that the owls are not harmed or injured during construction. Additionally a construction-free buffer of 150 feet will be established around all active owl nests. Once it has been determined that the owls have vacated the site, the burrows can be collapsed, and ground disturbance can proceed. If western burrowing owls are detected within the construction footprint or immediately adjacent lands (i.e. within 250 feet of the footprint) during the breeding season (February 1 to August 31), a construction-free buffer of 250 feet will be established around all active owl nests. The buffer area will be enclosed with temporary fencing, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. After the breeding season, passive relocation of any remaining owls may take place as described above.

**BIO-10:** A qualified biologist will survey suitable habitat no more than 48 hours before the onset of work activities for the presence of western pond turtle. If pond turtles are found and these individuals are likely to be killed or injured by work activities, the biologist will be allowed sufficient time to move them from the site before work activities begin. The biologist will relocate the pond turtles the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the project.

***Nesting Migratory Bird Species and California Horned Lark***

**BIO-11:** Construction activities that may directly (e.g., vegetation removal) or indirectly (e.g., noise/ground disturbance) affect protected nesting avian species will be timed to avoid the breeding and nesting season. Specifically, vegetation removal can be scheduled after September 16 and before January 31. Alternatively, a qualified biologist will be retained by the project applicant to conduct pre-construction surveys for protected nesting avian species within 500 feet of proposed construction activities if construction occurs between February 1 and September 15. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, surveys for nesting birds may be required to continue during construction to address new arrivals, and because some species breed multiple times in a season. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans and in coordination with the Service and Department, as needed.

If active nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place (generally 300 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

***CTS, CRLF, and San Joaquin Kit Fox***

To mitigate for potential impacts to CTS, CRLF, and San Joaquin kit fox, the following three options are recommended:

1. Conduct protocol-level surveys for each species to determine presence/absence within the project site with the approval of the Service and Department (as appropriate); or
2. Consult with the Service and Department (as appropriate) regarding the potential presence of each species on the property and obtain a letter of concurrence that the project is not likely to result in take of these species; or
3. Assume presence.

**BIO-12:** If it is determined or assumed that CTS, CRLF, and/or SJKF are present within the project site, the project shall comply with ESA and CESA. In doing so, a letter of concurrence that the project is not likely to result in take of CTS, CRLF, and/or SJKF shall be obtained from the Service and/or Department prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service and/or Department for CTS, CRLF, and/or SJKF prior to the initiation of ground disturbance.

***Callippe Silverspot Butterfly***

**BIO-13:** A qualified biologist should be retained to conduct survey(s) for the host plant species (Johnny jump-ups) during the appropriate blooming period (February-April), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the Service shall be contacted prior to construction in order to determine the need for focused surveys for Callippe silverspot butterflies.

**BIO-14:** If it is determined or assumed that Callippe silverspot butterflies are present within the project site, the project shall comply with ESA. In doing so, a letter of concurrence that the project is not likely to result in take of Callippe silverspot butterflies shall be obtained from the Service prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service for Callippe silverspot butterflies prior to the initiation of ground disturbance.

***Large-Flowered Fiddleneck***

Implementation of the mitigation measure BIO-1 and the following measures are recommended to reduce or avoid impacts of project actions to large-flowered fiddleneck:

**BIO-15:** A qualified biologist should be retained to conduct survey(s) for large-flowered fiddleneck, during the appropriate blooming period (April-May), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the project shall comply with ESA and CESA. In doing so, the Service and Department shall be contacted prior to construction in order to develop an appropriate avoidance, minimization,

and mitigation strategy for impacts to this species, and obtain a letter of concurrence that the project is not likely to result in take of large-flowered fiddleneck, or a take statement or take permit.

***Special-Status Plants***

Implementation of the mitigation measure BIO-1 and the following measures are recommended to reduce or avoid impacts of project actions to special-status plant species:

**BIO-16:** A qualified biologist should be retained to conduct survey(s) for the CNPS RPR 1B plant species identified above, during the appropriate blooming period(s), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the following measures shall be implemented:

a. Individuals shall be avoided to the maximum extent possible.

b. If avoidance is not feasible, species shall be replaced at a 1:1 success ratio for the acreage or individuals impacted (depending on species impacted) and a Rare Plant Restoration Plan shall be prepared by a qualified biologist and implemented. The plan shall include, but is not limited to, the following:

- a description of the baseline conditions of the habitats within the area of impact, including the presence of any special-status species, their locations, and densities;
- procedures to control non-native species invasion and elimination of existing non-native species within the area of impact;
- provisions for ongoing training of facility maintenance personnel to ensure compliance with the requirements of the plan;
- a detailed description of on-site and off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications, including, if required by the Department, increased planting ratio to ensure the 1:1 success ratio; and
- a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

***Non-Native Invasive Species Control***

**BIO-17:** The following measures will be implemented to reduce the introduction and spread of non-native, invasive species:

- Any landscaping or replanting required for the project will not use species listed as noxious by the California Department of Food and Agriculture (CDFA).
- Bare and disturbed soil will be landscaped with CDFA recommended seed mix or plantings from locally adopted species to preclude the invasion on noxious weeds in the project site.
- Any straw used for erosion control will either be rice straw or weed-free straw.
- Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds,

before mobilizing to arrive at the construction site and before leaving the construction site.

- All non-native, invasive plant species will be removed from disturbed areas prior to replanting.

b) **Less than Significant with Mitigation.** See explanation and mitigation under a) above.

c) **Less than Significant.** No federally protected wetlands are present within the project site.

d) **Less than Significant with Mitigation.** Implementation of mitigation measures BIO-1 to BIO-6 shall be implemented to reduce impacts to special-status wildlife movement and nursery sites resulting from construction of the project. This represents a less-than-significant impact.

e) **Less than Significant.** The project will not conflict with any local policies or ordinances protecting biological resources. This represents a less-than-significant impact.

f) **No Impact**. The project will not conflict with the provisions of an adopted HCP. As such, there is no impact.

## E. CULTURAL RESOURCES

### Setting

The Ohlone, or Costanoan, inhabited the region from the Golden Gate Bridge south to Monterey, including the Project Site. It is believed that the Ohlone Indians inhabited the area since A.D. 500, and that speakers of the Hokan language previously inhabited at least part of the region. Archaeological data documents Native American coastal activity in the Central Coast area over the past 10,000 years, with some indications of occupation as early as 12,000 to 13,000 years ago.

The Ohlone were hunters and gatherers who generally relied on the native flora and fauna. The abundance of resources in the region allowed them to settle in semi-sedentary villages. During winter, marine and waterfowl resources were collected from low-lying flats near the San Francisco Bay, and during the summer, nuts, seeds, and mammals were obtained from the surrounding mountainous areas. The Ohlone often organized in political units called "triblets" that consisted of 100 to 250 members. The abundance of plant and animal resources in California and the development of innovative technological processes allowed Native Californians to develop social structures beyond the normal parameters of hunting and gathering. These include extensive political systems, controlled production and redistribution of goods, and alliances and trade with other groups.

The first Spanish explorers to visit the east bay included Captain Pedro Fages (1772) with an expedition of fourteen soldiers and some other personnel, all on horseback. Fages' expedition explored from Monterey up through the length of the Santa Clara Valley and along the east side of San Francisco Bay to the mouths of the rivers, through present-day Walnut Creek and the Pleasanton/Livermore area.

**Impacts and Mitigation**

## Thresholds per CEQA Checklist

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA 15064.5? | ☐ | ☐ | ☐ | ■ | 1, 2, 6, 8 |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA 15064.5? | ☐ | ■ | ☐ | ☐ | 1, 2, 6, 8 |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ■ | ☐ | 1, 2, 6, 8 |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ■ | ☐ | 1, 2, 6, 8 |

**Explanation**

a) **No Impact.** The Proposed Project is located on an undeveloped and vacant site. There are no buildings or structures located within the Project footprint. As such, no impact would occur to any buildings or structures listed on the State Office of Historic Preservation California Register or the National Register of Historic Places. Therefore, the project will not result in a substantial adverse change in the significance of a historical resource as defined by CEQA.

b) **Less than Significant with Mitigation.** The Proposed Project Site is currently undeveloped and does not have a known history of disturbance on the sire. A records search from the Northwest Information Center Resources Information System, Sonoma State University is included as Appendix D to this Initial Study. No previous archaeological finds were reported from this search. Previous archaeological investigations in the area include a records search and archaeological report for the Greenville Subdivision, approximately ½ to 1 mile south of the project site on Greenville Road. No archaeological finds were reported for the Greenville study (Greenville Initial Study, 2012 on file with Alameda County). However, development of the Proposed Project would involve ground disturbing activities that could potentially unearth archaeological resources Mitigation Measure CUL-1 addresses the procedures that will be implemented in the event that human remains are discovered during construction. The potential for encountering and disturbing human remains will be minimized with implementation of this mitigation and best management practices, included below, will ensure that potential impacts are reduced to a less-than-significant level.

c),d) **Less than Significant Impact.** Though unlikely, human remains and paleontological resources may be encountered or unearthed during construction activities. Standard measures are identified to avoid impacts associated with disturbance to human remains and paleontological resources.

**Mitigation and Best Management Practices**

**CUL-1a:**

**Construction Crew Cultural Resource Training.** Prior to the beginning of construction, the applicant shall engage a qualified professional archaeologist to conduct a cultural resources training session for construction crew members. Information should be provided to construction personnel about the legal requirements relating to the discovery of buried cultural resources or buried human remains, as well as information useful in identifying historic and prehistoric cultural material, and the procedures to follow should cultural resources or buried human remains be encountered during Project excavations.

**CUL-1b:**

**Construction Activity, Evaluate Find and Implement Mitigation.** In accordance with CEQA Guideline §15064.5 (f), should any previously unknown paleontological, historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood or similar debris, be discovered during grading, trenching, or other onsite excavation(s), earthwork within 100 feet of these materials shall be stopped until a qualified professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s), as determined necessary to protect the resource, as detailed below.

(A) According to CEQA Section 15126.4 avoidance is the preferred mitigation. Since CEQA provisions regarding the preservation of historic sites direct that adverse effects to historic sites shall be avoided, if feasible, the resource shall be protected from damaging effects through avoidance.

(B) Avoidance can include, but is not limited to, the following options:

1. Planning construction to avoid the historic site.
2. Incorporation of sites within parks, green space, or other open space.
3. Capping the historic site with a layer of chemically stable soil before construction. Capping the historic site would include installation of a water permeable protective barrier that is covered with a 3-ft.-thick layer of chemically stable soil before constructing non-intrusive facilities on the site. Excavation for landscaping, irrigation or any other purpose shall be limited to the soil layer above the water permeable protective barrier. If the soil layer cannot accommodate all planned underground utilities, a thicker soil layer may be used to cover the site.
4. Deeding the site into a permanent conservation easement.

(C) If avoidance of any previously undiscovered site is not feasible, data recovery shall be conducted in accordance with an approved Archaeological Data Recovery Plan (ADRP) to mitigate adverse effects to the significance of the site – the area of data recovery being limited to the area of adverse effect. This would fulfill CEQA requirements that the mitigation measure must be "roughly proportional" to the impacts of the Project. Data recovery shall be conducted by a professional archaeologist in compliance with CEQA Guideline Section §15064.5. Once the site has been properly tested, subject to data recovery, or preserved to the satisfaction of the professional archaeologist in compliance with CEQA Guideline §15064.5, the site can be further developed.

**CUL-1c:**

**Observation During Ground-Disturbing Activities.** If the consulting archaeologist considers it necessary or appropriate, he or she shall be present during all preliminary grading or excavation work to observe soil materials being removed or excavated or respond to any discovery of human or cultural resource remains discovered by construction crews. In the event of any discovery of such resources, the archaeologist shall follow the procedures outlined in Mitigation Measure **Cultural-1a**.

**CUL-1d:**

**Halt Construction Activity, Evaluate Remains and Take Appropriate Action.** Section 7050.5(b) of the California Health and Safety code will be implemented in the event that human remains, or possible human remains, are located during Project-related construction excavation. Section 7050.5(b) states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission within 24 hours. The Commission has various powers and duties, including the appointment of Most Likely Descendant (MLD) to the Project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains

## F. GEOLOGY AND SOILS

### Setting

The Project Site lies on an undeveloped parcel that is relatively flat in eastern Alameda County in the Livermore Valley. The Livermore Valley lies south and west of the Diablo Range and east of the East Bay Hills. The Greenville fault forms the eastern border of the Livermore Valley. The Project Site is located in a region that contains active earthquake faults including the Calaveras, Greenville, and Verona. However, the Project Site is not located with a State of California Fault Hazard Zone (1982) for active faulting. The Livermore Valley is bounded by the Greenville Fault to the east, which separates it from the western foothills of the Diablo Range. The Mount Diablo uplift, an active Late Quaternary (11,000 years ago to present) tectonic feature, is located in the north-central portion of the valley. The Mount Diablo uplift is composed of rocks of the Miocene Green Valley/Tassajara Formation and is postulated to contain deposits of the Livermore Gravels Formation.

Soils: A soils map of the Project Site and surrounding area is presented in Figure 7. Soils on the site and properties as categorized by Soil Survey of the Alameda Area (USDA, 1966) are shown below and also more fully presented in Appendix A. Two soil types are present at the site: Positas gravelly loam (2 to 20 percent slopes, eroded) and Zamora silt loam (0 to 4 percent slopes).

Soil percolation field tests, performed in 1999 and on file with the Alameda County Environmental Health Services, indicate a Facility-specific percolation rate between 3.5 and 7.5 minutes per inch (see Appendix A).

The following summarizes the soil descriptions from Soil Survey (USDA, 1966):

Positas gravelly loam, 2 to 20 percent slopes, eroded (PoC2): Most of the soil is in large bodies on smooth, gently sloping to strongly sloping high terraces. This well-drained soil has very slowly permeable subsoil. Runoff is slow to medium and the available water holding capacity is low. Erosion hazard is slight to moderate on cultivated areas. This soil is used for pasture, range, dry-farmed grain, and grain hay.

Zamora silt loam, 0 to 4 percent slops (Za) and Zamora silty clay loam, 0 to 3 percent slopes (Zc): This soil type is used for irrigated row crops. This soil occurs mostly in large bodies on nearly level flood plains. This soil is well drained. Permeability is moderately slow. Runoff is slow, and the available water holding capacity is high.

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 following policies relevant although no site specific geologic hazards assessment is considered warranted:

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 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: Per the County Grading Ordinance (Chapter 9 of the Alameda County Ordinance Code, Articles 1 through 9), the project requires a grading permit from the County Public Works Department. Per the Grading Ordinance, a soils or geologic investigation report is required to accompany applications for grading permits when the proposed grading includes a cut or fill exceeding certain depth and conditions, when highly expansive soils are present or in areas of known or suspected geological hazards, including landslide hazards and hazards of ground failure stemming from seismically induced ground shaking.

The County will make a determination after review of the preliminary grading plan for the Project, as to whether 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. The project will be required to comply with Section 15.08.260 of the Code, including submittal of documentation for approvals by the County Building Department upon completion of rough grading and prior to the approval of a foundation for the proposed structures:

- A complete record of all geotechnical tests prepared by the responsible geotechnical engineer or soils engineer, geologist or engineering geologist.

•Documented letter or 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, and a finding 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.

**Impacts and Mitigation**

## Thresholds per CEQA Checklist

| **Would the Project:** | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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. | ☐ | ☐ | ☐ | ■ | 1, 2 |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| iv) Landslides? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☐ | ■ | ☐ | 1, 2,5,7 |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☐ | ☐ | ■ | ☐ | 1, 2, 5 |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ■ | ☐ | ☐ | 1, 2, 5, 7 |


Source: United States Department of Agriculture, 2014



# Soils Map

Tesla Road Winery
Initial Study

Figure
7

**Explanation**

ai) **Less than Significant Impact.** The Project Site is located within the Altamont Quadrangle as mapped by the California Geologic Survey. The site is in a tectonically active region but is not located within a State of California Earthquake Fault Hazard Zone and no known active faults cross the site. In addition, the Project is not mapped within an Alquist-Priolo Earthquake Fault Zone. The risk of ground rupture within the Project Site is considered low.

aii) **Less than Significant Impact.** Due to its location in a seismically active region, the proposed multi-use wine facility may be subject to strong ground shaking during its design life in the event of a major earthquake on any of the region's active faults. Seismic impacts will be minimized by implementation of standard engineering and construction techniques in compliance with the requirements of the California and Uniform Building Codes for Seismic Zone 4.

aiii),aiv) **Less than Significant Impact.** As described above, the Project Site may be subject to strong ground shaking in the event of a major earthquake. The site may also be subject to liquefaction, although it is not designated in a geotechnical hazard zone The California Geologic Society has mapped areas referred to *Zones of Required Investigation,* which include areas of potential liquefaction and landslide hazard. The California Geologic Society completed a liquefaction hazard evaluation for the area within the Altamont quadrangle, where the Project is located. According to this evaluation, the Project Site is not designated as a Zone of Required Investigation or an area where the risk of liquefaction or earthquake induced landslides is high. As such, the Proposed Project would have a less than significant impact associated with seismic-related ground failure including liquefaction or landslides.

b) **Less than Significant Impact.** Development of the Project will require paving and minimal grading that could result in a temporary increase in erosion. This increase is expected to be minor due to the topography of the Project Site. The project will be required to comply with all requirements for erosion control in accordance with County policy and County Grading Ordinance.

c),d) **Less than Significant Impact.** The Project may be subject to soil hazards such as weak soils, expansive soils, and/or settlement that are not documented for the site. The proposed wine facility would be designed and constructed in accordance with a design-level geotechnical investigation (required under County ordinance). The Project Site contains two different types of soils including Positas gravelly loam (PoC2) and Zamora (Za). The Project construction would be in compliance with the recommendations of a qualified geotechnical engineer and the Uniform Building Code to ensure. Pursuant to County regulation, 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 construction activities on the site. The required submittals will ensure that site development is 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. As such, impacts associated with soils will be less than significant.

e) **Less than Significant with Mitigation.** Construction of the Proposed Project would require the installation of septic systems on site for domestic wastewater disposal and a winery waste water disposal system or other disposal methods consistent with applicable regulations. The proposed project would include the installation of a septic system and underground pipes for the domestic system. The soil on the project site contains soil which has a moderately high capacity to transmit water (USDA 2006). Soils with high percolation rates generally can support and allow the quick and efficient drainage of septic systems. The septic tank for domestic purposes would be designed to

provide adequate capacity to serve the proposed project and would meet the County's design and siting requirements for septic systems.

Winery facilities will require wastewater disposal to meet existing regulations. Due to existing groundwater conditions in the area associated with high nitrate concentrations, subsurface disposal methods are discouraged or requirements placed on oversight and approvals. The proposed wastewater disposal and facility must meet approved waste discharge requirements from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) for management of the domestic and winery process wastewater to be generated by the facility. Permit approvals will also be required from the CRWQCB, Alameda County Health Department and Zone 7 Water Agency. The Alameda County Flood Control and Water Conservation District, Zone 7 (hereinafter "Zone 7", also known as Zone 7 Water Agency) is the groundwater basin manager of the Livermore-Amador Valley groundwater basin. Kennedy/Jenks Consultants (Kennedy/Jenks) prepared a wastewater discharge report for submittal to the County of Alameda and the CRWQCB in support of an application to that agency. The report, entitled "Amendment to the Report of Waste Discharge" (AROWD) for the proposed winery process wastewater operations is attached as Appendix A to this IS/MND.

The Kennedy/Jenks 2015 report addresses the winery process wastewater operations. Domestic wastewater is addressed in an earlier study prepared by Acorn Onsite, Inc. to the CRWQCB (dated March 4, 2014 which is also included as an attachment to Appendix A in this IS/MND). The two studies provide background and initial findings regarding winery and domestic wastewater loading and propose methods for wastewater discharge consistent with Zone 7, CRWQCB and County of Alameda requirements. Kennedy/Jenks 2015 study states: "Recent conversations with the CRWQCB have indicated that winery process wastewater treatment with effluent reuse and disposal via vineyard or crop irrigation may be more appropriate for the facility" and also notes that "The proposed winery process water treatment system will be a treatment system capable of producing effluent for irrigation reuse, and will likely be a compact package advanced wastewater treatment system from a qualified vendor with experience in treating winery process wastewater for irrigation reuse in California." (Kennedy/Jenks, 2015).

The application process for the required approval from the CRWQCB is underway but all elements of the application have not been completed as of June, 2015 (Personal communication with Melissa Gunter, Water Resources Control Engineer, SF Bay Regional Water Quality Control Board, June 2015). Discussion of wastewater treatment and disposal is also included under Section Q, Utilities & Service Systems of this IS/MND. Mitigations in Section Q and the following mitigation will ensure that potential impacts are reduced to a less-than-significant level.

**Mitigation**

**GEO-1.** The proposed facility must complete application requirements and obtain approved waste discharge requirements (WOR) from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) to manage domestic and winery process wastewater generated at the facility for the project. Domestic and winery wastewater disposal system design and approvals must also be obtained from Zone 7 and County of Alameda. Refer to Mitigation Measures, Section Q, Utilities & Service Systems.

## G. GREENHOUSE GAS EMISSIONS

**Setting**

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide ($CO_2$), methane ($CH_4$), ozone ($O_3$), water vapor, nitrous oxide ($N_2O$), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for enhancing the greenhouse effect (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Energy Commission 2006a). A byproduct of fossil fuel combustion is $CO_2$. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills. Processes that absorb and accumulate $CO_2$, often called $CO_2$ "sinks," include uptake by vegetation and dissolution into the ocean.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are of regional and local concern, respectively. California is the 12th to 16th largest emitter of $CO_2$ in the world (California Energy Commission 2006a). Carbon dioxide equivalents ($CO_2e$) are a measurement used to account for the fact that various GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

The Bay Area Air Quality Management District (BAAQMD) is responsible for air quality considerations in Alameda County. The BAAQMD establishes significance thresholds for GHG emissions, based on substantial evidence. The BAAQMD sets an operational-related GHG threshold of 1,100 metric tons of $CO_2$ equivalents per year (MT $CO_2e$/yr) or 4.6 MT $CO_2e$/per service population per year. Projects with GHG emissions below these significance thresholds are considered to comply with applicable plans, policies, and regulations for GHG emissions.

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ■ | ☐ | 1, 4, 5 |
| b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ■ | ☐ | 1, 4, 5 |

**Explanation**

a),b) **Less than Significant Impact.** The Proposed Project involves the construction of a multi-use wine facility and vineyard will not result in an expansion in service population compared to existing conditions. As such, the Project will not affect GHG emissions. Project construction activities will generate a temporary incremental increase in GHG emissions but due to the scale and duration, GHG emissions would be negligible. In addition, the Proposed Project would not conflict with any applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. There are no adopted GHG-related plans, policies, or regulations that would be applicable to the project.

## H. HAZARDS AND HAZARDOUS MATERIALS

**Setting**

The Proposed Project involves the development of a multi-use winery and event center on a currently undeveloped site. There are not facilities on or adjacent to the Project Site with toxic or hazardous conditions according to the U.S. Environmental Protection Agency's (EPA's) Envirofacts Web Database and the California Department of Toxic Substances EnviroStor Database. The Site has an existing water well and no paved access roads onto the Site. There are no schools in the vicinity of the Project Site. The Project Site is not located within an airport land use plan but it is located within a quarter mile of a small private land strip just south of the site. Construction of the proposed project would result in the transport of materials generally regarded as hazardous materials. It is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluids, paint, and other similarly related materials would be brought to the project site, used, and stored during the construction period. The types and quantities of materials to be used could pose a significant risk to the public and/or the environment if not properly handled.

State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). The California Highway Patrol (CHP) and California Department of Transportation (Caltrans) enforce regulations for hazardous materials transport. Within Cal/EPA, the Department of Toxic Substances Control (DTSC) has primary regulatory authority to enforce hazardous materials regulations. State hazardous waste regulations are contained primarily in Title 22 of the

California Code of Regulations (CCR). The California Occupational Health and Safety Administration (Cal OSHA) has developed rules and regulations regarding worker safety around hazardous and toxic substances.

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

| Would the Project: | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| a) | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| c) | Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| 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? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| 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? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| g) | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ■ | 1, 2 |

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2 |

**Explanation**

a) **Less than Significant Impact.** The Proposed Project would not involve the routine transport, use, or disposal of hazardous materials. The Project involves the construction of a multi-use wine facility and the planting of approximately 18 acres on the remainder of the parcel. The agricultural operations would likely utilize fertilizers, herbicides and potentially other products that could be considered hazardous materials but would not require special permits or authorization from Alameda County. Construction activities would require the use and transport of potentially hazardous materials including oils and combustible fuels but would not be stored in large quantities on-site.
The winery facility is projected to use chemicals throughout the facility including, but not limited to support its agricultural practices in the vineyards and for cleaning and sanitation of its winemaking operations. The agricultural chemicals are completely used within the vineyard. The spent chemicals used in the facility would be comingled with clean up water and discharged to the winery process water stream for advanced treatment. (Kennedy/Jenks, 2015). The applicant and its contractors must implement and comply with all relevant local, State, and Federal regulations related to the handling, transport, and storage of hazardous materials. The contractor or applicant must also prepare and adhere to a Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMP) during project construction and State and Federal requirements during operation. Therefore, impacts associated with the use, transportation or accidental release of potentially hazardous materials would be less than significant with the inclusion of standard best management practices (BMPs) during and after project construction.

b) **Less than Significant Impact.** Project construction has the potential to release fuels and other hazardous particles into the environment, potentially causing human exposure to the hazards. However, as described in a), above, the Project will implement best management practices pertaining to hazardous material usage requiring the safe handling and storage of hazardous materials in accordance with all applicable local, state and federal laws. As such, this represents a less than significant impact.

c) **Less than Significant Impact.** The Proposed Project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school. The nearest school is approximately four miles away. In addition, the Project Site is located in a rural and sparsely populated area, south of the City of Livermore. As such, the Project would have a less than significant impact.

d) **No Impact.** The Proposed Project Site or adjacent parcels are not identified by the Department of Toxic Substances Control EnviroStor Database as containing hazardous materials.

e) **No Impact.** The Proposed Project is not located within an airport land use plan. As such, there is no impact. The Project is located within a quarter mile of a private airstrip, which is discussed in f) below.

f) **Less than Significant Impact.** The Proposed Project is located approximately ¼ mile from Meadowlark Field, a private airstrip located south of the site. The Meadowlark Field airstrip is an east-west oriented airstrip due to the prevailing wind conditions in the area. Due to the airstrip's east-west orientation, there are no potential hazards associated with the Proposed Project being under the take-off or landing pattern of the airport. The Project is a winery and does not have the potential for causing any additional hazards associated with the Meadowlark Field. As such, potential impacts associated with the private airstrip are less than significant.

g) **No Impact.** The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As such, no impacts are associated with interfering with applicable emergency response or evacuation plans.

h) **Less than Significant Impact.** The Project is located in a rural agricultural area on open land with few trees just outside the City of Livermore in unincorporated Alameda County. The surrounding land uses consist primarily of vineyards and rural, low-density residential houses. The Project Site is not located within a high fire hazard severity area as designated by CAL FIRE. However, the Project Site is located in moderate fire hazard severity zone. Development of the wine facility will be in conformance with Chapter 7A of the *California Building Code* pertaining to wildland fire interface. Compliance with all applicable regulations will ensure that the Project does not expose people or structures to a significant risk of loss, injury or death involving wildland fires. As such, wildland fire risks associated with the Project would be considered less than significant.

## I. HYDROLOGY AND WATER QUALITY

### Setting

The Proposed Project is located within the Arroyo Mocho sub-watershed of the Upper Alameda Creek Watershed in the Livermore Valley just outside the City of Livermore, California. Arroyo Mocho is located approximately a quarter mile from the site and is the nearest major surface water body. Arroyo Mocho is a tributary of Arroyo de la Laguna which joins with Alameda Creek in Sunol. The headwaters of Arroyo Mocho are located southeast of Livermore. There are no major surface water bodies near the Project Site. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the Project is not located within the 100 year floodplain or any other flood hazard areas.

The Project Site lies within the Livermore Valley Groundwater Basin in the San Francisco Bay Basin, Region 2. The Livermore Valley occupies approximately 69,600 acres bounded by the Pleasanton Ridge to the west, the Altamont Hills to the east, the Livermore Upland to the south and the Orinda Upland to the north. Water bearing formations within the Livermore Valley Groundwater Basin consist of continental deposits from alluvial fans, outwash plains, and lakes including: Valley-Fill Material, Livermore Formation and Tassajara Formation. These water-bearing formations yield adequate to large quantities of groundwater under most conditions, with poor to excellent water quality. Seismic faults restrict lateral groundwater movement within the Livermore Valley Groundwater Basin, forming barriers resulting in higher groundwater levels on the upgradient side of the faults. In general, the groundwater gradient within the Livermore Valley Groundwater basin is directed to the west, then south towards Arroyo de la Laguna. Groundwater depths range from four to 60 feet below ground surface. In addition, the Livermore Valley Groundwater Basin is considered nitrate impacted as numerous Areas of Concern within the basin exhibit nitrate concentrations in excess of the basin

objective of 45 mg/l[7]. The Alameda County Flood Control and Water Conservation District, Zone 7 (hereinafter "Zone 7", also known as Zone 7 Water Agency) supplies drinking water and irrigation water and also provides flood protection to eastern Alameda County, and is the groundwater basin manager of the Livermore-Amador Valley groundwater basin (Kennedy/Jenks, 2015).

Annual total rainfall between the years 1903 and 2010 averaged 14.23 inches per year. Winter (October through February) rainfall average approximately 10.29 inches per year, and summer (March through September) rainfall averaged approximately 3.95 inches[8].

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

| Would the Project: | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| a) | Violate any water quality standards or waste discharge requirements? | ☐ | ■ | ☐ | ☐ | 1, 2, 5 |
| 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 ground water table level (for example, 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)? | ☐ | ☐ | ■ | ☐ | 1, 2,7 |
| 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. | ☐ | ☐ | ■ | ☐ | 1, 2 |
| d) | Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site? | ☐ | ☐ | ■ | ☐ | 1, 2 |

[7] Kennedy/Jenks Consultants. *Amendment Report of Waste Discharge for Mohan Rao Winery Livermore, California.*
[8] Ibid

| Would the Project: | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| e) | Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ■ | ☐ | 1, 2 |
| f) | Otherwise substantially degrade water quality? | ☐ | ■ | ☐ | ☐ | 1, 2 |
| 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? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| h) | Place within a 100-year flood-hazard area structures which would impede or redirect flood flows? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| 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? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| j) | Inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ■ | 1, 2 |

**Explanation**

a),f) **Less than Significant with Mitigation.** The Proposed Project will not substantially degrade water quality. The Project would generate wastewater associated with winery processing activities such as rinsing floors, tanks, bottles, barrels and equipment. However, the proposed winery process water treatment system will produce water that is suitable for irrigation reuse in accordance with requirements of the CRWQCB once a permit is issued. Monitoring will be required for this permit also. The proposed wastewater disposal and facility must meet approved waste discharge requirements from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) for management of the domestic and winery process wastewater to be generated by the facility. Permit approvals will also be required from the CRWQCB, Alameda County Health Department and Zone 7 Water Agency. With application of BMPs in Mitigation AIR-1 and other BMPs and agency requirements as noted below in Mitigation SW-1 and Mitigation under Utility Section Q, impacts to water quality and applicable water quality standards would be less-than-significant.

b) **Less than Significant Impact.** Construction of the Proposed Project will not substantially or otherwise deplete groundwater supplies or interfere substantially with groundwater recharge such that there would cause a net deficit in aquifer volume or a lowering of the local groundwater level. The Project would result in an increase in the impervious surface area on the site of approximately 2 acres on the 20 acre site as a result of the new multi-use wine facility and associated driveway. The increase in impervious surfaces could reduce infiltration of water into the groundwater. However, the majority of the site will remain as pervious and allow continued infiltration. Winery effluent will be

treated and reused for irrigation on vineyards on the remaining 18 acres of the project site. Winery facilities will require wastewater disposal to meet existing regulations. Due to existing groundwater conditions in the area associated with high nitrate concentrations, proposed wastewater disposal and irrigation must meet approved waste discharge requirements from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) and Zone 7 Water Agency. The Proposed Project will use water from an existing onsite well which would result in increased water use from the groundwater basin. However, this is partially offset by the reuse of the winery effluent and the proposed rain catchment system proposed by the application. Thus, with appropriate permit authority and oversight prior to implementation, the project would not substantially deplete groundwater resources or groundwater recharge.

c) **Less than Significant Impact.** Construction of the Proposed Project would result in grading and soil-disturbing activities and the installation of new impervious surfaces. These activities could result in increased discharge of stormwater to drainage facilities, which could cause additional erosion and associated siltation of local water bodies. The Project will implement a storm water control plan to manage storm water runoff in compliance with the County's requirements, per Mitigation Measure SW -1, below. Implementation of the proposed storm water control plan in addition to the standard best management practices will reduce potential drainage/runoff impacts to a less than significant level.

d),e) **Less than Significant Impact.** The Project would increase the impervious area and associated storm runoff from the site. Potentially significant Impacts to hydrology and water quality as a result of stormwater pollution are unlikely because best management practices that help to avoid or minimize erosion and sedimentation are a required regulatory element of this project. Mitigation SW-1 is identified to highlight this requirement to obtain and comply with a National Pollutant Discharge Elimination System (NPDES) General Construction Activities Permit, and this will reduce impacts to less than significant.

g,) **No Impact.** The Proposed Project is not located on a floodplain nor does it propose any housing.

h) **No Impact.** The Project Site is not located within any flood hazard zones, thus it will not impede or redirect flood flows.

i) **No Impact.** The Project Site is not located within a floodplain or flood hazard zone. As such, the Project would not result in a loss, injury or death involving flooding, including flooding as a result of the failure of a levee or damn.

j) **No Impact.** The Project is not located in an area subject to significant seiche, tsunami, or mudflow risk.

**Mitigation**

**SW-1**

Stormwater Pollution Protection Plan. A site-specific SWPPP shall be prepared as part of the NPDES General Construction Activities Stormwater Permit. It will require the construction contractor to incorporate the SWPPP's Best Management Practices (BMP) measures into all aspects of the Project. The BMPs will include measures for management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. These measures address procedures for controlling erosion and sedimentation and management all aspects of the construction to ensure control of potential water pollution sources.

Construction phase BMPs will include: dust control; minimal use of water for dust control (only as much as needed); dry sweeping and/or storm drain inlet control measures (e.g. sandbags, filter fabric, fiber rolls, etc.); install silt barriers around sensitive areas and wherever earthwork activities might result in erosion and sediment transport; stabilize stockpiled soils (if any). Post-construction BMPs will also be included to miminize off site runoff and control pollutants to storm runoff. These include minimal use of water for system washing (only as much as needed), and timing of sprinkler system to maximize infiltration. The measures included in the SWPPP will be monitored regularly for effectiveness. If a measure is found to be ineffective, it will be redesigned or replaced.

## J. LAND USE

### Setting

The Proposed Project is located in the Livermore Valley, just outside the City of Livermore, in unincorporated Alameda County. The Project Site has a General Plan designation as Large Parcel Agriculture and is zoned as Planned Development, 2055 Zoning Unit (PD-ZU-2055). In addition, the Project Site is not under a Williamson Act Contract. The Project Site is surrounded by agricultural and viticulture operations in all directions and rural residences to the east. The Project Site is located within the boundaries of the East County Area Plan, which serves as the County General Plan for this area, and the South Livermore Valley Area plan.

### Impacts and Mitigation

**Thresholds per CEQA Checklist**

| Will the Project: | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| a) | Physically divide an established community? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| 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? | ☐ | ☐ | ■ | ☐ | 1,6,7 |
| c) | Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan? | ☐ | ☐ | ■ | ☐ | 1, 2,7 |

### Explanation

a) **No Impact.** The Proposed Project would not physically divide an established community. The 19,944 sq. ft. multi-use wine facility is located in an area characterized by agriculture and viticulture uses. Additional surrounding uses include rural residential property to the east and a horse ranch to the south.

No existing communities are located on the property and construction of the Project would not disturb or divide a physical community. Therefore, no impact would occur.

b) **Less than Significant Impact.** The Proposed Project would be consistent with Alameda County land use policies contained in the East County Area Plan (ECAP), South Livermore Valley Area Plan and Alameda County Zoning Ordinance. A discussion of the Project's consistency with these applicable plans is provided below.

East County Area Plan (ECAP)

The proposed Project Site is part of the East County Area Plan (ECAP) area which provides the General Plan goals and policies for this area. The Project Site is designated as "Large Parcel Agriculture" as part of the ECAP. Policies applicable to the Project are provided below.

*Policy 78: In areas designated Large Parcel Agriculture, the County shall permit agricultural processing facilities (for example wineries, olive presses) and limited agricultural support service uses that primarily support Alameda County agriculture, are not detrimental to existing or potential agricultural uses, demonstrate an adequate and reliable water supply, and comply with the other policies and programs of the Initiative.*

*Policy 81: The County shall give the highest priority in areas designated "Large Parcel Agriculture" to agricultural operations. Visitor-serving commercial facilities (such as wineries, inns, and food and beverage stores) shall be limited to facilities that promote agriculture and are subordinate and directly related to the area's agricultural production.*

*Policy 82: In areas designated Large Parcel Agriculture, the County shall permit limited agriculture enhancing commercial uses that primarily support the area's agricultural production, are not detrimental to existing or potential agricultural use, demonstrate an adequate and reliable water supply, and comply with other policies and programs of the Initiative.*

*Policy 83: The County shall require any proposal for a visitor-serving commercial use in an agricultural area to meet all of the following criteria:*

- *The project will primarily promote agricultural products grown or processed in Alameda County;*
- *The project is compatible with existing agricultural activities in the area;*
- *The project mitigates, to the satisfaction of the County, all potential conflicts with surrounding agricultural uses and other environmental impacts; and*
- *The project can demonstrate an adequate and reliable water source that does not significantly diminish the availability of water to serve existing or potential agricultural size*

South Livermore Valley Area Plan (SLVAP)

The South Livermore Valley Area Plan was created with the goal of preserving and enhancing the south Livermore Valley as a top wine-producing region. Goals and policies throughout the plan aim at encouraging viticulture and other wine-related activities and facilities within the area and preserving the rural character in the region. The SLVAP contains four subareas, each with distinct land use policies and standards. The subareas include the Vineyard Area, Ruby Hill, Alden Lane Transitional Area and Vineyard Avenue Transitional Area. The Project Site is located in the Vineyard Area of the SLVAP. Policies applicable to the Project are provided below.

*Goal 1: Promote the South Livermore Valley as a unique and historic Wine Region.*

*Goal 3: Preserve the area's unique rural and scenic qualities.*

*Objective 1: Expansion of cultivated agricultural, particularly viticultural, use in the South Livermore Valley from the current 2,100 acres to the maximum acreage possible, with a minimum acceptable level of 5,000 acres.*

*Objective 2: Development of additional wineries with a range of sizes, and other wine-country uses that promote the area as a premier wine-producing area.*

*Agricultural Preservation and Enhancement Policy 3: Encourage the promotion of the South Livermore Valley as a premier wine-producing center by encouraging appropriate tourist attracting and supporting uses, such as bed and breakfast establishments, bicycle and equestrian facilities, a conference center, a wine museum, or other uses and by establishing clear, well-signed travel corridors from major highways to the area.*

*Agricultural Preservation and Enhancement Policy 4: Maintain and enhance the visual quality of the Plan Area by limiting inappropriate uses in viticultural areas and encouraging good design through establishment of appropriate design guidelines.*

Alameda County General Ordinance Code Title 17-Zoning

The Project Site has a zoning designation of Planned Development "PD". The intent of this zoning designation is to:

a) Be in accord with the policies of the General Plan of the county;
b) Provide efficient use of the land that includes preservation of significant open areas and natural topographic landscape features with minimum alteration of natural land forms;
c) Provide an environment that will encourage the use of common open areas for neighborhood or community activities and other amenities;
d) Be compatible with and enhance the development of the general area;
e) Create and attractive, efficient and safe environment.

Project Consistency: The Proposed Project involves the construction of a 19,944 square foot multi-use wine facility in the South Livermore Valley. The proposed use would be consistent with both the ECAP and SLVAP because the multi-use winery facility would support the objectives of enhancing the area as a premier wine region. In addition, the Project is consistent with the Alameda County Zoning Ordinance because the Project will be compatible with and enhance the surrounding area, which consists of similar viticulture uses. Compliance with County development standards contained within the SLVAP and County Zoning Ordinance will also be required. As such, the Project would be consistent with applicable plans, policies and regulations and there would be a less than significant impact.

c) **No Impact.** The Project Site is not located in or subject to a habitat conservation plan or a natural community conservation plan. As such, there is no impact.

## K. MINERAL RESOURCES

### Setting

The Proposed Project is located in unincorporated Alameda County just outside the City of Livermore. The California Geological Survey (CGS), formerly the California Division of Mines and Geology, has mapped and classified the Livermore-Amador Valley as part of the South San Francisco Bay Production-Consumption Region. Based on CGS mapping, no areas around the Project Site are designated as mineral resource zones. In addition, no mining is known to occur in the area and the East County Area Plan does not identify mineral resources in the Project area.

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| 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? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |

**Explanation**

a),b) **No Impact.** The proposed Project is not identified by the County's General Plan or the State of California as containing potential mineral resources. Additionally, the Project Site is not located within a designated Mineral Resource Zone.

## L. NOISE

**Setting**

Noise is defined as unwanted or objectionable sound. State and local regulations define objectionable noise levels and identify land use compatibility standards. Sound is comprised of three variables: magnitude, frequency, and duration. The magnitude of air pressure changes associated with sound waves results in the quality commonly referred to as "loudness." Variations in loudness are measured on the "decibel" (dB) scale. On this scale, noise at zero decibels is barely audible, while noise at 120-140 decibels is painful and may cause hearing damage. These extremes, however, are not encountered in commonplace environments.

Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

The second characteristic of sound is frequency. The human ear responds to sounds whose frequencies are in the range of 20 to 20,000 hertz. Within the audible range, subjective response to noise varies. People generally find higher pitched sound to be more annoying than lower pitched sounds. Noise is typically characterized using the A-weighted sound level or dBA. This scale gives greater weight to the frequencies to which the human ear is most sensitive. Table 2 demonstrates the correlation between the human response and the dBA sound levels.

The third characteristic of noise is duration. Annoyance due to noise is often associated with how long noise persists. To adequately describe a noise environment, it is necessary to quantify the variation in noise levels

over time. Acoustical engineers often use a statistical approach that specifies noise levels that are observed to be exceeded over a given percentage of time.

For evaluating noise over extended periods, the "Day-Night Noise Level" scale (DNL or $L_{dn}$) or "Community Noise Equivalent Level" (CNEL) are measures of the average equivalent sound level ($L_{eq}$) during a 24-hour period. The $L_{eq}$ can be thought of as the steady sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. The CNEL and $L_{dn}$ account for greater sensitivity of noise receptors at night by penalizing noise occurring during evening and nighttime hours.

**TABLE 2 TYPICAL NOISE LEVELS IN THE ENVIRONMENT**

| COMMON OUTDOOR NOISE SOURCE | Noise Level (dBA) | Common Indoor Noise Source |
|---|---|---|
| | 120 dBA | Rock concert |
| Jet fly-over at 300 meters | | |
| | 110 dBA | |
| Pile driver at 20 meters | 100 dBA | Night club with live music |
| | 90 dBA | |
| Large truck pass by at 15 meters | | Noisy restaurant |
| | 80 dBA | Garbage disposal at 1 meter |
| | | Vacuum cleaner at 3 meters |
| Gas lawn mower at 30 meters | 70 dBA | Normal speech at 1 meter |
| Commercial/Urban area daytime | | |
| Suburban expressway at 90 meters | 60 dBA | Active office environment |
| Suburban daytime | | |
| | 50 dBA | Quiet office environment |
| Urban area nighttime | | |
| | 40 dBA | |
| Suburban nighttime | | Library |
| Quiet rural areas | 30 dBA | Quiet bedroom at night |
| Wilderness area | 20 dBA | Threshold of human hearing |
| Most quiet remote areas | 10 dBA | |
| Threshold of human hearing | 0 dBA | |

*Source: California Department of Transportation 2009.*

**Regulatory Setting**

The Project Site is located in the South Livermore Valley, an area characterized by its quiet and rural nature. Due to the low number of residences in the area, the existing noise environment in the area is typically quiet with occasional sound from vehicles and agricultural or construction activities during the day. The East County Area Plan contains the following criteria for land use compatibility and acceptable noise levels in Alameda County:

**East County Area Plan (ECAP)**
The Alameda County ECAP establishes goals, policies and implementation programs for Eastern Alameda County including those relating to community noise levels.

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

  **Policies**
  - 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 60db 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.

  **Implementation Programs**
  - 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*.

**Alameda County Noise Ordinance**
The Alameda County Noise Ordinance is contained in Chapter 6.60 of the County General Code. The ordinance allows for higher noise exposure levels for commercial properties than for residential uses, schools, hospitals, churches, or libraries. These standards augment the state-mandated requirements of the Alameda County Building Code which establishes standards for interior noise levels consistent with the noise insulation standards contained in the California Building Code. Table 3, below, shows the Alameda County exterior noise standards and specifically the number of cumulative minutes that a particular external noise level is permitted and the maximum noise level allowed under the County Code.

**TABLE 3 ALAMEDA COUNTY NOISE STANDARDS**

| CUMULATIVE NUMBER OF MINUTES IN ANY 1-HOUR TIME PERIOD DAYTIME | Daytime (7am to 10pm) | Nighttime (10pm to 7am) |
|---|---|---|
| **Residential uses, schools, hospitals, churches, and libraries** | | |
| 30 | 50dBA | 45dBA |
| 15 | 55dBA | 50dBA |
| 5 | 60dBA | 55dBA |
| 1 | 65dBA | 60dBA |
| Maximum | 70dBA | 65dBA |
| **Commercial Uses** | | |
| 30 | 65dBA | 60dBA |

| | | |
|---|---|---|
| 15 | 70dBA | 65dBA |
| 5 | 75dBA | 70dBA |
| 1 | 80dBA | 75dBA |
| Maximum | 85dBA | 80dBA |

Source: Alameda County General Code, Chapter 6.60

**Impacts and Mitigation**

## Thresholds per CEQA Checklist

| **Would the Project:** | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ■ | ☐ | ☐ | 1, 2, 6 |
| b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels? | ☐ | ☐ | ■ | ☐ | 1, 2, 6 |
| c) Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ■ | ☐ | 1, 2, 6 |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ■ | ☐ | 1, 2, 6 |
| 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? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| 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? | ☐ | ☐ | ■ | ☐ | 1,2, 7 |

**Explanation**

a) **Less than Significant Impact with Mitigation.** The Proposed Project would introduce new noise sources onto the currently undeveloped site associated with the winery and event center. Operational noise would be caused by winery process activities and special events held at the site. Winery process activities will result in an incremental increase in noise from the existing setting but will occur within the facility and will be unlikely to be audible from surrounding residences. Processing activities include crushing, processing and washing associated with the wine. Events may include but are not limited to weddings, gatherings, harvest parties and dinners. Events will primarily occur within the tasting facility and banquet room but may also utilize the outdoor space where noise may be heard from surrounding residences. Special events may also include the amplification for live music and entertainment. As discussed in the project description, events will be limited to five large events with

a maximum of 400 people annually and 12 smaller events of up to 150 annually. The banquet rooms will provide space for a wide variety of events ranging from corporate meetings to weddings. Larger events at the facility will be a maximum of four to five hours in duration and occur between 10 a.m. and 11 p.m. and not exceed 65 dBA.

In addition, the Proposed Project will result in a temporary increase in ambient noise level associated with project construction activities. Construction activities will include grading and use of heavy machinery and equipment. Most construction noise ranges from 80 to 90 dBA at a distance of 50 feet from the source. The nearest sensitive receptor to the Project Site is a residence located adjacent to the east boundary and approximately 510 feet east of the proposed multi-use facility location and area of disturbance during construction. Due to the quiet nature of surrounding area, project construction activities have the potential of creating a potentially significant noise impact. This potentially significant impact can be mitigated to a less than significant level through mitigation discussed below.

**Impact Noise 1:** Construction activity from the Proposed Project may impact the sensitive receptor residences located east of the Project Site. Construction-related noise would be temporary in nature and not permanently impact surrounding residences. This represents a potentially significant impact that can be reduced to a less than significant level with appropriate mitigation.

**Mitigation:**

**NSE-1** The following measures shall be implemented during construction:

- Construction will be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday for any on site or off-site work within 500 feet of any residential unit. Construction will not occur on holidays.

- The contractor shall use construction equipment with noise shielding and muffling devices. All internal combustion engines used on the Project Site shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poor maintained engines or other components.

- Stationary noise generating equipment shall be located as far as possible from sensitive receptors. Staging areas shall be located a minimum of 200 feet from noise sensitive receptors.

b) **Less than Significant Impact.** The Proposed Project is not subject to groundborne vibration and will not generate any significant source of groundborne vibration. Project construction activities have the potential to temporarily increase groundborne levels in the area immediate vicinity of the Project area. Potential impacts would be mitigated though implementation of mitigation measure NSE-1, described above.

c) **Less than Significant Impact**. The Proposed Project would incrementally increase noise levels in the area due to construction-related activities. In addition, project operational noise will increase on the Project Site compared to the exiting noise setting. The Project will increase noise levels on the site during operation guests entering and leaving the site, wine tastings and on-site events will be the

primary sources of noise. However, as described above in a) special events at the facility will likely generate noise that could potentially be disruptive to surrounding residences. These potential disturbances will be reduced through Mitigation Measure NSE-1 and the facility's setback of over 500 feet from the nearest resident will ensure that noise is reduced. In instances where outdoor amplification for events is used, noise levels will not exceed 65 dBA per Alameda County requirements. As such, the increase in noise level will be minor in nature and represent a less than significant impact.

d) **Less than Significant Impact with Mitigation.** As discussed above in a), the Proposed Project will result in increased noise levels associated with project construction activities. Increased noise levels have the potential to impact sensitive receptors east of the Project Site. Inclusion of mitigation measure NSE-1 will reduce any potentially significant impact to a less than significant level.

e) **No Impact.** The Proposed Project is not located within an airport land use plan and is not located within two miles of a public airport. As such, there would be no impact.

f) **Less than Significant Impact.** The Proposed Project is not located within an airport land use plan but it is located within two miles of a Meadowlark Field, a private airstrip. Due to the low level of flight activity at Meadowlark Field, the potential for exposing future workers at the Project Site to excess noise levels is considered low.

## M. POPULATION AND HOUSING

### Setting

The Project Site is located in unincorporated Alameda County, just outside the City of Livermore. Alameda County experienced a growth rate of approximately 4.6% from 2000 and 2010, from 1,443,741 people in 2000 to 1,510,271 people in 2010 (source). The Proposed Project involves development of a multi-use wine facility and does not propose any residential development. The Project will, however, generate additional employees. The Proposed Project would permanently increase employment by seven employees. The Project would also generate short-term employment during construction activities.

### Impacts and Mitigation

### Thresholds per CEQA Checklist

| ENVIRONMENTAL IMPACTS | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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)? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ■ | 1, 7 |

| ENVIRONMENTAL IMPACTS | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ■ | 1, 2 |

**Explanation**

a) **No Impact.** The Project involves the construction of a 19,944 sq. ft. multi-use wine facility and would not result in population growth.

b) **No Impact.** The Project involves construction on undeveloped land. As such, there will be no removal of housing nor will the Project displace existing housing, necessitating the construction of replacement housing.

c) **No Impact.** See b) above.

## N. PUBLIC SERVICES

**Setting**

The Alameda County Fire Department (ACFD) provides fire protection services to unincorporated parts of Alameda County including the Project Site. The ACFD employs approximately 450 people and has 54 reserve firefighters. Fire Station #20 (7000 East Avenue, Livermore, CA 94550) is located 1.8 miles northeast of the Site and would serve the Project.

Police protection services are provided to the Project Site by the Alameda County Sheriff's Department from the Pleasanton Station (5672 Stoneridge Drive, Pleasanton, CA). The Sheriff's Office employs over 1500 individuals including over 1000 sworn personnel. The City of Livermore Police Department (1110 South Livermore Avenue, Livermore, CA) would also provide assistance to this area.

The Project Site is located within the Livermore Valley Join Unified School District. The District operates nine elementary schools, two K-8 schools, three middle schools, two high schools, two continuation schools and one adult school. The nearest schools are Vineyard Alternative Elementary and High School (14401 Almond Avenue Livermore, CA 94550) located approximately 3.7 miles from the Project, and Arroyo Seco Elementary School (5280 Irene Way, Livermore, CA 94550) located 3.2 miles from the site.

The East Bay Regional Park District manages 119,000 acres of land including regional parks, recreation areas, wilderness, shorelines, preserves and land bank areas throughout Alameda and Contra Costa counties. The Proposed Project is located in the Livermore Valley in eastern Alameda County. The closest Del Valle Regional Park located 9.5 miles south of the site and Shadow Cliffs Regional Park located 8.2 miles east of the Project Site.

**Impacts and Mitigation**

### Thresholds per CEQA Checklist

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or 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:

| **Would the Project:** | | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|---|
| a) | Fire protection? | ☐ | ☐ | ■ | ☐ | 1,2, 7 |
| b) | Police protection? | ☐ | ☐ | ■ | ☐ | 1,2, 7 |
| c) | Schools? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| d) | Parks? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |
| e) | Other public facilities? | ☐ | ☐ | ☐ | ■ | 1,2, 7 |

**Explanation**

a-b) **Less than Significant Impact.** The Proposed Project would result in an incremental increase in demand for police and fire services by introducing a new winery; however, the Project would not significantly affect the ability of service providers to maintain current levels of service. The incremental increase in demand for public service would be associated with increase in activities and employment at the currently undeveloped site. Impacts of the Proposed Project on police and fire protection services would be less than significant.

c-e) **No Impact.** A potentially significant impact to schools or parks is typically created when a project generates sufficient students or residences, respectively, to necessitate the need for additional schools or parks. Due to the nature of the Proposed Project, no new residences or students would be generated. In addition, the Project would not generate a need for additional facilities as a result of the Project. As such, the Proposed Project would have no impact on public services including schools, parks and other public facilities.

## O. RECREATION

**Setting**

There are no parks within easy walking distance of the Project Site. The nearest park is Bruno Canziani Park, located about 2.3 miles west of the Project Site. In addition, Robertson Park is located approximately 3.9 miles away from the Project Site.

**Impacts and Mitigation**

**Thresholds per CEQA Checklist**

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ☐ | ■ | 1, 2 |
| b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ■ | 1, 2 |

**Explanation**

a-b) **No Impact.** The Proposed Project involves the construction of a multi-use wine facility that will incrementally increase employment. The Project would not introduce any additional housing and would not result in an increase in demand for neighborhood and regional parks due to the potential for increasing the local housing stock. The proposed winery and associated activities would have no impact on recreational resources including neighborhood or regional parks. In addition, the Project does not include any recreational facilities and would not require the construction or expansion of recreational facilities.

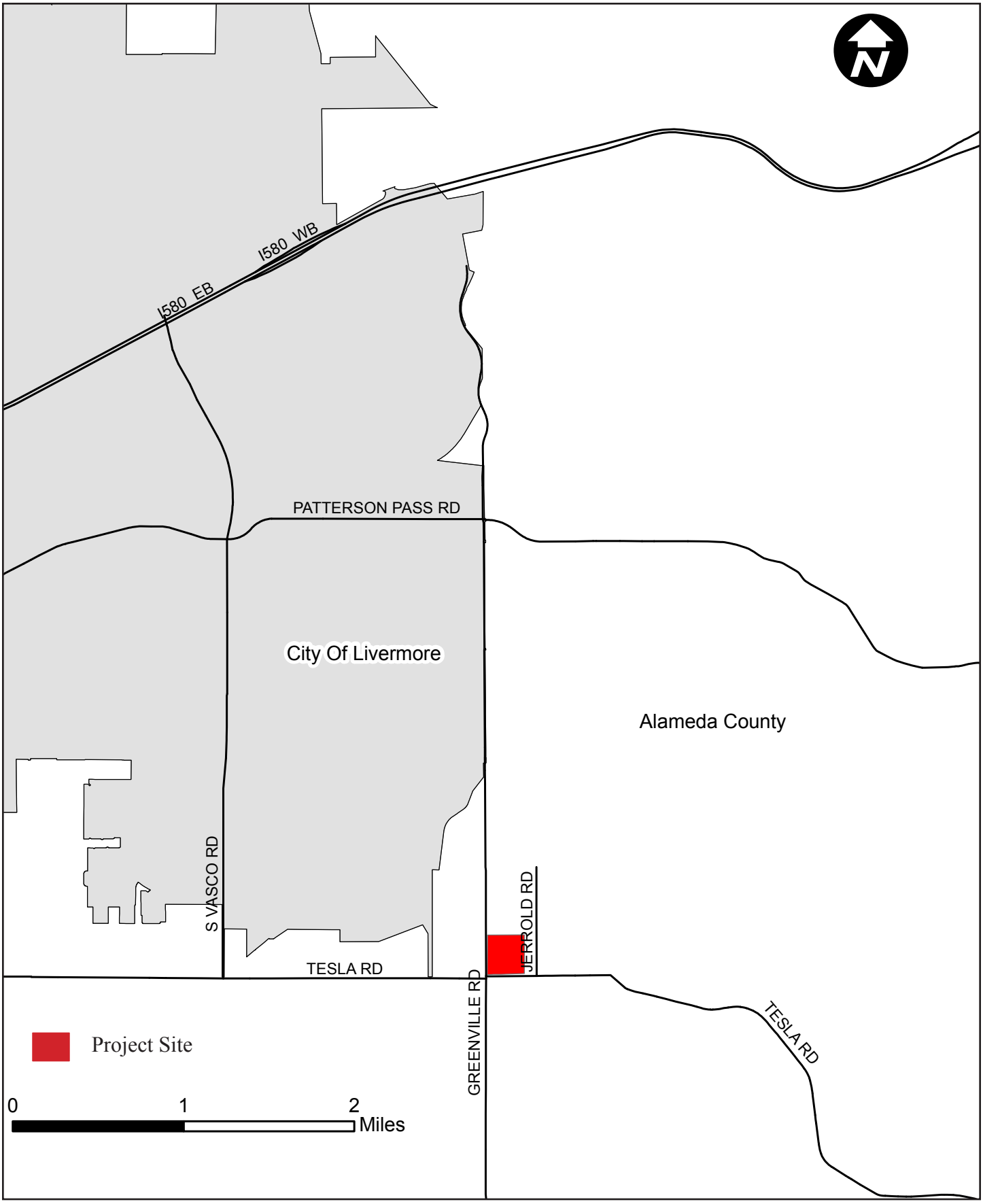
## P. TRANSPORTATION

**Setting**

The Project Site located at northeast corner of the Tesla Road and Greenville Road intersection in unincorporated Alameda County. Regional access to the site is provided by Interstate 580, an east-west highway that connects eastern Alameda County with the western portion of the county. Greenville Road and Tesla Road are the two major local roadways that provide access to the Project Site.

Figure 8 provides an overview of the transportation network in the Project Area. Greenville Road is a 2-lane road that becomes 4 lanes north of the site where it eventually connects to I-580. Tesla Road is a 2-lane east-west road that changes into South Livermore Boulevard west of the Project Site. Class 2 bike lanes run both northbound and southbound along the length of the Project Site on Greenville Road. Interstate 580 is an eight-lane freeway with average traffic volumes ranging from 117,000 to 184,000 vehicles daily in the vicinity of the City of Livermore (City of Livermore 2004).

Tesla Road is classified as a principal rural arterial. According to the functional classification by Federal Highway Administration (FHWA), arterial roadways serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel. Arterials are relatively high mobility and high capacity roadways that accommodate intra-community travel and connect the rest of the countywide collector system. In 2014 the Alameda County Public Works Agency (County) conducted a




DD&A

# Transportation Network

Figure 8

Tesla Road Winery
Initial Study

safety study to identify the roadway safety needs on Tesla Road from Greenville Road to the Alameda/San Joaquin County Line, a distance of approximately 9.6 miles. Tesla Road is rural two lane arterial connecting I-580 near Tracy with the City of Livermore. The roadway is used by residents and by motorists visiting the Livermore wineries, Livermore National Laboratory and the Carnegie State Vehicular Recreation Area. The roadway includes multi-modal traffic uses such as autos, trucks, bicycles, motorcycles, and pedestrians. The collision history on Tesla Road prompted the County to conduct the safety study. The primary goal of the safety study is to identify and prioritize the needed safety measures that will potentially make the roadway safer for the residents along Tesla Road and other road-users (Tesla Road Safety Study, May 2015)

## Impacts and Mitigation

### Thresholds per CEQA Checklist

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2, 7, 9 |
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2, 6,7,9 |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ■ | 1, 2, 7 |
| d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)? | ☐ | ■ | ☐ | ☐ | 1, 2, 9 |
| e) Result in inadequate emergency access? | ☐ | ☐ | ■ | ☐ | 1, 2, 9 |
| 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? | ☐ | ☐ | ■ | ☐ | 1, 2, 7 |

### Explanation

a) **Less than Significant Impact.** The Proposed Project will not conflict with an applicable plan, ordinance or policy establishing measures for of effectiveness for the performance of the circulation system.

b) **Less than Significant Impact**. The Proposed Project would not conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures. See a) above.

c) **No Impact.** The Proposed Project will not result in any changes to air traffic patterns.

d) **Less than Significant with Mitigation.** Access to the Proposed Site will be provided along Tesla Road which is flat with high visibility in both directions. Tesla Road includes multi-modal traffic uses such as autos, trucks, bicycles, motorcycles, and pedestrians. The collision history on Tesla Road prompted the County to conduct the May 2015 safety study. Tesla Road has become a heavily traveled two-lane route with traffic volumes ranging from 2,700 to 5,200 vehicles per day. The increase in vehicular traffic on this roadway, which was not designed to serve high volumes of fast moving motorists, has resulted in an increase of collisions on Tesla Road over the last decade. Additionally, the roadway conditions are at times considered unsafe for bicyclists in some areas of Tesla Road. However, in the area of the project, Class 2 bike lanes run both northbound and southbound along the length of the Project Site on Greenville Road.

The Proposed Project would generate an incremental increase in trips to and from the site associated with winery operations. Operations, including wine tastings and events at the facility are not anticipated to generate a significant amount of vehicular trips to the site. Tesla Road and Greenville Road intersection is currently operating at LOS F (Level of Service) during both peak hours, which would exceed Alameda County's acceptable threshold of LOS D[9]. The LOS is primarily affected by westbound through vehicles during the a.m. peak and by eastbound through vehicles during the p.m. peak. The Manual for Uniform Traffic Control Devices (MUTCD) peak hour signal warrant would be met at this intersection under both peak hours.

The increase in traffic trips to an intersection on LOS F during peak hour would contribute to the already impacted intersection Operation and construction of the project will increase traffic on Tesla Road and Greenville Road and create additional turning movements in the intersection and driveway to the site. The construction of the project will create additional traffic movements which may add safety hazards and impact bicycle or pedestrian transportation. With appropriate signage and driveway access design and construction consistent with County of Alameda Public Works requirements and standards, this impact can be reduced to less-than-significant. See Mitigation TRAF-1 below to improve and pave the driveways and the shoulders adjacent to the driveways to provide adequate area for drivers to safely accelerate or decelerate off of the actual traveled way. With application of this mitigation, the Proposed Project will not substantially increase hazards due to a design feature.

e) **Less than Significant Impact.** Emergency access to the Proposed Project Site will be provided along Tesla Road with primary access into the site. Access into the site will provide adequate space for fire trucks and emergency vehicles to enter and turn around.

[9] Level of Service represents the range of operating conditions and the driver's perception of these conditions. There are six levels of service designated with letters from A to F. LOS A represents the best operating conditions and LOS F represents the worst operating conditions.

f) **Less than Significant Impact.** The Proposed Project will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

**Mitigation**

**TRAF-1** Improve and pave the driveways and the shoulders adjacent to the driveways to provide adequate area for drivers to safely accelerate or decelerate off of the actual traveled way. Tesla Road driveway approaches and the shoulders adjacent to the driveways should provide safe and adequate bicycle movements and appropriate signage for motorists and bicyclists.

## Q. UTILITIES AND SERVICE SYSTEMS

**Water**

Project winery facility water is projected to be supplied by California Water Service Company's (Cal Water's) Livermore District or an existing onsite well. Cal Water's water supply is provided by a combination of local groundwater and surface water purchased from the Alameda County, Zone 7 Water Agency (Zone 7; Cal Water, 2011). Most of the water supplied by Cal Water originates as snowmelt in the Sierra Nevada, conveyed via the Delta to the San Francisco Bay Area and then to Zone 7 via the South Bay Aqueduct. Zone 7 also utilizes storm water runoff stored in the nearby Del Valle Reservoir and groundwater from the Livermore-Amador Valley aquifer system (Cal Water, 2011).

Cal Water or groundwater, from an existing onsite well, will be used throughout the winery facility for winemaking processes including cleaning, sanitation, grape crushing, barrel and equipment rinsing, racking, filtering, and bottling. Water will also be supplied for domestic use by staff and visitors, general housekeeping, and irrigation of surrounding landscaping, lawns, and vineyards.

A plume of high nitrate concentration has been detected in the main groundwater basin underlying the City of Livermore for many decades. Nitrate has been detected at elevated levels in the basin and sub basin areas and is currently a constituent of concern (Zone 7, 2015). The Livermore Valley Groundwater Basin is considered nitrate impacted as numerous Areas of Concern within the basin exhibit nitrate concentrations in excess of The Basin Objective of 45 mg/1. Water well testing results at the project site well are included in Appendix A. The nitrate concentration in the groundwater exceeds State and Federal Safe Drinking Water limits. Past evaluations of the nitrate in the groundwater have indicated that rural land uses including septic tank leachate, livestock, and agricultural activities could be primary sources for the nitrogen. The Zone 7 Water Agency has established programs to reduce the amount of nitrate entering the groundwater including a management and limitation of commercial septic tanks and monitoring among other plan elements. The long term goal of continued implementation of nitrogen reduction programs is to reduce groundwater nitrate concentration. See Figure 9 for location of project in relation to Zone 7 area.

**Wastewater System.** Zone 7's GWMP program monitors groundwater quality throughout the basin areas. Of the two main groundwater quality parameters being monitored as nutrient contamination indicators (nitrate and phosphate), only nitrate has been detected at significant concentrations in the basin areas. The Basin Objective (BO) for nitrate in groundwater is 45 mg/L (measured as NO3) or less for all of the NMP basin areas (California State Water Board, 2011). This is the same value adopted by the California Department of Health as the maximum contamination limit (MCL) for drinking water. The proposed wastewater system is described below.

**Winery:** The proposed winery process water treatment system will be a treatment system capable of producing effluent for irrigation reuse, and will likely be a compact package advanced wastewater treatment system from a qualified vendor with experience in treating winery process wastewater for irrigation reuse in California. Winery process water typically includes wash water from rinsing floors, tanks, bottles, barrels, and equipment. Peak flows occur during the crushing season and can range in excess of annual averages. Most flow occurs during the working hours of the winery. High peak flow days can occur during the crushing season when there might be a hot weather necessity to crush at maximum capacity for full 24-hour days.

An estimate of the quantity and quality of winery process water produced at the winery was developed on the basis of typical average flow relating to production capacity of California North Coast wineries. This information was based on reviewing and evaluating information provided by the applicant and facility, the process source water quality, and Kennedy/Jenks' extensive experience and the scientific literature related to management, treatment and reuse of winery process water. Additionally, the information was based on estimated process water flows on the basis of 20,000 cases per year. (Kennedy/Jenks, 2015)

Annual winery process wastewater flow generation, using six gallons of wastewater per gallon of wine produced, will result in approximately 286,000 gallons.

**Domestic:** Annual domestic wastewater flow is projected on Table 4, below.

**System Design**: Both winery facility and domestic sources of wastewater may be combined as allowed in the Alameda County Regulations for wineries of this anticipated wine volume or each source will be treated in two separate treatment and dispersal systems based on efficiencies of design and possible requirements from agencies. Under two separate systems, the Proposed Project would require the construction of a wastewater advanced treatment system for treating winery facility effluent and a new septic system for treatment of domestic uses. The proposed winery process water treatment system will be a treatment system capable of producing effluent for irrigation reuse, and will likely be a compact package advanced wastewater treatment system from a qualified vendor with experience in treating winery process wastewater for irrigation reuse in California. A proprietary pre-treatment system that would remove a minimum of 50% total nitrogen from wastewater before it is introduced into the soil dispersal system is proposed due to the high level of nitrates in the shallow surface water. (Kennedy/Jenks, 2015)

The treatment process would likely consist of a process wastewater screen system, equalization tank, pH adjustment system, aeration/mixing system, an advanced package membrane bioreactor system for filtration and aerobic biological stabilization and an above ground storage tank. This advanced process relies on physical-chemical and biological treatment to reduce BODs and TSS and to adjust pH with chemical addition suitable for irrigation reuse. Effluent quality produced by this treatment process would be suitable for many irrigation reuse applications, including vineyards and landscaping. Nitrogen effluent concentrations will be reduced by approximately half as a result of the advanced biological treatment process and the pH of the treated effluent would be adjusted by the treatment process to meet irrigation reuse guidelines. Figure 9 depicts the site plan in relation to the proposed septic system. Approximate locations of the septic system and wastewater treatment facilities are shown on project plans however, these areas will be confirmed based upon agency review and approval processes.

**Table 4**
**Estimated Wastewater Loading* for Domestic Uses**
**Source: Appendix A, Acorn Onsite, Inc.; March 2014**

| Use | Quantity (e.g, Meals, Tables, Persons, Shifts, Residences) | Total Gallons Per Year | Maximum Gallons (per day) | Average Gallons per Day over year (gpd) |
|---|---|---|---|---|
| Restaurant in new event center | | | | |
| Maintenance Factor Café (seats) | 78 Seats | 425880 | 1170 | 1167 |
| Kitchen waste for café (meals served) | 156 meals served | 283920 | 780 | 778 |
| Restroom Use café (per meal served) | 78 per meal served | 85176 | 234 | 233 |
| Employee workers (per employee) | 2 employees | 10920 | 30 | 30 |
| Events in new event center | | | | |
| Kitchen waste for events (per visitor) | 400 people at event | 20,000 | 4,000 | 55 |
| Typical Events | 150 people at event | 27000 | | 74 |
| Employee Workers | 3 employees | 16380 | 45 | 45 |
| Kitchen Waste for Large Events (per person) | | | | |
| Large Events | 400 meals served | 48000 | 1200 | 132 |
| Wine Tasting | | | | |
| Wine tasting w/ no meals (per visitor) | 30 Wine tasting visitors | 27300 | 75 | 75 |
| Employee workers | 1 employee | 5460 | 15 | 15 |
| Employees | | | | |
| Day worker – Office (per employee) | 1 employee' Domestics sewage: | 3900 953936 | 15 7564 | 11 2614 |
| **Total from Domestic** | | **1,051,856** | **9164** | **2882 gpd** |

*= Values from Table 3 – Commercial Establishment Quantities of Sewage Flow, Alameda County Onsite Wastewater Treatment System Regulations (2007)

Mitigation measures below will ensure all applicable waste discharge requirements and permits from the San Francisco RWQCB shall be secured for the existing process waste water treatment facility and that the proposed septic system location, design and capacity shall be approved by Alameda County. Approvals from Zone 7 will also be required. See Mitigation UTIL-1, below.

**Impacts and Mitigation**

**Thresholds per CEQA Checklist**

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ■ | ☐ | ☐ | 1, 2,5, 6, 7 |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction or which could cause significant environmental effects? | ☐ | ■ | ☐ | ☐ | 1, 2,5 |
| 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? | ☐ | ■ | ☐ | ☐ | 1, 2 |
| d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed? | ☐ | ■ | ☐ | ☐ | 1, 5,6,7 |
| e) Result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ■ | ☐ | 1,2,5,7 |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs? | ☐ | ☐ | ■ | ☐ | 1,2,6,7 |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ■ | ☐ | 1,2,6,7 |

**Explanation**

a) **Less than Significant with Mitigation.** The Proposed Project would require the construction of a wastewater advanced treatment system for treating effluent and a new septic system for sanitary uses. The septic tank for domestic purposes would be designed to provide adequate capacity to serve the

proposed project and would meet the County's design and siting requirements for septic systems. Approximate locations of the septic system and wastewater treatment facilities are shown on project plans however, these areas will be confirmed based upon agency review and approval processes.

The Proposed Project would generate wastewater associated with winery processing activities. Currently, the proposed winery process wastewater treatment facility does not have approved Waste Discharge Requirement (WDR) permits from the CRWQCB and the facility is in the process of completing all application requirements established by the RWQCB. Additionally, the proposed sanitary septic system would also need to meet all County design and treatment requirements prior to its installation and operation. Because the applicant does not currently hold the necessary permits from the CRWQCB for the process wastewater facility, this would be considered potentially significant impact. Implementation of Mitigation UTIL-1 below would reduce the project's potential impact to a less-than-significant level.

**Mitigation**

**UTIL-1** The following measures shall be implemented during construction:

- All applicable waste discharge requirements and permits from the San Francisco RWQCB shall be secured for the existing process waste water treatment facility.

    - The proposed septic system location, design and capacity shall be approved by Alameda County.
    - All appropriate permits shall be obtained for the construction and installation of the proposed septic system.
    - All approvals from Zone 7 shall be obtained.

b) **Less than Significant Impact with Mitigation.** As discussed above, the Proposed Project would involve the construction of a private onsite a septic system. The project would not require the construction or expansion of new public wastewater facilities.

The Project is anticipated to utilize approximately 286,000 gallons per year during operation. The Project would also include connection to water provided by California Water Service Company's (Cal Water's) Livermore District or by an existing onsite well. Cal Water or groundwater from an existing onsite well would be used throughout the facility for winemaking processes including cleaning, sanitation, grape crushing, barrel and equipment rinsing, racking, filtering and bottling. Water from Cal Water will also be provided for domestic use by staff and visitors, general housekeeping. Well water will be used for irrigation of surrounding landscape, lawns and vineyards. The construction of the water supply connection and the disposal systems could potentially result in significant impacts; however, inclusion of mitigation included above would reduce impacts to a less than significant level.

c) **Less than Significant Impact with Mitigation.** Construction of the Proposed Project would include a new stormwater drainage system onsite. Mitigation for storm water pollution prevention and development of the storm drain system in accordance with applicable County regulations would reduce this impact to less than significant.

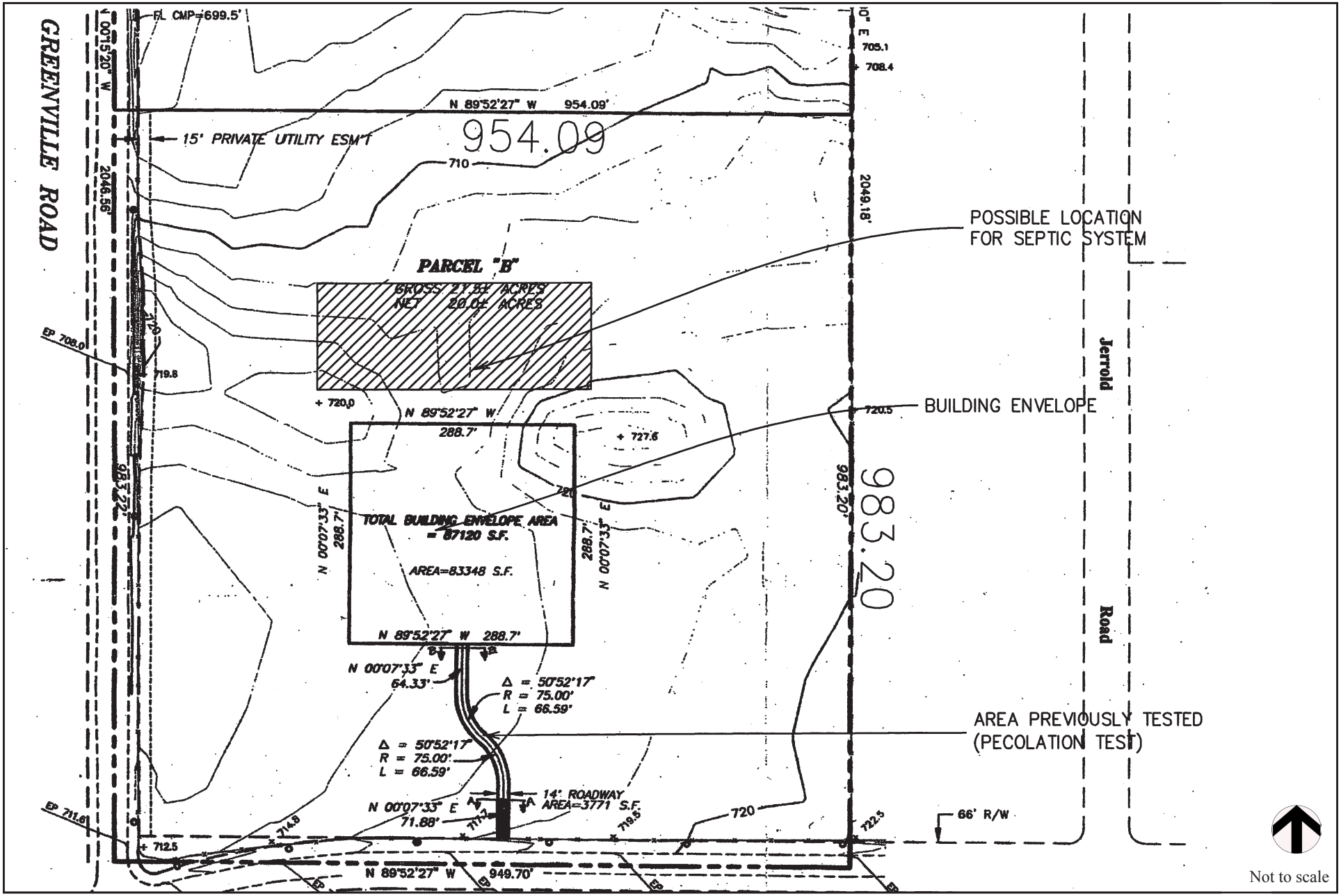
d) **Less than Significant Impact with Mitigation.** As discussed in b), water would be provided to the site by California Water Service Company's (Cal Water's) Livermore District and by an existing onsite well. The Project is anticipated to utilize approximately 286,000 gallons per year during operation.

The Project would not result in a substantial demand for water supplies such that Cal Water would not be able to adequately serve the Project in addition to its other customers.

e) **Less than Significant Impact.** The Proposed Project would require the construction of a wastewater advanced treatment system for treating effluent and a new septic system for sanitary uses. The system will be on site and there will be no utility scale wastewater treatment provider, therefore, total system demand will not be impacted.

f), g) **Less than Significant Impact.** Three landfills serve Alameda County including the Altamont Landfill in Livermore, Tri-Cities Landfill and Resource Recovery Facility in Fremont and Vasco Road Landfill in Livermore. Livermore Sanitation is the franchise hauler for the City of Livermore and unincorporated Livermore with exclusive rights for hauling trash, recycling and organics and utilizes Vasco Road Landfill. According to the Alameda County Department of Environmental Health, the remaining capacity at Vasco Road Landfill is 7,808,128 CY.[10] Project construction activities would generate minimal solid waste associated with excess construction materials. Solid waste generated during Project operations will include grape pomace, which consists of grape skins and stems, and solid waste generated through standard winery operations and special events. The quantity of solid waste is not anticipated to affect the capacity at Vasco Road Landfill during construction or operation. Disposal of waste will comply with all applicable regulations. As such, the Proposed Project would have a less than significant impact on landfill capacity and solid waste regulations. The impact of the Project in relation to the total remaining capacity of the Vasco Road Landfill is considered to be less than significant. In addition, the Project would comply with all federal, state, and local statutes and regulations related to solid waste reduction and removal.

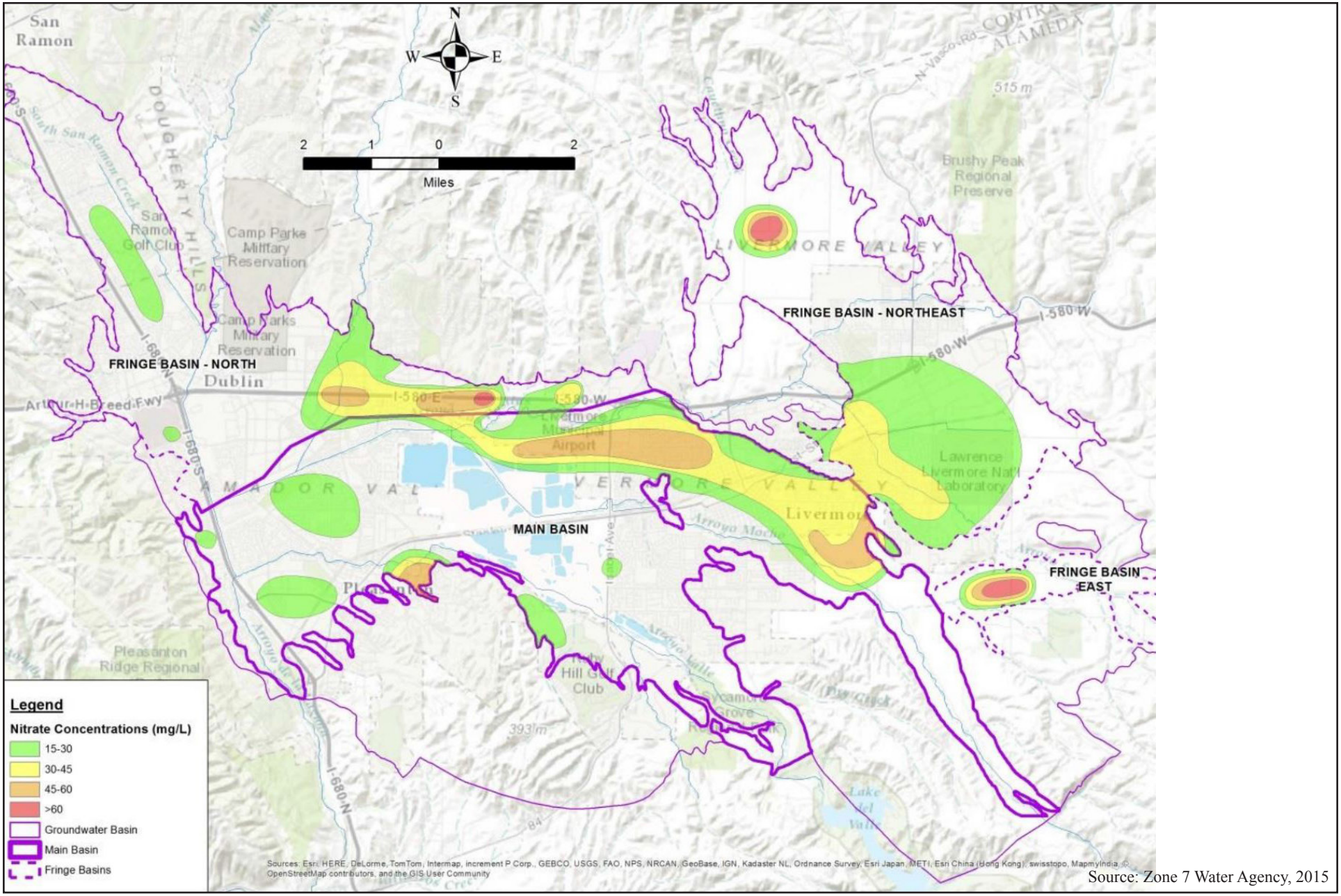
[10] Remaining capacity as of 12/31/14




# Site Plan and Building Coverage

Tesla Road Winery
Initial Study

Figure
9




Source: Zone 7 Water Agency, 2015

# Zone 7 Nitrate Management Area

Tesla Road Winery
Initial Study

Figure
10

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## R. MANDATORY FINDINGS OF SIGNIFICANCE

| Would the Project: | Potentially Significant Issues | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact | Checklist Source(s) |
|---|---|---|---|---|---|
| a) 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? | ☐ | ■ | ☐ | ☐ | 1, 2 |
| b) 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 the past projects, the effects of other current projects, and the effects of probable future projects. | ☐ | ☐ | ■ | ☐ | 1, 2 |
| c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ■ | ☐ | 1 |

**Explanation**

a) **Less Than Significant Impact with Mitigation**. The proposed project could result in impacts to biological resources due to the potential for various protected and special status species to occur on the site. The project could result in impacts to cultural resources, if encountered during construction activities. The project could also result in temporary air quality, water quality, and noise impacts during construction. In addition, the project has the potential to impact water supply. With the implementation of mitigation measures identified in this Initial Study, these impacts will be reduced to a less-than-significant level.

b) **Less Than Significant Impact**. Based on the analysis provided in this Initial Study, the proposed infill project will not significantly contribute to cumulative impacts since no development is proposed in the immediate project vicinity.

c) **Less than Significant Impact**. Based on the analysis provided in this Initial Study, the proposed infill project will not result in environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. See a) above

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# Chapter 4. References

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## BIBLIOGRAPHY


AES, Cultural Resources Assessment, Greenville Road Property, Alameda County, August 2008. Available online: http://www.acgov.org/aceh/landuse/regulatory_docs.htm, under Zone 7 Groundwater Management Plan

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

Alameda County, *South Livermore Valley Area Plan,* February 1993.

Alameda County, *Tesla Road Safety Study Report*, 2015. Available online: http://acgov.org/pwa/updates/studies/teslaroadstudy.htm

Alameda County Zoning Ordinance, as amended.

Ascent Environmental, *Concannon Vineyard Warehouse/Administration Building Project Initial Study and Mitigated Negative Declaration,* September 2011.

Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, May 2011

Bay Area Air Quality Management District, *Clean Air Plan*, March 2010.

California Department of Conservation, *Altamont Official Map*, January 1982.

California Department of Conservation, *Seismic Hazard Zones Altamont Quadrangle Official Map*, February 2009.

California Department of Conservation, *Alameda County Important Farmlands Map*, accessed online 2015.

California Energy Commission (CEC). 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Available online: http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF

Federal Emergency Management Agency, *Flood Insurance Rate Map Number 06001C0362G*, August 2009.

Jones & Stokes, *Groundwater Management Plan for Livermore Amador Valley Groundwater Basin 5-12,* September 2005.

Kennedy Jenks, *Amendment Report of Waste Discharge for Mohan Rao Winery Livermore, California*, April 2015.

Lamphier-Gregory, *Greenville Road Subdivision Project Initial Study & Mitigated negative Declaration,* September 2011.

Soil Survey of the Alameda Area, California provided by the United States Department of Agriculture (USDA, 1966)

**CHECKLIST SOURCES**

1. CEQA Guidelines, professional expertise of consultant, and technical reports prepared for this project site.
2. Project Application maps and plans on file with County of Alameda and referenced in this report
3. Alameda County Important Farmlands Map
4. BAAQMD CEQA Guidelines. 2011
5. Kennedy Jenks, Amendment Report of Waste Discharge for Mohan Rao Winery Livermore, California, April 2015 (Feasibility Study, 2015)
6. Greenville Road and Concannon Vineyard Initial Studies
7. County of Alameda Planning Documents, including East County Area Plan, revised 2000 and South Livermore Valley Area Plan.
8. Cultural Resources Report, California Historical Resources Information System
9. Tesla Road Safety Study, May 2015

# Appendix A

# Feasibility Report

**Kennedy/Jenks Consultants**

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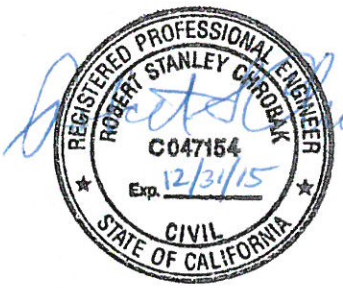
# Amendment Report of Waste Discharge for Mohan Rao Winery Livermore, California

10 April 2015




4/10/15

Prepared for

**Mohan Rao Winery**
8310 Tesla Road
Livermore, California 94550

K/J Project No. 1465040*00

# Table of Contents

## List of Tables



## List of Appendices

# Section 1: Introduction

Kennedy/Jenks Consultants (Kennedy/Jenks) has prepared this Amendment to the Report of Waste Discharge (AROWD) on behalf of Mohan Rao Winery for proposed winery process wastewater operations at the proposed winery located at 8310 Tesla Road, Livermore, California 94550. This AROWD addresses winery process wastewater operations only, as domestic wastewater is addressed in the original ROWD submittal. For purposes of this report, the term "Facility" will be defined as the proposed building comprised of wine production and storage areas, visitors tasting area, event center, cafe, and office. The Facility and surrounding land (including proposed vineyards, parking lot, driveways, landscaping, leach field, and other wastewater treatment systems) shall be referred to as the "Site". The proposed Site occupies approximately 20 acres of property on Alameda County Assessor Parcel Numbers 99A-1625-17.

The proposed facility needs approved waste discharge requirements (WDR) from the California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) to manage domestic and winery process wastewater generated at the facility for the project to move forward. An initial ROWD was submitted by Acorn Onsite, Inc. to the CRWQCB on 4 March 2014 (Appendix A). Preliminary feedback from the CRWQCB, Alameda County Health Department and Zone 7 Water Agency indicated the application for WDR is incomplete and more information and details for the proposed plans are required.

Additionally, CRWQCB has discouraged subsurface disposal of wastewater due to the existing groundwater conditions in the area associated with high nitrate concentrations. Recent conversations with the CRWQCB have indicated that winery process wastewater treatment with effluent reuse and disposal via vineyard or crop irrigation may be more appropriate for the facility.

# Section 2: Site Description

The Site is located in the unincorporated portion of Alameda County just outside of the City of Livermore, as shown in the Vicinity Map, Figure 1 of Appendix A. A site map showing the proposed Facility and septic system location north of Tesla Road and east of Greenville Road is shown on the Site Plan, Figure 2 of Appendix A. The proposed winery building covers about 19,300 square feet (sf) or 0.44 acres and a Floor Plan is provided in Figure 3 of Appendix A.

## 2.1 Proposed Facility Operations

The proposed facility operations are presented in the "Proposed Facility" section of the ROWD in Appendix A.

# Section 3: Winery Process Water Characteristics

An estimate of the quantity and quality of winery process water produced at the winery was developed by Kennedy/Jenks on the basis of typical average flow relating to production capacity of California North Coast wineries that we have evaluated and measured over the past 55 years. The estimate was also developed on the basis of reviewing and evaluating information provided by the Facility, the process source water quality, and Kennedy/Jenks' extensive experience and the scientific literature related to management, treatment and reuse of winery process water. Additionally, the Facility provided information on estimated process water flows on the basis of 20,000 case per year.

## 3.1 Winery Process Water Quantity

Winery process water typically includes wash water from rinsing floors, tanks, bottles, barrels, and equipment. Peak flows occur during the crushing season and can range in excess of annual averages. Most flow occurs during the working hours of the winery. High peak flow days can occur during the crushing season when there might be a hot weather necessity to crush at maximum capacity for full 24-hour days. Annual winery process wastewater flow generation, using six gallons of wastewater per gallon of wine produced, will result in approximately 286,000 gallons.

## 3.2 Winery Process Water Quality

Table 2 provides a summary of measured process water characteristics for California North Coast wineries. The data included in Table 2 indicate that winery process water is highly variable, and relatively high strength in terms of organic matter as measured by 5-day Biochemical Oxygen Demand ($BOD_5$), Chemical Oxygen Demand (COD), and moderate Total Suspended Solids (TSS). Process water equalization is a critical requirement to help minimize impact of flow variations, but also to blend and buffer the quality of the winery process water prior to pretreatment and reuse or disposal.

# Section 4: Proposed Winery Process Water Treatment System

The proposed winery process water treatment system will be a treatment system capable of producing effluent for irrigation reuse, and will likely be a compact package advanced wastewater treatment system from a qualified vendor with experience in treating winery process wastewater for irrigation reuse in California. The advanced treatment system process would reduce the $BOD_5$ and TSS effluent concentrations to values consistent with or below $BOD_5$ and TSS less than 30 mg/l. Nitrogen effluent concentrations will be reduced by approximately half as a result of the advanced biological treatment process and the pH of the treated effluent would be adjusted by the treatment process to meet irrigation reuse guidelines.

The treatment process would likely consist of a process wastewater screen system, equalization tank, pH adjustment system, aeration/mixing system, an advanced package membrane bioreactor system for filtration and aerobic biological stabilization and an above ground storage tank. This advanced process relies on physical-chemical and biological treatment to reduce $BOD_5$ and TSS and to adjust pH with chemical addition suitable for irrigation reuse. Effluent quality produced by this treatment process would be suitable for many irrigation reuse applications, including vineyards and landscaping.

The Winery Facility is projected to use chemicals throughout the facility including, but not limited to support its agricultural practices in the vineyards and for cleaning and sanitation of its winemaking operations. The agricultural chemicals are completely used within the vineyard. The spent chemicals used in the Facility are comingled with clean up water and discharged to the winery process water stream for advanced treatment. Specific chemical usage and handling practices will be identified upon the commencement of operations at the Facility.

## Section 5: Soils

A general description of the physical and chemical properties for the different soil types underlying the Site was obtained from the Soil Survey of the Alameda Area, California provided by the United States Department of Agriculture (USDA, 1966) and is provided in Appendix A as part of the previously submitted ROWD. According to this survey, there are two soil types present at the Site: Positas gravelly loam (2 to 20 percent slopes, eroded) and Zamora silt loam (0 to 4 percent slopes). Following is the soil description provided in the survey:

*"Positas gravelly loam, 2 to 20 percent slopes, eroded (PoC2).- Most of the soil is in large bodies on smooth, gently sloping to strongly sloping high terraces.*

*Representative profile:*

*0 to 11 inches, brown gravelly loam; massive; hard when dry, friable when moist; medium acid.*

*11 to 29 inches, reddish-brown clay; strong prismatic structure; extremely hard when dry, extremely firm when moist, very plastic and sticky when wet; medium acid in upper part and mildly alkaline in lower part.*

*29 to 54 inches, brown heavy loam; strong, medium, blockly structure; very hard why dry, firm when moist, sticky and plastic when wet; moderately alkaline.*

*54 inches +, light yellowish-brown gravelly sandy clay loam; massive; slightly hard when dry, friable when moist, non-sticky and nonplastic when wet; mildly alkaline.*

*In places the texture of the surface soil is gravelly sandy loam, gravelly loam, or loam. Some areas have coarse pebbles of cobbles throughout the profile. Although typically brown, this layer is reddish brown in places. In areas transitional to the Perkins soils, the subsoil is light clay. In some places the underlying material is weakly consolidated, yellowish calcareous silt.*

*This well-drained soil has a very slowly permeable subsoil. Before the surface soil is saturates, the soil absorbs water readily. Runoff is slow to medium and the available water holding capacity is low. Rot penetration is shallow. The soil has fair tilth, and cultivation is somewhat difficult. 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."*

*"Zamora silt loam, 0 to 4 percent slops (Za) - Exept for coarser texture, this soil is similar to Zamora silty clay loam, 0 to 3 percent slopes. A few small areas have slopes steeper than 4 percent. The soil is used for irrigated row crops, alfalfa, grain and grain hay.*

*Zamora silty clay loam, 0 to 3 percent slopes (Zc) - This soil occurs mostly in large bodies on nearly level flood plains.*

*Representative profile:*

> *0 to 18 inches, grayish-brown light silty clay loam, dark grayish brown in the lower part; moderate subangular blockly structure; hard when dry, friable when moist, sticky and slightly plastic when wet; mildly alkaline.*
>
> *18 to 50 inches, dark grayish-brown, heavy clay loam; medium blockly structure; hard when dry, friable when moist, sticky and plastic when wet; moderately alkaline.*
>
> *50 to 60 inches, brown clay loam; massive; hard when dry, friable when moist, sticky and plastic when wet; slightly calcareous; moderately alkaline.*

*The surface soil ranges from grayish brown or dark grayish brown to dark brown. The texture ranges from heavy slit loam or silty clay loam to clay loam. In areas transitional to Rincon soils, the subsoil is more distinct and slightly finer textured. The substratum ranges from brown to yellowish brown in color. In some areas it is noncalcareous.*

*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. The soil has good tilth, and cultivation is easy. Fertility is moderate. The erosion hazard is slight in cultivated areas. The soil is used for irrigated roses, row crops, alfalfa, grain and grain hay."*

Soil percolation field tests, performed in 1999 and on file with the Alameda County Environmental Health Services, indicate a Facility-specific percolation rate between 3.5 and 7.5 minutes per inch (see Appendix A).

# Section 6: Hydrology and Water Resources

## 6.1 Precipitation and Evapotranspiration

Rainfall data was collected from the Livermore Station, Western Regional Climate Center for years 1903 through 2010. Evapotranspiration (ET) data were collected from the nearby Pleasanton Station, California Irrigation Management Information System (CIMIS) for years 2004 through 2010.

- Annual total ranfall between years 1903 and 2010 averaged 14.23 inches per year. Winter (October through February) rainfall average approximately 10.29 inches per year, and summer (March through September) rainfall averaged approximately 3.95 inches.

- Evapotranspiration (ET) data recorded in Pleasanton ranged from 1.01 inches in December to 7.40 inches in July, with an average annual total ET of 46.21 inches.

## 6.2 Surface Water

The Facility is located within the Arroyo Mocho sub-watershed of the Upper Alameda Creek Watershed. Arroyo Mocho, located approximately a quarter of a mile away, is the nearest major surface water body to the Facility. Arroyo Mocho is a tributary of Arroyo de la Laguna, which joins with Alameda Creek in Sunol. The headwaters of Arroyo Mocho are located southeast of Livermore. There are no other major surface water bodies near the Facility.

Existing potential and beneficial uses for the major significant surface water body (Arroyo Mocho) include: groundwater recharge; cold freshwater habitat; fish migration; fish spawning; warm freshwater habitat; wildlife habitat; water contact recreation; and non-contact water recreation (CRWQCB, 2010).

Drainage at the Facility will be generally controlled by components of the storm water control system. and all storm water runoff will be contained onsite. Drainage in the vineyards is controlled by agricultural development.

Inspection of the FEMA map for the area indicates that the Facility is not located within the 100-year floodplain.

## 6.3 Groundwater

Although Site-specific groundwater information is not available, following is a summary of regional groundwater resources. As shown in the Water Quality Control Plan (WQCP) for the San Francisco Bay Basin, the Site lies within the Livermore Valley Groundwater Basin (Basin) in the San Francisco Bay Basin, Region 2 (CRWQCB, 2010). The Livermore Valley occupies approximately 69,600 acres bounded by the Pleasanton Ridge to the west, the Altamont Hills to the east, the Livermore Upland to the south and the Orinda Upland to the north

Water bearing formations within the Livermore Valley Groundwater Basin consist of continental deposits from alluvial fans, outwash plains, and lakes, including:

- Valley-Fill Material
- Livermore Formation
- Tassajara Formation

These water-bearing formations yield adequate to large quantities of groundwater under most conditions, with poor to excellent water quality.

Seismic faults restrict lateral groundwater movement within the Livermore Valley Groundwater Basin, forming barriers resulting in higher groundwater levels on the upgradient side of the faults. In general, the groundwater gradient within the Livermore Valley Groundwater basin is directed to the west, then south towards Arroyo de la Laguna. Although Site-specific groundwater elevation data is not available, field observations provided by Gregg Drilling (http://www.greggdrilling.com) during drilling operations in Livermore indicate groundwater depths ranging from four to 60 feet below ground surface.

Water chemistry is highly variable within the Livermore Valley Groundwater Basin. In the area beneath Livermore, groundwater contains magnesium as the dominant cation and the entire basin has bicarbonate as the dominant anion. Total dissolved solids range from 300 to 550 milligrams per liter and average 450 milligrams per liter. Some areas of the basin contain boron concentrations exceeding 2 milligrams per liter. Additionally, nitrate has been detected at elevated levels in the basin and sub basin areas and is currently a constituent of concern (Zone 7, 2015). The Livermore Valley Groundwater Basin is considered nitrate impacted as numerous Areas of Concern within the basin exhibit nitrate concentrations in excess of The Basin Objective of 45 mg/l.

## Section 7: Source Water

The Facility water is projected to be supplied by California Water Service Company's (Cal Water's) Livermore District or an existing onsite well. Cal Water's water supply is provided by a combination of local groundwater and surface water purchased from the Alameda County, Zone 7 Water Agency (Zone 7; Cal Water, 2011). Most of the water supplied by Cal Water originates as snowmelt in the Sierra Nevada, conveyed via the Delta to the San Francisco Bay Area and then to Zone 7 via the South Bay Aqueduct. Zone 7 also utilizes storm water runoff stored in the nearby Del Valle Reservoir and groundwater from the Livermore-Amador Valley aquifer system (Cal Water, 2011).

Cal Water or groundwater, from an existing onsite well, will be used throughout the Facility for winemaking processes including cleaning, sanitation, grape crushing, barrel and equipment rinsing, racking, filtering, and bottling. Water will also be supplied for domestic use by staff and visitors, general housekeeping, and irrigation of surrounding landscaping, lawns, and vineyards.

# Section 8: Winery Process Water Management Plan

This section presents information on the proposed management of treated winery process water. Hydraulic and chemical loadings are discussed below. Calculations are based on information provided by the Facility and Kennedy/Jenks' experience with winery process water characteristics in California.

## 8.1 Hydraulic Loading

Typical hydraulic loadings to the land application areas from the winery process water treatment will average approximately 1,200 gpd on an annual basis assuming about 240 days of operation. This will result in approximately 286,000 gallons per year during operation. The estimated hydraulic loading to the Site vineyards in gpd per acre (gpd/acre) available from the advanced winery process water treatment system was calculated for an area of ten acres, conservatively based on half of the Site available for application. Theoretically fifteen to eighteen acres will be planted with vineyard, however a conservative value of ten acres was used for planning calculations. The typical hydraulic loading will average approximately 120 gpd/acre during operating days. This estimate is also conservative because the annual evapotranspiration rate for the vicinity exceeds the annual average rainfall rate by 31 inches.

## 8.2 Organic Loading

The conceptual winery process wastewater advanced treatment system that is proposed will produce treatment effluent for $BOD_5$ of 30 mg/l. Effluent at 30 mg/l will result in an average calculated loading of 0.3 pounds per day (lbs/day) These estimated process water characteristics will result in an average annual $BOD_5$ loading of approximately 72 lbs per year during operation. The estimated organic loading to the Site vineyards in pounds per day per acre (lbs/day/acre) available from the treated winery process water was calculated for an area of ten acres of cropping with vineyards and landscaping. The conservative organic loading will average approximately 0.03 lbs/day/acre during operating days. The estimated organic loading rate is low for typical land application loading rates from treatment of winery process discharges containing simple sugars.

## 8.3 Total Nitrogen Loading

The conceptual winery process wastewater advanced treatment system that is proposed will reduce the typical total nitrogen concentrations for non-distilling California wineries during crush from Table 2 by about 50%. The nitrogen concentrations will range from 2.5 mg/l to 20 mg/l which correspond to loadings ranging from 0.03 lbs/day to 0.2 lbs/day, with an average of 0.1 lbs/day. These process water characteristics will result in an average annual loading of approximately 25 lbs per year during operation. This is a conservative estimate because not all of the total nitrogen is available and will likely be reduced by soil nitrification/dentrification processes. The estimated total nitrogen loading to the Site vineyards in lbs/acre/year available from the treated winery process water was calculated for an area of ten acres. The conservative annual total nitrogen loading will average approximately 2.5 lbs/acre/yr. Grape vines typically take up 90-120 lbs/acre/yr of nitrogen and vineyard cover crops or native grasses can take up an additional 100 lbs/acre/yr.

## Section 9: Solids Management Plan

Winery processing solids, such as spent pomace and grape skins and stems, generated from crushing and pressing processes can be spread as a soil amendment for vineyards or hauled offsite to an approved facility for disposal. Specific operations have not been identified at this time.

## References

California Irrigation Management Information Systems (CIMIS, 1999), *Reference Evapo-transpiration Zone Map*, 1999.

California Department of Water Resources (CDWR, 2000), *A Guide to Estimating Irrigation Needs of Landscape Plantings in California, The Landscape Coefficient Method and WUCOLS III*, August 2000.

California Department of Water Resources (CDWR, 2003), *California Data Exchange Center, Bulk Data Retriever for Weather Station No. NSH at the Napa Fire Department, Monthly Precipitation since Year 1905*, September 2003.

California Regional Water Quality Control Board (CRWQCB, 1995), *Water Quality Control Plan for the San Francisco Bay Basin, Region 2*, 1995.

California Water Service Company (Cal Water, 2011). http://www.calwater.com/.

National Oceanic and Atmospheric Administration (NOAA, 1990), *Climatogeological Data for California,* 1990.

Ryder, A Robert, Kennedy/Jenks Consultants (Ryder, 1995), *Aerobic Pond Treatment of Winery Wastewater for Vineyard Irrigation by Drip and Spray Systems in California,* June 1995.

United States Department of Agriculture (USDA, 1966), *Soil Survey – Alameda Area, California,* March, 1966.

Zone 7 Water Agency (Zone 7, 2015), *Nutrient Management Plan Livermore Valley Groundwater Basin*, February 2015.

# Tables

# Table 1: Estimated Winery Process Wastewater Quantity

| Notes | Value |
|---|---|
| Annual Wine Production[(a)] | 20,000 cases<br>or<br>47,600 gallons |
| Annual Wastewater Generation[(b)] | ~286,000 gallons |
| Average Daily Wastewater Generation[(c)] | ~1,200 gallons |
| Crush Season Average Daily Wastewater Generation[(d)] | ~2,400 gallons |
| Crush Season Peak Daily Flow[(e)] | ~8,000 gallons |

**Notes:**

(a) Twelve 750ml bottles of wine per case.
(b) Wastewater generation estimated using six gallons of wastewater per gallon of wine.
(c) Average daily wastewater generation estimated using 250 days of operation per year.
(d) Half of the annual average wastewater generation is estimated to take place during a 60 day crush season.
(e) Peak daily flow based on an factor of three and a half times the daily average flow.

# Table 2: Wastewater Quality for Non-Distilling California Wineries[a]

| Characteristic | Units | Crushing Season | | Non-Crushing Season | |
|---|---|---|---|---|---|
| | | Range | Average | Range | Average |
| pH | – | 3.5-12.5 | 4.1 | – | 4.8 |
| $BOD_5$[b] | mg/l | 2,000-5,000 | 2500 | 2,000-5,000 | 2400 |
| COD[c] | mg/l | 4,000-10,000 | 5000 | 4,000-10,000 | 4000 |
| Grease | mg/l | 5-30 | 15 | 5-50 | 40 |
| Settleable Solids | mg/l | 25-100 | 80 | 2-10 | 2.5 |
| Suspended Solids | mg/l | 200-800 | 500 | 100-400 | 400 |
| Volatile Suspended Solids | mg/l | 150-700 | 450 | 80-350 | 300 |
| Dissolved Solids | mg/l | 300-900 | 800 | 400-800 | 700 |
| Nitrogen | mg/l | 5-40 | 20 | 10-50 | 40 |
| Phosphorus | mg/l | 5-10 | 10 | 10-25 | 25 |
| Sodium | mg/l | 100-200 | 150 | 100-200 | 140 |
| Alkalinity ($CaC0_3$) | mg/l | 40-120 | 115 | 10-100 | 50 |
| Chloride | mg/l | 100-250 | 150 | 100-250 | 150 |
| Sulfate | mg/l | 20-75 | 50 | 20-75 | 50 |
| Boron | mg/l | 0.2 | 0.1 | 0.2 | 0.1 |

**Notes:**

(a) Ryder, R.A. "Winery Wastewater Treatment and Reclamation." 1993 Oenology, and Proceedings of the First International Conference on Winery Wastewater, 1994.
(b) $BOD_5$ = Biochemical Oxygen Demand
(c) COD = Chemical Oxygen Demand

# Appendix A

Acorn and Associates Report of Waste Discharge for Mohan Rao Winery submitted to the CRWQCB on 4 March 2014

ACORN
ONSITE, Inc.
*Complete Septic System Specialists*

PELS# 66172 and CSLB #499418
2288 Buena Vista Avenue
Livermore, CA 94550

Telephone (925) 447-5200
Toll Free 1-800-832-7711
FAX (925) 447-0919

March 4, 2014

Regional Water Quality Control Board
California Regional Water Quality Control Board, San Francisco Bay Region
Attn: Blair Allen
1515 Clay Street, Suite 1400
Oakland, California 94612

Property Location: Proposed Mohan Rao Winery, 8310 Tesla Road, Livermore

Subject: Report of Waste Discharge:

Dear Blair:

Enclosed is a ROWD for a proposed winery. As we have been discussion on the phone, this is a preliminary proposal and I would like feedback on this application and what is needed to completed the proposal. I understand that the goals of treatment are currently being worked out and I present this application to formally start the process to receive approval.

Please look over this application and let me know of any questions or additional information needed.

Sincerely,

Tim Johnston, P.E.
Acorn Onsite, Inc.

Acorn Onsite, Inc.
Tim Johnston, P.E.
2288 Buena Vista Avenue
Livermore, CA 94550
(925) 4470-5200

# Report of Waste Discharge
# For
# Mohan Rao
# 8310 Tesla Road
# Livermore, CA 94550

March 4, 2014

**Table of Contents::**

# CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
# SAN FRANCISCO BAY REGION

## REPORT OF WASTE DISCHARGE
## for
## DISCHARGES OF WINERY WASTE TO LAND WITHIN THE SAN FRANCISCO BAY REGION

**A. OWNER (DISCHARGER) INFORMATION** ☐ Additional information attached.

| | | |
|---|---|---|
| 1. Owner Name: MOHAN RAO | | |
| 2. Mailing Address: 4364 W. RUBY HILL DRIVE | | |
| 3. City: PLEASANTON | 4. State: CA | 5. Zip: 94566 |
| 6. Phone Number: (408) 712-1984 | 7. Fax: | 8. Email: |
| 9. Contact Person: MOHAN RAO | 10. Title: OWNER | |
| 11. Owner Type: a. ☒ Individual b. ☐ Corporation c. ☐ Partnership d. ☐ Government Agency e. ☐ Other: | | |

**B. FACILITY INFORMATION** ☐ Additional information attached.

| | | |
|---|---|---|
| 1. Facility Name: MOHAN RAO | | |
| 2. Location Address: 8310 TESLA ROAD | | |
| 3. City: LIVERMORE | 4. State: CA | 5. Zip: 94550 |
| 6. Phone Number: (408) 712-1984 | 7. Fax: | 8. Email: |
| 9. Contact Person: MOHAN RAO | 10. Title: OWNER | |
| 11. County ALAMEDA | 12. APN: 99A-1625-17 | 13. Watershed: ARROYO SECO |
| 14. Latitude: 37°39'55" | 15. Longitude: 121°41'40" | 16. Lat/Long Basis: USGS |

**C. OPERATOR INFORMATION:** ☐ Additional information attached

| | | |
|---|---|---|
| 1. Operator Name: MOHAN RAO | | |
| 2. Contact Person: MOHAN RAO | 3. Title: OWNER | |
| 4. Phone Number: (408) 712-1984 | 5. Fax: | 6. Email: |

**D. BILLING ADDRESS:** ☐ Additional information attached

| | | |
|---|---|---|
| 1. Billing Company Name: MOHAN RAO | | |
| 2. Mailing Address: 4364 W. RUBY HILL DRIVE | | |
| 3. City: PLEASANTON | 4. State: CA | 5. Zip: 94566 |
| 4. Contact Person: MOHAN RAO | 6. Phone: (408) 712-1984 | |

| **FOR REGIONAL WATER BOARD USE:** | | |
|---|---|---|
| **WDID:** | **Date Received:** | **Date Reviewed:** |
| **Case Staff:** | **Fee Received($):** | **Check #:** |

# CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
# SAN FRANCISCO BAY REGION

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| | | |
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| | | |
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| 1. Billing Company Name: MOHAN RAO | | |
| 2. Mailing Address: 4364 W. RUBY HILL DRIVE | | |
| 3. City: PLEASANTON | 4. State: CA | 5. Zip: 94566 |
| 4. Contact Person: MOHAN RAO | 6. Phone: (408) 712-1984 | |

| **FOR REGIONAL WATER BOARD USE:** | | |
|---|---|---|
| **WDID:** | **Date Received:** | **Date Reviewed:** |
| **Case Staff:** | **Fee Received($):** | **Check #:** |

## L. TREATMENT and DISCHARGE SYSTEMS

a. Attach a complete description of the winery wastewater treatment, storage, and discharge systems.
b. Complete the following, to provide a summary of the wastewater systems. Check as many items as apply.

| | | | | | |
|---|---|---|---|---|---|
| 1. Pretreatment: | ☐ pH Control; | ☐ Solids Separation; | ☐ Flow Measurement; | ☐ Flow Equalization; | ☐ Other |
| 2. Primary Treatment | ☒ Septic Tank; | ☐ Pond; | ☐ Proprietary Treatment Unit; | | ☐ Other |
| 3. Advanced Treatment: | | ☐ Pond; | ☒ Proprietary Treatment Unit; | | ☐ Other |
| 4. Storage: | ☐ Tanks; | ☐ Ponds | | | |
| Treated Winery Wastewater Discharges to Land: | | | | | |
| 5. Irrigation: a. Type: | ☐ Vineyard; | ☐ Pasture; | ☐ Grass Field; | ☐ Landscaping; | ☐ Other |
| b. Method: | ☐ Spray; | ☐ Drip; | ☐ Subsurface Drip; | | ☐ Other |
| 6. Subsurface: a. Type: | ☒ Conventional Leachfield; | | ☐ Special Design System; | ☐ Subsurface Drip; | ☐ Other |
| b. Method: | ☐ Gravity flow; | ☒ Pressurized; | ☐ Timed-Dosing; | ☐ Flow-Dosing; | ☐ Other |
| 7. Terminal Pond: | ☐ Evaporation Pond; | | ☐ Infiltration Pond/Basin; | | ☐ Other |
| 8. Other Uses: | ☐ Frost Protection; | | ☐ Fire Protection; | ☐ Dust Control; | ☐ Other |
| Winery Waste Solids Management: | | | | | |
| 9. a. Type: | ☐ Off-site Disposal; | ☒ On-site Disposal; | ☐ On-site Temporary Storage Only. | | |
| b. Method: | ☐ Composting; | ☒ Soil amendment; | ☐ Dedicated Disposal Site; | ☐ Landfill; | ☐ Other |

## M. DISCHARGE WATER QUALITY

☐ Additional information attached

Provide a description of the known or estimated quality of the treated winery wastewater to be discharged to land.
Include information for the parameters listed below. If additional information is available, include as attachment(s).

| | 1. BOD5 (mg/L) | 2. TSS (mg/L) | 3. TDS (mg/L) | 4. pH | 5. D.O. (mg/L) | 6. Total Nitrogen (mg/L as N) | 7. Basis |
|---|---|---|---|---|---|---|---|
| a. Average | 240 | 30 | 30 | 6 | 10 | 10 | ☐Test Data ☒Estimate |
| b. Maximum | 500 | 50 | 60 | 8 | 15 | 20 | ☐Test Data ☒Estimate |
| c. Minimum | 100 | 10 | 10 | 5.5 | 5 | 8 | ☐Test Data ☒Estimate |

## N. GROUNDWATER USES AND INFORMATION

☐ Additional information attached

| | |
|---|---|
| 1. Are there water supply wells located on the facility site, or within 500 feet of the discharge location(s) ? | ☒ Yes ☐ No. |
| 2. Are there ground water monitoring wells located on the facility site? | ☐ Yes ☒ No. |
| 3. If yes for 1 or 2 above, show well locations on attached Facility Site Plan, and attach the following information for each well: Use Type; Total Depth; Screened Depth; Age; Production Capacity; Identification (well name or code). | |
| 4. Is there data available about levels or quality of ground water in the vicinity of the discharges? | ☒ Yes ☐ No. |
| 5. If yes for 4 above, attach description of the groundwater levels and quality based on the data. | |

## O. SOIL INFORMATION

☐ Additional information attached

| | | | | |
|---|---|---|---|---|
| 1. Has an investigation of the soils in the vicinity of the discharge locations been conducted? | | | | ☒ Yes ☐ No. |
| 2. If yes, identify the following and attach description of the soils, based on the soil investigation: | | | | |
| a. Method: | ☐ Soil Profile Excavation (pit); | ☐ Soil Boring; | ☒ Literature review only. | |
| b. Data: | ☒ Soil Profile Description; | ☐ Soil Boring Log; | ☐ Laboratory analyses; | ☒ Literature References. |

Percolation testing has been conducted.

**P. LOCATION MAP**
Provide a map or accurately scaled and labeled drawing showing the location of the discharge facility in the context of the general vicinity. Show at least one mile beyond the property boundaries of the facility on the map.

**Q. FACILITY SITE PLAN OR MAP**
Provide a map or accurately scaled and labeled drawing showing a plan view of the facility showing all relevant site features and locations of the wastewater system and discharges.

**R. FLOW DIAGRAM**
Attach a flow chart or schematic diagram showing the wastewater system components and the path of wastewater flow throughout the system, from source water to final disposal.

**S. DOMESTIC WASTEWATER SYSTEM**
Provide a description of the means by which domestic wastewater (sanitary sewage) generated at the facility is managed.

**T. ADDITIONAL INFORMATION**
Attach additional information needed to explain, clarify or augment any response. In the space below, or on attached page(s), provide a summary list of all attached additional information, including titles and dates of the documents, and reference to the relevant section of this form.

_____

_____

_____

_____

_____

_____

_____

_____

_____

**U. SIGNATURE and CERTIFICATION**

" I certify under penalty of law that this document and all attachments were prepared under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Signature: _____ Date: _____

Printed Name: _____

Title: _____

Company Name: _____

(Optional: Phone No.: _____ Fax No.: _____ E-mail: _____ )

---

Electronic file name: S:\1Div- Watershed Division\Wineries\ROWD\R2WineROWDForm-11-2-04.doc
Document Creation Date: 11/2/04

---

# Proposed Winery and Event Center at 8310 Tesla Road

**Parcel:**

The parcel is approximately 20 acres located at the north-east corner of the intersection of Tesla Road and Greenville Road, south-east of Livermore.

Please see the attached site plan.

**Current Status of Parcel:**

Currently there are no buildings or improvements on the property other than a water well. Uses of surrounding parcels are: grazing land to the north; an event center and county facility to the north-west; a winery, with wine tasting, temporary use event center use (large tent) and event center under construction and an unoccupied residence; wine grape vines to the south-west; a residence and horse ranch to the south; wine grape vines to the south-east; and residences of a several acres along Jerrold Road to the east.

**Proposed Facility:**

The owner proposes to build an approximately 18,000 sq ft winery, event center and café. This facility would consists of an indoor wine process area, wine tasting area, event center, café, rest rooms, commercial kitchen, and office for facility. This is shown on the accompanying preliminary floor plan.

**Treatment:**

Information in this report is from past soil testing and published ligature. Since there are ongoing discussions dealing with discharge requirements of this site and other sites in the vicinity this is a work in progress. There is concern of possible impaired ground water, perhaps from historic uses in the area. This preliminary information and application is intended to obtain preliminary approval, feedback and guidance on what further information is needed to proceed. We anticipate using an advanced septic system for the domestic sewage as well as the process water from the wine production. Either both sources will be combined as allowed in the Alameda County Regulation for wineries of this anticipated wine production volume or in two separate treatment and dispersal systems, based on efficiencies of design and possible requirements from agencies. Soil testing consisting of profile logging, percolation testing, perhaps ground water testing will be conducted once more definitive criteria is received on the anticipated methods of sewage and wastewater treatment is determined.

Please see attached soil survey data.

**Design Flow:**

Peak design flow of domestic wastewater might be as high as 7600 gallons per day, if all highest uses occur on a single day. Uses might be limited , such as no wine crushing on large event days, or café closed on large event days, to reduce the maximum daily design flow. A daily average design flow of 2600 gallons is based on the owner's projected frequency of events and uses. Wine production process water, based on 20,000 cases is 97,920 gallons per year, averaging 268 gallons per day with a peak flow in crush of

approximately 1600 gallons.

Please see attached table for specific design flow information.

**Treatment level:**

Due concern of adding to possible high nitrates in shallow surface water, perhaps existing from historic uses in the surrounding area, a treatment system providing a minimum of 50% total nitrogen removal in the wastewater before introduction into the soil dispersal system is proposed. This would be achieved by a using proprietary pre-treatment system, the particular type will be determined and presented once further site planning is completed.

Please see attached flow diagram.

**Subsurface Dispersal:**

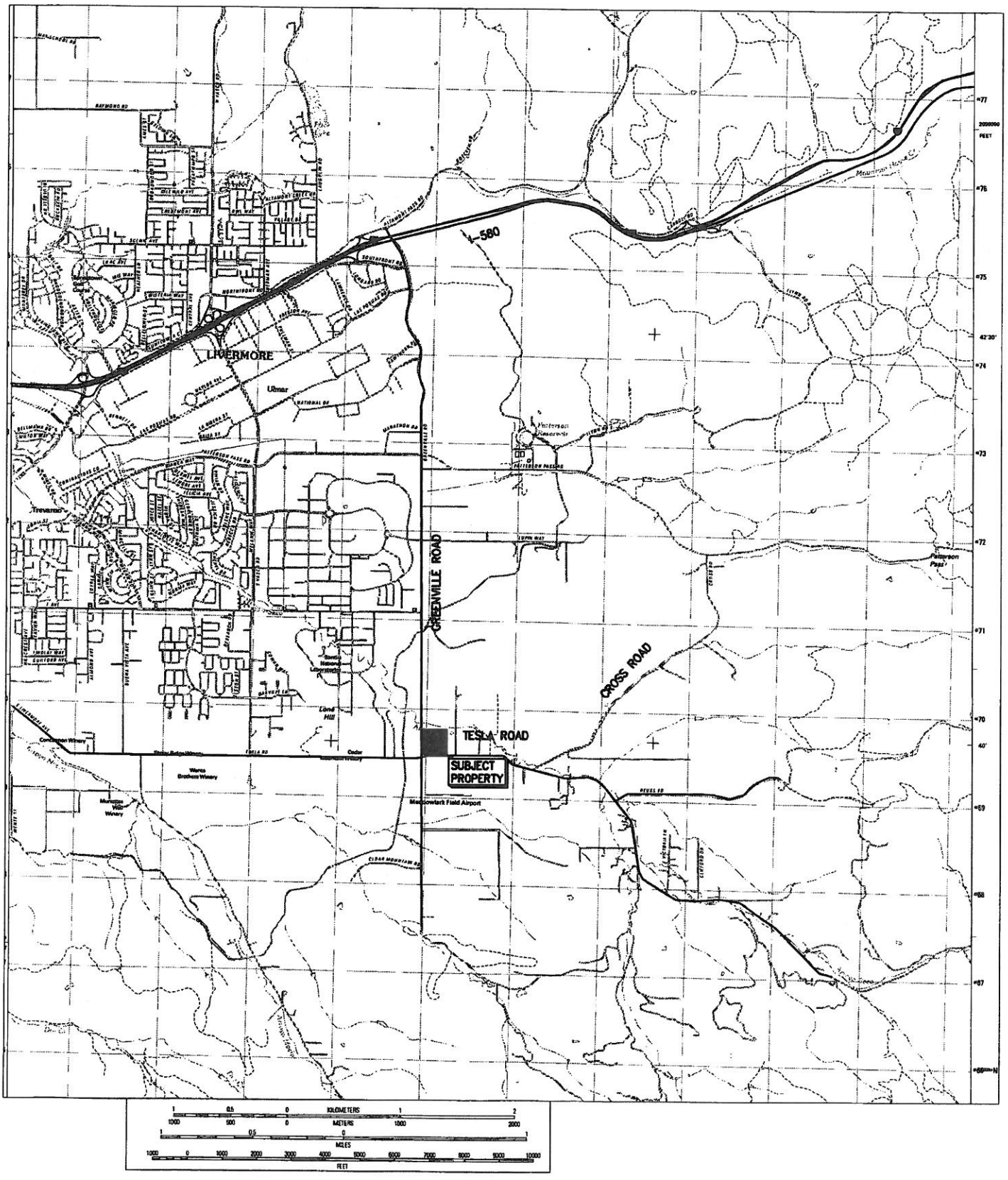
The method of dispersal into the soil is expected to be shallow trench pressure distribution or shallow drip lines.

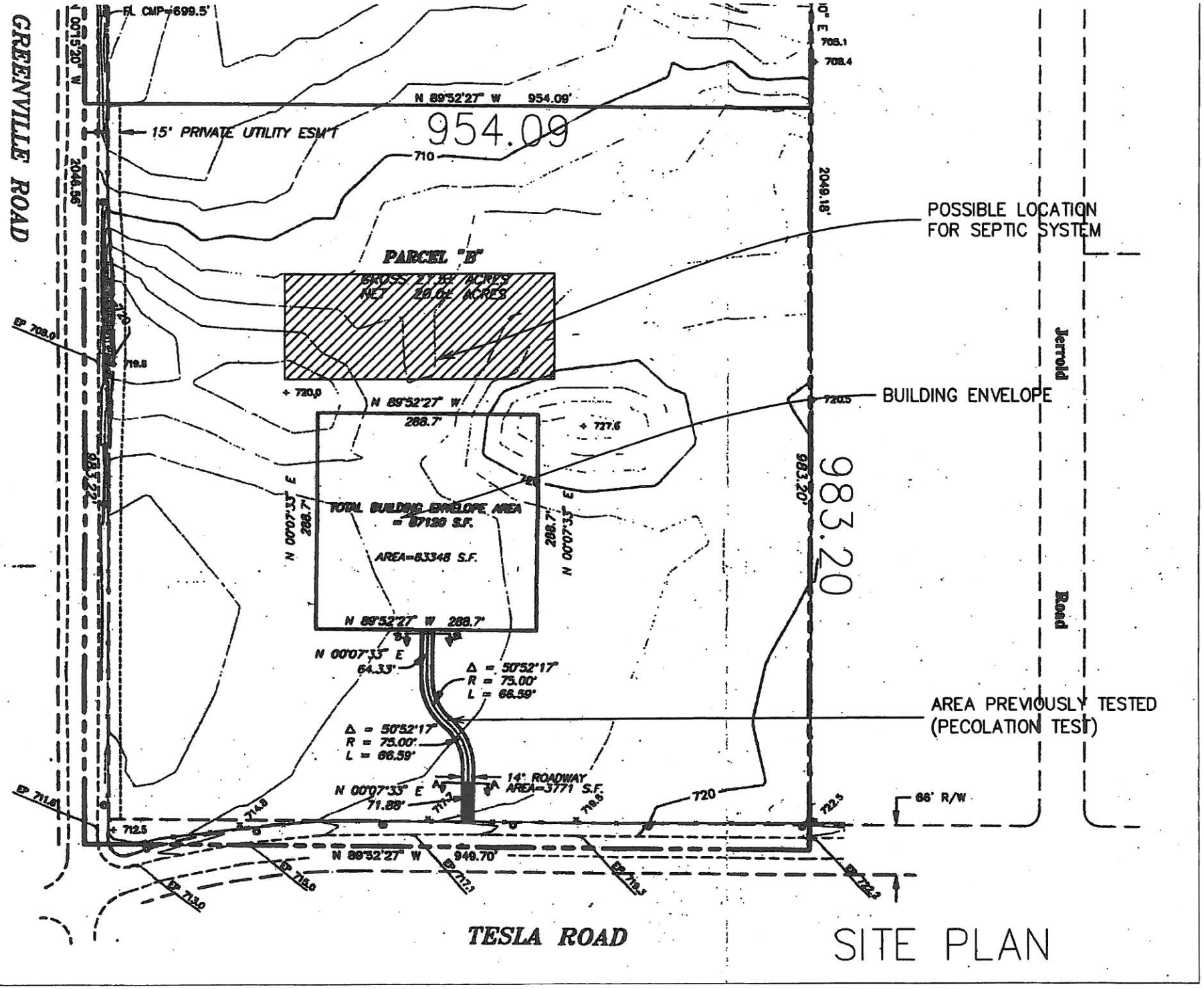
**Groundwater:**

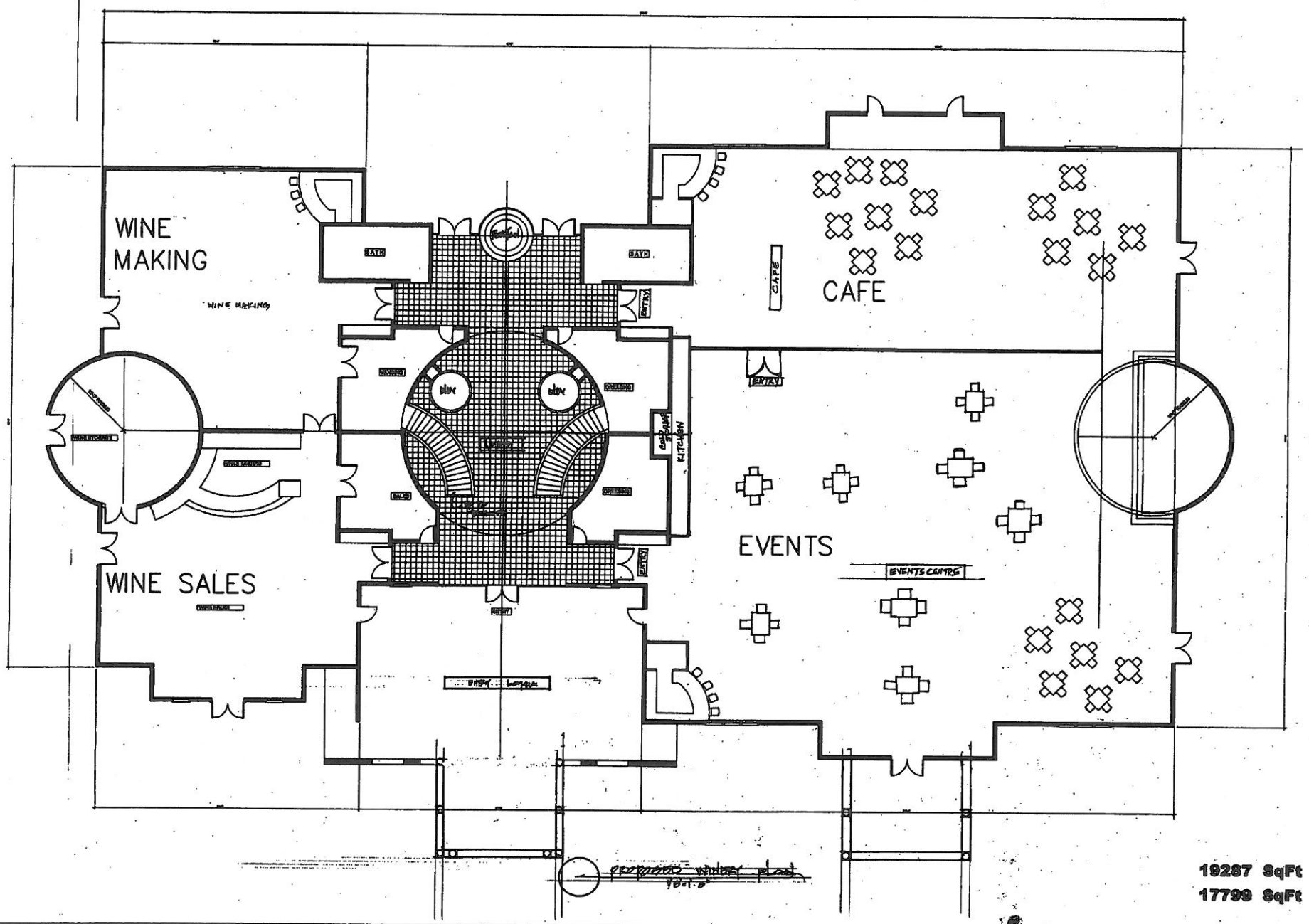
Groundwater in the vicinity is used for drinking water and irrigation. Potable water for some parcels in the vicinity is provided by Crane Ridge Water and irrigation water for some parcels is surface water from the state water project.

Zone 7 will be closely involved in the design proceed and approval from Zone 7 accepting a plan not exceeding one Rural Residence Equivalent (RE) per five (5) acres of parcel size plus possible other requirements from concern including possible high nitrates in a monitoring well in the vicinity.

VICINTY MAP
MOHAN RAO




GREENVILLE ROAD
TESLA ROAD
Jerrold Road
PARCEL "B"
GROSS 21.35± ACRES
NET 20.04± ACRES
TOTAL BUILDING ENVELOPE AREA
= 87120 S.F.
AREA=83348 S.F.
POSSIBLE LOCATION FOR SEPTIC SYSTEM
BUILDING ENVELOPE
AREA PREVIOUSLY TESTED
(PECOLATION TEST)
15' PRIVATE UTILITY ESM'T
14' ROADWAY
AREA=3771 S.F.
66' R/W
N 89°52'27" W 954.09'
954.09
983.20'
N 89°52'27" W 288.7'
N 00°07'33" E 288.7'
N 00°07'33" E 64.33'
Δ = 50°52'17"
R = 75.00'
L = 66.59'
N 00°07'33" E 71.88'
N 89°52'27" W 949.70'
SITE PLAN




# FLOOR PLAN

TESLA WINERY

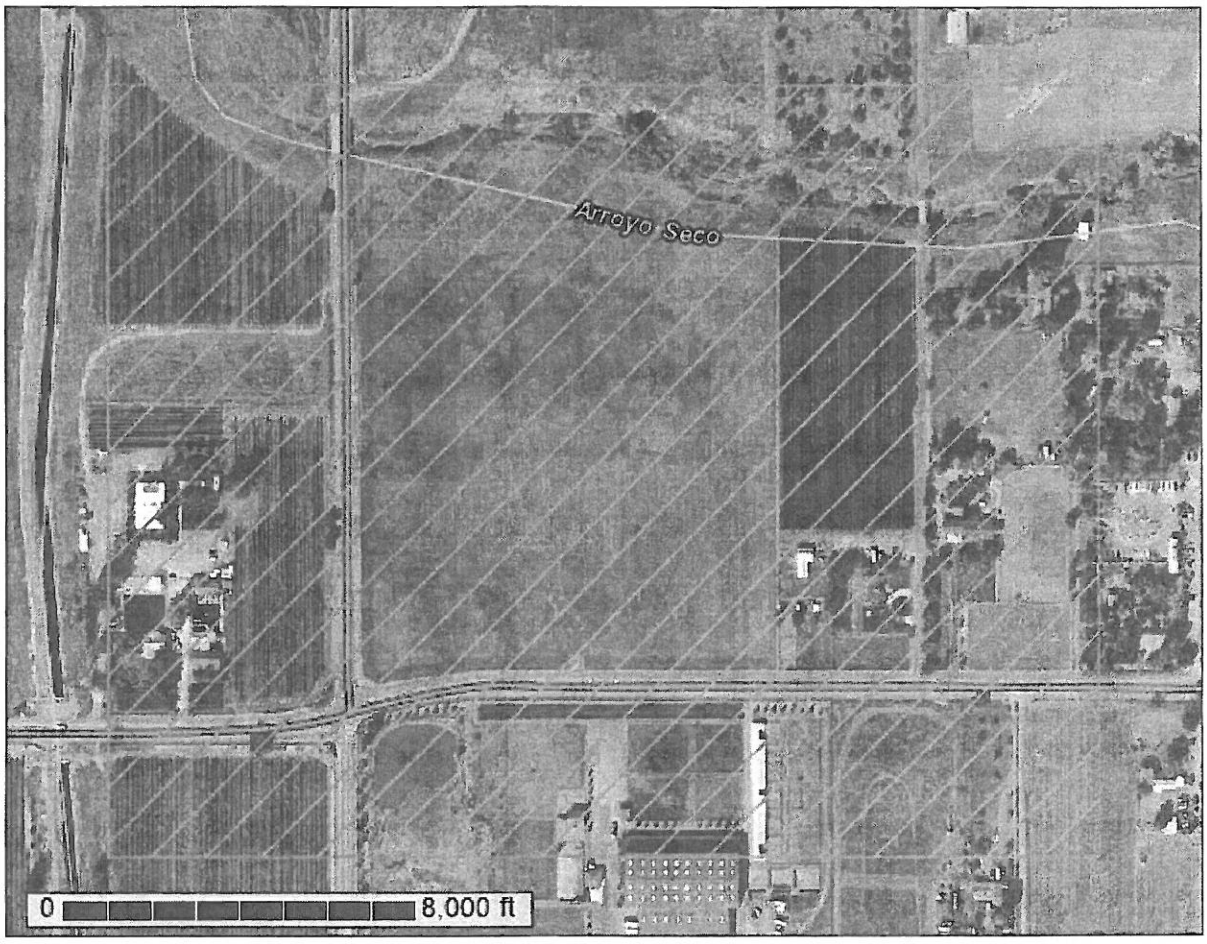
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Alameda Area, California




March 3, 2014

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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# Contents

# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

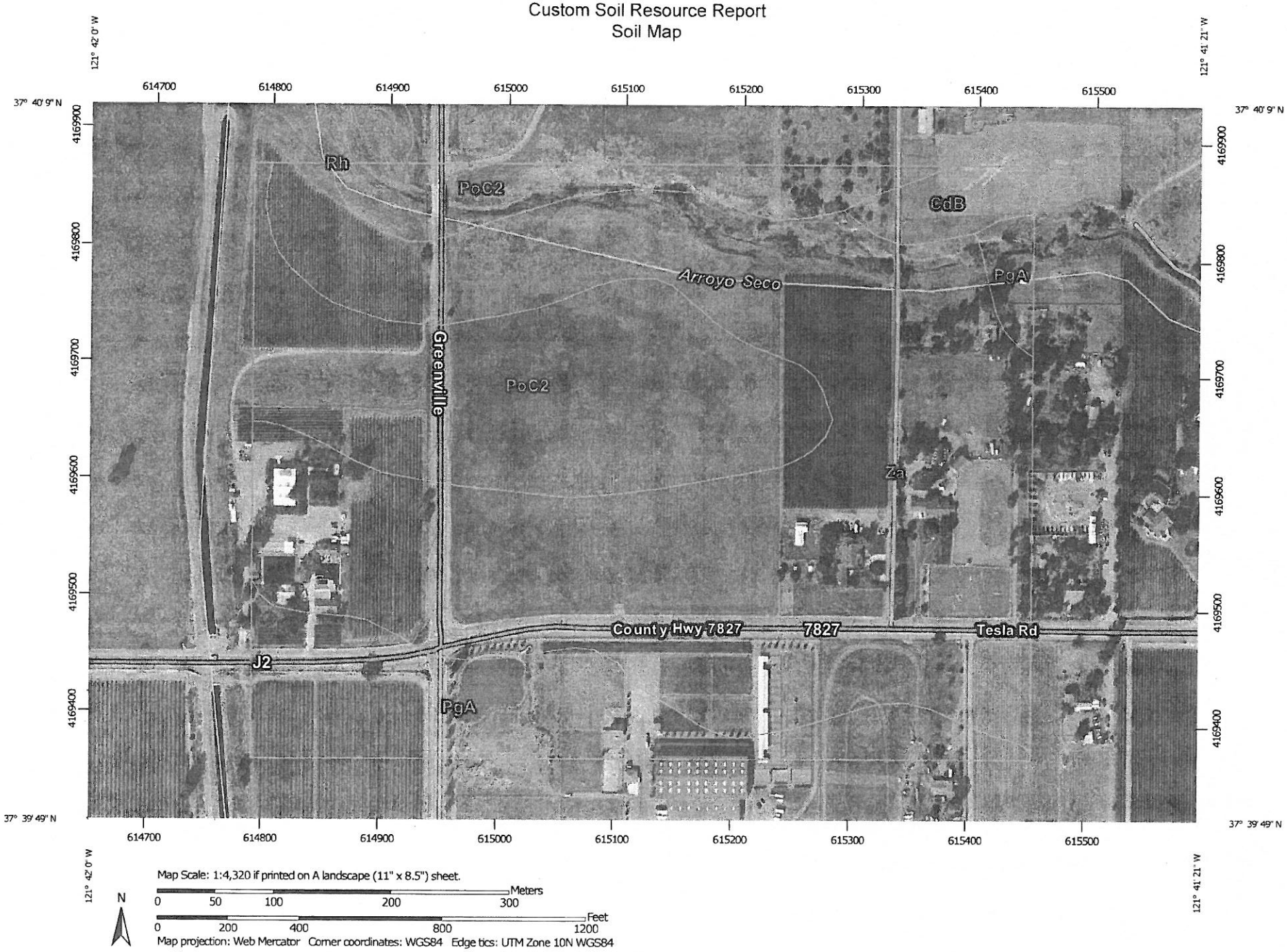
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map



## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Alameda Area, California
Survey Area Data: Version 7, Dec 10, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 12, 2010—Nov 15, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Alameda Area, California (CA609) | | | |
|---|---|---|---|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| CdB | Clear Lake clay, drained, 3 to 7 percent slopes | 1.8 | 2.2% |
| PgA | Pleasanton gravelly loam, 0 to 3 percent slopes | 12.2 | 14.5% |
| PoC2 | Positas gravelly loam, 2 to 20 percent slopes, eroded | 21.9 | 26.1% |
| Rh | Riverwash | 0.0 | 0.0% |
| Za | Zamora silt loam, 0 to 4 percent slopes | 48.0 | 57.2% |
| Totals for Area of Interest | | 84.0 | 100.0% |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Alameda Area, California

## CdB—Clear Lake clay, drained, 3 to 7 percent slopes

### Map Unit Setting

*Elevation:* 100 to 900 feet
*Mean annual precipitation:* 14 to 15 inches
*Mean annual air temperature:* 57 degrees F
*Frost-free period:* 240 to 260 days

### Map Unit Composition

*Clear lake and similar soils:* 85 percent
*Minor components:* 15 percent

### Description of Clear Lake

#### Setting

*Landform:* Basin floors
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from sedimentary rock

#### Properties and qualities

*Slope:* 3 to 7 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 5 percent
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 8.0 mmhos/cm)
*Available water capacity:* Moderate (about 8.4 inches)

#### Interpretive groups

*Farmland classification:* Prime farmland if irrigated
*Land capability classification (irrigated):* 2e
*Land capability (nonirrigated):* 4e
*Hydrologic Soil Group:* C

#### Typical profile

*0 to 36 inches:* Clay
*36 to 65 inches:* Clay

### Minor Components

#### Capay

*Percent of map unit:* 5 percent

#### San ysidro

*Percent of map unit:* 5 percent

#### Unnamed

*Percent of map unit:* 5 percent

*Landform:* Basin floors
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear

## PgA—Pleasanton gravelly loam, 0 to 3 percent slopes

### Map Unit Setting

*Elevation:* 220 to 800 feet
*Mean annual precipitation:* 14 inches
*Mean annual air temperature:* 57 degrees F
*Frost-free period:* 260 to 280 days

### Map Unit Composition

*Pleasanton and similar soils:* 85 percent
*Minor components:* 15 percent

### Description of Pleasanton

#### Setting

*Landform:* Fluvial terraces, alluvial fans
*Landform position (two-dimensional):* Toeslope, footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from sandstone and shale

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)
*Available water capacity:* Moderate (about 8.6 inches)

#### Interpretive groups

*Farmland classification:* Prime farmland if irrigated
*Land capability classification (irrigated):* 2s
*Land capability (nonirrigated):* 4s
*Hydrologic Soil Group:* C

#### Typical profile

*0 to 21 inches:* Gravelly loam
*21 to 64 inches:* Gravelly clay loam
*64 to 72 inches:* Gravelly silt loam

**Minor Components**

**Rincon**
*Percent of map unit:* 5 percent

**Positas**
*Percent of map unit:* 5 percent

**Livermore**
*Percent of map unit:* 5 percent

## PoC2—Positas gravelly loam, 2 to 20 percent slopes, eroded

**Map Unit Setting**
*Elevation:* 300 to 1,500 feet
*Mean annual precipitation:* 12 to 15 inches
*Mean annual air temperature:* 57 degrees F
*Frost-free period:* 260 to 280 days

**Map Unit Composition**
*Positas and similar soils:* 85 percent
*Minor components:* 15 percent

**Description of Positas**

**Setting**
*Landform:* Fluvial terraces
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from sandstone and shale

**Properties and qualities**
*Slope:* 2 to 20 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)
*Available water capacity:* Moderate (about 8.3 inches)

**Interpretive groups**
*Farmland classification:* Not prime farmland
*Land capability classification (irrigated):* 4e
*Land capability (nonirrigated):* 4e
*Hydrologic Soil Group:* D

**Typical profile**
*0 to 11 inches:* Gravelly loam
*11 to 29 inches:* Clay
*29 to 54 inches:* Clay loam
*54 to 60 inches:* Gravelly sandy clay loam

**Minor Components**

**Perkins**
*Percent of map unit:* 5 percent

**Azule**
*Percent of map unit:* 5 percent

**Pleasanton**
*Percent of map unit:* 5 percent

## Rh—Riverwash

**Map Unit Setting**
*Elevation:* 10 to 900 feet
*Mean annual precipitation:* 12 to 16 inches
*Mean annual air temperature:* 57 degrees F
*Frost-free period:* 240 to 280 days

**Map Unit Composition**
*Riverwash:* 100 percent

**Description of Riverwash**

**Setting**
*Landform:* Channels
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from sandstone and shale

**Properties and qualities**
*Slope:* 0 to 2 percent
*Drainage class:* Excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (19.98 to 99.90 in/hr)
*Depth to water table:* About 0 to 24 inches
*Frequency of flooding:* Frequent

**Interpretive groups**
*Farmland classification:* Not prime farmland
*Land capability (nonirrigated):* 8w
*Hydrologic Soil Group:* A

**Typical profile**
*0 to 6 inches:* Error

*6 to 60 inches:* Error

## Za—Zamora silt loam, 0 to 4 percent slopes

**Map Unit Setting**

*Elevation:* 220 to 800 feet
*Mean annual precipitation:* 14 inches
*Mean annual air temperature:* 57 degrees F
*Frost-free period:* 260 to 280 days

**Map Unit Composition**

*Zamora and similar soils:* 85 percent
*Minor components:* 15 percent

**Description of Zamora**

**Setting**

*Landform:* Flood plains
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from sandstone and shale

**Properties and qualities**

*Slope:* 0 to 4 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 1 percent
*Available water capacity:* High (about 11.0 inches)

**Interpretive groups**

*Farmland classification:* Prime farmland if irrigated
*Land capability classification (irrigated):* 1
*Land capability (nonirrigated):* 4c
*Hydrologic Soil Group:* C

**Typical profile**

*0 to 18 inches:* Silt loam
*18 to 60 inches:* Clay loam

**Minor Components**

**Pleasanton**

*Percent of map unit:* 10 percent

**Rincon**

*Percent of map unit:* 5 percent

# References


American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/forestry/pub/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

## Alameda County Environmental Health Services
## Percolation Test Records

Parcel Number: _____

Address: 8310 TESLA RD.

Owner: BRAD CAROLINE.

Applicant: "

Date of Test: 1/4/99 Test Conducted By: Jim W. R.E.H.S.# _____

| Stabilized Rates | |
|---|---|
| Hole # | Inches/ Hour |
| | Test |
| See | |
| COPY | |
| | |

Average Rate: 4"

Sq. Ft. per field required: 150

**Absorption area requirements for private residences:**

| Percolation rate(inches/hour) | | Sq. ft/bedroom/field |
|---|---|---|
| 12 | = | 90 |
| 6 | = | 120 |
| 4 | = | 150 |
| 2 | = | 180 |
| 1½ | = | 240 |
| 1 | = | 270 |

Note: Minimum of 200 sq. ft. required per field.
Sq. Ft. absorption area is based on trench bottom

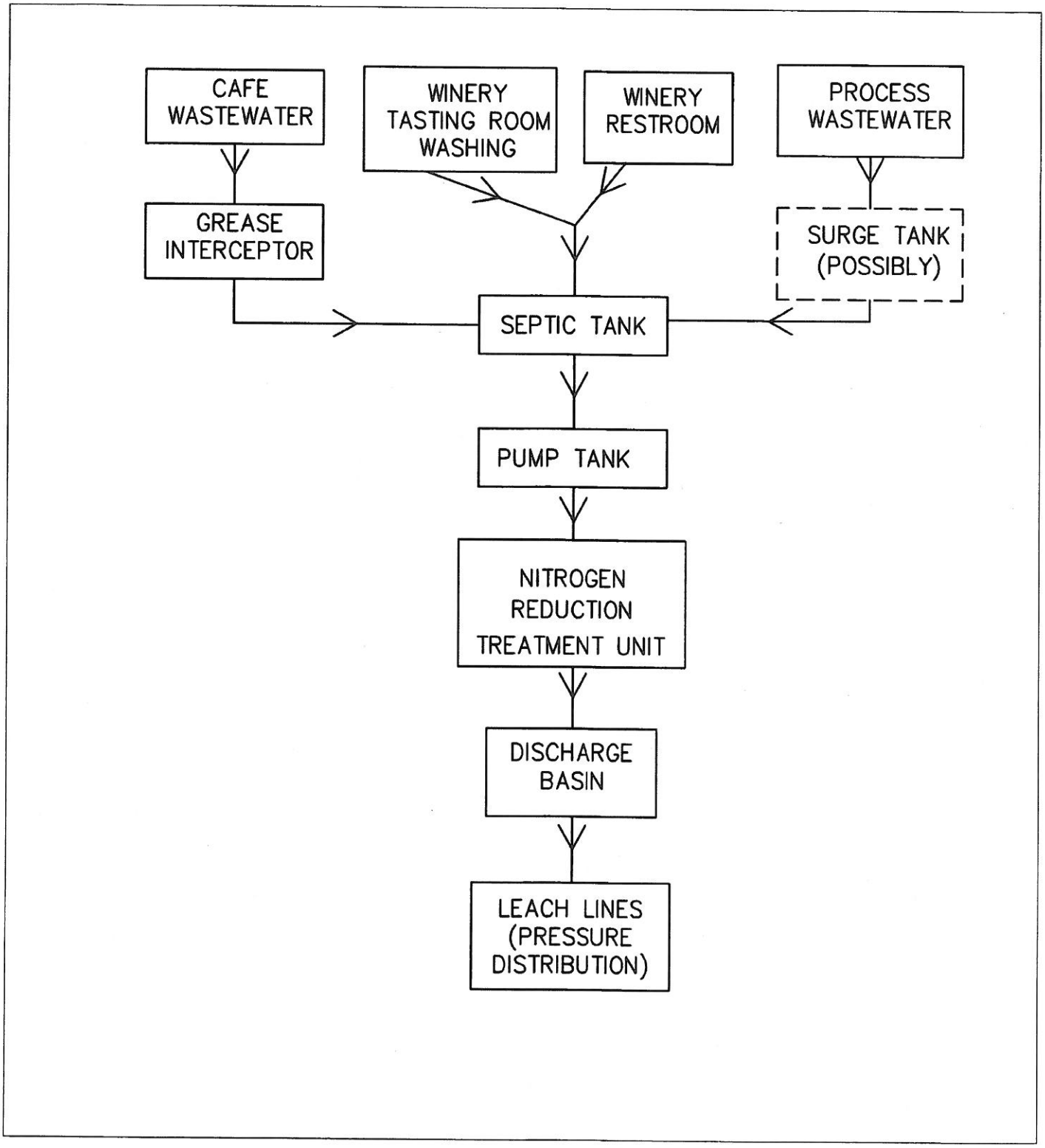
| Hole # 1 Pipe Depth: _____ Hole Depth: 60" | | | Hole # 2 Pipe Depth: _____ Hole Depth: 54" | | | Hole # 3 Pipe Depth: _____ Hole Depth: 48" | | | Hole # 4 Pipe Depth: _____ Hole Depth: 60" | | | Hole # 5 Pipe Depth: _____ Hole Depth: 60" | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | Inches | Rate | Time | Inches | Rate | Time | Inches | Rate | Time | Inches | Rate | Time | Inches | Rate |
| 10:25 ~~4"~~ | 4-4" | | 10:25 | 17½ | | 10:25 | 14¾ | | 10:25 | 12½ | | 10:25 | 9" | |
| 11:05 | 4-5¾ | 3½ | 11:05 | 13¾ | 7½ | 11:05 | 17¾ | 4 | 11:05 | 10¼ | 4½ | 11:05 | 2 | 11¼ |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | Confirms | | | Test | | | Avg | | | | |
| | | | | Perc | | | test | | | results | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

# Estimated Wastewater Loading* for
# Mohan Rao
# 8310 Tesla Road, Livermore

| Use | Quantity (e.g., Meals, Tables, Persons, Shifts, Residences) | | Times per Week | Times per Year | Gallons per Person per Day* | Total Gallons per Year | Maximum Gallons (per day) | Average Gallons per Day over year (gpd) |
|---|---|---|---|---|---|---|---|---|
| Restaurant in new event center | | | | | | | | |
| Maintenance Factor Café (seats) | 78 | seats | 7 | 52 | 15 | 425,880 | 1170 | 1167 |
| Kitchen waste for café (meals served) | 156 | meals served | 7 | 52 | 5 | 283,920 | 780 | 778 |
| Restroom Use café (per meal served) | 78 | per meal served | 7 | 52 | 3 | 85,176 | 234 | 233 |
| Employee workers (per employee) | 2 | employees | 7 | 52 | 15 | 10,920 | 30 | 30 |
| Events in new event center | | | | | | | | |
| Kitchen waste for events (per person)_ | 400 | people at event | 1 | 5 | 10 | 20,000 | 4000 | 55 |
| Typical Events | 150 | people at event | 1 | 12 | 15 | 27,000 | | 74 |
| Employee workers | 3 | employees | 7 | 52 | 15 | 16,380 | 45 | 45 |
| Kitchen Waste for Large Events (per person) | | | | | | | | |
| Large Events | 400 | meals served | 1 | 40 | 3 | 48,000 | 1200 | 132 |
| All uses above will be on new septic system with pretreatment | | | | | | | | |
| All uses below will be on existing septic system without pretreatment | | | | | | | | |
| Wine Tasting | | | | | | | | |
| Wine Tasting w/ no meals (per visitor) | 30 | wine tasting visitor | 7 | 52 | 2.5 | 27,300 | 75 | 75 |
| Employee workers | 1 | employee | 7 | 52 | 15 | 5,460 | 15 | 15 |
| Employees | | | | | | | | |
| Day worker -Office (per employee) | 1 | employees | 5 | 52 | 15 | 3,900 | 15 | 11 |
| | | Domestics Sewage: | | | | 953,936 | 7564 | 2614 |
| Wine Production | | | | | | | | |
| Cases per year | 20000 | cases | 2.4 | 1 | 2.04 | 97,920 | 1600 | 268 |
| | | Toatl from Domestic and Wine production | | | | 1,051,856 | 9164 | 2,882 gpd |

* = Values from Table 3 - Commercial Establishment Estimated Quantities of Sewage Flow, Alameda County Onsite Wastewater Treatment System Regulations (2007)

FLOW DIAGRAM
MOHAN RAO



# Appendix B

# Air Quality Modeling (from Concannon Vineyard Initial Study)

**5/23/2011 10:18:22 AM**

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: H:\Concannon\Air Quality\ConcannonBuilding.urb924

Project Name: Concannon Building

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 TOTALS (lbs/day unmitigated) | 6.01 | 43.77 | 26.73 | 0.00 | 10.02 | 2.71 | 12.73 | 2.09 | 2.50 | 4.59 | 4,476.85 |
| 2012 TOTALS (lbs/day unmitigated) | 5.67 | 40.97 | 25.86 | 0.00 | 10.02 | 2.49 | 12.50 | 2.09 | 2.29 | 4.38 | 4,477.03 |

AREA SOURCE EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 0.19 | 0.83 | 2.23 | 0.00 | 0.01 | 0.01 | 969.25 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 0.05 | 0.05 | 0.58 | 0.00 | 0.10 | 0.02 | 57.09 |

**5/23/2011 10:18:22 AM**

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 0.24 | 0.88 | 2.81 | 0.00 | 0.11 | 0.03 | 1,026.34 |

**5/23/2011 10:18:31 AM**

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: H:\Concannon\Air Quality\ConcannonBuilding.urb924

Project Name: Concannon Building

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 Total | PM2.5 Dust | PM2.5 Exhaust | PM2.5 Total | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/11/2011-11/29/2011 Active Days: 231 | 1.12 | 8.58 | 4.81 | 0.00 | 0.00 | 0.55 | 0.55 | 0.00 | 0.50 | 0.50 | 915.63 |
| Building 01/11/2011-08/22/2012 | 1.12 | 8.58 | 4.81 | 0.00 | 0.00 | 0.55 | 0.55 | 0.00 | 0.50 | 0.50 | 915.63 |
| Building Off Road Diesel | 1.11 | 8.51 | 4.68 | 0.00 | 0.00 | 0.54 | 0.54 | 0.00 | 0.50 | 0.50 | 893.39 |
| Building Vendor Trips | 0.00 | 0.07 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |
| Time Slice 11/30/2011-12/27/2011 Active Days: 20 | 3.98 | 32.07 | 17.84 | 0.00 | 10.01 | 1.72 | 11.73 | 2.09 | 1.58 | 3.67 | 3,264.92 |
| Building 01/11/2011-08/22/2012 | 1.12 | 8.58 | 4.81 | 0.00 | 0.00 | 0.55 | 0.55 | 0.00 | 0.50 | 0.50 | 915.63 |
| Building Off Road Diesel | 1.11 | 8.51 | 4.68 | 0.00 | 0.00 | 0.54 | 0.54 | 0.00 | 0.50 | 0.50 | 893.39 |
| Building Vendor Trips | 0.00 | 0.07 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |
| Fine Grading 11/30/2011-01/11/2012 | 2.86 | 23.50 | 13.03 | 0.00 | 10.00 | 1.17 | 11.18 | 2.09 | 1.08 | 3.17 | 2,349.29 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 10.00 | 2.09 | 0.00 | 2.09 | 0.00 |
| Fine Grading Off Road Diesel | 2.83 | 23.44 | 11.96 | 0.00 | 0.00 | 1.17 | 1.17 | 0.00 | 1.08 | 1.08 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.06 | 1.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 101.97 |

**5/23/2011 10:18:31 AM**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 12/28/2011-12/30/2011<br>Active Days: 3 | **6.01** | **43.77** | **26.73** | **0.00** | **10.02** | **2.71** | **12.73** | **2.09** | **2.50** | **4.59** | 4,476.85 |
| Asphalt 12/28/2011-01/11/2012 | 2.03 | 11.70 | 8.89 | 0.00 | 0.01 | 0.99 | 1.00 | 0.00 | 0.91 | 0.92 | 1,211.93 |
| Paving Off-Gas | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 1.83 | 11.26 | 6.91 | 0.00 | 0.00 | 0.98 | 0.98 | 0.00 | 0.90 | 0.90 | 979.23 |
| Paving On Road Diesel | 0.02 | 0.34 | 0.11 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 54.25 |
| Paving Worker Trips | 0.06 | 0.10 | 1.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 178.46 |
| Building 01/11/2011-08/22/2012 | 1.12 | 8.58 | 4.81 | 0.00 | 0.00 | 0.55 | 0.55 | 0.00 | 0.50 | 0.50 | 915.63 |
| Building Off Road Diesel | 1.11 | 8.51 | 4.68 | 0.00 | 0.00 | 0.54 | 0.54 | 0.00 | 0.50 | 0.50 | 893.39 |
| Building Vendor Trips | 0.00 | 0.07 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |
| Fine Grading 11/30/2011-01/11/2012 | 2.86 | 23.50 | 13.03 | 0.00 | 10.00 | 1.17 | 11.18 | 2.09 | 1.08 | 3.17 | 2,349.29 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 10.00 | 2.09 | 0.00 | 2.09 | 0.00 |
| Fine Grading Off Road Diesel | 2.83 | 23.44 | 11.96 | 0.00 | 0.00 | 1.17 | 1.17 | 0.00 | 1.08 | 1.08 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.06 | 1.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 101.97 |

**5/23/2011 10:18:31 AM**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/2/2012-1/11/2012 Active Days: 8 | 5.67 | 40.97 | 25.86 | **0.00** | **10.02** | 2.49 | 12.50 | **2.09** | 2.29 | 4.38 | **4,477.03** |
| Asphalt 12/28/2011-01/11/2012 | 1.91 | 11.04 | 8.67 | 0.00 | 0.01 | 0.93 | 0.94 | 0.00 | 0.85 | 0.85 | 1,212.04 |
| Paving Off-Gas | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 1.72 | 10.64 | 6.84 | 0.00 | 0.00 | 0.91 | 0.91 | 0.00 | 0.84 | 0.84 | 979.23 |
| Paving On Road Diesel | 0.02 | 0.30 | 0.10 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 54.25 |
| Paving Worker Trips | 0.05 | 0.09 | 1.73 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 178.56 |
| Building 01/11/2011-08/22/2012 | 1.04 | 7.94 | 4.69 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 915.63 |
| Building Off Road Diesel | 1.03 | 7.87 | 4.56 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 893.39 |
| Building Vendor Trips | 0.00 | 0.06 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |
| Fine Grading 11/30/2011-01/11/2012 | 2.72 | 22.00 | 12.50 | 0.00 | 10.00 | 1.07 | 11.08 | 2.09 | 0.99 | 3.08 | 2,349.35 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 10.00 | 2.09 | 0.00 | 2.09 | 0.00 |
| Fine Grading Off Road Diesel | 2.69 | 21.95 | 11.51 | 0.00 | 0.00 | 1.07 | 1.07 | 0.00 | 0.99 | 0.99 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.99 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 102.04 |
| Time Slice 1/12/2012-8/7/2012 Active Days: 149 | 1.04 | 7.94 | 4.69 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 915.63 |
| Building 01/11/2011-08/22/2012 | 1.04 | 7.94 | 4.69 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 915.63 |
| Building Off Road Diesel | 1.03 | 7.87 | 4.56 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 893.39 |
| Building Vendor Trips | 0.00 | 0.06 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 8/8/2012-8/22/2012 Active Days: 11 | 2.06 | 7.94 | 4.70 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 916.85 |
| Building 01/11/2011-08/22/2012 | 1.04 | 7.94 | 4.69 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 915.63 |
| Building Off Road Diesel | 1.03 | 7.87 | 4.56 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.45 | 0.45 | 893.39 |
| Building Vendor Trips | 0.00 | 0.06 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.68 |
| Building Worker Trips | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.57 |
| Coating 08/08/2012-09/05/2012 | 1.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.21 |
| Architectural Coating | 1.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.21 |
| Time Slice 8/23/2012-9/5/2012 Active Days: 10 | 1.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.21 |
| Coating 08/08/2012-09/05/2012 | 1.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.21 |
| Architectural Coating | 1.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.21 |

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 0.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2011 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

**5/23/2011 10:17:49 AM**

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: H:\Concannon\Air Quality\ConcannonBuilding.urb924

Project Name: Concannon Building

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 TOTALS (tons/year unmitigated) | 0.18 | 1.38 | 0.77 | 0.00 | 0.12 | 0.08 | 0.20 | 0.02 | 0.08 | 0.10 | 145.12 |
| 2012 TOTALS (tons/year unmitigated) | 0.12 | 0.80 | 0.48 | 0.00 | 0.04 | 0.05 | 0.09 | 0.01 | 0.05 | 0.05 | 91.17 |

AREA SOURCE EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 0.02 | 0.15 | 0.26 | 0.00 | 0.00 | 0.00 | 176.63 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 0.01 | 0.01 | 0.11 | 0.00 | 0.02 | 0.00 | 9.95 |

**5/23/2011 10:17:49 AM**

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 0.03 | 0.16 | 0.37 | 0.00 | 0.02 | 0.00 | 186.58 |

**5/23/2011 10:18:08 AM**

Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: H:\Concannon\Air Quality\ConcannonBuilding.urb924

Project Name: Concannon Building

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 Total | PM2.5 Dust | PM2.5 Exhaust | PM2.5 Total | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | 0.18 | 1.38 | 0.77 | 0.00 | 0.12 | 0.08 | 0.20 | 0.02 | 0.08 | 0.10 | 145.12 |
| Building 01/11/2011-08/22/2012 | 0.14 | 1.09 | 0.61 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.06 | 0.06 | 116.28 |
| Building Off Road Diesel | 0.14 | 1.08 | 0.59 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.06 | 0.06 | 113.46 |
| Building Vendor Trips | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.74 |
| Building Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.09 |
| Fine Grading 11/30/2011-01/11/2012 | 0.03 | 0.27 | 0.15 | 0.00 | 0.12 | 0.01 | 0.13 | 0.02 | 0.01 | 0.04 | 27.02 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.12 | 0.02 | 0.00 | 0.02 | 0.00 |
| Fine Grading Off Road Diesel | 0.03 | 0.27 | 0.14 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 25.84 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.17 |
| Asphalt 12/28/2011-01/11/2012 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.82 |
| Paving Off-Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.47 |
| Paving On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 |
| Paving Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.27 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2012 | 0.12 | 0.80 | 0.48 | 0.00 | 0.04 | 0.05 | 0.09 | 0.01 | 0.05 | 0.05 | 91.17 |
| Asphalt 12/28/2011-01/11/2012 | 0.01 | 0.04 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.85 |
| Paving Off-Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 0.01 | 0.04 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.92 |
| Paving On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 |
| Paving Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.71 |
| Building 01/11/2011-08/22/2012 | 0.09 | 0.67 | 0.39 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.04 | 0.04 | 76.91 |
| Building Off Road Diesel | 0.09 | 0.66 | 0.38 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.04 | 0.04 | 75.04 |
| Building Vendor Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.15 |
| Building Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.72 |
| Fine Grading 11/30/2011-01/11/2012 | 0.01 | 0.09 | 0.05 | 0.00 | 0.04 | 0.00 | 0.04 | 0.01 | 0.00 | 0.01 | 9.40 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.01 | 0.00 | 0.01 | 0.00 |
| Fine Grading Off Road Diesel | 0.01 | 0.09 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.99 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 |
| Coating 08/08/2012-09/05/2012 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Architectural Coating | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description
Acres to be Paved: 0.5
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2011 - 8/22/2012 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2012 - 9/5/2012 - Default Architectural Coating Description
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

# Appendix C

# Biology Report

# Tesla Road Winery

## Biological Resources Report

**Prepared for:**

RAO Company

**Prepared by:**

Denise Duffy & Associates, Inc.
947 Cass St. Suite 5
Monterey, CA 93940

**June 2015**

# Table of Contents

# List of Figures

# Chapter 1. Introduction

DENISE DUFFY & ASSOCIATES, Inc. (DD&A) was contracted by the RAO Company to prepare a Biological Resources Report (Bio Report) for the Tesla Road Winery Project (project) located in the unincorporated area of Alameda County, near the City of Livermore, California (Figure 1). The emphasis of this study is to describe existing biological resources within and surrounding the project site, identify any special-status species and sensitive habitats within the project site, assess potential impacts that may occur to biological resources, and recommend appropriate avoidance, minimization, and mitigation measures necessary to reduce those impacts in accordance with the California Environmental Quality Act (CEQA).

## 1.1. Project Description

The proposed project is located at north-east corner of the intersection of Tesla Road and Greenville Road in the unincorporated area Alameda County near the City of Livermore, California (Figure 1). The site is bounded by Tesla Road to the south, Greenville Road to the west, agricultural uses to north and a rural residential property to the east. The property is located on Assessor's Parcel (APN) 99A-1625-17 and is approximately 20 acres.

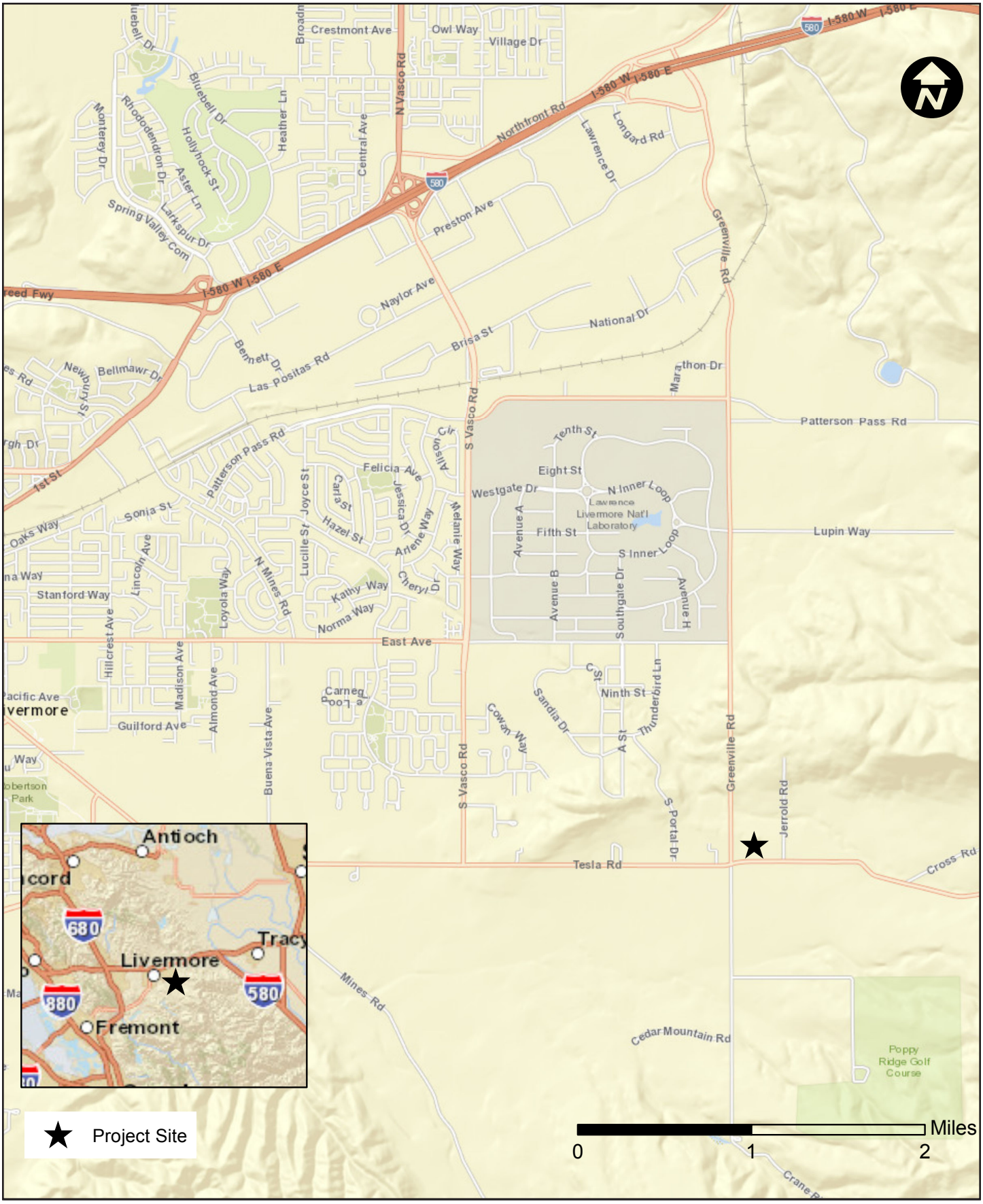
The Project includes approximately two acres (23,082 sq. ft.) of developed land that is proposed for the winery facility and associated parking and driveways. The remaining 18 acres of the parcel are expected to be utilized for wine grapes. The project proponent is proposing a 23,082 sq. ft. multi-purpose facility that would include a wine tasting room, wine manufacturing area, café, event space, kitchen, restrooms, and office space (Figure 2). Primary access to the Project's parking lot is proposed from Tesla Road with an additional access drive proposed from Greenville Road. The site is currently undeveloped and once completed, it is anticipated that the facility would generate 20,000 cases of wine annually.

## 1.2. Summary of Results

One habitat type is present within the project site: non-native annual grassland. This habitat is not listed as sensitive on the California Department of Fish and Wildlife's (Department's)[1] California Natural Diversity Data Base (CNDDB) working list of high priority and rare natural communities. No other sensitive habitats were identified within the project site.

Several special-status species have the potential to occur within the project site based on presence of appropriate habitat and known occurrences within the vicinity. Please refer to Appendix A and Section 4.1 for an analysis of each species within the project site. All other species presented in Appendix A are assumed "unlikely to occur" for the species-specific reasons presented and are not discussed within the document.

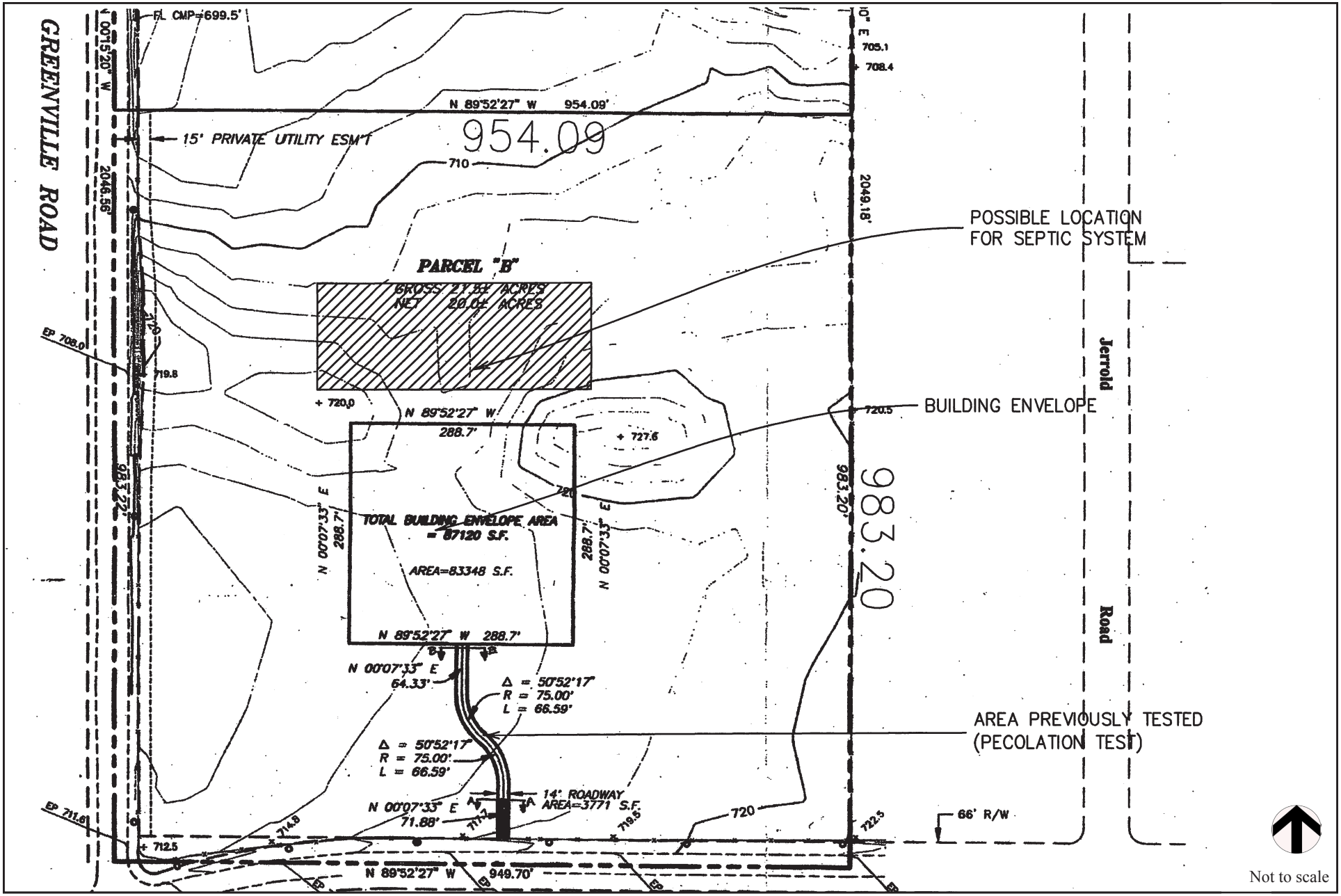
[1] California Department of Fish and Game changed its name to California Department of Fish and Wildlife (Department), effective January 1, 2013. Please note that although the name has changed, "game" from "California Fish and Game Code" was not changed.




# Location Map

Figure 1

Tesla Road Winery
Biological Resources Report




# Site Plan

Figure 2

Tesla Road Winery
Biological Resources Report

The following special-status wildlife species have the potential to occur within or immediately adjacent to the project site:

- Pallid bat (*Antrozous pallidus*) – CSC[2]
- Townsend's big-eared bat (*Corynorhinus townsendii* ) – CSC
- Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*) – CNDDB
- Hoary bat (*Lasiurus cinereus*) - CNDDB
- San Joaquin pocket mouse (*Perognathus inornatus*) – CNDDB
- American badger (*Taxidea taxus*) – CSC
- San Joaquin kit fox (*Vulpes macrotis mutica*) – FE/ST
- Tricolored blackbird (*Agelaius tricolor*) – CSC/MBTA
- Golden eagle (*Aquila chrysaetos*) - CFP/MBTA
- Western burrowing owl (*Athene cunicularia*) – CSC/MBTA
- Ferruginous hawk (*Buteo regalis*) – CNDDB/MBTA
- Swainson's hawk (*Buteo swainsoni*) - ST/MBTA
- Northern harrier (*Circus cyaneus*) - CSC/MBTA
- White-tailed kite (*Elanus leucurus*) – CFP/MBTA
- California horned lark (*Eremophila alpestris actia*) – CNDDB/MBTA
- Prairie falcon (*Falco mexicanus*) - CNDDB/MBTA
- American peregrine falcon (*Falco peregrinis anatum*) – CFP/MBTA
- Loggerhead shrike (*Lanius ludovicianus*) - CSC/MBTA
- California tiger salamander (CTS; *Ambystoma californiense*) – FT/ST
- Western pond turtle (*Emys marmorata*) – CSC
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*) - CSC
- California red-legged frog (CRLF, *Rana draytonii*) – FT/CSC
- Western spadefoot toad (*Spea hammondii*) – CSC
- Callippe silverspot butterfly (*Speyeria callippe callippe*) - FE

The following special-status plant species have the potential to occur within the project site:

- Large-flowered fiddleneck (*Amsinckia grandiflora*) – FE/SE/ 1B
- Big-scale balsamroot (*Balsamorhiza macrolepis*) – 1B
- Big tarplant (*Blepharizonia plumose*) – 1B
- Round-leaved filaree (*California macrophylla*) – 1B
- Mount Diablo fairy-lantern (*Calochortus pulchellus*) – 1B
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) – 1B
- Recurved larkspur (*Delphinium recurvatum*) – 1B
- Diamond-petaled California poppy (*Eschscholzia rhombipetala*) – 1B
- Diablo helianthella (*Helianthella castanea*) – 1B

[2] FE: Federally Endangered; FT: Federally Threatened; SE: State Endangered; ST: State Threatened; CSC: California Species of Special Concern; CNDDB: species on the Department's "Special Animals" list; MBTA: Protected under the Migratory Bird Treaty Act (MBTA); 1B: CNPS Rare Plant Rank 1B species – rare, threatened, or endangered in California and elsewhere.

- Showy golden madia (*Madia radiata*) – 1B
- Shining navarretia (*Navarretia nigelliformis* ssp. *radians*) – 1B
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*) – 1B

# Chapter 2. Methods

The following section discusses sources used to develop information on the project site. Study methods and sources used consisted of a review of occurrence records for special-status species with the potential to be affected by the project and the East Alameda County Conservation Strategy (EACCS; ICF International, 2010), as well as field reconnaissance and evaluation of impacts to identified resources. Additionally, a regulatory discussion is presented within the section that describes the major laws that may be applicable to the project.

## 2.1. Personnel and Survey Dates

A reconnaissance-level survey was conducted at the project site on December 29, 2014 by DD&A Associate Environmental Scientist, Jami Davis. Maps provided by the Project Proponent defined the survey area. Survey methods included walking the project site and using aerial maps to identify general habitat types, potential sensitive habitats, and potential habitat for special-status plant and wildlife species. Available reference materials were reviewed prior to conducting the field surveys, including the Department's CNDDB occurrence reports (Appendix B; Department, 2014) and a U.S. Fish and Wildlife Service's (Service's) list of Federally Listed Threatened and Endangered Species that may occur (Appendix C; Service, 2015) for the U.S. Geological Survey (USGS) Altamont quadrangle and the eight surrounding quadrangles[3], the Department's Special Animals list (Department 2011), and aerial photographs of the project site. Data collected during the surveys were used to assess the environmental conditions of the survey area and its surroundings, evaluate environmental constraints at the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts.

## 2.2. Definitions

### SPECIAL-STATUS SPECIES

Special-status species are those plants and animals that have been formally listed or proposed for listing as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA). Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of rare or endangered under the CEQA Section 15380 are also considered special-status species. Animals on the Department's list of "species of special concern" (most of which are species whose breeding populations in California may face extirpation if current population trends continue) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA. Additionally, the Department also includes some animal species that are not assigned any of the other status designations in the CNDDB "Special Animals" list. The Department considers the taxa on this list to be those of greatest conservation need, regardless of their legal or protection status.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or on California Native Plant Society (CNPS) lists are also treated as special-status species in accordance with CEQA Guidelines Section 15380. In general, the Department considers plant species with a CNPS Rare Plant Rank (RPR) of 1 (RPR 1A [Plants presumed extinct in California] and RPR 1B [Plants rare, threatened, or endangered in California and elsewhere]), or a RPR of 2 (Plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS,

[3] The eight quadrangles surrounding the Altamont quadrangle are: Byron Hot Springs, Cedar Mountain, Clifton Court Forebay, La Costa Valley, Livermore, Mendenhall Springs, Midway, and Tassajara.

2014) as qualifying for legal protection under this CEQA provision.[4] In addition, species of vascular plants, bryophytes, and lichens listed as having special-status by the Department are considered special-status plant species (Department, 2014).

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state laws and regulations. The federal Migratory Bird Treaty Act (MBTA) of 1918 and California Fish and Game Code Section 3513 prohibit killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Birds of prey are protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto." In addition, fully protected species under the Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline are also considered special-status animal species (Department, 2011).

### SENSITIVE HABITATS

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the CNDDB's working list of high priority and rare natural communities (i.e., those habitats that are rare or endangered within the borders of California) (Department, 2010), those that are occupied by species listed under ESA or are critical habitat in accordance with ESA, and those that are defined as Environmentally Sensitive Habitat Areas (ESHA) under the California Coastal Act (CCA). Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act [CWA] and Executive Order 11990 – Protection of Wetlands), state regulations (such as CEQA and the Department Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

## 2.3. Data Sources

### BOTANY

The classification and characterization of the vegetation within the project site is based on field observations. Vegetation types identified in *A Manual of California Vegetation* (Sawyer et.al., 2009) were utilized to determine if sensitive habitats on the CNDDB's working list of high priority and rare natural communities are present within the project site (Department, 2010) . Information regarding the distribution and habitats of local and State vascular plants was also reviewed (Munz and Keck, 1973; Baldwin et al. 2012; Jepson Flora Project, 2014). All plants identifiable at the time of the survey were identified to species or intraspecific taxon using keys and descriptions in Baldwin et al. (2012).

### WILDLIFE

A focused review of literature and data sources was conducted in order to determine which special-status wildlife species have the potential to occur within the Action Area. The following literature and data sources were reviewed: the EACCS (ICF International, 2010), Department reports on special-status wildlife (Remsen, 1978; Williams, 1986; Jennings and Hayes, 1994; Thelander, 1994), California Wildlife

[4] Species with a CNPS RPR of 3 (Plants about which we need more information - a review list) and a RPR of 4 (Plants of limited distribution - a watch list) may, but generally do not, qualify for protection under this provision.

Habitat Relationships Program species-habitat models (Department, 2008; Zeiner et al., 1988 and 1990), and general wildlife references (Stebbins, 1985).

## 2.4. Regulatory Setting

### FEDERAL REGULATIONS

#### Federal Endangered Species Act

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally listed threatened or endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by the Service or National Oceanic and Atmospheric Administration Marine Fisheries Service (NOAA Fisheries). In general, NOAA Fisheries is responsible for the protection of ESA-listed marine species and anadromous fish, whereas other listed species are under Service jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the fish or wildlife…including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

#### Critical Habitat

Critical habitat is a term defined and used in the ESA. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the Service publishes a proposed federal regulation in the Federal Register and then public comments are received and considered on the proposal. The final boundaries of the critical habitat area are also published in the Federal Register. Federal agencies are required to consult with the Service on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. In this way, a critical habitat designation protects areas that are necessary for the conservation of the species.

#### Recovery Plans

The ultimate goal of the ESA is the recovery (and subsequent conservation) of endangered and threatened species and the ecosystems on which they depend. A variety of methods and procedures are used to recover listed species, such as protective measures to prevent extinction or further decline, consultation to avoid adverse impacts of federal activities, habitat acquisition and restoration, and other on-the-ground activities for managing and monitoring endangered and threatened species. The collaborative efforts of the Service and its many partners (federal, state, and local agencies, tribal governments, conservation organizations, the business community, landowners, and other concerned citizens) are critical to the recovery of listed species.

One recovery plan has been prepared for listed species known or with the potential to occur within the project site:

- Recovery Plan for the California Red-Legged Frog (Service, 2002a)

**Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (16 USC 651 Et Seq.) requires all federal agencies to consult with and give strong consideration to the views of the Service, the NMFS, and state wildlife agencies regarding the fish and wildlife impacts of projects that propose to impound, divert, channel, or otherwise alter a body of water.

**Migratory Bird Treaty Act**

The MBTA of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. The Service is responsible for overseeing compliance with the MBTA and implements Conventions (treaties) between the United States and four countries for the protection of migratory birds – Canada, Mexico, Japan, and Russia. The Service maintains a list of migratory bird species that are protected under the MBTA, which was updated in 2010 to: 1) correct previous mistakes, such as misspellings or removing species no longer known to occur within the United States; 2) add species, as a result of expanding the geographic scope to include Hawaii and U.S. territories and new evidence of occurrence in the United States or U.S. territories; and 3) update name changes based on new taxonomy (Service, 2010a).

**Executive Order 13112-Invasive Species**

Executive Order 13112 - Invasive Species requires the prevention of introduction and spread of invasive species. Invasive species are defined as "alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Each federal agency whose actions may affect the status of invasive species on a project site shall, to the extent practicable and permitted by law, subject to the availability of appropriations, use relevant programs and authorities to: 1) prevent the introduction of invasive species; 2) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; 3) monitor invasive species populations accurately and reliably; 4) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; 5) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and 6) promote public education on invasive species and the means to address them. A national invasive species management plan was prepared by the National Invasive Species Council and the Invasive Species Advisory Committee (ISAC) that recommends objectives and measures to implement the Executive Order.

## STATE REGULATIONS

**California Endangered Species Act**

The CESA was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered endangered or threatened by the state. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." A Section 2081 Incidental Take Permit from the Department may be obtained to authorize "take" of any state listed species.

### California Fish and Game Code

*Birds:* Section 3503 of the Fish and Game Code states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

*Fully Protected Species:* The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

*Species of Special Concern:* As noted above, the Department also maintains a list of animal "species of special concern." Although these species have no legal status, the Department recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as endangered in the future.

### Native Plant Protection Act

The CNPPA of 1977 directed the Department to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in the state." The CNPPA prohibits importing rare and endangered plants into California, taking rare and endangered plants, and selling rare and endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA.

## LOCAL REGULATIONS

### East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy (EACCS) is intended to provide an effect framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects. The EACCS focuses on impacts to 19 special-status species and several sensitive habitats and enables local projects to comply with state and federal regulatory requirements within a framework of comprehensive conservation goals and objectives using consistent and standardized mitigation requirements. The EACCS does not include permits, but instead serves as guidance for project-level permits. However, the Service issued a Programmatic Biological Opinion (BO) on the issuance of permits for projects under the U.S. Army Corps of Engineers (ACOE) jurisdiction that are utilizing the EACCS under Section 404 of the CWA.

# Chapter 3. Environmental Setting

The project site is located in the Livermore Valley, just outside the City of Livermore, in the unincorporated area of Alameda County. The project site is undeveloped and is surrounded by agricultural and viticulture operations in all directions, as well as rural residences to the east.

## 3.1. Vegetation

The project site consists completely of non-native annual grassland. At the time of the survey, the dominant species within the project site were not easily discernible, as the site has been mowed previously and the plants were just beginning to sprout. However, it appears that ripgut brome (*Bromus diandrus*) and filaree (*Erodium* sp.) may be the dominant plant species based on the presence of a few early sprouters and remnant filaree seeds. As such, it is likely that the *Manual of California Vegetation* (Sawyer et.al, 2009) classification for the site is Annual Brome Grasslands (*Bromus diandrus, hordeaceus-Brachypodium distachyon* Semi-Natural Herbaceous Stands), which is not identified as rare on the CNDDB list of high priority and rare natural communities (Department, 2010). Although this vegetation type is dominated by non-native grass and forb species, some native species may also be present, including some special-status plant species, as described below in Section 4.1.

Non-native annual grasslands provide habitat to a number of wildlife species, such as the Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), northern pacific rattlesnake (*Crotalus oreganus* ssp. *oreganus*), gopher snake (*Pituophis catenifer catenifer*), fence lizard (*Sceloporus* sp.), western meadowlark (*Sturnella neglecta*), and western kingbirds (*Tyrannus verticalis*). Raptors and black-tailed deer (*Odocoileus hemionus columbianus*) are also known to forage in this habitat. Several special-status wildlife species may also utilize non-native annual grasslands, such as CTS, CRLF, western burrowing owl, and other species described in Section 4.1.

## 3.2. Soils

The Web Soil Survey (USDA-NRCS, 2013) identifies two map units within the project site (Figure 3): Positas gravelly loam, 2-20% slopes, eroded (PoC2) and Zamora silt loam 0-4% slopes (Za). The soils are described as well-drained alluvium from sandstone and shale. Positas gravelly loam is noted to have a neutral pH of approximately 7.2, while Zamora silt loam is noted to be slightly alkaline with a pH of approximately 8.0. Neither soil type is identified as potentially hydric soil on the National Hydric Soils List (USDA-NRCS, 2007).

## 3.3. Hydrology

The proposed project is located within the Arroyo Mocho watershed. No hydrologic features are present within the project site; however, the Arroyo Seco Creek is present to the north of the project site, approximately 75 to 200 feet from the property boundary. The USGS identifies this creek as intermittent (USGS, 2013).

# Chapter 4. Results

## 4.1. Special-Status Species

Published occurrence data within the project site and surrounding USGS Quads were evaluated to compile a table of special-status species known to occur in the vicinity of the project site (Please refer to 2.0 Methods). Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the project site (Appendix A).[5] No special-status species were observed within the project site during the reconnaissance-level survey in December 2014. The special-status species that have the potential to occur within or immediately adjacent the project site are discussed below. All other species presented in Appendix A are assumed "unlikely to occur" for the species-specific reasons presented.

### SPECIAL-STATUS WILDLIFE SPECIES

#### Special-Status Bat Species

The CNDDB reports seven occurrences of special-status bat species within the nine quadrangles reviewed, the nearest of which is approximately two miles from the project site. Special-status bat species known to occur in the vicinity that may occur within the project site include the pallid bat, Townsends's big-eared bat, and hoary bat. These species may forage over the grassland within the project site. However, no roosting or breeding habitat for special-status bat species is present within the project site.

#### Berkeley Kangaroo Rat

The Berkeley kangaroo rat is included on the Department's CNDDB "Special Animals" list. Little is known about the typical habitats favored by this species as all collections of this species occurred prior to 1940 and more recent encounters with suspected Berkeley kangaroo rats have not been verified because specimens or photos of these individuals were not been collected. What little is known is based on field notes from the early collected specimens. These notes make reference to bare ridges near rocky outcrops and thin soils with scattered chaparral and annual grass species. In general kangaroo rats are adapted to arid conditions and have nocturnal foraging habitat and adaptations to conserve water. The collections of this species occurred in the open hilltops east of the City of Berkeley, near Eureka Peak, on Mount Diablo, and at the Calaveras Reservoir Dam in Alameda County (Service, 2002b).

The CNDDB reports one occurrence of Berkeley kangaroo rat within the nine quadrangles evaluated, located approximately eight miles from the project site. The grassland within the project site may provide suitable habitat for this species.

#### San Joaquin Pocket Mouse

The San Joaquin pocket mouse is included on the Department's CNDDB "Special Animals" list. This species occurs in dry, open grassland and scrub areas on fine-textured soils at elevations from 350-600 meters. The currently known range of this species is within the Central and Salinas Valleys. San Joaquin pocket mice are active only at night during the spring and summer, and spend the rest of the year hibernating in burrows. The burrows are typically small (approximately two to three centimeters across) and the entrances are often near bushes of patches of grass.

The CNDDB reports five occurrences of San Joaquin pocket mouse within the nine quadrangles evaluated, the nearest of which is located approximately 5.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species.

[5] Please see Appendix A for the evaluation standards for the potential for species to occur.

**American Badger**

The American badger is a Department species of special concern. Badgers occupy a diversity of habitats within California. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds. Grasslands, savannas, and mountain meadows near timberline are preferred. Badgers feed primarily of burrowing rodents, such as gophers, squirrels, mice, and kangaroo rats, as well as some insects and reptiles. Badgers also break open bee hives to eat both the brood and honey. This species is active all year long and is nocturnal and diurnal. Mating occurs in summer and early fall and two to five young are born in burrows dug in relatively dry, often sandy soil, usually with sparse overstory cover.

The CNDDB reports 21 occurrences of this species within the nine quads evaluated, the nearest of which is located approximately 2.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species. The EACCS identifies potential habitat for this species within the project site (ICF International, 2010).

**San Joaquin Kit Fox**

The San Joaquin kit fox was listed as a federally endangered species on March 11, 1967 (32 FR 4001) and is also a state threatened species. Its present range extends from the southern end of the San Joaquin Valley, north to Stanislaus County along the east, and along the interior Coast Range valleys and foothills to central Contra Costa County. The kit fox typically inhabits valley alkaline scrub, valley and foothill grasslands, and open oak woodlands of low to moderate relief. Kit foxes are known to occupy human-altered habitats, such as vineyards, orchards, and petroleum fields, where denning opportunities and suitable prey are available. Man-made features, such as culverts in roadbeds and pipes, are frequently used in developed landscapes in the southern range of the kit fox. Kit foxes are thought to be weak excavators and largely dependent on rodent burrows, which they enlarge as den sites. Studies of kit fox in the northern part of their range support this presumption, as kit foxes are largely dependent on California ground squirrel burrows for the creation of den sites. In the course of a year, up to 70 different dens may be used by a single individual. Mating occurs from December to February with pups born between February and late March. Pups emerge above ground, and are fed primarily by the male adult, at approximately one month old. Pups are fed 4 to 5 months, after which, the pups begin to forage independently. Juveniles disperse as far as 19 kilometers away from natal dens. Home ranges vary in size, depending on prey availability. Average home range is approximately 500 hectares.

The CNDDB reports 37 occurrences of San Joaquin kit fox within the nine quads evaluated, the nearest of which is located approximately three miles from the project site. This species is typically found more to the east of the project site and the amount of human activity in the vicinity makes this a somewhat unlikely site for this species to establish dens. However, marginal habitat is present within the project site; and this species may forage or travel through the project site. The EACCS identifies core habitat for this species within the project site (ICF International, 2010).

**Tricolored Blackbird**

The tricolored blackbird is a Department species of special concern. This species is common locally throughout the Central Valley and in coastal districts from Sonoma County south. These birds are summer residents in northeastern California, occurring regularly only at Tule Lake, but can be found as far south as Honey Lake in some years. In winter, this species becomes more widespread along the central coast and San Francisco Bay area (Grinnell and Miller, 1944). Tricolored blackbirds breed near fresh water, preferably in emergent wetlands with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs, which also serve as their preferred nesting habitat. Nests are

built of mud and plant materials over or near fresh water, especially in emergent wetlands. This species is highly colonial and the minimum nesting colony size is about 50 pairs (Grinnell and Miller 1944). Drinking water is probably required, at least when seeds and grains are the major foods.

The CNDDB reports 11 occurrences of tricolored blackbird within the nine quadrangles reviewed, the nearest of which is approximately one mile from the project site. This species may forage over the grassland in the project site; however, no nesting habitat is present. The EACCS identifies potential foraging habitat for this species within the project site (ICF International, 2010).

**Western Burrowing Owl**

Western burrowing owls are a Department species of special concern. Burrowing owls are a year-round resident of open, dry grassland and desert habitats, and grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. In general, burrowing owls frequent open grasslands and shrublands with perches and burrows. Burrowing owls use rodent burrows (often California ground squirrel) for roosting and nesting cover. These burrows are lined with excrement, pellets, debris, grass, and feathers (occasionally are unlined). Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available. Breeding occurs from March through August, with the peak occurring in April and May. This species is semi-colonial and is probably the most gregarious owl in North America. Burrowing owls eat mostly insects, but small mammals, reptiles, birds, and carrion are also taken. This species usually hunts from a perch and hovers, hawks, dives, and hops after prey on the ground. Conversion of grassland to agriculture, poisoning of ground squirrels, and other forms of habitat destruction have led to the reduction in their numbers in the recent decades.

The CNDDB reports 93 occurrences of western burrowing owl within the nine quadrangles reviewed, the nearest of which includes a portion of the project site. Suitable habitat for this species is present within the project site; several ground squirrel burrow complexes were observed within the project site that may currently or could in the future provide breeding or wintering habitat for this species. The EACCS identifies potential habitat for this species within the project site (ICF International, 2010).

**California Horned Lark**

California horned lark is included on the Department's CNDDB "Special Animals" list. California horned larks are a common to abundant resident in a variety of open habitats and are frequently found in grasslands with low, sparse vegetation. This species builds a grass-lined cup nest in a depression on the ground, generally in the open. Breeding occurs between March and July, with peak activity occurring in May. California horned larks often form large flocks which forage and roost gregariously after breeding. This species eats mainly insects, snails, and spiders during the breeding season, and add grass and forb seeds (as well as other plant material) to their diet seasonally.

The CNDDB reports seven occurrences of California horned lark within the nine quadrangles reviewed, the nearest of which is approximately five miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Loggerhead Shrike**

The loggerhead shrike is a Department species of special concern. This species frequents open habitats with sparse shrubs and trees, suitable perches, and low or sparse herbaceous cover. This species occurs only rarely in heavily urbanized areas, but are often found in open agricultural areas with associated fencing. Nests are built upon a stable branch in densely-foliaged shrubs or trees, usually well-concealed. Nest height averages 1.3 to 50 feet above ground. Breeding occurs from March to May, with peak activity occurring in July or August. Loggerhead shrikes mainly eat large insects, but may also take small

birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. This species frequently skewers prey on a thorn, sharp twig, wire barb, or forces it into a tree crotch as a food cache for later consumption.

The CNDDB reports eight occurrences of loggerhead shrike within the nine quadrangles reviewed, the nearest of which is approximately 300 feet from the project site. This species may forage over the grassland in the project site; however, no nesting habitat is present.

**Raptors and Other Migratory Bird Species**

Raptors and their nests and migratory birds are protected under Fish and Game Code and the MBTA. While the life histories of these species vary, overlapping nesting and foraging similarities (approximately February through August) allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest habitats, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland, habitat edges, and grasslands.

Various common raptor species (such as red-tailed hawk [*Buteo jamaicensis*], red-shouldered hawk [*Buteo lineatus*], great horned owl [*Bubo virginianus*], American kestrel [*Falco sparverius*], and turkey vulture [*Cathartes aura*]) have a potential to forage within the project site. Several special-status raptor species also have the potential to forage within the project site, including golden eagle, ferruginous hawk, Swainson's hawk, northern harrier, white-tailed kite, prairie falcon, and American peregrine falcon. However, no nesting habitat for raptor species is present. The EACCS identifies potential foraging habitat for golden eagle within the project site. Additionally, migratory bird species with the potential to forage and/or nest within the project site include, but are not limited to, American robin (*Turdus migratorius*), western meadowlark, killdeer (*Charadrius vociferous*), western kingbird, Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), tree swallow (*Tachycineta bicolor*), and western bluebird (*Sialia mexicana*).

**California Tiger Salamander**

The CTS was listed as a federally threatened species on August 4, 2004 (69 FR 47211-47248). Critical habitat was designated for CTS on August 23, 2005 (70 FR 49379-49458), and went into effect on September 22, 2005. Additionally, CTS was listed as a state threatened species on March 3, 2010. The CTS is a large, stocky salamander most commonly found in annual grassland habitat, but also occurring in the grassy understory of valley-foothill hardwood and chaparral habitats, and uncommonly along stream courses in valley-foothill riparian habitats (Service, 2004). Adults spend most of their lives underground, typically in burrows of ground squirrels and other animals (Service, 2004). The California tiger salamander has been eliminated from an estimated 55 percent of its documented historic breeding sites. Currently, about 150 known populations of California tiger salamanders remain. The CTS persists in disjunct remnant vernal pool complexes in Sonoma County and Santa Barbara County, in vernal pool complexes and isolated stockponds scattered along a narrow strip of rangeland on the fringes of the Central Valley from southern Colusa County south to northern Kern County, and in sag ponds and human-maintained stockponds in the coast ranges from the San Francisco Bay Area south to the Temblor Range.

Above-ground migratory and breeding activity may occur under suitable environmental conditions from mid-October through May. Adults may travel long distances between upland and breeding sites; adults have been found more than two kilometers (1.24 miles) from breeding sites (Service, 2004). Breeding occurs from November to February, following relatively warm rains (Stebbins, 2003). The CTS breeds

and lays eggs primarily in vernal pools and other temporary rainwater ponds. Permanent human-made ponds are sometimes utilized if predatory fishes are absent; streams are rarely used for reproduction. Eggs are laid singly or in clumps on both submerged and emergent vegetation and on submerged debris in shallow water (Stebbins, 1972; Jennings and Hayes, 1994). Males typically spend 6-8 weeks at breeding ponds, while females typically spend only 1-2 weeks (Loredo et al., 1996). Eggs hatch within 10-14 days (Service, 2004) and a minimum of 10 weeks is required to complete development through metamorphosis (Jennings and Hayes, 1994), although the larval stage may last up to six months and some larvae in Contra Costa and Alameda Counties may remain in their breeding sites over the summer (Service, 2004).

The CNDDB reports 259 occurrences of CTS within the nine quadrangles reviewed. One of these occurrence includes the entire project site and an another occurrence includes a portion of the project site. No suitable aquatic breeding habitat is present within the project site; however, suitable upland and dispersal habitat is present. Several small mammal burrows were observed within the project site that may be suitable for aestivation. The EACCS identifies potential upland habitat for this species within the project site (ICF International, 2010).

**Western Pond Turtle**

The western pond turtle is a Department species of special concern. Western pond turtles are uncommon to common in permanent or nearly permanent aquatic resources in a wide variety of habitats throughout California, west of the Sierra-Cascade crest and are absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Elevation range extends from near sea level to 1,430 meters. Western pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. The home range of western pond turtles is typically quite restricted; however, ongoing research indicates that in many areas, turtles may leave the watercourse in late fall and move into upland habitats where they burrow into duff and/or soil and overwinter (Holland, 1994). However, western pond turtles remain active year-round and may move several times during the course of overwintering. The time spent in the terrestrial habitat appears highly variable; in southern California, western pond turtles may remain in these sites for only a month or two. In pond and lake habitats, however, some turtles remain in the pond during the winter (Holland, 1994). Additionally, during the spring or early summer, females move overland for up to 325 feet to find suitable sites for egg-laying. Nests are typically excavated in compact, dry soils in areas characterized by sparse vegetation, usually short grasses or forbs (Holland, 1994). Three to 11 eggs are laid from March to August depending on local conditions (Ernst and Barbour, 1972). The western pond turtle is not known to be territorial, but aggressive encounters, including gesturing and physical combat (Bury and Wolfheim, 1973), are common and may function to maintain spacing on basking sites and to settle disputes over preferred spots. This species is considered omnivorous and food sources include aquatic plant material, beetles, and a wide variety of aquatic invertebrates. Fishes, frogs, and carrion have also been reported among their food (Stebbins, 1972).

The CNDDB reports 39 occurrences of western pond turtle within the nine quadrangles reviewed, the nearest of which is located approximately 700 feet from the project site. No suitable aquatic habitat is present within the project site; however due to the proximity of Arroyo Seco Creek, the project site may provide suitable upland habitat for this species.

**San Joaquin Whipsnake**

The San Joaquin whipsnake is a Department species of special concern. Whipsnakes seek cover in rodent burrows, bushes, trees, and rock pies. This species hibernates in soil or sand approximately 0.3 meter (1 foot) below the surface, sometimes at the bases of plants. Little is known about nest sites. In

desert regions, whipsnakes may be attracted to water to drink or ambush prey. Open terrestrial habitats are preferred, but whipsnakes will occasionally climb trees and bushes to bask, seek prey, or take cover. Diet consists of rodents, lizards and their eggs, snakes (including rattlesnakes), birds and their eggs, young turtles, insects, and carrion. Whipsnakes search actively for prey, with their heads elevated. They pole their heads in burrows or climb trees, using both vision and olfaction to detect prey (Stebbins, 1985). Mating occurs in April and May, eggs are laid in June and July, and the first young appear in late August to early September.

The CNDDB reports four occurrences of San Joaquin whipsnake within the nine quadrangles reviewed, the nearest of which is approximately 1,500 feet from the project site. The grassland within the project site may provide suitable habitat for this species.

**California Red-Legged Frog**

The CRLF was listed as a federally Threatened species on June 24, 1996 (61 FR 25813-25833) and is also a Department species of special concern. Critical habitat was designated for CRLF on April 13, 2006 (71 FR 19244-19346) and revised on March 17, 2010 (75 FR 12816-12959). The revised critical habitat went into effect on April 16, 2010. This species has been extirpated from 70% of its former range and now is found in coastal drainages of central California, from Marin County, California, south to northern Baja California, Mexico, and in isolated drainages in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The CRLF is known to use and breed in marshy habitats, springs, natural and artificial ponds, and slack water pools of rivers and streams. In addition, CRLF is known to occur and reproduce in tidally-influenced coastal marshes under certain conditions. They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity or to avoid desiccation. Radiotelemetry data indicates that adults engage in straight-line breeding season movements irrespective of riparian corridors or topography and they may move up to two miles between non-breeding and breeding sites (Bulger et. al., 2003). During the non-breeding season, a wider variety of aquatic habitats are used including small pools in coastal streams, springs, water traps, and other ephemeral water bodies. CRLF may also move up to 300 feet from aquatic habitats into surrounding uplands, especially following rains, where individuals may spend days or weeks (Bulger et al., 2003.)

The CNDDB reports 260 occurrences of CRLF within the nine quadrangles reviewed, the nearest of which is located approximately 130 feet from the project site, associated with the Arroyo Seco Creek. No suitable aquatic breeding or non-breeding habitat is present within the project site; however, suitable upland and dispersal habitat is present. Several small mammal burrows were observed within the project site that may be suitable for use as upland refugia. The EACCS identifies potential upland and dispersal habitat for this species within the project site (ICF International, 2010).

**Western Spadefoot Toad**

The western spadefoot toad is a Department species of special concern. Western spadefoot toads are distributed throughout the Central Valley and adjacent foothills and are typically quite common where they occur. In the Coast Ranges, this species is found from Point Conception in Santa Barbara County, south to the Mexican border. Elevations of occurrence extend from near sea-level to 1,360 meters. Rarely found on the surface, spadefoot toads spend most of the year in underground burrows, which they may construct themselves or may improve (from small mammals). Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains. Egg masses are attached to plant material or the upper surfaces of submerged rocks. Tadpoles consume planktonic organisms and algae, but are also carnivorous and may consume dead aquatic larvae of amphibians (including cannibalism). Recently metamorphosed juveniles seek refuge in the immediate vicinities of breeding ponds.

The CNDDB reports 10 occurrences of western spadefoot toad within the nine quadrangles reviewed, the nearest of which is approximately 0.5 mile from the project site. The grassland within the project site may provide suitable upland habitat for this species based on the proximity of the project site to Arroyo Seco Creek, which may provide low quality breeding habitat.

**Callippe Silverspot Butterfly**

The callippe silverspot butterfly was listed as federally endangered on December 5, 1997 (62 FR 64306-64320). Historically, this species occurred on the west side of the San Francisco Bay, from Twin Peaks in San Francisco to the vicinity of La Honda in San Mateo County (ICF International, 2010). When the species was listed, only two populations were known to be extant within the historic range: one population at San Bruno Mountain in San Mateo County and one population in a city park in Alameda County; however, the population at the city park is now believed to be extirpated. Four additional populations have been observed; however, only one population, located in the hills between the City of Vallejo and the City of Cordelia has been verified to be the endangered subspecies (Service, 2009). Essential features of callippe silverspot butterfly habitat includes grasslands with proper topography in the San Francisco Bay area, sufficient larval host plants (Johnny jump-ups [*Viola pedunculata*]), adequate nectar sources (including thistles, such as *Silybum* sp., *Carduus* sp., and *Cirsium* sp., and mints, such as *Monardella* sp.) , within an area influenced by coastal fog, and hilltops for mating congregations. However, because this species has been observed flying distances of approximately one mile, these habitat features are not required to be adjacent to one another (ICF International, 2010).

Female callippe silverspot butterflies lay their eggs on the dried remains of Johnny jump-ups or on the surrounding debris. Larvae hatch within a week, and then spin a silk pad upon which they pass the summer and winter in diapause. In the spring, the larvae search for food plants, grow through five larval stages, and pupate in a composite leave and silk chamber. Adults emerge approximately two weeks later and fly for about three weeks from approximately mid-May to late July, depending on environmental conditions (Service, 2009).

The CNDDB does not report any occurrences of this species within the nine quadrangles evaluated; however, one of the unverified occurrences is located in the hills near the City of Pleasanton. Additionally, the EACCS identifies potential habitat for this species within the project site (ICF International, 2010). The grassland within the project site may support the host plant for this species.

## SPECIAL-STATUS PLANT SPECIES

**Large-Flowered Fiddleneck**

Large-flowered fiddleneck is a federally endangered, state endangered, and CNPS RPR 1B species. It is an annual herb in the Boraginaceae family that blooms April through May. Large-flowered fiddleneck is typically associated with cismontane woodland and valley and foothill grassland, within a range of 275-550 meters in elevation. This species is known from fewer than five natural occurrences in San Joaquin, Alameda, and Contra Costa Counties.

The CNDDB reports three occurrences of large-flowered fiddleneck within the nine quadrangles reviewed, the nearest of which is approximately seven miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Big-Scale Balsamroot**

Big-scale balsamroot is a CNPS List 1B species. It is a perennial herb in the Asteraceae family that blooms March through June. Big-scale balsamroot is typically associated with chaparral, cismontane

woodland and valley and foothill grassland, within a range of 90-1,555 meters in elevation. Additionally, this species may occasionally occur on serpentine soils. This species is known from fewer than five natural occurrences in San Joaquin, Alameda, and Contra Costa Counties.

The CNDDB reports one occurrence of big-scale balsamroot within the nine quadrangles reviewed, located approximately 1.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Big Tarplant**

Big tarplant is a CNPS RPR 1B species in the Asteraceae family. This annual herb blooms July through October. Big tarplant is typically associated with valley and foothill grassland at elevations of 30-505 meters.

The CNDDB reports 19 occurrences of big tarplant within the nine quadrangles reviewed, the nearest of which is located approximately 3.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species. The EACCS does not identify potential habitat for this species within the project site (ICF International, 2010).

**Round-leaved Filaree**

Round-leaved filaree is a CNPS RPR 1B species in the Geraniaceae family. This annual herb is found at elevations between 15-1,200 meters in cismontane woodland and valley and foothill grassland on clay soils. The blooming period is from March through May.

The CNDDB reports eight occurrences of round-leaved filaree within the nine quadrangles reviewed, the nearest of which is located approximately 4.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Mount Diablo Fairy-Lantern**

Mount Diablo fairy-lantern is a CNPS RPR 1B species in the Liliaceae family. This bulbiferous herb blooms from April through June. Mount Diablo fairy-lantern is typically associated with chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands at elevations of 30-840 meters.

The CNDDB reports eight occurrences of Mount Diablo fairy-lantern within the nine quadrangles reviewed, the nearest of which is located approximately nine miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Congdon's tarplant**

Congdon's tarplant is a CNPS RPR 1B species in the Asteraceae family. This annual herb is associated with valley and foothill grassland on alkaline soils at elevations of 0-230 meters. The blooming period is from May to November.

The CNDDB reports 15 occurrences of Congdon's tarplant within the nine quadrangles reviewed, the nearest of which is located approximately 4.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species. The EACCS does not identify potential habitat for this species within the project site (ICF International, 2010).

**Recurved Larkspur**

Recurved larkspur is a CNPS RPR 1B species. This perennial herb in the Ranunculaceae family blooms from March through June. Recurved larkspur is typically associated with chenopod scrub, cismontane woodlands, and valley and foothill grasslands on alkaline soils at elevations ranging from 3-750 meters.

The CNDDB reports four occurrences of recurved larkspur within the nine quadrangles reviewed, the nearest of which is located approximately 10.5 miles from the project site. The grassland within the project site may provide suitable habitat for this species. The EACCS does not identify potential habitat for this species within the project site (ICF International, 2010).

**Diamond-Petaled California Poppy**

Diamond-petaled California poppy is a CNPS RPR 1B species in the Papaveraceae family. This annual herb blooms from March through April. Diamond-petaled California poppy is typically associated with valley and foothill grasslands on alkaline and clay soils at elevations of 0-970 meters.

The CNDDB reports three occurrences of diamond-petaled California poppy within the nine quadrangles reviewed, the nearest of which is located approximately five miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Diablo Helianthella**

Diablo helianthella is a CNPS RPR 1B species in the Asteraceae family. This perennial herb blooms from March through June. Diablo helianthella is typically found in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grasslands at elevations of 60-1,300 meters.

The CNDDB reports 10 occurrences of Diablo helianthella within the nine quadrangles reviewed, the nearest of which is located approximately nine miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Showy Golden Madia**

Showy golden madia is a CNPS RPR 1B species in the Asteraceae family. This annual herb blooms from March through May. Showy golden madia typically occurs in cismontane woodland and valley and foothill grassland at elevations of 25-1,215 meters.

The CNDDB reports one occurrence of showy golden madia within the nine quadrangles reviewed, located approximately 10 miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Shining Navarretia**

Shining navarretia is a CNPS RPR 1B species. This annual herb in the Polemoniaceae family blooms from April through July. Shining navarretia is typically associated with cismontane woodland, valley and foothill grasslands, and vernal pools at elevations of 76-1,000 meters.

The CNDDB reports one occurrence of shining navarretia within the nine quadrangles reviewed, located approximately seven miles from the project site. The grassland within the project site may provide suitable habitat for this species.

**Caper-Fruited Tropidocarpum**

Caper-fruited tropidocarpum is a CNPS RPR 1B species in the Brassicaceae family. This annual herb blooms from March through April. Caper-fruited tropidocarpum is typically found on alkaline hills in valley and foothill grassland at elevations ranging from 1-455 meters.

The CNDDB reports seven occurrences of caper-fruited tropidocarpum within the nine quadrangles reviewed, the nearest of which is a large non-specific occurrence from 1897 that includes the project site. This occurrence is noted to occur near the train tracks east of the City of Livermore and it is unlikely that this occurrence was found within the project site. The grassland within the project site may provide suitable habitat for this species.

## 4.2. Sensitive Habitats

No sensitive habitats were identified within the project site during the reconnaissance-level survey.

# Chapter 5. Impacts and Mitigation

## 5.1. Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the proposed action would:

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 Department or Service; or

b) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the Department or Service; or

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

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; or

e) conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance; or

f) conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan; or

## 5.2. Impact Analysis Approach

This impact analysis addresses direct and indirect impacts that may result from the construction and operation of the project. Direct impacts are those effects of a project that occur at the same time and place of project construction, such as removal of habitat from ground disturbance. Indirect impacts are those effects of a project that occur either later in time or at a distance from the project location but are reasonably foreseeable. Direct and indirect impacts can also vary in duration and result in temporary, short-term, and long-term effects on biological resources. A temporary effect would occur only during the activity. A short-term effect would last from the time an activity ceases to some intermediate period of approximately 1-5 years (i.e., repopulation of habitat following restoration). A long-term or permanent effect would last longer than 5 years after an activity ceases. Long-term effects may include the ongoing maintenance and operation of a project, or may result in a permanent change in the condition of a resource, in which case it could be considered a permanent impact. The analysis herein includes a comprehensive, detailed analysis of the potential impacts to biological resources with the potential to occur within the project site.

## 5.3. Impacts Analysis

### SPECIAL-STATUS SPECIES

Several special-status species have the potential to occur within the project site. Federally endangered or threatened species with the potential to occur include San Joaquin kit fox, CTS, CRLF, and large-flowered fiddleneck. San Joaquin kit fox, CTS, and large-flowered fiddleneck are also listed as state endangered or threatened species, as is Swainson's hawk. California red-legged frog is also listed as a Department species of special concern. Other Department species of special concern that have the potential to occur within the project site include pallid bat, Townsend's big-eared bat, American badger, western burrowing owl, northern harrier, loggerhead shrike, western pond turtle, San Joaquin whipsnake,

and western spadefoot toad. Several species listed as California fully protected species may also occur within the project site, including golden eagle, white-tailed kite, and American peregrine falcon. Additionally, species on the Department's "Special Animals" list with the potential to occur includes Berkeley kangaroo rat, San Joaquin pocket mouse, tricolored blackbird, ferruginous hawk, California horned lark, and prairie falcon. The large-flowered fiddleneck is also a CNPS RPR 1B species. Other CNPS RPR 1B species that may occur within the project site includes big-scale balsamroot, big tarplant, round-leaved filaree, Mount Diablo fairy-lantern, Congdon's tarplant, recurved larkspur, diamond-petaled California poppy, Diablo helianthella, showy golden madia, shining navarretia, and caper-fruited tropidocarpum.

Although the special-status species identified above have the potential to occur within the project site, not all species have the potential to be impacted by the project. Highly mobile bat and raptor species that may forage, but do not have the potential to breed within the project site, would likely avoid the project site during construction and forage in other open space areas in the vicinity. As such, the project will result in no effect to the pallid bat, Townsend's big-eared bat, hoary bat, tricolored blackbird, golden eagle, ferruginous hawk, Swainson's hawk, northern harrier, white-tailed kite, prairie falcon, American peregrine falcon, or loggerhead shrike.

Impacts to special-status species may include direct and indirect impacts associated with heavy equipment and construction activities that could result in direct mortality of individuals, soil compaction, dust, vegetation removal/loss of habitat, disturbance and harassment of individuals, erosion, destruction or disturbance of nests, and introduction and spread of non-native, invasive species. These are considered potentially significant impacts that can be reduced to a less-than-significant level with implementation of the mitigation measures identified below.

**Mitigation Measures for Impacts to Special-Status Species**

***General Avoidance and Minimization Measures***

**Bio-1:** A qualified biologist will conduct an Environmental Sensitivity Training for the construction crew prior to any construction activities. A qualified biologist will meet with the construction crew at the onset of construction at the project site to educate the construction crew on the following: 1) the appropriate access route(s) in and out of the construction area and review project boundaries; 2) how a biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the Service and Department; and 6) the proper procedures if a special-status species is encountered within the project site.

**Bio-2:** Protective fencing will be placed prior to and during construction as to keep construction equipment and personnel from impacting vegetation outside of work limits. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact.

**Bio-3:** Following construction, disturbed areas will be restored to pre-project contours to the maximum extent possible and revegetated using locally-occurring native species and native erosion control seed mix, per the recommendations of a qualified biologist.

**Bio-4:** Grading, excavating, and other activities that involve substantial soil disturbance will be planned and carried out in consultation with a qualified hydrologist, engineer, or erosion control specialist, and will utilize standard erosion control techniques to minimize erosion and sedimentation

to native vegetation (pre-, during, and post-construction). Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used. Acceptable substitutes include coconut coir matting or tackified hydroseed compounds.

**Bio-5:** No pets, hunting, firearms, or open fires not required by the project will be allowed on the project site at any time.

**Bio-6:** All food-related and other trash will be disposed of in closed containers and removed from the project area at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel will not feed or otherwise attract wildlife to the area.

**Bio-7:** Pipes, culverts, and similar materials greater than four inches in diameter will be stored so as to prevent special-status wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.

**Bio-8:** Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no special-status wildlife species are trapped. Earthen ramps will be installed at intervals prescribed by a qualified biologist.

***Berkeley Kangaroo Rat, San Joaquin Pocket Mouse, San Joaquin Whipsnake, and Western Spadefoot Toad***

Implementation of mitigation measures **Bio-1** to **Bio-8** shall be implemented to reduce impacts to Berkeley kangaroo rat, San Joaquin pocket mouse, San Joaquin whipsnake, and western spadefoot toad resulting from construction of the project.

***American Badger, Western Burrowing Owl, and Western Pond Turtle***

**Bio-8:** To avoid and reduce impacts to the American badger, the project applicant will retain a qualified biologist to conduct focused pre-construction surveys for badger dens in all suitable habitat proposed for construction, ground disturbance, or staging no more than two weeks prior to construction. If no potential badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential significant impacts to the American badger:

a. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

b. If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three to five day period. After the qualified biologist determines that badgers have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

**Bio-9:** In order to avoid impacts to active western burrowing owl nests, a qualified biologist will conduct pre-construction surveys in suitable habitat within the construction footprint and within 250 feet of the footprint prior to construction. The survey shall conform to the Department's 1995 Staff Report protocol. If no western burrowing owls are found, no further mitigation is required. If it is determined that western burrowing owls occupy the site during the non-breeding season (September

1 through January 31), then a passive relocation effort (e.g., blocking burrows with one-way doors and leaving them in place for a minimum of three days) may be necessary to ensure that the owls are not harmed or injured during construction. Additionally a construction-free buffer of 150 feet will be established around all active owl nests. Once it has been determined that the owls have vacated the site, the burrows can be collapsed, and ground disturbance can proceed. If western burrowing owls are detected within the construction footprint or immediately adjacent lands (i.e. within 250 feet of the footprint) during the breeding season (February 1 to August 31), a construction-free buffer of 250 feet will be established around all active owl nests. The buffer area will be enclosed with temporary fencing, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. After the breeding season, passive relocation of any remaining owls may take place as described above.

**Bio-10:** A qualified biologist will survey suitable habitat no more than 48 hours before the onset of work activities for the presence of western pond turtle. If pond turtles are found and these individuals are likely to be killed or injured by work activities, the biologist will be allowed sufficient time to move them from the site before work activities begin. The biologist will relocate the pond turtles the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the project.

### *Nesting Migratory Bird Species and California Horned Lark*

**Bio-11:** Construction activities that may directly (e.g., vegetation removal) or indirectly (e.g., noise/ground disturbance) affect protected nesting avian species will be timed to avoid the breeding and nesting season. Specifically, vegetation removal can be scheduled after September 16 and before January 31. Alternatively, a qualified biologist will be retained by the project applicant to conduct pre-construction surveys for protected nesting avian species within 500 feet of proposed construction activities if construction occurs between February 1 and September 15. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, surveys for nesting birds may be required to continue during construction to address new arrivals, and because some species breed multiple times in a season. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans and in coordination with the Service and Department, as needed.

If active nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place (generally 300 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

### *CTS, CRLF, and San Joaquin Kit Fox*

To mitigate for potential impacts to CTS, CRLF, and San Joaquin kit fox, the following three options are recommended:

1. Conduct protocol-level surveys for each species to determine presence/absence within the project site with the approval of the Service and Department (as appropriate); or
2. Consult with the Service and Department (as appropriate) regarding the potential presence of each species on the property and obtain a letter of concurrence that the project is not likely to result in take of these species; or
3. Assume presence.

**Bio-12:** If it is determined or assumed that CTS, CRLF, and/or SJKF are present within the project site, the project shall comply with ESA and CESA. In doing so, a letter of concurrence that the project is not likely to result in take of CTS, CRLF, and/or SJKF shall be obtained from the Service and/or Department prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service and/or Department for CTS, CRLF, and/or SJKF prior to the initiation of ground disturbance.

### *Callippe Silverspot Butterfly*

**Bio-13:** A qualified biologist should be retained to conduct survey(s) for the host plant species (Johnny jump-ups) during the appropriate blooming period (February-April), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the Service shall be contacted prior to construction in order to determine the need for focused surveys for Callippe silverspot butterflies.

**Bio-14:** If it is determined or assumed that Callippe silverspot butterflies are present within the project site, the project shall comply with ESA. In doing so, a letter of concurrence that the project is not likely to result in take of Callippe silverspot butterflies shall be obtained from the Service prior to the initiation of construction. Alternatively a take statement or take permit for the project shall be obtained from the Service for Callippe silverspot butterflies prior to the initiation of ground disturbance.

### *Large-Flowered Fiddleneck*

Implementation of the mitigation measure **Bio-1** and the following measures are recommended to reduce or avoid impacts of project actions to large-flowered fiddleneck:

**Bio-15:** A qualified biologist should be retained to conduct survey(s) for large-flowered fiddleneck, during the appropriate blooming period (April-May), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the project shall comply with ESA and CESA. In doing so, the Service and Department shall be contacted prior to construction in order to develop an appropriate avoidance, minimization, and mitigation strategy for impacts to this species, and obtain a letter of concurrence that the project is not likely to result in take of large-flowered fiddleneck, or a take statement or take permit.

### *Special-Status Plants*

Implementation of the mitigation measure **Bio-1** and the following measures are recommended to reduce or avoid impacts of project actions to special-status plant species:

**Bio-16:** A qualified biologist should be retained to conduct survey(s) for the CNPS RPR 1B plant species identified above, during the appropriate blooming period(s), to determine their presence within the project site. The biologist should prepare a report that provides the results of the survey, including a description of the baseline habitat conditions, and, if found, the number of individuals and location of the populations identified within the area of impact. If no individuals are found, no further mitigation is necessary. If individuals are found, the following measures shall be implemented:

c. Individuals shall be avoided to the maximum extent possible.

d. If avoidance is not feasible, species shall be replaced at a 1:1 success ratio for the acreage or individuals impacted (depending on species impacted) and a Rare Plant Restoration Plan shall be prepared by a qualified biologist and implemented. The plan shall include, but is not limited to, the following:

- a description of the baseline conditions of the habitats within the area of impact, including the presence of any special-status species, their locations, and densities;
- procedures to control non-native species invasion and elimination of existing non-native species within the area of impact;
- provisions for ongoing training of facility maintenance personnel to ensure compliance with the requirements of the plan;
- a detailed description of on-site and off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications, including, if required by the Department, increased planting ratio to ensure the 1:1 success ratio; and
- a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

### *Non-Native Invasive Species Control*

**Bio-17:** The following measures will be implemented to reduce the introduction and spread of non-native, invasive species:

- Any landscaping or replanting required for the project will not use species listed as noxious by the California Department of Food and Agriculture (CDFA).
- Bare and disturbed soil will be landscaped with CDFA recommended seed mix or plantings from locally adopted species to preclude the invasion on noxious weeds in the project site.
- Any straw used for erosion control will either be rice straw or weed-free straw.
- Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds, before mobilizing to arrive at the construction site and before leaving the construction site.
- All non-native, invasive plant species will be removed from disturbed areas prior to replanting.

## RIPARIAN HABITAT AND OTHER SENSITIVE NATURAL COMMUNITIES

No riparian habitat or other sensitive natural communities are present within the project site. Therefore, no impacts to sensitive habitats will occur as a result of the project.

## FEDERALLY PROTECTED WETLANDS

No federally protected wetlands are present within the project site. Therefore, no impacts to federally protected wetlands will occur as a result of the project.

## WILDLIFE MOVEMENT AND NURSERY SITES

Implementation of mitigation measures **Bio-1** to **Bio-6** shall be implemented to reduce impacts to special-status wildlife movement and nursery sites resulting from construction of the project.

## LOCAL POLICIES/ORDINANCES PROTECTING BIOLOGICAL RESOURCES

The project will not conflict with any local policies or ordinances protecting biological resources.

## ADOPTED HCPS OR NCCPS

The project will not conflict with the provisions of an adopted HCP.

# Chapter 6. References

Baldwin, B. G, et. al. 2012. The Jepson Manual – Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press. Berkeley, CA. 1600 pp.

Bulger, J.B., N.J. Scott Jr., and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frog *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation, Vol. 110. Pp. 85-95.

Bury, R.B. and J.H. Wolfheim. 1973. Aggression in free-living pond turtles (Clemmys marmorata). Bio-Science, Vol. 23. Pp. 659-662.

[Department] California Department of Fish and Wildlife. 2008. California Wildlife Relationships System: Life History Accounts. Database Version 8.2.

[Department] California Department of Fish and Wildlife. 2010. List of California terrestrial natural communities recognized by the Natural Diversity Database.

[Department] California Department of Fish and Wildlife. 2011. Special Animals List. Available online at: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf

[Department] California Department of Fish and Wildlife. 2014. California Natural Diversity Database Rare Find 5 Report. Available online at: https://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp

[CNPS] California Native Plant Society. 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available online at: http://www.rareplants.cnps.org/

Ernst, C.H. and R.W. Barbour. 1972. Turtles of the United States. University Kentucky Press, Lexington, KY. 347 pp.

Grinnell, J and A.H. Miller. 1944. The Distribution of Birds of California. Pacific Coast Avifauna No. 27.

Holland, D. C. 1994. The Western Pond Turtle: Habitat and History. Final Report. Portland, OR: U.S. Department of Energy, Bonneville Power Administration. Available online at: http://www.efw.bpa.gov/Environment/EW/EWP/DOCS/REPORTS/WILDLIFE/W62137-1.pdf

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final report to the California Department of Fish and Game, Inland Fisheries Division.255 pp.

Jepson Flora Project. 2014. Jepson Online Interchange for California floristics. Available online at: http://ucjeps.berkeley.edu/interchange.html

Loredo, I., D. Van Vuren, and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. Journal of Herpetology, Vol. 30(2). Pp. 282-285.

Munz, P.A. and D.D. Keck. 1973. A California flora and supplement. University of California Press, Berkeley, CA. 1681 pp., + 224 pp. supplement.

Remsen, J.V. Jr. 1978. Bird species of special concern in California. California Dept. of Fish and Game, Nongame Wildlife Investigations, Wildlife Management Branch Administrative Report No. 78-1.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A manual of California vegetation 2nd Edition. California Native Plant Society, Sacramento, CA. 1300 pp.

Stebbins, R.C. 1972. California amphibians and reptiles. University of California Press, Berkeley, CA. 152 pp.

Stebbins, R.C. 1985. Western reptiles and amphibians. Houghton Mifflin Company, Boston, MA.336 pp.

Stebbins, R.C. 2003. Western reptiles and amphibians, 3rd edition. Houghton Mifflin Company, New York, NY. 533 pp.

Thelander, C. (ed.). 1994. Life on the edge: A guide to California's endangered natural resources: wildlife. BioSystems Books, Santa Cruz, CA.

[Service] U.S. Fish and Wildlife Service. 1967. Endangered Species. Federal Register, Vol. 32 (48). Pp. 4001.

[Service] U.S. Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Red-legged Frog; Final Rule. Federal Register, Vol. 61(101). Pp. 25813-25833.

[Service] U.S. Fish and Wildlife Service. 1997. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Callippe Silverspot Butterfly and the Behren's Silverspot Butterfly and Threatened Status for the Alameda Whipsnake, Final Rule. Federal Register Vol. 62 (234). Pp. 64306-64320.

[Service] U.S. Fish and Wildlife Service. 2002a. Recovery Plan for the California red-legged frog (*Rana aurora draytonii).* U.S. Fish and Wildlife Service, Portland, OR.

[Service] U.S. Fish and Wildlife Service. 2002b. Draft Recovery Plan for Chaparral and Scrub Community Species East of San Francisco Bay, California. 306 pp.

[Service] U.S. Fish and Wildlife Service. 2004. Endangered and threatened wildlife and plants; Determination of threatened status for the California Tiger Salamander; and special rule exemption for existing routine ranching activities; Final rule. Federal Register, Vol. 69(149). Pp. 47211-47248.

[Service] U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander; Central Population; Final Rule. Federal Register, Vol. 70(162). Pp 49379-49458.

[Service] U.S. Fish and Wildlife Service. 2006. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Red-legged Frog and Special Rule Exemption Associated with Final Listing for Existing Routine Ranching Activities; Final rule. Federal Register, Vol. 71(71). Pp. 19244-19292.

[Service] U.S. Fish and Wildlife Service. 2009. Callippe Silverspot Butterfly 5-Year Review. 29 pp.

[Service] U.S. Fish and Wildlife Service. 2010a. Birds Protected by the Migratory Bird Treaty Act. Available online at: http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtintro.html

[Service] U.S. Fish and Wildlife Service. 2010b. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the California Red-legged Frog; Final rule. Federal Register, Vol. 75(51). Pp. 12816-12959.

[Service] U.S. Fish and Wildlife Service. 2015. List of Threatened and Endangered Species with the potential to occur. Available online at: http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm

[USDA-NRCS] U.S. Department of Agriculture – Natural Resources Conservation Service. 2007. Hydric Soils of the United States, February 2007. Available online at: http://soils.usda.gov/use/hydric/

USDA-NRCS] U.S. Department of Agriculture – Natural Resources Conservation Service. 2013. Web Soil Survey Database. Available online at: http://websoilsurvey.nrcs.usda.gov/app/

[USGS] U.S. Geological Survey. 2013. The National Map. Available online at: http://nationalmap.gov/viewer.html

Williams, D. 1986. Mammalian species of special concern in California. California Department of Fish and Game Report 86-1. 112 pp.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White (eds.). 1988. California's wildlife, Volume I: Amphibians and reptiles. California Department of Fish and Game, Sacramento, CA. 272 pp.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. California's Wildlife, Volume II: Birds. California Department of Fish and Game, Sacramento, CA. 731 pp.

# **Appendix A** Table of Species with the Potential to Occur within the Project Site

# Special-Status Species Table

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| **MAMMALS** | | | |
| *Antrozous pallidus*<br>Pallid bat | -- / CSC / -- | Occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Most common in open, dry habitats with rocky areas for roosting. Day roosts include caves, crevices, mines, and occasionally hollow trees and buildings. Seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Similar structures are used for night roosting and will also use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts. | **Low:** Suitable foraging habitat is present within the project site; however, no roosting habitat is present. The CNDDB reports two occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately two miles from the project site. |
| *Corynorhinus townsendii*<br>Townsend's big-eared bat | -- / CSC / -- | Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. | **Low:** Suitable foraging habitat is present within the project site; however, no roosting habitat is present. The CNDDB reports four occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 4.5 miles from the project site. |
| *Dipodomys heermanni berkeleyensis*<br>Berkeley kangaroo rat | -- / CNDDB / -- | Found in annual grassland, coastal scrub, mixed and montane chaparral, and early successional stages (sparse to open canopy) of valley foothill hardwood and hardwood-conifer habitats. | **Low:** Suitable habitat is present within the project site. The CNDDB reports one occurrence of this species within the nine quads evaluated, located approximately eight miles from the project site. |
| *Lasiurus cinereus*<br>Hoary bat | -- / CNDDB / -- | Prefers open habitats or habitat mosaics with access to trees for cover and open areas or edge for feeding. Generally roost in dense foliage of trees; does not use buildings for roosting. Winters in California and Mexico and often migrates towards summer quarters in the north and east during the spring. Young are born and reared in summer grounds, which is unlikely to occur in California. | **Low:** Suitable foraging habitat is present within the project site; however, no roosting habitat is present. The CNDDB reports one occurrence of this species within the nine quads evaluated, located approximately 3.5 miles from the project site. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Neotoma fuscipes annectens* San Francisco dusky-footed woodrat | -- / CSC / -- | Forest habitats of moderate canopy with moderate to dense understory. Also occurs in chaparral habitats. | **Unlikely:** No suitable habitat. |
| *Perognathus inornatus* San Joaquin pocket mouse | -- / CNDDB / -- | Typically found in grasslands and blue oak savanna, needs friable soils. | **Low:** Suitable habitat is present within the project site. The CNDDB reports five occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 5.5 miles from the project site. |
| *Taxidea taxus* American badger | -- / CSC / -- | Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds. | **Moderate:** Suitable habitat is present within the project site. The CNDDB reports 21 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 2.5 miles from the project site. The EACCS identifies potential habitat for this species within the project site. |
| *Vulpes macrotis mutica* San Joaquin Kit fox | FE / ST / -- | Open, level areas with loose-textured soils supporting scattered, shrubby vegetation with little human disturbance. Live in annual grasslands or grassy open stages dominated by scattered brush, shrubs, and scrub. | **Low:** This species is typically found more to the east of the project site and the amount of human activity in the vicinity makes this a somewhat unlikely site for this species to establish dens. However, marginal habitat is present within the project site; and this species may forage or travel through the project site. The CNDDB reports 37 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately three miles from the project site. The EACCS identifies core habitat for this species within the project site. |
| **BIRDS** | | | |
| *Accipiter cooperii* Cooper's hawk (nesting) | -- / CNDDB / -- | Resident throughout most of the wooded portion of the state. Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently. Seldom found in areas without dense tree stands, or patchy woodland habitats. | **Unlikely:** No suitable habitat. |
| *Accipiter striatus* Sharp-shinned hawk (nesting) | -- / CNDDB / -- | Uses dense stands in close proximity to open areas. Roosts in intermediate to high-canopy forest. Nests in dense, even-aged, single-layered forest canopy. Winters in woodlands. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Agelaius tricolor* Tricolored blackbird (nesting colony) | -- / CSC / -- | Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports 11 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately one mile from the project site. The EACCS identifies potential foraging habitat for this species within the project site. |
| *Aquila chrysaetos* Golden eagle (nesting & wintering) | -- / CFP / -- | Use rolling foothills, mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, cliffs, and rocky outcrops. Nest in secluded cliffs with overhanging ledges as well as large trees. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports 20 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately nine miles from the project site. The EACCS identifies potential foraging habitat for this species within the project site. |
| *Athene cunicularia* Burrowing owl (burrow sites & some wintering sites) | -- / CSC / -- | Year round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available. | **High:** Suitable foraging and nesting habitat is present within the project site. Several burrow complexes were observed within the project site that may currently or could in the future provide breeding or wintering habitat for this species. The CNDDB reports 93 occurrences of this species within the nine quads evaluated. The nearest occurrence includes a portion of the project site. The EACCS identifies potential habitat for this species within the project site. |
| *Buteo regalis* Ferruginous hawk (wintering) | -- / CNDDB/ -- | An uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges and a fairly common winter resident of grassland and agricultural areas in southwestern California. Frequent open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Does not breed in California. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports seven occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 1.5 miles from the project site. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Buteo swainsoni* Swainson's hawk (nesting) | -- / ST / -- | Generally found associate with plains, range, open hills, and sparse trees. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports 27 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 9.5 miles from the project site. |
| *Circus cyaneus* Northern harrier (nesting) | -- / CSC / -- | Generally found in flat open areas with tall, dense grasses, shrubs, and edges for cover and breeding. Use tall grasses in wetlands or at wetland borders for nesting. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports two occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 11 miles from the project site. |
| *Coccyzus americanus occidentalis* Western yellow-billed cuckoo | FT / SE / -- | Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of the vegetation. | **Unlikely:** No suitable habitat. |
| *Elanus leucurus* White-tailed kite (nesting) | -- / CFP / -- | Open groves, river valleys, marshes, and grasslands. Prefer such area with low roosts (fences etc.). Nest in shrubs and trees adjacent to grasslands. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports five occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 1.5 miles from the project site. |
| *Eremophila alpestris actia* California horned lark | -- / CNDDB / -- | Variety of open habitats, usually where large trees and/or shrubs are absent. Found from grasslands along the coast to deserts at sea-level and alpine dwarf-shrub habitats are higher elevations. Builds open cup-like nests on the ground. | **Moderate:** Suitable foraging and nesting habitat is present within the project site. The CNDDB reports seven occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately five miles from the project site. |
| *Falco mexicanus* Prairie falcon (nesting) | -- / CNDDB / -- | Associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Uses open terrain for foraging; nests in open terrain with canyons, cliffs, escarpments, and rock outcrops. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports eight occurrences of this species within five of the nine quads evaluated. No specific location information is available for this species. There is no occurrence of this species for the quad within which the project site occurs. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Falco peregrinus anatum* American peregrine falcon (nesting) | -- / CFP / -- | Forages for other birds over a variety of habitats. During migration and winter they can be found in nearly any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains. Breeds primarily on rocky cliffs but may use skyscrapers in urban areas. | **Low:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports two occurrences of this species within one of the nine quads evaluated. No specific location information is available for this species. There is no occurrence of this species for the quad within which the project site occurs. |
| *Haliaeetus leucocephalus leucocephalus* Bald eagle (nesting & wintering) | -- / SE & CFP /-- | Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near waters. Roosts communally in winter in dense, sheltered, remote conifer stands. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Often chooses largest tree in a stand on which to build stick platform nest. Require large bodies of water, or free flowing rivers with abundant fish. | **Unlikely:** No suitable habitat. |
| *Lanius ludovicianus* Loggerhead shrike (nesting) | -- / CSC / -- | Open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Nests are often built in thorny vegetation, but in the absence of trees or shrubs, they may nest in brush piles or tumbleweeds. | **High:** Suitable foraging habitat is present within the project site; however, no nesting habitat is present. The CNDDB reports eight occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 300 feet from the project site. |
| *Melospiza melodia* Song sparrow ("Modesto" population) | -- / CSC / -- | Wetlands and riparian forests in the California Central Valley. | **Unlikely:** No suitable habitat. |
| *Sterna antillarum browni* California least tern (nesting colony) | FE / SE&CFP /-- | Sea beaches, bays, large rivers, and bars. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| **REPTILES AND AMPHIBIANS** | | | |
| *Ambystoma californiense*<br>California tiger salamander | FT / ST /-- | Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources. | **High:** Suitable upland and dispersal habitat is present within the project site. Numerous small mammal burrows were observed within the project site that are suitable for aestivation. The CNDDB reports 259 occurrences of this species within the nine quads evaluated. The nearest occurrence includes the entire project site and another occurrence includes a portion of the project site.<br>The EACCS identifies potential upland habitat for this species within the project site. |
| *Anniella pulchra*<br>California legless lizard<br><br>(includes *A. p. nigra* and *A. p. pulchra* as recognized by the Department) | -- / CSC / -- | Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas. | **Unlikely:** No suitable habitat. |
| *Emys marmorata*<br>Western pond turtle<br><br>(includes *E. m. pallida* and *E. m. marmorata* as recognized by the Department) | -- / CSC / -- | Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks. | **Moderate:** Suitable upland habitat is present within the project site due to the proximity of the property to the Arroyo Seco Creek. The CNDDB reports 39 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 700 feet from the project site. |
| *Masticophis flagellum ruddocki*<br>San Joaquin whipsnake | -- / CSC / -- | Variety of habitats-deserts, scrub land, juniper-grassland, woodland, thorn forest, and farmland. Generally avoid dense vegetation. Ranges from Arbuckle in the Sacramento southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges. An isolated population also occurs in the Sutter Buttes. | **Moderate:** Suitable habitat is present within the project site. The CNDDB reports four occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 1,500 feet from the project site. |
| *Masticophis lateralis euryxanthus*<br>Alameda whipsnake | FT / ST / -- | Open areas in canyons, rocky hillsides, chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands of the coast ranges between the vicinity of Monterey and north San Francisco Bay. Also found on pond edges and stream courses. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Phrynosoma blainvillii*<br>Coast horned lizard | -- / CSC / -- | Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands. | **Unlikely:** No suitable habitat. |
| *Rana boylii*<br>Foothill yellow-legged frog | -- / CSC / -- | Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including hardwood, pine, and riparian forests, scrub, chaparral, and wet meadows. Rarely encountered far from permanent water. | **Unlikely:** No suitable habitat. The adjacent Arroyo Seco Creek is likely too ephemeral to support this species. The EACCS does not identify potential habitat for this species within the project site. |
| *Rana draytonii*<br>California red-legged frog | FT / CSC / -- | Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows. | **High:** Suitable upland and dispersal habitat is present within the project site. Numerous small mammal burrows were observed within the project site that are suitable for upland refugia. The CNDDB reports 260 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 130 feet from the project site, associated with Arroyo Seco Creek. The EACCS identifies potential upland and dispersal habitat for this species within the project site. |
| *Spea hammondii*<br>Western spadefoot toad | -- / CSC / -- | Grasslands with shallow temporary pools are optimal habitats for the western spadefoot. Occur primarily in grassland habitats, but can be found in valley and foothill woodlands. Vernal pools are essential for breeding and egg laying. | **Low:** Suitable upland habitat may be present within the project site based on the proximity to Arroyo Seco Creek, which may provide low quality breeding habitat. The CNDDB reports 10 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 0.5 mile from the project site. |
| *Thamnophis gigas*<br>Giant garter snake | FT / ST / -- | Essential habitat components include adequate water during early spring through mid-fall, emergent, herbaceous wetland vegetation (eg. cattail and bulrush), grassy banks and opening in waterside vegetation, and higher elevation upland for refuge from flood waters in the winter. | **Unlikely:** No suitable habitat. |
| **FISH** | | | |
| *Acispenser medirostris*<br>Green sturgeon<br>(southern DPS) | FT / CSC / -- | San Francisco Bay, San Pablo Bay, and the lower San Joaquin River and Delta (Radtke, 1966). Spawning locations are uncertain, an anadromous fish that spends most of its life in salt water and returns to spawn in fresh water. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Hypomesus transpacificus*<br>Delta smelt | FT / ST / -- | Sacramento-San Joaquin Delta, seasonally present in Suisun Bay, Carquinez Strait, and San Pablo Bay. | **Unlikely:** No suitable habitat. |
| *Oncorhynchus mykiss irideus*<br>Steelhead<br>(Central California Coast ESU) | FT / -- / -- | Coastal perennial and near perennial streams, with suitable spawning and rearing habitat and no major barriers. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |
| *Oncorhynchus mykiss irideus*<br>Steelhead<br>(Central Valley ESU) | FT / -- / -- | Sacramento and San Joaquin Rivers and their tributaries. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |
| *Oncorhynchus tshawytscha*<br>Chinook salmon<br>(Central Valley spring-run) | FT / ST / -- | Central valley rivers including portions of the Sacrament, Feather, American, Stanislaus, Tuolumne, and San Joaquin, and associated creeks and tributaries. | **Unlikely:** No suitable habitat. |
| *Oncorhynchus tshawytscha*<br>Chinook salmon<br>(Sacramento River winter run) | FE / SE / -- | Sacramento River and associated tributaries. | **Unlikely:** No suitable habitat. |
| *Spirinchus thaleichthys*<br>Longfin smelt | -- / ST / -- | Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 PPT, but can be found in completely freshwater to almost pure seawater. | **Unlikely:** No suitable habitat. |
| *Thaleichthys pacificus*<br>eulachon | FT / CSC / -- | Nearshore ocean waters and to 300 meters in depth, except for the brief spawning runs into their natal (birth) streams. Spawning grounds are typically in the lower reaches of larger snowmelt-fed rivers with water temperatures ranging from 39 to 50°F. Spawning occurs over sand or coarse gravel substrates. | **Unlikely:** No suitable habitat. |
| **INVERTEBRATES** | | | |
| *Branchinecta conservatio*<br>Conservancy fairy shrimp | FE / -- / -- | Require ephemeral pools with no flow. Grasslands of the northern two-thirds of the Central Valley, spanning a north-south distance of about 300 km, at elevations of 5-145 meters. Require ephemeral pools with no flow. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Branchinecta longiantenna*<br>Longhorn fairy shrimp | FE / -- / -- | Require ephemeral pools with no flow. Restricted distribution; Eastern edge of the Central Coast Mountains Region.<br>Require ephemeral pools, typically associated with clear to turbid, clay and grass-bottomed pools. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |
| *Branchinecta lynchi*<br>Vernal pool fairy shrimp | FT / -- / -- | Require ephemeral pools with no flow. Associated with vernal pool/grasslands from near Red Bluff (Shasta County), through the central valley, and into the South Coast Mountains Region.<br>Require ephemeral pools with no flow. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |
| *Branchinecta mesovallensis*<br>Mid-valley fairy shrimp | -- / CNDDB / -- | Northern claypan vernal pools scattered throughout the lower elevations of the San Joaquin Valley. | **Unlikely:** No suitable habitat. |
| *Desmocerus californicus dimorphus*<br>Valley elderberry longhorn beetle | FT / -- / -- | Inhabit established mature elderberry shrubs. Endemic to moist Valley Oak woodlands a ling margin of streams and rivers. Lower Sacramento to upper San Joaquin Valley. | **Unlikely:** No suitable habitat. |
| *Euphydryas editha bayensis*<br>Bay checkerspot butterfly | FT / -- / -- | Restricted to native grasslands on outcrops of serpentine soil in the vicinity of the San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurascens* are secondary host plants. | **Unlikely:** No suitable habitat. |
| *Hygrotus curvipes*<br>Curved-foot hygrotus diving beetle | -- / CNDDB / -- | Aquatic; known only from shallow, muddy pools in Alameda and Contra Costa Counties. | **Unlikely:** No suitable habitat. |
| *Incisalia mosii bayensis*<br>San Bruno elfin butterfly | FE / -- / -- | Inhabits rocky outcroppings and cliffs in coastal scrub on the San Francisco peninsula. | **Unlikely:** No suitable habitat. |
| *Lepidurus packardi*<br>Vernal pool tadpole shrimp | FE / -- / -- | Endemic to vernal pools in grasslands of the Central Valley, Central Coast mountains, and South Coast mountains. | **Unlikely:** No suitable habitat. |
| *Linderiella occidentalis*<br>California linderiella (fairy shrimp) | -- / CNDDB / -- | Ephemeral ponds with no flow. Generally associated with hardpans. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Speyeria callippe callippe* Silverspot butterfly | FE / -- / -- | Restricted to the northern coastal scrub of the San Francisco peninsula; host plant is *Viola pedunculata*. | **Low:** There are no CNDDB occurrences of this species within the nine quads evaluated; however, the Service notes potential unverified occurrences in the hills near the City of Pleasanton and the EACCS identifies potential habitat for this species within the project site. The project site may support the host plant for this species. |
| **PLANTS** | | | |
| *Allium sharsmithae* Sharsmith's onion | -- / -- / 1B | Chaparral and cismontane woodland on serpentine and rocky soils at elevations of 400-1200 meters. Perennial bulbiferous herb in the Alliaceae family; blooms March-May. | **Unlikely:** No suitable habitat. |
| *Amsinckia grandiflora* Large-flowered fiddleneck | FE / SE / 1B | Cismontane woodland and valley and foothill grassland at elevations of 275-550 meters. Annual herb in the Boraginaceae family; blooms April-May. | **Low:** Suitable habitat is present within the project site. The CNDDB reports three occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately seven miles from the project site. |
| *Arctostaphylos auriculata* Mt. Diablo manzanita | -- / -- / 1B | Chaparral and cismontane woodland on sandstone at elevations of 135-650 meters. Evergreen shrub in the Ericaceae family; blooms January-March. | **Unlikely:** No suitable habitat. |
| *Arctostaphylos manzanita* ssp. *laevigata* Contra Costa manzanita | -- / -- / 1B | Chaparral on rocky soils at elevations of 500-1100 meters. Evergreen shrub in the Ericaceae family; blooms January-April. | **Unlikely:** No suitable habitat. |
| *Astragalus tener* var. *tener* Alkali milk-vetch | -- / -- / 1B | Playas, valley and foothill grassland on adobe clay, and vernal pools on alkaline soils at elevations of 1-60 meters. Annual herb in the Fabaceae family; blooms March-June. | **Unlikely:** No suitable habitat. |
| *Atriplex cordulata* var. *cordulata* Heartscale | -- / -- / 1B | Often found in vernally mesic, sandy areas of coastal bluff scrub, coastal dunes, and coastal prairie at elevations of 1-50 meters. Annual herb in the Fabaceae family; blooms March-May. | **Unlikely:** No suitable habitat. The EACCS does not identify potential habitat for this species within the project site. |
| *Atriplex depressa* Brittlescale | -- / -- / 1B | Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or clay in meadows or annual grassland; rarely associated w/riparian, marshes, or vernal pools. Elevation range of 1-320 meters. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Atriplex joaquiniana*<br>San Joaquin spearscale | -- / -- / 1B | Meadows and seeps, playas, chenopod scrub, and valley and foothill grassland on alkaline soils at elevations of 1-835 meters. Annual herb in the Chenopodiaceae family; blooms April-October. | **Unlikely:** No suitable habitat. |
| *Atriplex minuscula*<br>Lesser saltscale | -- / -- / 1B | Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy, alkaline soils. Elevation range of 20-100 meters. | **Unlikely:** The project site is outside of the known elevation range for this species. |
| *Balsamorhiza macrolepis*<br>Big-scale balsamroot | -- / -- / 1B | Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils, at elevations of 90-1555 meters. Perennial herb in the Asteraceae family; blooms March-June. | **Low:** Suitable habitat is present within the project site. The CNDDB reports one occurrences of this species within the nine quads evaluated, located approximately 1.5 miles from the project site. |
| *Blepharizonia plumosa*<br>Big tarplant | -- / -- / 1B | Valley and foothill grassland at elevations of 30-505 meters. Annual herb in the Asteraceae family; blooms July-October. | **Low:** Suitable habitat is present within the project site. The CNDDB reports 19 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 3.5 miles from the project site. The EACCS does not identify potential habitat for this species within the project site. |
| *California macrophylla*<br>Round-leaved filaree | -- / -- / 1B | Cismontane woodland and valley and foothill grassland on clay soils at elevations of 15-1200 meters. Annual herb in the Geraniaceae family; blooms March-May. | **Low:** Suitable habitat is present within the project site. The CNDDB reports eight occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 4.5 miles from the project site. |
| *Calochortus pulchellus*<br>Mt. Diablo fairy-lantern | -- / -- / 1B | Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland at elevations of 30-840 meters. Bulbiferous perennial herb in the Liliaceae family; blooms April-June. | **Low:** Suitable habitat is present within the project site. The CNDDB reports eight occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately nine miles from the project site. |
| *Campanula exigua*<br>Chaparral harebell | -- / -- / 1B | Chaparral on rocky, usually serpentinite soils at elevations of 275-1250 meters. Annual herb in the Campanulaceae family; blooms May-June. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Caulanthus lemmonii* Lemmon's jewel flower | -- / -- / 1B | Open, grassy areas on hillside slopes and in fields, canyons, and arroyos. Soils include alkaline soils, shaley clay, sandstone talus, and decomposed serpentine. Predominantly found within valley and foothill grassland and occasionally in pinyon and juniper woodland at elevations of 80 - 12200 meters. Annual herb in the Brassicaceae family; blooms March-May. | **Unlikely:** No suitable habitat. |
| *Centromadia parryi* ssp. *congdonii* Congdon's tarplant | -- / -- / 1B | Valley and foothill grassland on alkaline soils at elevations of 0-230 meters. Annual herb in the Asteraceae family; blooms May-November. | **Low:** Suitable habitat is present within the project site. The CNDDB reports 15 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 4.5 miles from the project site. The EACCS does not identify potential habitat for this species within the project site. |
| *Chloropyron molle* ssp. *hispidum* Hispid salty bird's-beak | -- / -- / 1B | Playas, meadows and seeps, and valley and foothill grasslands on alkaline soils at elevations of 1-155 meters. Annual hemiparasitic herb in the Orobanchaceae family; blooms June-September. | **Unlikely:** No suitable habitat. |
| *Chloropyron palmatum* Palmate-bracted salty bird's-beak | FE / SE / 1B | Chenopod scrub and valley and foothill grasslands on alkaline soils at elevations of 5-155 meters. Annual hemiparasitic herb in the Orobanchaceae family; blooms May-October. | **Unlikely:** The project site is outside of the known elevation range for this species. |
| *Cirsium fontinale var. campylon Mount Hamilton fountain thistle* | -- / -- / 1B | Chaparral, cismontane woodland, and valley and foothill grassland on serpentinite seeps, at elevations of 100-890 meters. Perennial herb in the Asteraceae family; blooms February-October. | **Unlikely:** No suitable habitat. |
| *Cordylanthus palmatus* Palmate-bracted bird's-beak | FE / SE / 1B | Chenopod scrub and valley and foothill grasslands on alkaline soils at elevations of 5-155 meters. Annual hemiparasitic herb in the Orobanchaceae family; blooms May-October. | **Unlikely:** No suitable habitat. |
| *Deinandra bacigalupii* Livermore tarplant | -- / -- / 1B | Alkaline meadows and seeps at elevations of 150-185 meters. Annual herb in the Asteraceae family; blooms June-October. | **Unlikely:** No suitable habitat. |
| *Delphinium californicum ssp. interius* Hospital Canyon California larkspur | -- / -- / 1B | Openings in chaparral, coastal scrub, and mesic areas of cismontane woodland at elevations of 230-1095 meters. Perennial herb in the Ranunculaceae family; blooms April-June. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Delphinium recurvatum* Recurved larkspur | -- / -- / 1B | Chenopod scrub, cismontane woodlands, and valley and foothill grasslands on alkaline soils at elevations of 3-750 meters. Perennial herb in the Ranunculaceae family; blooms March-June. | **Low:** Suitable habitat is present within the project site. The CNDDB reports four occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately 10.5 miles from the project site. The EACCS does not identify potential habitat for this species within the project site. |
| *Eryngium spinosepalum* Spiny-sepaled button-celery | -- / -- / 1B | Valley and foothill grassland and vernal pools at elevations of 80-620 meters. Annual/perennial herb in the Apiaceae family; blooms April-June. | **Unlikely:** No suitable habitat. |
| *Eschscholzia rhombipetala* Diamond-petaled California poppy | -- / -- / 1B | Valley and foothill grassland on alkaline and clay soils at elevations of 0-975 meters. Annual herb in the Papaveraceae family; blooms March-April. | **Low:** Suitable habitat is present within the project site. The CNDDB reports three occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately five miles from the project site. |
| *Fritillaria falcata* Talus fritillary | -- / -- / 1B | Chaparral, cismontane woodland, and lower montane coniferous forest on serpentine or often talus soils at elevations of 300-1525 meters. Bulbiferous, perennial herb in the Liliaceae family; blooms March-May. | **Unlikely:** No suitable habitat. |
| *Helianthella castanea* Diablo helianthella | -- / -- / 1B | Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland at elevations of 60-1300 meters. Perennial herb in the Asteraceae family; blooms March-June. | **Low:** Suitable habitat is present within the project site. The CNDDB reports 10 occurrences of this species within the nine quads evaluated. The nearest occurrence is approximately nine miles from the project site. |
| *Hesperolinon breweri* Brewer's western flax | -- / -- / 1B | Chaparral, cismontane woodland, and valley and foothill grasslands, mostly on serpentinite, at elevations of 30-900 meters. Annual herb in the Linaceae family; blooms May-July. | **Unlikely:** No suitable habitat. |
| *Hibiscus lasiocarpus* var. *occidentalis* Wooly rose-mallow | -- / -- / 1B | Freshwater marshes, swamps at elevations of 0-120 meters. Perennial rhizomatous herb in the Malvaceae family; blooms June-September. | **Unlikely:** No suitable habitat. |
| *Hoita strobilina* Loma Prieta hoita | -- / -- / 1B | Mesic areas of chaparral, cismontane woodland, and riparian woodland, usually on serpentinite soils, at elevations of 30-860 meters. Perennial herb in the Fabaceae family; blooms May-October. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Lasthenia conjugens* Contra Costa goldfields | FE / -- / 1B | Mesic areas of valley and foothill grassland, alkaline playas, cismontane woodland, and vernal pools at elevations of 0-470 meters. Annual herb in the Asteraceae family; blooms March-June. | **Unlikely:** No suitable habitat. |
| *Legenere limosa* Legenere | -- / -- / 1B | Vernal pools and wetlands at elevations of 1-880 meters. Annual herb in the Campanulaceae family; blooms April- June. | **Unlikely:** No suitable habitat. |
| *Leptosyne hamiltonii* Mt. Hamilton coreopsis | -- / -- / 1B | Cismontane woodland pools at elevations of 550-1300 meters. Annual herb in the Asteraceae family; blooms March-May. | **Unlikely:** No suitable habitat. |
| *Lilaeopsis masonii* Mason's lilaeopsis | -- / SR / 1B | Freshwater and brackish marshes and swamps and riparian scrub at elevations of 0-10 meters. Rhizomatous herb in the Apiaceae family; blooms April-November. | **Unlikely:** No suitable habitat. |
| *Limosella australis* Delta mudwort | -- / -- / 2B | Usually on mud banks. Freshwater or brackish marshes and swamps, riparian scrub at elevations of 0-3 meters. Perennial stoloniferous herb in the Scrophulariaceae family; blooms May-August. | **Unlikely:** No suitable habitat. |
| *Madia radiata* Showy golden madia | -- / -- / 1B | Cismontane woodland and valley and foothill grassland at elevations of 25-1215 meters. Annual herb in the Asteraceae family; blooms March-May. | **Low:** Suitable habitat is present within the project site. The CNDDB reports one occurrence of this species within the nine quads evaluated, located approximately 10 miles from the project site. |
| *Navarretia nigelliformis* ssp. *radians* Shining navarretia | -- / -- / 1B | Cismontane woodland, valley and foothill grasslands, and vernal pools at elevations of 76-1000 meters. Annual herb in the Polemoniaceae family; blooms April-July. | **Low:** Suitable habitat is present within the project site. The CNDDB reports one occurrences of this species within the nine quads evaluated, located approximately seven miles from the project site. |
| *Navarretia prostrata* Prostrate vernal pool navarretia | -- / -- / 1B | Meadows, seeps, vernal pools, and mesic areas of coastal scrub and valley and foothill grassland at elevations of 15-2110 meters. Annual herb in the Polemoniaceae family; blooms April-July. | **Unlikely:** No suitable habitat. |
| *Plagiobothrys glaber* Hairless popcorn-flower | -- / -- / 1A | Alkaline meadows and seeps, and coastal salt marshes and swamps at elevations of 15-180 meters. Annual herb in the Boraginaceae family; blooms March-May. | **Unlikely:** No suitable habitat. |

| Species | Status (Service/ Department/CNPS) | General Habitat | Potential Occurrence within project Vicinity |
|---|---|---|---|
| *Senecio aphanactis*<br>Chaparral ragwort | -- / -- / List 2 | Chaparral, cismontane woodland, and coastal scrub, sometimes on alkaline soils, at elevations of 15-800 acres. Annual herb in the Asteraceae family; blooms January-April. | **Unlikely:** No suitable habitat. |
| *Streptanthus albidus ssp. peramoenus*<br>Most beautiful jewel-flower | -- / -- / 1B | Chaparral, cismontane woodlands, and valley and foothill grasslands on serpentinite soils at elevations of 94-1000 meters. Annual herb in the Brassicaceae family; blooms March-October. | **Unlikely:** No suitable habitat. |
| *Trifolium hydrophilum*<br>Saline clover | -- / -- / 1B | Marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools at elevations of 0-300 meters. Annual herb in the Fabaceae family; blooms April-June. | **Unlikely:** No suitable habitat. |
| *Tropidocarpum capparideum*<br>Caper-fruited tropidocarpum | -- / -- / 1B | Alkaline hills in valley and foothill grassland at elevations of 1-455 meters. Annual herb in the Brassicaceae family; blooms March-April. | **Low:** Suitable habitat is present within the project site. The CNDDB reports seven occurrences of this species within the nine quads evaluated, one of which is a large non-specific occurrence from 1897 that includes the project site. |
| *Viburnum ellipticum*<br>Oval-leaved viburnum | -- / -- / 2B | Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 215-1400 meters. Perennial deciduous shrub in the Adoxaceae family; blooms May-June. | **Unlikely:** No suitable habitat. |

**STATUS DEFINITIONS**

**Federal**

**FE** = listed as Endangered under the federal Endangered Species Act
**FT** = listed as Threatened under the federal Endangered Species Act
**--** = no listing

**State**

**SE** = listed as Endangered under the California Endangered Species Act
**ST** = listed as Threatened under the California Endangered Species Act
**SR** = listed as Rare under the California Endangered Species Act
**CSC** = California Department of Fish and Wildlife Species of Concern
**CFP** = California Fully Protected Animal
**CNDDB** = This designation is being assigned to animal species that are not assigned any of the other status designations defined in this table. These animal species are included in the Department's CNDDB "Special Animals" list (2010), which includes all taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species." The Department considers the taxa on this list to be those of greatest conservation need.
**--** = no listing

**California Native Plant Society**

**1A** = California Rare Plant Rank 1A species; plants presumed extinct in California
**1B** = California Rare Plant Rank 1B species; plants rare, threatened, or endangered in California and elsewhere
**2B** = California Rare Plant Rank 2B species; plants rare, threatened, or endangered in California, but more common elsewhere
**--** = no listing

**POTENTIAL TO OCCUR**

**Present** = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
**High** = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of suitable habitat conditions
**Moderate** = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of marginal habitat conditions within the site
**Low** = species known to occur in the vicinity from the CNDDB or other documentation; lack of suitable habitat or poor quality
**Unlikely** = species not known to occur in the vicinity from the CNDDB or other documentation, no suitable habitat is present within the site
**Not Present** = species was not observed during surveys

# **Appendix B** CNDDB Rare Find 5 Report

# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

## California Natural Diversity Database

**Query Criteria:** Taxonomic Group is (Fish or Amphibians or Reptiles or Birds or Mammals or Mollusks or Arachnids or Crustaceans or Insects or Ferns or Gymnosperms or Monocots or Dicots or Lichens or Bryophytes) and Quad is (Altamont (3712166) or Byron Hot Springs (3712176) or Clifton Court Forebay (3712175) or Midway (3712165) or Cedar Mtn. (3712155) or Mendenhall Springs (3712156) or La Costa Valley (3712157) or Livermore (3712167) or Tassajara (3712177))

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Accipiter cooperii*** Cooper's hawk | ABNKC12040 | None | None | G5 | S4 | WL |
| ***Accipiter striatus*** sharp-shinned hawk | ABNKC12020 | None | None | G5 | S4 | WL |
| ***Agelaius tricolor*** tricolored blackbird | ABPBXB0020 | None | None | G2G3 | S1S2 | SSC |
| ***Allium sharsmithiae*** Sharsmith's onion | PMLIL02310 | None | None | G2 | S2 | 1B.3 |
| ***Ambystoma californiense*** California tiger salamander | AAAAA01180 | Threatened | Threatened | G2G3 | S2S3 | SSC |
| ***Amsinckia grandiflora*** large-flowered fiddleneck | PDBOR01050 | Endangered | Endangered | G1 | S1 | 1B.1 |
| ***Anniella pulchra pulchra*** silvery legless lizard | ARACC01012 | None | None | G3G4T3T4Q | S3 | SSC |
| ***Anomobryum julaceum*** slender silver moss | NBMUS80010 | None | None | G4G5 | S2 | 4.2 |
| ***Antrozous pallidus*** pallid bat | AMACC10010 | None | None | G5 | S3 | SSC |
| ***Aquila chrysaetos*** golden eagle | ABNKC22010 | None | None | G5 | S3 | FP |
| ***Arctostaphylos auriculata*** Mt. Diablo manzanita | PDERI04040 | None | None | G2 | S2 | 1B.3 |
| ***Arctostaphylos manzanita ssp. laevigata*** Contra Costa manzanita | PDERI04273 | None | None | G5T2 | S2 | 1B.2 |
| ***Astragalus tener var. tener*** alkali milk-vetch | PDFAB0F8R1 | None | None | G2T2 | S2 | 1B.2 |
| ***Athene cunicularia*** burrowing owl | ABNSB10010 | None | None | G4 | S3 | SSC |
| ***Atriplex cordulata var. cordulata*** heartscale | PDCHE040B0 | None | None | G3T2 | S2 | 1B.2 |
| ***Atriplex depressa*** brittlescale | PDCHE042L0 | None | None | G2 | S2 | 1B.2 |
| ***Atriplex joaquinana*** San Joaquin spearscale | PDCHE041F3 | None | None | G2 | S2 | 1B.2 |
| ***Atriplex minuscula*** lesser saltscale | PDCHE042M0 | None | None | G2 | S2 | 1B.1 |
| ***Balsamorhiza macrolepis*** big-scale balsamroot | PDAST11061 | None | None | G2 | S2 | 1B.2 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Blepharizonia plumosa*** big tarplant | PDAST1C011 | None | None | G2 | S2 | 1B.1 |
| ***Branchinecta longiantenna*** longhorn fairy shrimp | ICBRA03020 | Endangered | None | G1 | S1 | |
| ***Branchinecta lynchi*** vernal pool fairy shrimp | ICBRA03030 | Threatened | None | G3 | S2S3 | |
| ***Branchinecta mesovallensis*** midvalley fairy shrimp | ICBRA03150 | None | None | G2 | S2 | |
| ***Buteo regalis*** ferruginous hawk | ABNKC19120 | None | None | G4 | S3S4 | WL |
| ***Buteo swainsoni*** Swainson's hawk | ABNKC19070 | None | Threatened | G5 | S3 | |
| ***California macrophylla*** round-leaved filaree | PDGER01070 | None | None | G2 | S2 | 1B.1 |
| ***Calochortus pulchellus*** Mt. Diablo fairy-lantern | PMLIL0D160 | None | None | G2 | S2 | 1B.2 |
| ***Campanula exigua*** chaparral harebell | PDCAM020A0 | None | None | G2 | S2 | 1B.2 |
| ***Caulanthus lemmonii*** Lemmon's jewelflower | PDBRA0M0E0 | None | None | G3 | S3 | 1B.2 |
| ***Centromadia parryi ssp. congdonii*** Congdon's tarplant | PDAST4R0P1 | None | None | G3T2 | S2 | 1B.1 |
| ***Chloropyron molle ssp. hispidum*** hispid salty bird's-beak | PDSCR0J0D1 | None | None | G2T2 | S2 | 1B.1 |
| ***Chloropyron palmatum*** palmate-bracted salty bird's-beak | PDSCR0J0J0 | Endangered | Endangered | G1 | S1 | 1B.1 |
| ***Circus cyaneus*** northern harrier | ABNKC11010 | None | None | G5 | S3 | SSC |
| ***Cirsium fontinale var. campylon*** Mt. Hamilton fountain thistle | PDAST2E163 | None | None | G2T2 | S2 | 1B.2 |
| ***Clarkia concinna ssp. automixa*** Santa Clara red ribbons | PDONA050A1 | None | None | G5?T3 | S3 | 4.3 |
| ***Corynorhinus townsendii*** Townsend's big-eared bat | AMACC08010 | None | Candidate Threatened | G3G4 | S2 | SSC |
| ***Deinandra bacigalupii*** Livermore tarplant | PDAST4R0V0 | None | None | G1 | S1 | 1B.2 |
| ***Delphinium californicum ssp. interius*** Hospital Canyon larkspur | PDRAN0B0A2 | None | None | G3T3 | S3 | 1B.2 |
| ***Delphinium recurvatum*** recurved larkspur | PDRAN0B1J0 | None | None | G3 | S3 | 1B.2 |
| ***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle | IICOL48011 | Threatened | None | G3T2 | S2 | |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Dipodomys heermanni berkeleyensis*** Berkeley kangaroo rat | AMAFD03061 | None | None | G3G4T1 | S1 | |
| ***Elanus leucurus*** white-tailed kite | ABNKC06010 | None | None | G5 | S3S4 | FP |
| ***Emys marmorata*** western pond turtle | ARAAD02030 | None | None | G3G4 | S3 | SSC |
| ***Eremophila alpestris actia*** California horned lark | ABPAT02011 | None | None | G5T3Q | S3 | WL |
| ***Eryngium spinosepalum*** spiny-sepaled button-celery | PDAPI0Z0Y0 | None | None | G2 | S2 | 1B.2 |
| ***Eschscholzia rhombipetala*** diamond-petaled California poppy | PDPAP0A0D0 | None | None | G1 | S1 | 1B.1 |
| ***Falco mexicanus*** prairie falcon | ABNKD06090 | None | None | G5 | S4 | WL |
| ***Falco peregrinus anatum*** American peregrine falcon | ABNKD06071 | Delisted | Delisted | G4T4 | S3S4 | FP |
| ***Fritillaria agrestis*** stinkbells | PMLIL0V010 | None | None | G3 | S3 | 4.2 |
| ***Fritillaria falcata*** talus fritillary | PMLIL0V070 | None | None | G2 | S2 | 1B.2 |
| ***Haliaeetus leucocephalus*** bald eagle | ABNKC10010 | Delisted | Endangered | G5 | S2 | FP |
| ***Helianthella castanea*** Diablo helianthella | PDAST4M020 | None | None | G2 | S2 | 1B.2 |
| ***Hesperolinon breweri*** Brewer's western flax | PDLIN01030 | None | None | G2 | S2 | 1B.2 |
| ***Hibiscus lasiocarpos var. occidentalis*** woolly rose-mallow | PDMAL0H0R3 | None | None | G5T2 | S2 | 1B.2 |
| ***Hoita strobilina*** Loma Prieta hoita | PDFAB5Z030 | None | None | G2 | S2 | 1B.1 |
| ***Hygrotus curvipes*** curved-foot hygrotus diving beetle | IICOL38030 | None | None | G1 | S1 | |
| ***Hypomesus transpacificus*** Delta smelt | AFCHB01040 | Threatened | Endangered | G1 | S1 | |
| ***Lanius ludovicianus*** loggerhead shrike | ABPBR01030 | None | None | G4 | S4 | SSC |
| ***Lasiurus cinereus*** hoary bat | AMACC05030 | None | None | G5 | S4? | |
| ***Legenere limosa*** legenere | PDCAM0C010 | None | None | G2 | S2 | 1B.1 |
| ***Leptosyne hamiltonii*** Mt. Hamilton coreopsis | PDAST2L0C0 | None | None | G2 | S2 | 1B.2 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Lilaeopsis masonii*** Mason's lilaeopsis | PDAPI19030 | None | Rare | G2 | S2 | 1B.1 |
| ***Limosella australis*** Delta mudwort | PDSCR10050 | None | None | G4G5 | S2 | 2B.1 |
| ***Linderiella occidentalis*** California linderiella | ICBRA06010 | None | None | G2G3 | S2S3 | |
| ***Madia radiata*** showy golden madia | PDAST650E0 | None | None | G2 | S2 | 1B.1 |
| ***Masticophis flagellum ruddocki*** San Joaquin whipsnake | ARADB21021 | None | None | G5T2T3 | S2? | SSC |
| ***Masticophis lateralis euryxanthus*** Alameda whipsnake | ARADB21031 | Threatened | Threatened | G4T2 | S2 | |
| ***Melospiza melodia*** song sparrow ("Modesto" population) | ABPBXA3010 | None | None | G5 | S3? | SSC |
| ***Navarretia nigelliformis ssp. radians*** shining navarretia | PDPLM0C0J2 | None | None | G4T2 | S2 | 1B.2 |
| ***Navarretia prostrata*** prostrate vernal pool navarretia | PDPLM0C0Q0 | None | None | G2 | S2 | 1B.1 |
| ***Neotoma fuscipes annectens*** San Francisco dusky-footed woodrat | AMAFF08082 | None | None | G5T2T3 | S2S3 | SSC |
| ***Oncorhynchus mykiss irideus*** steelhead - central California coast DPS | AFCHA0209G | Threatened | None | G5T2T3Q | S2S3 | |
| ***Oncorhynchus mykiss irideus*** steelhead - Central Valley DPS | AFCHA0209K | Threatened | None | G5T2Q | S2 | |
| ***Perognathus inornatus*** San Joaquin Pocket Mouse | AMAFD01060 | None | None | G2G3 | S2S3 | |
| ***Phrynosoma blainvillii*** coast horned lizard | ARACF12100 | None | None | G3G4 | S3S4 | SSC |
| ***Plagiobothrys glaber*** hairless popcornflower | PDBOR0V0B0 | None | None | GH | SH | 1A |
| ***Rana boylii*** foothill yellow-legged frog | AAABH01050 | None | None | G3 | S2S3 | SSC |
| ***Rana draytonii*** California red-legged frog | AAABH01022 | Threatened | None | G2G3 | S2S3 | SSC |
| ***Senecio aphanactis*** chaparral ragwort | PDAST8H060 | None | None | G3? | S2 | 2B.2 |
| ***Spea hammondii*** western spadefoot | AAABF02020 | None | None | G3 | S3 | SSC |
| ***Spirinchus thaleichthys*** longfin smelt | AFCHB03010 | Candidate | Threatened | G5 | S1 | SSC |
| ***Streptanthus albidus ssp. peramoenus*** most beautiful jewelflower | PDBRA2G012 | None | None | G2T2 | S2 | 1B.2 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Taxidea taxus*** American badger | AMAJF04010 | None | None | G5 | S3 | SSC |
| ***Thaleichthys pacificus*** eulachon | AFCHB04010 | Threatened | None | G5 | S3 | SSC |
| ***Trifolium hydrophilum*** saline clover | PDFAB400R5 | None | None | G2 | S2 | 1B.2 |
| ***Tropidocarpum capparideum*** caper-fruited tropidocarpum | PDBRA2R010 | None | None | G1 | S1 | 1B.1 |
| ***Viburnum ellipticum*** oval-leaved viburnum | PDCPR07080 | None | None | G5 | S3 | 2B.3 |
| ***Vulpes macrotis mutica*** San Joaquin kit fox | AMAJA03041 | Endangered | Threatened | G4T2 | S2 | |

**Record Count: 88**

# **Appendix C** Service List of Federally Listed Threatened and Endangered Species That May Occur

# U.S. Fish & Wildlife Service

# Sacramento Fish & Wildlife Office

## Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 150130104825

Current as of: January 30, 2015

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## Quad Lists

### Listed Species

#### Invertebrates

*Branchinecta conservatio*
- Conservancy fairy shrimp (E)

*Branchinecta longiantenna*
- Critical habitat, longhorn fairy shrimp (X)
- longhorn fairy shrimp (E)

*Branchinecta lynchi*
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*
- valley elderberry longhorn beetle (T)

*Euphydryas editha bayensis*
- bay checkerspot butterfly (T)

*Incisalia mossii bayensis*
- San Bruno elfin butterfly (E)

*Lepidurus packardi*
- vernal pool tadpole shrimp (E)

#### Fish

*Acipenser medirostris*
- green sturgeon (T) (NMFS)

*Hypomesus transpacificus*
- Critical habitat, delta smelt (X)
- delta smelt (T)

*Oncorhynchus mykiss*
- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

*Oncorhynchus tshawytscha*
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

#### Amphibians

*Ambystoma californiense*
- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

*Rana draytonii*
- California red-legged frog (T)
- Critical habitat, California red-legged frog (X)

#### Reptiles

*Masticophis lateralis euryxanthus*

Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

*Thamnophis gigas*
giant garter snake (T)

### Birds

*Coccyzus americanus occidentalis*
Western yellow-billed cuckoo (T)

*Sternula antillarum (=Sterna, =albifrons) browni*
California least tern (E)

### Mammals

*Vulpes macrotis mutica*
San Joaquin kit fox (E)

### Plants

*Amsinckia grandiflora*
Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)

*Cordylanthus palmatus*
palmate-bracted bird's-beak (E)

*Lasthenia conjugens*
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

### Quads Containing Listed, Proposed or Candidate Species:

MIDWAY (445A)
ALTAMONT (445B)
MENDENHALL SPRINGS (445C)
CEDAR MTN. (445D)
LIVERMORE (446A)
LA COSTA VALLEY (446D)
BYRON HOT SPRINGS (463C)
CLIFTON COURT FOREBAY (463D)
TASSAJARA (464D)

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## County Lists

# Alameda County

## Listed Species

### Invertebrates

*Branchinecta conservatio*
Conservancy fairy shrimp (E)

*Branchinecta longiantenna*
Critical habitat, longhorn fairy shrimp (X)
longhorn fairy shrimp (E)

*Branchinecta lynchi*
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)

*Euphydryas editha bayensis*
bay checkerspot butterfly (T)

*Icaricia icarioides missionensis*
mission blue butterfly (E)

*Incisalia mossii bayensis*
San Bruno elfin butterfly (E)

*Lepidurus packardi*
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

*Speyeria callippe callippe*
callippe silverspot butterfly (E)

## Fish

*Acipenser medirostris*
green sturgeon (T) (NMFS)

*Eucyclogobius newberryi*
tidewater goby (E)

*Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)

*Oncorhynchus kisutch*
coho salmon - central CA coast (E) (NMFS)

*Oncorhynchus mykiss*
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

*Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

## Amphibians

*Ambystoma californiense*
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

*Rana draytonii*
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

## Reptiles

*Masticophis lateralis euryxanthus*
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

*Thamnophis gigas*
giant garter snake (T)

*Thamnophis sirtalis tetrataenia*
San Francisco garter snake (E)

## Birds

*Charadrius alexandrinus nivosus*
western snowy plover (T)

*Coccyzus americanus occidentalis*
Western yellow-billed cuckoo (T)

*Pelecanus occidentalis californicus*
California brown pelican (E)

*Rallus longirostris obsoletus*
California clapper rail (E)

*Sternula antillarum (=Sterna, =albifrons) browni*
California least tern (E)

## Mammals

*Reithrodontomys raviventris*
salt marsh harvest mouse (E)

*Vulpes macrotis mutica*
San Joaquin kit fox (E)

## Plants

*Amsinckia grandiflora*
Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)

*Arctostaphylos pallida*
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

*Chorizanthe robusta var. robusta*
robust spineflower (E)

*Clarkia franciscana*
Presidio clarkia (E)

*Cordylanthus palmatus*
palmate-bracted bird's-beak (E)

*Holocarpha macradenia*
Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)

*Lasthenia conjugens*
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

*Layia carnosa*
beach layia (E)

*Suaeda californica*
California sea blite (E)

## Key:

(E) *Endangered* - Listed as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
*Critical Habitat* - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) *Critical Habitat* designated for this species

# Important Information About Your Species List

## How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

## Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

## Surveying

Some of the species on your list may not be affected by your project. A trained biologist

and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

## Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

## Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 30, 2015.

# Appendix D

# Cultural Resources Report

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

**Northwest Information Center**
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

July 17, 2015 NWIC File No.: 14-1800

Denise Duffy
Denise Duffy & Associates
947 Cass Street #5
Monterey, CA 93940

Re: Record search results for the proposed project at 8310 Tesla Road, Livermore, CA 94550, APN 99A-1625-17

Dear Ms. Duffy:

Per your request received by our office on 17 June 2015, a records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for Alameda County. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

Review of this information indicates there is no record of any cultural resources studies that cover the proposed project area. This project area contains no recorded archaeological resources. The State Office of Historic Preservation Historic Property Directory (OHP HPD) (which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places) lists no recorded buildings or structures adjacent to the proposed project area. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed project area.

At the time of Euro American contact, the Native Americans that lived in the area were speakers of the Costanoan/Ohlone language, part of the Utian language family (Levy 1978:485). There are no Native American resources in or adjacent to the proposed project area referenced in the ethnographic literature.

Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of Alameda County have been found

near sources of water (including perennial and intermittent springs and streams), near the interface between the valleys and adjacent uplands, and in close proximity to ecotones or other productive resource environments. The proposed project area is located in a transitional area between the bottom lands associated with Livermore Valley and the adjacent uplands. Arroyo Seco, an intermittent watercourse, is adjacent to the project area. Given the similarity of these environmental factors, there is a moderate potential for unrecorded Native American resources in the proposed project area.

Review of historical literature and maps gave no indication of the possibility of historic-period archaeological resources within the proposed project area. With this in mind, there is a low potential for unrecorded historic-period archaeological resources in the proposed project area.

The 1953 USGS 7.5-minute topographic quadrangle fails to depict any buildings or structures within the proposed project area; therefore, there is a low possibility of identifying any buildings or structures 45 years or older within the project area.

**RECOMMENDATIONS:**

1) There is a moderate potential of identifying Native American archaeological resources and a low potential of identifying historic-period archaeological resources in the project area. We recommend a qualified archaeologist conduct further archival and field study to identify cultural resources. Field study may include, but is not limited to, pedestrian survey, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

2) We recommend you contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

3) If the proposed project area contains buildings or structures that meet the minimum age requirement, prior to commencement of project activities, it is recommended that this resource be assessed by a professional familiar with the architecture and history of Alameda County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

4) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

5) If archaeological resources are encountered **during construction,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

6) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: http://ohp.parks.ca.gov/default.asp?page_id=1069

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,

Bryan Much
Coordinator

**LITERATURE REVIEWED**

In addition to archaeological maps and site records on file at the Historical Resources Information System, Northwest Information Center, the following literature was reviewed:


Bennyhoff, James
1977 *Ethnogeography of the Plains Miwok*. Center for Archaeological Research at Davis Publication Number 5. University of California, Davis.

Bowman, J.N.
1951 *Adobe Houses in the San Francisco Bay Region*. In Geologic Guidebook of the San Francisco Bay Counties, Bulletin 154. California Division of Mines, Ferry Building, San Francisco, CA.

Fickewirth, Alvin A.
1992 *California Railroads*. Golden West Books, San Marino, CA.

Gudde, Erwin G.
1969 *California Place Names: The Origin and Etymology of Current Geographical Names*. Third Edition. University of California Press, Berkeley and Los Angeles.

Hart, James D.
1987 *A Companion to California*. University of California Press, Berkeley and Los Angeles.

Heizer, Robert F., editor
1974 *Local History Studies*, Vol. 18., "The Costanoan Indians." California History Center, DeAnza College, Cupertino, CA.

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair
1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*. Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Rensch, revised by William N. Abeloe
1966 *Historic Spots in California*. Third Edition. Stanford University Press, Stanford, CA.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Rensch, William N. Abeloe, revised by Douglas E. Kyle
1990 *Historic Spots in California*. Fourth Edition. Stanford University Press, Stanford, CA.

Hope, Andrew
2005 *Caltrans Statewide Historic Bridge Inventory Update*. Caltrans, Division of Environmental Analysis, Sacramento, CA.

Kroeber, A.L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C. (Reprint by Dover Publications, Inc., New York, 1976).

Levy, Richard
1978 Costanoan. In *California,* edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Milliken, Randall
1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

Myers, William A. (editor)
1977 *Historic Civil Engineering Landmarks of San Francisco and Northern California*. Prepared by The History and Heritage Committee, San Francisco Section, American Society of Civil Engineers. Pacific Gas and Electric Company, San Francisco, CA.

Nelson, N.C.
1909 *Shellmounds of the San Francisco Bay Region*. University of California Publications in American Archaeology and Ethnology 7(4):309-356. (Reprint by Kraus Reprint Corporation, New York, 1964)

Nichols, Donald R., and Nancy A. Wright
1971 Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map. U.S. Department of the Interior, Geological Survey in cooperation with the U.S. Department of Housing and Urban Development, Washington, D.C.

Roberts, George, and Jan Roberts
1988 *Discover Historic California*. Gem Guides Book Co., Pico Rivera, CA.

State of California Department of Parks and Recreation
1976 *California Inventory of Historic Resources*. State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation
1988 *Five Views: An Ethnic Sites Survey for California*. State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2012 *Historic Properties Directory*. Listing by City (through April 2012). State of California Office of Historic Preservation, Sacramento.

Thompson & West
1878 Official and Historical Atlas Map of Alameda County, California. Thompson & West, Oakland. (Reprint by Valley Publishers, Fresno, 1976)

Woodbridge, Sally B.
1988 *California Architecture: Historic American Buildings Survey*. Chronicle Books, San Francisco, CA.

Works Progress Administration
1984 *The WPA Guide to California*. Reprint by Pantheon Books, New York. (Originally published as California: A Guide to the Golden State in 1939 by Books, Inc., distributed by Hastings House Publishers, New York.)

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.