



Administrative Draft Environmental Impact Report

Jess Ranch Compost Facility, Conditional Use
Permit, PLN2015-00087

Alameda County
November 2019

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Executive Summary

Overview of the Draft EIR Process

The California Environmental Quality Act (CEQA) requires that before a decision can be made to approve a project with potentially significant environmental effects, an Environmental Impact Report (EIR) must be prepared that fully describes the environmental effects of the project. This EIR analyzes the construction and operation of the proposed Jess Ranch Compost Facility (Proposed Project).

The EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental consequences of a proposed project, to recommend mitigation measures to lessen or eliminate adverse impacts, and to examine feasible alternatives to the project. The information contained in the EIR is reviewed and considered by the governing agency prior to the ultimate decision to approve, disapprove, or modify the proposed project.

This EIR has been prepared on behalf of Alameda County (County) as Lead Agency in conformance with CEQA. Plans for the Proposed Project have proceeded to a degree sufficient for adequate environmental analysis. Accordingly, this EIR presents the overall types and levels of activities that Alameda County could anticipate under the Proposed Project and describes their associated environmental impacts. The analyses, where necessary, are based on conservative assumptions that tend to overstate project impacts.

This EIR will initially be published as a Draft EIR and will be subject to review and comment by the public, as well as responsible and other interested jurisdictions, agencies, and organizations during a 45-day review period. Written responses to comments on the Draft EIR will be prepared and may specify changes to the Draft EIR. The responses to comments and any changes to the Draft EIR therein specified will become the Final EIR.

Proposed Project

The owners of Jess Ranch (ranch), Joe and Connie Jess are the applicants for the Proposed Project located in eastern Alameda County, California. The Proposed Project would be located within the 160-acre Jess Ranch property located south of Interstate 580 (I-580) at 15850 Jess Ranch Road (APN 99B-7800-007-08).

The owners have been operating the ranch since 1969 and became owners in 1973. Like much of the Altamont area, the 160-acre ranch has historically been used as a cattle grazing operation. The current primary use of the ranch is for cattle grazing and breeding. Due to the arid nature of this part of the County, the owners have previously brought in biosolids to apply to the grassland. Biosolids applications have since been discontinued.

The Project is being proposed in response to a series of county and state mandates to increase solid waste and organics diversion from landfills. Targets were established under Senate Bill (SB) 1383 to achieve a 50 percent reduction in the level of the

statewide disposal of organic waste from the 2014 level by 2020 and 75 percent reduction by 2025. Because compostable organic materials comprise a large portion of the waste stream, and because organics diversion is critical to achieving statewide organic waste reduction goals and a countywide 75 percent landfill waste diversion goal, the Alameda County Waste Management Authority (ACWMA) and the Alameda County Source Reduction and Recycling Board have targeted organic materials for diversion from landfills and have policies and goals to develop composting capacity in Alameda County.

Currently, a major portion of Alameda County's potential composting feedstock is being transported out of County to composting facilities such as the Recology Blossom Valley Organics North facility located in Vernalis (San Joaquin County), the Newby Island Landfill composting facility located in Milpitas (Santa Clara County), and the Redwood Landfill composting facility located in Marin County. Approximately 35 percent of the potential organic composting feedstock is currently disposed of in Alameda County landfills. It is anticipated that a portion of the feedstock supplying the Proposed Project would come from Alameda County. Organic feedstocks would also likely come from other Bay Area counties and the Central Valley.

The Proposed Project is located in the eastern portion of unincorporated Alameda County, at the eastern edge of the San Francisco Bay Area. San Joaquin County and the Central Valley is immediately to the east. As such, the Project site is conveniently located close to the organic waste generating communities of the Bay Area and the potential agricultural soils amendment markets of the Central Valley. The location and design of the Proposed Project have been chosen to serve the anticipated market areas—primarily agricultural uses in the Central Valley—while minimizing the potential for aesthetic concerns, odors and similar effects in residential areas.

The Proposed Project would receive and process organic materials, primarily greenwaste, foodwaste, and biosolids, but may also receive untreated scrap wood, natural fiber products, non-recyclable paper waste, and inert material, such as sediment, gypsum, wood ash, and clean construction debris. Non-hazardous liquid wastes may also be accepted for use in moisture conditioning of the compost piles. The Proposed Project would process organic material utilizing an aerated static pile (ASP) system with positive or negative aeration or a combination of both. The Proposed Project would be developed in two phases, with Phase 1 supporting a daily throughput of up to 500 tons per day (TPD) and Phase 2 developing the facility to full build out for a maximum of 1,000 TPD. The proposed Project will receive organic materials and produce compost-based soil amendments for agricultural, horticultural, erosion control and land reclamation uses.

Summary of Alternatives

The County considered alternatives to the Proposed Project evaluated in this Draft EIR, including the use of alternate composting technologies for processing and disposal of organic material. The alternatives analyzed for the Proposed Project focus on reducing or avoiding identified significant environmental impacts. In addition to the Proposed Project, the County evaluated the No Project Alternative and an enclosed In-Building Technology Alternative.

Under the No Project Alternative, an in-county composting facility would not be developed, but the other elements of the County's waste reduction and diversion programs would continue. However, it is likely that the long-range goal of 75 percent and greater diversion (County General Plan) could not be met in the absence of an in-county composting facility. Compostable materials would continue to be processed by out-of-county facilities, which would require longer hauling distances and greater traffic impacts. Furthermore, exporting compostable organics out-of-county would preclude the assurance of a long-term, cost-effective, and reliable in-county facility.

The In-Building Technology Alternative assumes development of a compost facility at the Project site, but rather than composting organic materials in conventional windrows or aerobic static piles outdoors through the entire composting process, the initial active composting phase (i.e., the first few weeks of decomposition) all composting activities would be conducted in an enclosed structure. To enclose all of the composting operations at the proposed composting site, a building would need to be more than 10 acres in size, or 500,000 square feet. Alameda County's East County Area Plan restricts building sizes and areas where buildings can be located on agricultural parcels. The Project site is designated Large Parcel Agriculture, which restricts the building size to a floor area ratio (FAR) of 0.01 of parcel square footage and the building(s) must be located in a contiguous 2-acre development envelope. Based on a FAR of 0.01 and the site parcel consisting of 123.19 acres, the maximum building size allowable on the Project site would be approximately 54,000 square feet, which limits the feasibility of this alternative.

Table of Impacts and Mitigation Measures

Impacts identified in this Draft EIR are summarized in Table ES-1 below. For potentially significant impacts, mitigation measures are identified where feasible to reduce impacts to a less-than-significant level. Refer to Chapter 3, Environmental Setting and Impact Analysis, for a detailed discussion of impacts and mitigation measures.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
3.3 Aesthetics		
Impact AES-1: Permanent Alteration of the Visual Character and Quality of the Proposed Project Area	Less than Significant with Mitigation Incorporated	Mitigation Measure AES-1: Provide visual screening of Project facilities.
Impact AES-2: Introduction of New Sources of Light and Glare at the Site	Less than Significant with Mitigation Incorporated	Mitigation Measure AES-2: Reduce light and glare effects.
3.4 Air Quality and Greenhouse Gases		
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and Unavoidable	None; impact would remain significant and unavoidable
Impact AQ-2: Violate any air quality standard or contribute significantly to an existing or projected air quality violation	Less than Significant with Mitigation Incorporated	Mitigation Measure AQ-1: Implement BAAQMD's Basic Construction Mitigation Measures Mitigation Measure AQ-2: Use of Tier 2 or Better Equipment Mitigation Measure AQ-3: Composting Control Measures
Impact AQ-3: Result in a cumulative net increase of any nonattainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and Unavoidable	None; impact would remain significant and unavoidable
Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Less than Significant	None required
Impact AQ-5: Create objectionable odors affecting a substantial number of people	Less than Significant	None required
Impact AQ-6: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Less than Significant	None required
Impact AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reduction the emissions of GHG	Less than Significant	None required
3.5 Biological Resources		
Impact BIO-1: Impacts on Candidate, Sensitive, or Special-Status Species	Less than Significant with Mitigation Incorporated	Mitigation Measure BIO-1: Conduct pre-construction surveys and implement avoidance and minimization measures for special-status plant species.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
		<p>Mitigation Measure BIO-2: Conduct environmental tailboard trainings.</p> <p>Mitigation Measure BIO-3: Obligate all contractors to comply with EACCS AMMs</p> <p>Mitigation Measure BIO-4: Hire a qualified biological monitor to remain onsite during all construction activities in or adjacent to habitat for special status species.</p> <p>Mitigation Measure BIO-5: Delineate construction area to prevent encroachment of construction personnel and equipment outside of the construction area.</p> <p>Mitigation Measure BIO-6: Prevent nighttime construction.</p> <p>Mitigation Measure BIO-7: Restrict grading to the minimum area necessary and limit grading to the dry season.</p> <p>Mitigation Measure BIO-8: Prevent earth-moving-activities in riparian areas within 24 hours of predicted storms or after major storms.</p> <p>Mitigation Measure BIO-9: Store and inspect pipes, culverts and similar materials greater than four inches in diameter to prevent covered wildlife species from using these as temporary refuges.</p> <p>Mitigation Measure BIO-11: Remove all vegetation which obscures the observation of wildlife movement prior to the initiation of grading.</p> <p>Mitigation Measure BIO-12: Place all trash and debris from work area in containers with secure lids.</p> <p>Mitigation Measure BIO-13: Stockpile material in order to avoid effects to covered species.</p> <p>Mitigation Measure BIO-14: Cover excavated holes and trenches deeper than 6 inches at the end of each workday with plywood or similar materials.</p> <p>Mitigation Measure BIO-15: Prevent trash dumping, firearms, open fires, hunting and pets at or near work sites.</p> <p>Mitigation Measure BIO-16: Park vehicles on pavement, existing roads, and previously disturbed areas.</p> <p>Mitigation Measure BIO-17: Minimize off-road vehicle travel.</p> <p>Mitigation Measure BIO-18: Set speed limit on unpaved roads, within natural land-cover types, or during off-road travel.</p> <p>Mitigation Measure BIO-19: Prohibit refueling of vehicles within 100 feet of a wetland, stream, or other waterway.</p> <p>Mitigation Measure BIO-20: Wash vehicles only at approved areas, outside of job sites.</p> <p>Mitigation Measure BIO-21: Discourage the introduction and establishment of invasive plant species.</p> <p>Mitigation Measure BIO-22: Revegetate project site with an appropriate assemblage of native riparian wetland and upland vegetation.</p> <p>Mitigation Measure BIO-23: Translocation of special-status species.</p>

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
		<p>Mitigation Measure BIO-24: Hire a qualified botanist to perform focused surveys to determine the presence/absence of special status plant species in the project area.</p> <p>Mitigation Measure BIO-25: Avoid state listed, federally listed, and/or CNPS List 1 or CNPS List 2 plant species found within 100 feet of the project area.</p> <p>Mitigation Measure BIO-26: Hire a qualified biologist to survey the work site immediately prior to construction activities.</p> <p>Mitigation Measure BIO-27: Use bare hands to capture California red-legged frog, California tiger salamander, California glossy snake, and/or San Joaquin coachwhip.</p> <p>Mitigation Measure BIO-28: Hire a qualified biologist to stake and flag an exclusion zone prior to ground disturbing activities if these activities would occur within the typical dispersal distance and/or within 500 feet of suitable aquatic habitat for California red-legged frogs and California tiger salamanders.</p> <p>Mitigation Measure BIO-29: Provide mitigation for permanent impacts on California red-legged frog and California tiger salamander habitat at a minimum 3:1 ratio.</p> <p>Mitigation Measure BIO-30: Hire a qualified biologist to conduct preconstruction surveys to identify active migratory bird and/or raptor nests if construction activities would occur during the migratory bird nesting season.</p> <p>Mitigation Measure BIO-31: Conduct work outside of nesting season if an active nest is identified near a proposed work area.</p> <p>Mitigation Measure BIO-32: Hire a qualified biologist to determine if active dens for San Joaquin kit fox and/or American badger occur within 500 feet of the proposed work areas.</p> <p>Mitigation Measure BIO-33: Avoid disturbance and destruction to dens.</p> <p>Mitigation Measure BIO-34: Implement exclusion zones following current USFWS procedures or the latest USFES procedures available at the time.</p> <p>Mitigation Measure BIO-35: Provide mitigation for permanent impacts on San Joaquin kit fox habitat at a minimum 3:1 ratio.</p>
Impact BIO-2: Impacts on Riparian, Aquatic or Wetland Habitat, or other Sensitive Natural Community	Less than Significant with Mitigation Incorporated	<p>Mitigation Measure BIO-1 through Mitigation Measure BIO-35 (described above).</p> <p>Mitigation Measure BIO-36: Provide mitigation for permanent impacts on sensitive communities at a minimum 1:1 ratio.</p>
Impact BIO-3: Impacts on State and/or Federally Protected Wetlands	Less than Significant with Mitigation Incorporated	Mitigation Measure BIO-1 through Mitigation Measure BIO-36 (described above).
Impact BIO-4: Impacts on Wildlife Movement	No Impact	None required

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
Impact BIO-5: Conflict with Local Policies and Ordinances	No Impact	None required
Impact BIO-6: Conflict with Conservation Plans	No Impact	None required
3.6 Cultural Resources		
Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical or Archaeological Resource	Less than Significant with Mitigation Incorporated	Mitigation Measure CR-1: Halt Construction Activities if Any Cultural Materials Are Discovered.
Impact CR-2: Disturb Human Remains	Less than Significant with Mitigation Incorporated	Mitigation Measure CR-2: Halt Construction Activities if Any Human Remains Are Discovered.
3.7 Energy		
Impact ENRG-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during Project construction or operation	Less than Significant	None required
Impact ENRG-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Less than Significant	None required
3.8 Geology and Seismicity		
Impact GEO-1: Structures, facilities, and workers could be subject to seismic hazards	Less than Significant	None required
Impact GEO-2: Project construction activities could result in soil erosion or loss of top soil	Less than Significant	None required
Impact GEO-3: Structures and facilities could be subject to damage related to shrink-swell potential and/or settlements of site soils	Less than Significant with Mitigation Incorporated	Mitigation Measure GEO-1: Perform geotechnical investigation and reporting
Impact GEO-4: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Less than Significant with Mitigation Incorporated	Mitigation Measure GEO-2: Follow the Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts on Paleontological Resources

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
Impact GEO-5: Damage to structures, pavements, and/or utilities could occur at the compost facility site if cut and fill slopes failed, resulting in landsliding.	Less than Significant with Mitigation Incorporated	Mitigation Measure GEO-3: Perform geotechnical investigation for slope stability
3.9 Hazards and Human Health		
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction and operation	Less than Significant	None required
Impact HAZ-2: Construction and operation of the Proposed Project could 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	Less than Significant	None required
Impact HAZ-3: Composting facility workers and end users of compost could be exposed to chemical contaminants and/or pathogens potentially present in compost feedstocks	Less than Significant with Mitigation Incorporated	Mitigation Measure HAZ-1: Prepare and implement screening, monitoring, testing, and training procedures
Impact HAZ-4: Composting facility workers could suffer health effects as a result of exposure to bioaerosols	Less than Significant with Mitigation Incorporated	Mitigation Measure HAZ-2: Provide worker training and protective equipment
Impact HAZ-5: Composting operations may attract vectors, which may pose a health risk to facility workers and the general public	Less than Significant with Mitigation Incorporated	Mitigation Measure HAZ-3: Prepare a Vector Control Plan
Impact HAZ-6: Composting operations may expose workers, residents, and structures to increased fire hazards	Less than Significant	None required
3.10 Hydrology and Water Quality		
Impact HWQ-1: Degradation of water quality during Construction and Operation	Less than Significant with Mitigation Incorporated	Mitigation Measure HWQ-1: Prepare and implement a SWPPP

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
Impact HWQ-2: Degradation of Groundwater Quality during Operation	Less than Significant	None required
Impact HWQ-3: Alteration of the Existing Drainage Pattern of the Site	Less than Significant	None required
Impact HWQ-4: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge	Less than Significant	None required
3.11 Land Use and Agriculture		
Impact LU-1: Conflict with existing zoning for agricultural use, or a Williamson Act contract	Less than Significant	None required
Impact LU-2: Conversion of Farmland to non-agricultural use	Less than Significant	None required
3.12 Noise		
Impact NO-1: Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity during Construction	Less than Significant	None required
Impact NO-2: Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity due to Operations at the Compost Facility	Less than Significant	None required
Impact NO-3: Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity due to Traffic Volume Associated with the Project	Less than Significant	None required
Impact NO-4: Generation of excessive groundborne vibration or groundborne noise levels	Less than Significant	None required
3.13 Public Services and Utilities		
Impact PSU-1: Increase demand for police and fire protection and emergency medical services	Less than Significant	None required
Impact PSU-2: Require a sufficient water supply to serve the Project site	Less than Significant	None required

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
Impact PSU-3: Generate wastewater requiring treatment	Less than Significant	None required
Impact PSU-4: Generate stormwater drainage requiring the construction of drainage facilities	Less than Significant	None required
Impact PSU-5: Generate solid waste requiring landfill disposal	Less than Significant	None required
Impact PSU-6: Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities	Less than Significant	None required
3.14 Transportation and Circulation		
Impact TRANS-1: Increase in Traffic on Local Roadways during Construction	Less than Significant	None required
Impact TRANS-2: Increase in Traffic on Local Roadways during Operation	Less than Significant	None required
3.15 Tribal Cultural Resources		
Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource	Less than Significant with Mitigation Incorporated	Mitigation Measure TCR-1: Implement Mitigation Measures CR-1 and CR-2
3.16 Wildfires		
Impact WILD-1: Impair an adopted emergency response plan or emergency evacuation plan	No Impact	None required
Impact WILD-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	No Impact	None required
Impact WILD-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources,	No Impact	None required

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measure
power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment		
Impact WILD-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	No Impact	None required



1 Introduction

The California Environmental Quality Act (CEQA) requires that before a decision can be made to approve a project with potentially significant environmental effects, an Environmental Impact Report (EIR) must be prepared that fully describes the environmental effects of the project. This EIR analyzes the proposal to construct a new compost facility at the Jess Ranch (Proposed Project, or Project).

Joe and Connie Jess are the Project Applicants and Alameda County (County) is the Lead Agency for the Proposed Project. As such, the County has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. The County would certify completion of the EIR and, based on consideration of this document, would determine whether to approve or disapprove the Proposed Project.

1.1 Scope and Process of the EIR

This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering all of the approvals necessary to implement the Proposed Project. In conformance with CEQA, California Public Resources Code, Section 21000 et seq., this EIR provides objective information addressing the environmental consequences of the Proposed Project and the possible means of reducing or avoiding its potentially significant impacts. The guidelines for implementing CEQA help define the role of this EIR:

Plans for the Proposed Project have proceeded to a degree sufficient for adequate environmental analysis in conformance with CEQA. Accordingly, this EIR presents the overall types and levels of activities that the County could anticipate under the Proposed Project and describes their associated environmental impacts. The analyses, where necessary, are based on conservative assumptions that tend to overstate Project impacts.

The CEQA Guidelines, Section 15382, define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project...” Therefore, in identifying the significant impacts of the Proposed Project, this EIR concentrates on its substantial physical effects and upon mitigation measures to avoid, reduce, or otherwise alleviate those effects.

This EIR will initially be published as a Draft EIR. A Notice of Preparation (NOP) of the Draft EIR will be prepared and will be sent to responsible agencies and local print agencies in order to solicit comments to help determine the scope of the Proposed Project and solicit concerns of the affected public and agencies. After distribution of the NOP, the Draft EIR will then be subject to review and comment by the public, as well as responsible and other interested jurisdictions, agencies, and organizations during a 45-day review period which includes a public scoping meeting. Written responses to comments on the Draft EIR will be prepared and may specify changes to the Draft EIR. The responses to comments and any changes to the Draft EIR therein specified will become the Final EIR.

The County, in its review of the Proposed Project, will consider the entire environmental assessment contained in this Draft EIR. Upon completion of the environmental review process, the County will have the option to certify that the Final EIR: (1) has been completed in compliance with CEQA; (2) was presented to the Planning Commission where it was reviewed and considered prior to project approval; and (3) reflects the lead agency's independent judgment and analysis (State CEQA Guidelines Section 15090). If the EIR is certified, the Planning Commission will make a decision in a separate action whether the project Conditional Use Permit will be denied, approved, or conditionally approved.

The County can approve or conditionally approve the Proposed Project, if it chooses, even if significant impacts are identified. When significant effects are identified and the lead agency wishes to approve or conditionally approve the Project, CEQA Section 21081(a) requires that one of three specific findings be made for each significant effect. The possible findings include the following:

- Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- Specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

The County, as the lead agency, must also adopt a Statement of Overriding Considerations, in accordance with CEQA Section 21081(b), if the proposed project is approved with unavoidable significant effects to the environment. The Statement of Overriding Considerations is a statement by the decision makers acknowledging that significant unavoidable environmental impacts are acceptable when balanced against certain economic, legal, social, technological, or other benefits of the project.

1.2 Introduction to the Analysis

This section presents the general approach to analysis that was used in this Draft EIR to evaluate the impacts of the Proposed Project. More specifically, this section describes the EIR baseline scenario and the approach used to determine impact significance and mitigation measure requirements.

Per CEQA Guidelines Section 15125, the environmental setting is the physical conditions that exist at the date that the Notice of Preparation (NOP) is published. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

The existing conditions and setting for the environmental issue areas analyzed in this EIR are described in Chapter 3, Environmental Setting and Impact Analysis, and are consistent with the CEQA Guidelines Section 15125 definition.

1.2.1 Impacts and Mitigation Measures

As described above, an EIR analyzes the environmental effects of a proposed project, indicates ways to reduce or avoid potential environmental damage resulting from the project, and identifies alternatives to the proposed project. In accordance with CEQA, an EIR includes the following analytical steps:

- Identification of existing conditions in and around the proposed project sites;
- Analysis of the significant environmental impacts of the proposed project and the alternatives, including identification of thresholds of significance, for both project specific and cumulative impacts, by resource issue area;
- Disclosure of any significant environmental effects of the proposed project which cannot be avoided if the project is implemented; and
- Development of mitigation measures to minimize or avoid significant effects of the proposed project and the alternatives. Mitigation measures should be developed that can be reasonably expected to reduce significant adverse impacts of development to a less-than-significant level. The expected reduction of impacts should be quantified in the text of the report. Mitigation measures must be specific and must be written to be incorporated into a Mitigation Monitoring and Reporting Program.

Chapter 3 provides the regulatory and environmental setting, thresholds of significance, and environmental consequences for each resource category included in the analysis. The environmental setting and thresholds of significance discussion establishes the baseline and thresholds by which the Proposed Project is measured and analyzed. The environmental setting discussion addresses the conditions that exist prior to Project development (e.g., traffic conditions, air quality conditions) and provides the basis by which the Proposed Project and alternatives are measured for environmental impacts. A threshold of significance is identified for each resource category to determine if implementation of the Proposed Project could result in a significant environmental impact when evaluated against the environmental setting. The threshold of significance varies depending on the individual resource category. Impacts and feasible mitigation measures are presented, where appropriate, for each resource category.

The significance of the Project-specific and cumulative impacts is identified in one of three ways throughout the discussion: (1) no impact; (2) less than significant impact; and (3) significant impact (see Chapter 5 for the analysis of cumulative impacts). Feasible mitigation measures are identified, if available, for those impacts found to be significant, but are not presented for those impacts found to be less than significant. An impact is considered significant and unavoidable if there are no feasible mitigation measures available that would reduce the impact to a less-than significant level (see Chapter 5 for a summary of significant unavoidable impacts).

1.2.2 Summary of Alternatives

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed project with alternatives to the project that are capable of attaining most of the project's basic objectives, but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an

evaluation of a range of reasonable alternatives, including the no project alternative. Chapter 4 of this EIR identifies and analyzes such a reasonable range of alternatives; discusses the environmental effects of each alternative; compares the environmental effects of each alternative with the environmental setting and Proposed Project; and addresses the relationship of each alternative to the Proposed Project objectives. The determinations concerning the feasibility, acceptance, or rejection of each alternative considered in this EIR will be addressed and resolved in the County's findings when it considers approval of the project, as required by CEQA. In addition to the Proposed Project, this EIR analyzes the No Project Alternative and the In-Building Technology Alternative.

1.3 Public Participation

In accordance with CEQA Guidelines, the County encourages public participation in the planning and environmental review processes. Opportunities will be provided for the public to present comments and concerns regarding the CEQA and planning process through a CEQA public review and comment period and public hearings or meetings. Written public comments may be submitted to the County at any time during the public review and comment period, and written and spoken comments may be presented at the public hearing(s).

The County reviewed the Proposed Project proposal and identified potentially significant impacts that could result from implementation of the Proposed Project in a NOP published on April 26, 2018 (see Appendix A). The NOP was sent to responsible agencies and local print agencies. Comments regarding the scope and environmental analysis were accepted during the 30-day public review period that occurred from April 26, 2018 to May 26, 2018. A public scoping meeting was held on May 21, 2018 at the Alameda County Planning Department in Hayward, California (224 W. Winton, Room 160). The public scoping meeting, which 5 citizens attended, was intended to provide an opportunity to disseminate information and solicit comments on the scope and content of the EIR for the Proposed Project. Eight written and in-person comments were received during the public scoping meeting and public review period. Comment themes in both the public meeting and written comments included concerns with respect to traffic, fire hazards, odors, and noise.

The following issues have been fully considered by the County and were dismissed from further detailed evaluation in the Draft EIR, because no adverse impacts were identified that could potentially occur as a result of the Proposed Project: Mineral Resources, Population and Housing, Recreation, and Wildfire. The justification for dismissal of these resources from further evaluation is described in the Initial Study (see Appendix A) and summarized in the introduction to Chapter 3, Environmental Setting and Impact Analysis.

As described above, the Draft EIR will be available for a 45-day public review period. During this time, written comments on the adequacy of this Draft EIR may be submitted to the County. A public hearing will be noticed and held during this 45-day review period to receive spoken comments. Substantive comments received on the adequacy of the Draft EIR and submitted within the specified review period will be included and responded to in the Final EIR. Prior to approval of the Proposed Project, the County must certify the Final EIR and adopt a mitigation monitoring and reporting program for

mitigation measures identified in this report in accordance with the requirements of Public Resources Code Section 21081.

Following the close of the 45-day comment period, a Final EIR will be prepared. All comments received during the 45-day comment period and public hearing will be responded to in writing in the Final EIR. The Final EIR also will include any modifications to the Draft EIR text considered appropriate or necessary in light of the comments received or any other information that is available and relevant at that time. The Final EIR will be presented to the Planning Commission for certification as to its adequacy under CEQA.

1.3.1 Areas of Controversy, Issues Raised, and Areas Resolved in the EIR

Section 15123 of the State CEQA Guidelines requires the summary section of a Draft EIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public. Based on a review of comment letters received on the NOP and during scoping (see Appendix A), the following issues and areas of controversy were identified:

- Odor and dust that could impact neighbors
- Impacts on regional transportation network
- Potential for negative impacts on protected species in adjacent property due to use of existing dirt road during construction
- Potential difficulties with access road maintenance and upkeep
- Interference with bull grazing operations and health of bulls on adjacent property
- Security concerns on the Contra Costa Water District parcel given the increase in personnel permitted to access the parcel

All of the substantive environmental issues raised in the NOP and scoping comment letters have been addressed in this Draft EIR (Appendix A). No other areas of controversy or issues with implementation of the Proposed Project have been identified.

1.4 Organization of the Draft EIR

The Draft EIR begins with the **Executive Summary**, which contains a summary of the Draft EIR. Specifically, the summary includes an overview of the Draft EIR process, a description of the Proposed Project, a summary of alternatives to the Proposed Project, and a summary of environmental impacts and mitigation measures.

- **Chapter 1, Introduction**, provides an overview of the intended use and organization of this EIR, and sets forth some of the assumptions critical to the environmental analysis.
- **Chapter 2, Project Description**, provides a detailed discussion of the Proposed Project background, objectives, location and setting, and characteristics. A discussion of the required discretionary actions for the Proposed Project is also provided in this chapter.

- **Chapter 3, Environmental Setting and Impact Analysis**, provides a description of the existing regulatory and environmental conditions for each resource area evaluated in this Draft EIR, as well as an analysis of environmental impacts and mitigation measures associated with Proposed Project implementation. The resource areas are presented as follows:
 - 3.3 Aesthetics
 - 3.4 Air Quality and Greenhouse Gases
 - 3.5 Biological Resources
 - 3.6 Cultural Resources
 - 3.7 Energy
 - 3.8 Geology and Seismicity
 - 3.9 Hazards and Human Health
 - 3.10 Hydrology and Water Quality
 - 3.11 Land Use and Agriculture
 - 3.12 Noise
 - 3.13 Public Services and Utilities
 - 3.14 Transportation and Circulation
 - 3.15 Tribal Cultural Resources
 - 3.16 Wildfire

Proposed Project impacts are identified in each resource section, and they are numbered sequentially by chapter and impact number. That is, impacts in Chapter 3.1 are numbered 3.1-1, 3.1-2, 3.1-3; and so on. Mitigation measures identified for significant impacts are numbered in correspondence to their impact number.

- **Chapter 4, Alternatives**, describes a range of alternatives to the Proposed Project. These alternatives include: (1) No Project; (2) Proposed Project; and (3) In-Building Technology Alternative. This chapter evaluates the merits of the alternatives and compares the impacts of the alternatives to those of the Proposed Project.
- **Chapter 5, CEQA Required Assessment Conclusions**, provides a discussion of cumulative, growth-inducing, and significant unavoidable impacts of the Proposed Project, as described in further detail below.
 - **Cumulative Impacts** – This section provides an analysis of potential cumulative impacts that could result from approval of past, present, and reasonably foreseeable future projects in conjunction with the Proposed Project.
 - **Growth-Inducing Impacts** – This section provides a discussion regarding potential growth-inducing impacts associated with implementation of the Proposed Project.
 - **Significant Unavoidable Impacts** – This section identifies all significant and unavoidable adverse environmental impacts associated with implementation of the Proposed Project.

- **Chapter 6, Report Authors**, provides a list of preparers and contributors to development of the Draft EIR.
- **Chapter 7, References**, includes all reference material used in preparation of the EIR.
- **Appendices** – The appendices to the Draft EIR include the NOP, NOP Attachment, Fact Sheet and comment letters received on the NOP. The appendices also include detailed information and technical reports that support the conclusions of the Draft EIR.

2 Project Description

The following sections present the location and physical setting of the Jess Ranch Compost Facility, summarize relevant history and background at the Jess Ranch, discuss key elements of the Proposed Project, and identify the Proposed Project objectives. Discretionary actions and permits necessary to complete the Proposed Project are also identified at the end of this chapter.

2.1 Introduction

2.1.1 Project Background

The owners of Jess Ranch (ranch), Joe and Connie Jess, are the applicants for the Proposed Project located in eastern Alameda County, California. The Proposed Project would be located within the 160-acre Jess Ranch property located at 15850 Jess Ranch Road (APN 99B-7800-007-08), south of Interstate 580 (I-580), just east of the Altamont Pass at Grant Line Road. The Zoning classification for the property is "A" (Agricultural, 100 acre minimum parcel size) with an East County Area Plan (ECAP) Land Use Designation of Large Parcel Agriculture.

The property owners, who have been operating the ranch since 1969, assumed ownership in 1973 and would retain ownership of the project site following development of the Proposed Project. Like many of the Altamont area properties, the 160-acre ranch has historically been used as a cattle grazing operation. Currently, a majority of the ranch functions as a cow-calf operation, with ranch lands being used primarily for cattle grazing and breeding. The ranch typically supports approximately 50 head of cattle year-round.

The owners have previously worked with the Natural Resources Conservation Service (NRCS) and the Alameda County Resource Conservation District, and have participated in the NRCS' Environmental Quality Incentives Program. In 2007, the owners participated in the preparation of a Comprehensive Resource Management System Plan for the ranch and developed the Jess Ranch Conservation Plan. In addition, the owners hired private consultants to perform biological site assessments of the ranch in May 2005, November 2015, and March 2016. These previous actions are further described in Chapter 3, Environmental Setting and Impact Analysis.

Due to the arid nature of this part of Alameda County, the owners have previously brought in biosolids to apply to the grassland (began 1992). The land application of the biosolids had a very positive impact on the quality and growth of the pasture grasses. However, biosolids applications have since been discontinued (2014) due to the anticipated development of the proposed composting facility and will no longer occur at the site.

2.1.2 Introduction to the Composting Process

This section provides an overview of the typical composting process and provides a description of the specific types of composting procedures that would be utilized for the Proposed Project.

Composting is the aerobic, or oxygen-requiring, decomposition of organic waste by microorganisms under controlled, high temperature conditions. Like all living organisms, composting microbes require air, water, nutrients and a suitable temperature to grow and multiply. Proper management of these four basic needs is necessary to ensure a high rate of decomposition in a compost pile while also minimizing any potential nuisance conditions. During composting, microorganisms consume oxygen (O₂) while feeding on organic matter. As microbes successively break down and consume nutrients from complex organic compounds in the feedstock, compost is formed.

The general objectives of composting are to:

- Process organics wastes in a way that puts the organic material to its highest and best use instead of landfilling, by producing a soil amendment product
- Transform biodegradable organic materials into a biologically stable material in a reasonable time
- Destroy weed seeds, pathogens, insect eggs, and other unwanted organisms that may be present in the original feedstock
- Produce a product that can be safely used as soil amendment to support soil integrity and plant growth

In any well-managed composting facility, natural decomposition processes are accelerated and controlled to produce a quality product that meets applicable standards of use in a relatively short period of time.

Composting Essentials

An important requirement for active composting is an appropriate balance between carbon and nitrogen, which is measured by the carbon-to-nitrogen (C:N) ratio – the ratio, by weight of total organic carbon to total nitrogen. A blend of carbon and nitrogen is essential for the composting process. Grasses and green wastes such as leaves, along with food wastes and biosolids contain a high nitrogen content. More fibrous sources such as wood chips, branches, dried leaves, dried grasses, and straw provides a higher carbon content. Having a balanced ratio of carbon and nitrogen is a necessary component for the composting process to maintain aerobic conditions within the compost pile and sustain microbial activity.

Maintaining porosity within the compost pile is essential. Porosity is the volume of void space in a material divided by its total volume, and is closely related to particle size. If particle sizes are too small, then they will pack together and obstruct air movement in the pile. If air cannot move through the pile, the material can go anaerobic and result in potential nuisance conditions. Bulking agents are often utilized to help achieve the necessary porosity for active composting.

Moisture is also essential to composting, since much of the decomposition in a compost pile occurs within the liquid that covers the particle surfaces. Ideally, the moisture level within the compost pile will be between 40% and 60%. If a mixture is too wet, the water may displace the oxygen supply for microorganisms, resulting in potentially anaerobic conditions. If the mixture is too dry, it can inhibit the composting process and potentially result in fires.

Types of Composting Methods

A variety of methods or technologies have been developed to compost municipal organic feedstock materials. Each method has distinct operational characteristics such as compost pile configuration and level of management and equipment required. Factors such as project size, distance to sensitive receptors, and volume and type of feedstock materials all play a role in determining the appropriate method.

Two of the most common composting methods are open windrow composting and aerated static pile composting.

1. Windrow Composting

Windrow composting is a composting method by which organic materials are placed into long piles, or windrows. The windrows are turned periodically, which helps to add air to the piles, maintain porosity, maintain optimal moisture, and redistribute cooler and hotter portions of the pile. While turning typically occurs with a windrow turning machine, piles can also be turned with a loader.

While windrows can compost without some sort of cover placed over it, some composters will utilize a cover as part of the windrow composting process. Typically cover material includes micropore fabric material (a waterproof and breathable material), or use of a biocover that consists of wood media, finished compost, or ground compost overs. Covers help to protect the windrows from weather, and maintain moisture. The use of covers can also help to manage odors and reduce air emissions that result from the composting process. Additionally, use of covers may also reduce active compost time. With the covers, windrows are still turned periodically during the active composting phase. The micro-pore fabric cover is removed prior to turning and replaced following turning. A bio-cover would be incorporated into the windrow during the turning process, and a new biocover layer reapplied followed turning.

2. Aerated Static Pile Composting

Aerated static piles (ASPs) are closely managed piles that are mechanically aerated by blowers that either push (positive) and/or pull (negative) air through the piles. Positive air systems push air up through the compost pile, where a cover over the pile acts as a filter to reduce air emissions and odors. Negative air systems pull air from the bottom of the composting pile which is then conveyed via a piping system to a standalone biofilter to reduce odors and air emissions.

Air is being forced through the pile, so ASP systems are not turned as frequently as a windrow system. In addition, an ASP system can support larger pile sizes. The pathogen reduction process is shorter for ASP systems because the pile is covered or insulated (with a layer of wood chips or a membrane cover). Temperature sensors are used in the ASP system, and can be used to automatically control the frequency of aeration to prevent excessively high or low pile temperatures.

As a result, the active composting phase in an ASP system is faster than an open windrow method. Because of the larger pile sizes and faster active composting phase, ASP systems can support a larger annual throughput and/or a smaller composting footprint.

A negative air ASP, or a push/pull ASP system will utilize a standalone biofilter. Biofiltration uses microorganisms to break down or transform organic compounds into carbon dioxide, water and some salts. The biofilters are comprised of stockpiled loose organic materials, typically wood. Approximately every 1 to 2 years the biofilter material may require replacement. The spent biofilter material is an inert, innocuous organic compound that will require disposal in a landfill or may become part of the bulking agent used in the composting process.

Compost Management

The composting process can be broken down into four steps. Each is described in turn below:

1. Feedstock Receiving and Pre-processing

Incoming feedstocks are consolidated in a dedicated receiving area prior to being processed. The feedstock is typically prepared for composting through a pre-process, such as grinding, shredding and/or screening.

Greenwaste, which will be stored onsite before processing, may contain non-native plant seeds. In order to reduce the possibility of off-site transportation of the seeds, greenwaste will be stored for only short periods of time and will be ground to reduce the volume of the material before it is composted. Water will be added during the grinding process to reduce dust and air-borne particles. Once the material is placed into piles for composting, it will be covered to prevent wind-blown particles from leaving the site. Plant seeds are also killed during the composting process.

During this phase, materials to be composted may be either premixed prior to being formed into a windrow, or are layered (e.g., typically on a bed of ground yard trimmings, wood chips or sawdust) and then mixed with the turner.

A truck or conveyor system is used to deliver the feedstock from the stockpiles to the composting area.

2. Active Composting

Following pre-processing, the prepared feedstock is constructed into windrows or ASP piles for the active composting process. For an open windrow composting method, this active composting phase can take 30-45 days. For an ASP system, this active composting phase can take 14-20 days. It is during this active composting phase that the composting material heats up to a proper temperature to comply with pathogen reduction requirements. It is also during this phase that weed seeds, insect eggs, and other unwanted organisms are destroyed. Temperature is monitored through this active composting process to verify that the materials are reaching the proper temperatures. A

majority of the objectionable odors and air contaminants are reduced by 80% during the first 12-14 days of the composting cycle.

For an open windrow composting method, the windrows will be turned periodically during this phase. While turning can be achieved with a Front End Loader, it is typically performed with a Windrow Turner. Pile turning introduces oxygen, accelerates physical degradation of feedstocks and provides an opportunity to adjust the moisture content to the optimum level. Many windrow turners have a watering attachment or a water truck will accompany a turner, which enables moisture to be added to the pile while turning.

Aerated static piles are not turned during active composting as they are on a forced air system, so pile porosity must be maintained by structural integrity of the material. Amendments such as ground wood chips or green waste (shredded tires may also be used to accomplish the same purpose) are commonly used to help maintain pile structure.

At the completion of the active composting cycle, the compost product is moved out of its zone or pile with front-end loaders and delivered to the curing area.

3. Curing

Following the active composting phase, the material is transferred to a separate area for curing. The curing phase allows for the compost product to stabilize before final screening. Compost material will cure for approximately 20-40 days.

4. Final Screen, storage and load out

Following the curing phase, the compost product will be prepared to send to market. This usually involves screening the finished product to customer specs and to separate the larger fraction (or “overs”).

The finished product meets requirements for maximum acceptable pathogen concentrations, meeting requirements for Salmonella, fecal coliform in the compost product as outlined in the CalRecycle regulations.

Finished compost product will also meet maximum acceptable metals concentrations as outlined in the regulations. Metals include: Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, and Zinc.

Physical Contamination of the finished compost product is also limited by the regulations. Finished product cannot contain more than .5% by weight of contaminants greater than 4 millimeters, and no more than 20% of that .5% can be film plastic greater than 4 millimeters.

Testing and sampling occur during and after the composting process to ensure these standards prior to removal of the compost from the facility.

Odor Control

Odor management is vital to successfully siting and maintaining composting facilities. The first step in odor control is an understanding of the process and how to minimize odor generation.

The primary sources of odor generation at composting facilities are:

1. Delivery and handling of raw feedstocks
2. Active composting process
3. Screening operations
4. Curing process

Controllable factors that impact the potential for odor generation includes feedstock quality, aeration, moisture, porosity, pH, temperature and time. Most of the odorous compounds are generated during the first 14 days of active composting. To reduce any potential odors generated by anaerobic metabolism, the process is kept in an aerobic state.

Best management practices throughout the composting process to help reduce odor includes good housekeeping practices, liquids control such as leachate collection and treatment, and prompt processing of more odorous feedstock. Potential emission control systems include chemical scrubbers, granular activated carbon (GAC), trickling filters (biofiltration towers) or biofilters.

2.1.3 Need for the Proposed Project

Throughout California, local jurisdictions are using recycling and composting technologies as a practical and efficient method to divert organics materials from landfills. As new state and local policy results in more aggressive diversion targets, the need for additional organics processing/recycling infrastructure increases. In the August 2018 report, *Composting in California*, a joint paper written by the California Air Pollution Control Officers Association, the California Air Resources Board and CalRecycle, it is stated that California will need at least 75-100 new organics processing facilities to meet the demands of the new policies.

The Proposed Project responds to a series of Alameda County (County) and State of California (State) mandates to increase organics diversion from landfills.

Under State law, cities and counties have been mandated to significantly reduce the volume of all solid waste taken to landfills. Specifically, the 1989 California Integrated Waste Management Act (IWMA), Assembly Bill (AB) 939, mandated that jurisdictions reduce the volume of waste that is landfilled by 25 percent in 1995 and by 50 percent by 2000, as compared to the 1990 baseline disposal levels. The Act also established a hierarchy of preferred waste management practices as follows:

1. Source reduction, to reduce the amount of waste generated at its source;
2. Recycling and composting, to divert solid waste from entering landfills; and

3. Environmentally safe landfill disposal or transformation (incineration of solid waste).

There have also been a number of new state laws enacted affecting organic waste management, which include the following:

- **Senate Bill (SB) 1383.** Requires reduction in methane by reducing 50% of currently disposed organic waste in landfills by 2020, and 75% by 2025.
- **Assembly Bill (AB) 1572.** This bill gives the California Department of Resources and Recycling Recovery (CalRecycle) greater flexibility in ensuring locals comply with sustainable waste management law while reducing burdens associated with oversight for areas that exceed state requirements.
- **AB 876.** Requires jurisdiction to report estimated additional organics infrastructure required and locations for new/expanded infrastructure. The local counties and regional agencies are also required to estimate the amount of organic waste during a 15-year period.
- **AB 1594.** The bill requires a local jurisdiction to include information in an annual report on how the local jurisdiction intends to address these diversion requirements and divert green material that is being used as alternative daily cover.

In 1990, Alameda County voters approved Measure D, the Alameda County Waste Reduction and Recycling Act, with the goal of reducing waste by 75 percent by 2010. Measure D also established the Alameda County Source Reduction and Recycling Board (Board), which is responsible for programs that promote source reduction, recycling, recycled product procurement, market development, and grants to non-profit waste reduction enterprises.

Because organic materials comprise a large portion of the waste stream, and because organics diversion is critical to achieving a countywide 75 percent landfill waste diversion goal, the Alameda County Waste Management Authority (Authority), also known as StopWaste, and the Board have targeted organic materials for diversion from landfills and have enacted policies and goals to develop composting capacity within the County (ACWMA 2015). The Authority is responsible for the preparation of the Alameda County Integrated Waste Management Plan and Alameda County Hazardous Waste Management Plan. In addition, it manages a long-range program for development of solid waste facilities and offers many programs in the areas of source reduction and recycling, market development, technical assistance and public education.

In 2003, the ACWMA adopted the *Alameda County Source Reduction and Recycling Plan, Vision 2010: 75% and Beyond* (Plan). The Plan identified specific programs, objectives, and strategies for the County to reach a 75 percent and beyond diversion rate, and served as a guiding document, together with the Countywide Integrated Waste Management Plan (CoIWMP).

The Organics Program of the Plan consists of two complementary efforts:

- a sustainable landscaping program that prevents, and recycles plant debris and promotes recycled content building materials in landscapes, and

- centralized collection and processing of food scraps, plant debris and contaminated paper.

According to the Plan, food is the single largest category of landfilled waste at 12 percent, and with the addition of contaminated paper and plant debris, the compostable portion of the waste stream is 27 percent of all landfilled materials. The 2017-2018 Annual Waste Characterization Study showed that organics, broken into categories: food soiled paper, plant debris and food scraps made up 18.2% of the waste stream. The Plan considers composting as the preferred method of handling compostable materials because it is a cost effective, proven technology that is environmentally beneficial. The Plan also states that to reach the 75 percent diversion, targeting programs to divert foodwaste and contaminated paper and demolition and construction debris are especially important.

The ACWMA has established a goal of promoting the siting of up to two composting facilities within Alameda County. This goal is established in the Plan adopted by both the County Recycling Board and StopWaste. The purpose of in-county facilities is to minimize the transporting of organic materials out of the County and to provide a local site for the purchase of finished compost materials, such as mulch. As described above, the majority of the organic waste material generated in the County is currently being landfilled, or is being transported to organics processing facilities outside of the County.

Table 2.1-1 lists current composting facilities in Alameda County along with associated capacities and feedstock types accepted at each facility.

Table 2.1-1. Active Composting Facilities in Alameda County

Composting Facility	SWIS Number	Location	Maximum Permitted Throughput Tons/day	Maximum Permitted Capacity (Tons/year)	Waste type
Bee Green Recycling and Supply	01-AA-0326	740 Julie Ann Way Oakland , CA 94621	199	NA	Green Materials, Wood waste
Vision Recycling	01-AA-0308	30 Greenville Rd. Livermore , CA 94551	200	62,000	Green Materials, Wood waste
Vision Recycling	01-AA-0313	6756 Central Ave. Newark , CA 94560	200	72,000	Wood waste
Vision Recycling Green Waste Composting	01-AA-0322	30 Greenville Rd. (B) Livermore , CA 94551	3,375	13,500	Green Materials, Wood waste
Altamont Landfill Composting Facility	01-AA-0325	10840 Altamont Pass Rd. Livermore , CA 94551	500	346,700	Agricultural, residential foodwaste, Construction/demolition, Green Materials, Mixed municipal

Source: CalRecycle 2018

The Proposed Project is consistent with goals and objectives of the Alameda County Waste Management Plan as stated in Objective 2.5 which is “to achieve by composting an additional 425,000 tons of countywide diversion of organics per year by 2020”.

Currently, a major portion of Alameda County’s composting feedstock is being transported out of County to composting facilities, such as the Recology Blossom Valley Organics North facility located in Vernalis (approximately 21 miles southeast of the Proposed Project), Newby Island Landfill composting facility located in Milpitas (approximately 36 miles southwest of the Proposed Project), and the Redwood Landfill composting facility located in Marin County (approximately 79 miles northwest of the Proposed Project). Approximately 35 percent of the remaining potential organic composting feedstock is currently disposed of in Alameda County landfills. In addition, Waste Management’s Altamont Landfill has been recently permitted to accept up to 500 tons per day of greenwaste, foodwaste and agricultural waste. Altamont Landfill opened the first industrial covered ASP composting facility in Alameda County in April 2018 (Waste Management 2018). The facility is capable of processing up to 500 tons per day (TPD) of residential green waste co-collected with foodwaste and is located approximately 5 miles northwest of the Project area. No other composting facilities in Alameda County accept agricultural waste, foodwaste, or biosolids, as shown in Table 2.1-1 (California Department of Resources Recycling and Recovery [CalRecycle] 2018).

The Bay Area produces approximately 160,000 dry tons of biosolids annually. Currently biosolids are generally applied during dry months and used as landfill cover during the rainy season. The Proposed Project would be the only site in the Bay Area that could use biosolids as a compost feedstock.

It is anticipated that a significant portion of the feedstock supplying the Proposed Project would come from Alameda County. Organic feedstocks would also likely come from other Bay Area counties.

The location and design of the Proposed Project have been chosen to serve the anticipated market areas—primarily agricultural uses in the California Central Valley — while providing sufficient isolation to minimize the potential for aesthetic concerns, odors and similar effects in residential areas. Transportation distances, both to transport organic material feedstock to the Project site and to transport composted material to market areas, are balanced with remoteness to minimize adverse effects. The Project site is located within a 30-mile radius of major sources of organic materials, which is generally a lesser distance than where organics are currently being transported for processing.

2.1.4 Project Objectives

The primary objectives of the Proposed Project are as follows:

- Assist jurisdictions in Alameda County in meeting the diversion goals of the IWMA and Alameda County’s Measure D by diverting organic materials from landfills;

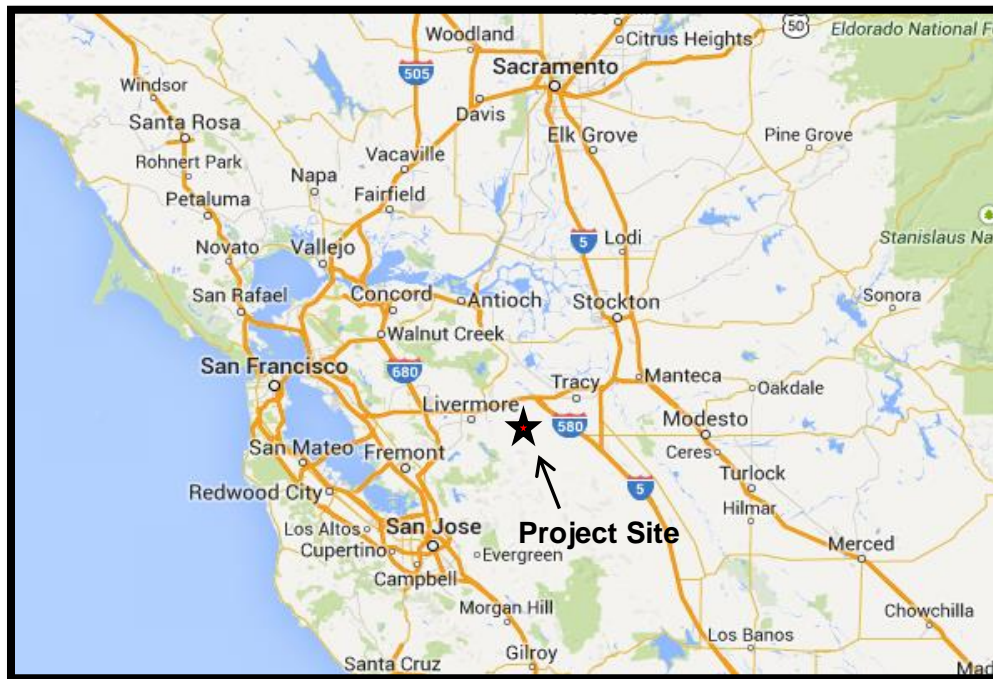
- Assist other jurisdictions in other counties, as appropriate, in meeting their individual diversion goals;
 - Assist the state in providing additional organics processing capacity to meet the requirements of recent legislation;
 - Facilitate and secure a long-term, in-county, organics processing facility available to government agencies to increase the diversion of green and food materials from the waste stream;
 - Satisfy local and regional market demands for compost-based amendments; and
 - Support the County in meeting their 75-percent goal for waste reduction countywide by diverting from the waste stream up to 1,000 TPD of organic materials.
-

2.2 Overview of the Proposed Project

2.2.1 Regional Project Setting

The Proposed Project is located in the eastern portion of unincorporated Alameda County, at the eastern edge of the San Francisco Bay Area. San Joaquin County is located immediately to the east. As such, the Project site is conveniently located close to the urban and suburban organic waste generating communities of the San Francisco Bay Area, as well as the potential agricultural soils amendment markets of California's Central Valley. The nearest communities to the Proposed Project include the City of Livermore, located approximately eight miles west of the Project site, and the City of Tracy, located approximately eight miles east of the Project site. The California Aqueduct and the Central Valley Project Canal are located approximately 2.5 miles northeast of the Project site. The regional location of the Project site is shown on Figure 2.2-1.

Figure 2.2-1. Regional Location



2.2.2 Project Site

The Proposed Project would be implemented at the Jess Ranch property located east of the Altamont Pass at 15850 Jess Ranch Road (APN 99B-7800-007-08) (Figure 2.2-2). The Project site comprises approximately 30 acres located within the southeastern portion of the 160-acre Jess Ranch property (Figure 2.2-3). The Project site is bounded on the north by I-580; to the east, south and west by agricultural lands; and to the southwest by the Southern Pacific Railroad right-of-way.

Access to the Project site is provided via I-580 and West Grant Line Road; the I-580/Grant Line Road interchange is located approximately 0.5 mile from the Project site. At the terminus of West Grant Line Road is Jess Ranch Road. A gravel road crosses the Project site from north to south. A second gravel/dirt road is located south of the storage area and runs along the southern Project site boundary. The former Southern Pacific Railroad right-of-way crosses through the Jess Ranch property from southeast to northwest for slightly more than 1,500 feet; this right-of-way is 200 feet in width and delineates the southern boundary of the Project site. This rail corridor remains in active use by the Altamont Corridor Express train. Project site access routes and the location of the former Southern Pacific Railroad right-of-way are displayed on Figure 2.2-3.

The parcel on which the Project site is located does not contain any residences or other buildings. Adjacent to the Jess Ranch are parcels which are both publicly and privately owned. Parcels to the west and north are owned by the Contra Costa Water District (CCWD) (APN 99B-7800-007-07) and are under a conservation easement to be used as habitat mitigation. The Contra Costa Water District property shares an address with the Jess Ranch property at 15850 Jess Ranch Road; however, these two properties have separate APNs, as distinguished above. Cattle continue to graze on these parcels as part of the property management plan. The CCWD parcel contains a temporary modular

residence that will be removed from the site in 2019, as well as a service center structure for wind turbine operators. The CCWD parcel is currently accessed by a number of vehicles daily. An easement shared with the CCWD would be used as part of the Proposed Project only during pre-construction as a temporary access road. Access to the Project site during construction and operations would be through use of a new road that would be constructed as part of the project.

Figure 2.2-2. Project Site



Other land uses in the general vicinity of the Proposed Project include wind farms, grazing lands and rural residences. The nearest school is the Mountain House School located approximately four miles to the north of the Project site on Mountain House Road.

The Project site is located on the eastern edge of the Altamont Hills, and drains into the San Joaquin Delta watershed by way of Mountain House Creek. The average elevation of the Project site is approximately 470 feet. The rainfall averages 12-14 inches per year, with very high variation. The rangeland ecosystem is predominantly annual grassland.

Seasonal drainages traverse the Project site, carrying water primarily during the rainy season, and drying out during the summer and fall. Perennial vegetation primarily consists of grasses and forbs. The Project site does not have any woody vegetation, which is typical for the Altamont Hills area.

The Project site is located within California's Altamont Pass Wind Resource Area and, at one time, included wind-generating turbines on much of its acreage. The wind turbines are no longer in operation and remnant structures have been removed.

2.2.3 Project Description

The Proposed Project will receive organic materials for composting, which will produce a compost product soil amendment for agricultural, horticultural, erosion control and land reclamation uses.

The Proposed Project would receive primarily green materials, food materials, and biosolids, but may also receive untreated scrap wood, natural fiber products, non-recyclable paper waste, and inert material, such as sediment, gypsum, wood ash, and clean construction debris. Non-hazardous liquid wastes may also be accepted to be used as moisture conditioning in the piles to aid in efficient composting and minimize nuisance conditions.

Food materials, green materials and biosolids are defined as:

- Green Material or greenwaste, means any plant material that is separated at the point of generation, contains no greater than 1.0 percent of physical contaminants by dry weight, and meets the requirements of Section 17868.5 (14 California Code of Regulations [CCR] 17868.5). Green material includes, but is not limited to, yard trimmings, untreated wood wastes, natural fiber products, wood waste from silviculture and manufacturing, and construction and demolition wood waste. Green material does not include food material, vegetative food material, biosolids, mixed material, material separated from commingled solid waste collection or processing, wood containing lead-based paint or wood preservative, or mixed construction and demolition debris. (14 CCR 17852 Chapter 3.1, Article 1).
- Food Material or foodwaste, means a waste material of plant or animal origin that results from the preparation or processing of food for animal or human consumption and that is separated from the municipal solid waste stream. Food material includes, but is not limited to, food waste from food facilities as defined in Health and Safety Code section 113789 (such as restaurants), food processing establishments as defined in Health and Safety Code section 111955, grocery stores, institutional cafeterias (such as prisons, schools and hospitals), and residential food scrap collection. Food material does not include any material that is required to be handled only pursuant to the California Food and Agricultural Code and regulations adopted pursuant thereto. (CCR Title 14, Chapter 3.1, Article 1, Section 17852).
- “Biosolids” means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Biosolids includes, but is not limited to, treated domestic septage and scum or solids removed in primary, secondary, or advanced wastewater treatment processes. Biosolids includes the residue solids resulting from the co-digestion of anaerobically digestible material with sewage sludge. Biosolids does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during the preliminary treatment of domestic sewage in a treatment works. (CCR Title 14, Chapter 3.1, Article 1, Section 17852).

In addition to the processing of greenwaste, foodwaste, and biosolids, other organic material feedstocks such as wood waste, wood ash and straw could be processed into a high quality compost, mulch product and/or soil amendment. Because some of these feedstocks contain a



relatively high moisture content, the compost facility anticipates using a variety of dry bulking agents such as wood waste, ground brush, rice hulls and straw.

Potential greenwaste sources include local cities and waste transfer stations. Foodwaste and feedstock materials' sources include the many restaurants and supermarkets throughout the San Francisco Bay Area and neighboring jurisdictions. It is anticipated that the compost facility would receive approximately forty percent of its material as greenwaste and ten percent in the form of foodwaste. Biosolids would likely make up the remaining fifty percent of the feedstock processed at the site. The percentage of bulking agents used would vary, depending on the combination of primary waste products and resulting moisture content.

As mentioned previously, the Proposed Project would be designed to accept up to 1,000 TPD of organic feedstock at full build out. Based on the bulk density of the incoming feedstocks, the site would process approximately 2,800 cubic yards of material per day. Table 2.2-2 below shows the average and maximum quantities of individual feedstocks on a TPD basis.

Table 2.2-1. Average and Maximum Daily Feedstock

Feedstock	Average TPD	Maximum TPD
Biosolids	300	500
Greenwaste	500	800
Foodwaste	80	200
Wood Chips	70	160
Agricultural Waste	30	150
Ash	20	80
Total	1,000	

TPD=tons per day

At full buildout, the Proposed Project will occupy a footprint of approximately 30 acres. Within the 30 acre footprint, the site will include a receiving and mixing building, a biofilter, active composting pads, curing pads, storm water catchment basins and perimeter drainage ditches, and circulation roads/areas. The Proposed Project would be developed in two phases. Initially, the Proposed Project would be developed to support a daily throughput of up to 500 TPD. As market needs determine, the facility would be further developed to full build out, supporting a maximum throughput of up to 1,000 TPD. See Figures 2.2-3, 2.2-4, and 2.2-5.

The Proposed Project would utilize an aerated static pile (ASP) system technology for the active composting phase, using positive aeration, negative aeration or a combination of both. The Proposed Project may also utilize microporous fabric covers or biocovers placed over active composting piles to reduce odors and emissions necessary to meet the Bay Area Air Quality Management District (BAAQMD) emission requirements.

Figure 2.2-3. Proposed Project Location at Jess Ranch

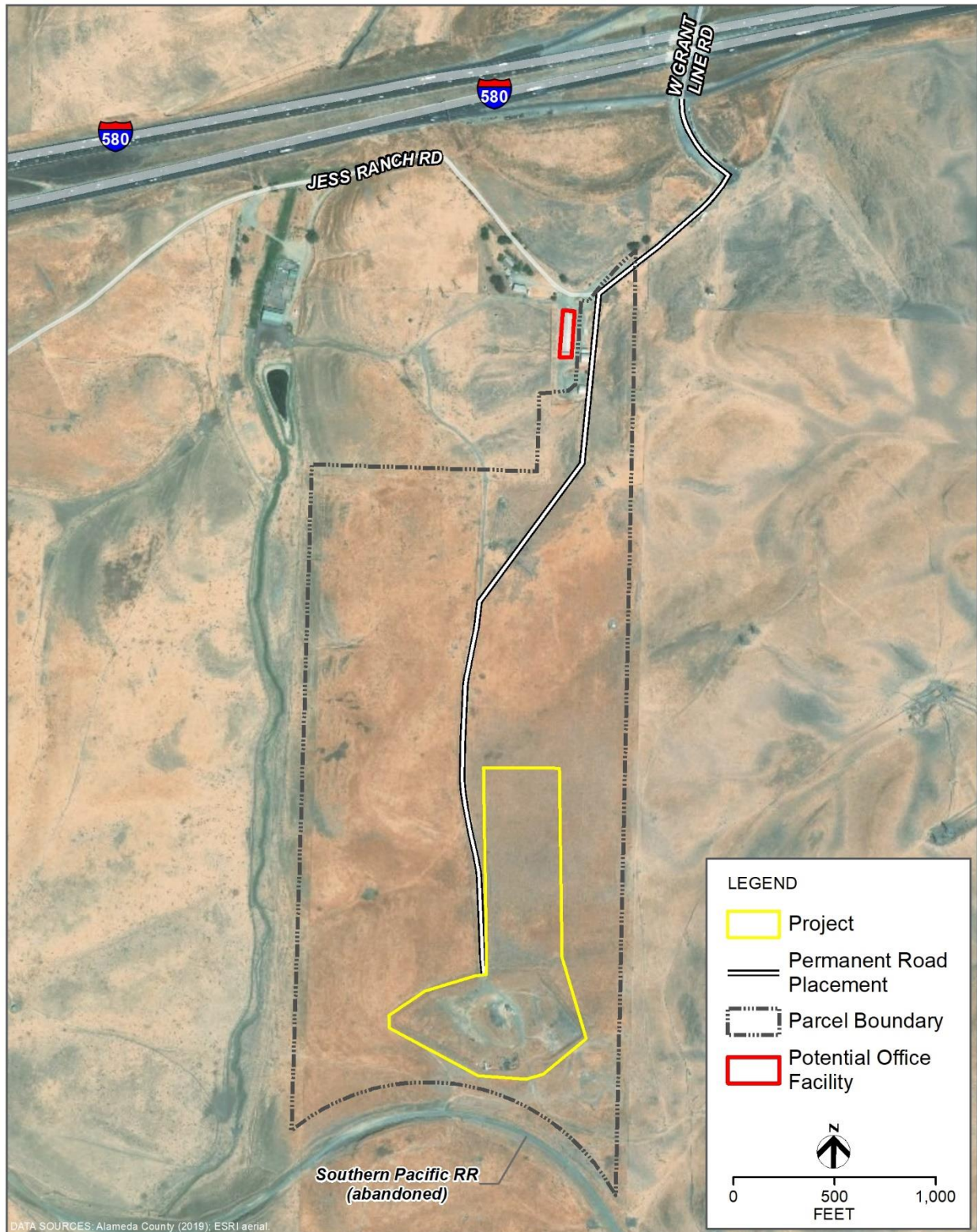


Figure 2.2-4. Site Plan (Overview)

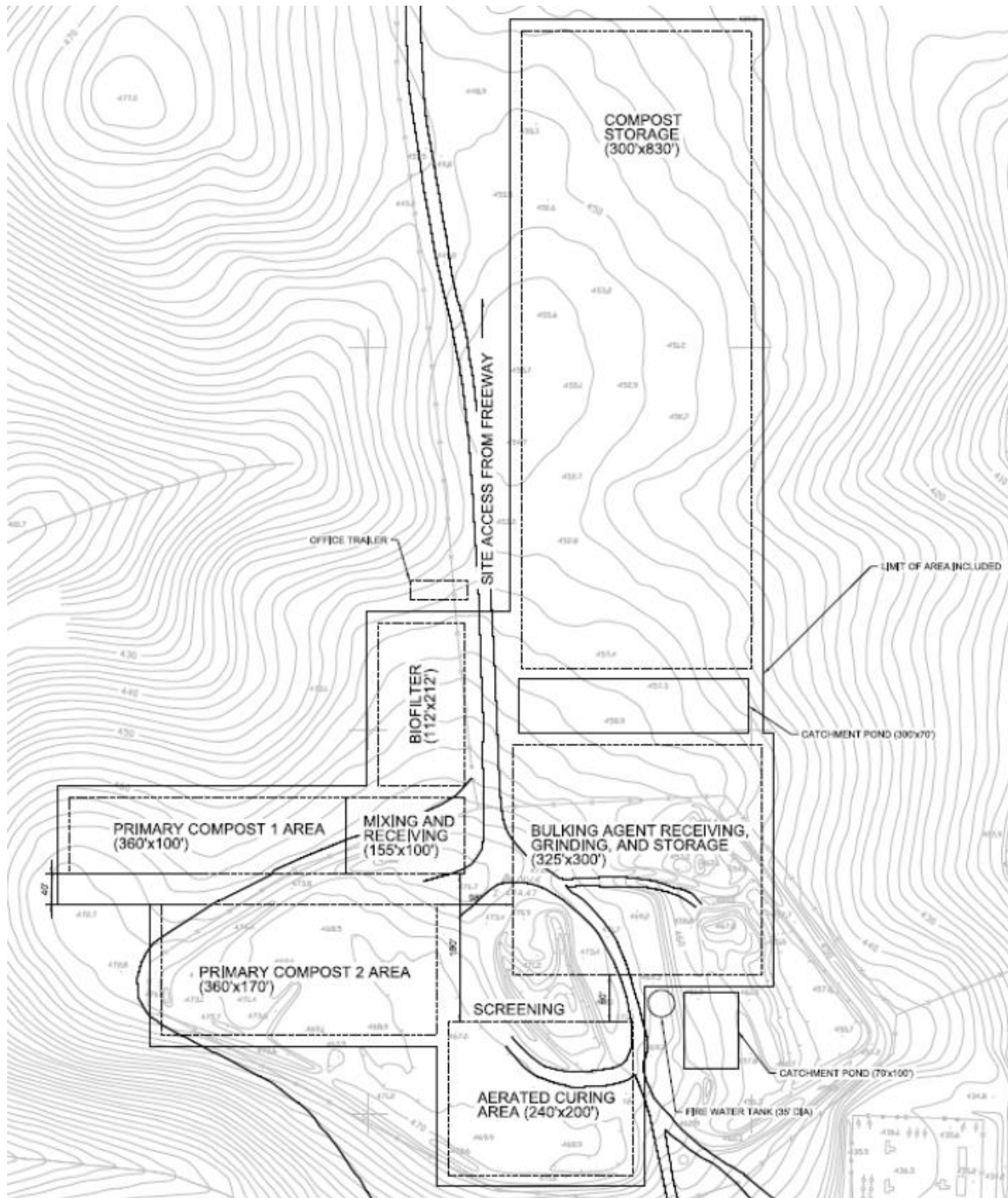


Figure 2.2-5. Site Plan (Detail)



Organic feedstock materials would be delivered to the site by trucks from regional municipal solid waste collection transfer stations, wastewater treatment plants, and other sources. It is anticipated that the majority of feedstock would arrive from sources within the San Francisco Bay Area, with some feedstocks potentially coming from the Central Valley.

Under normal operating conditions, the Proposed Project would generate approximately 100 round-trips (or 200 vehicle trips) per day for the 500 TPD facility (Phase 1) and 200 round trips (400 vehicle trips) per day for the 1,000 TPD facility at full build out (Phase 2). The vehicles would consist of trucks delivering feedstock and water, employee vehicles, trucks off-hauling finished compost products, and visitors to the site up to six days per week.

The Proposed Project would accept incoming material approximately 312 days per year (6 days per week). Operations at the Proposed Project are planned for 24 hours per day, 7 days per week. However, composting operations would occur in most instances during daylight hours. Delivery of materials would occur mostly during daytime hours, but also may be delivered during nighttime hours.

The Proposed Project would also involve the use of office space for up to 12 administrative staff. An office building located just outside of the Project Area parcel boundary at 15850 Jess Ranch Road in Tracy (APN 99B-7800-007-07) would be one of two possible locations for the Jess Ranch office facility (see Figure 2.2-3). This property is owned by Contra Costa Water District and would be leased by the compost facility operator under the Proposed Project. No changes or modifications to the existing buildings or outside areas would be proposed under this option. The second option for office space would be to employ portable buildings within the existing Project Area; details for this option are provided in the *Installation of Facilities* section below.

Construction and operations of the Proposed Project are described in further detail below.

2.2.4 Construction of the Proposed Project

At full build-out, the Proposed Project would process up to 1,000 TPD of organic material utilizing ASP system technology. Construction of the Proposed Project would include grading the currently unimproved property, dewatering, excavation and soil removal, deposition and compaction of fill material, reuse of excavated soil as fill, transporting and installing materials and equipment, disposal of soil and construction waste, and construction of ponds and Project access roads. Construction would be completed in two phases: construction of the initial facility with a capacity of 500 TPD (Phase 1) and expansion of the facility for a capacity up to 1,000 TPD (Phase 2).

Other site improvements would include the following features, all described in further detail below:

- Entrance road with entrance/exit scale
- Arriving and departing vehicle circulation area
- Feedstock receiving and mixing area

- Bulking agent receiving, grinding, and storage area
- Aerated active composting pads with leachate collection systems
- Compost curing pads
- Potential portable modular office and administration building
- Maintenance building and storage area
- Employee parking area
- Final product (compost) storage pad
- Finished compost sales and load-out pad
- Screening area
- Stormwater catchment ponds
- Biofilters for the mixing and receiving building, and ASP composting infrastructure

Construction Methods and Activities

Construction of the Proposed Project would be completed in two phases: construction of the initial facility up to 500 TPD (Phase 1) and expansion of the facility up to a full buildout of 1,000 TPD (Phase 2). For each phase, typical construction sequencing and activities to be involved in the construction include:

- Preparation of staging areas, including transport of materials and equipment,
- Site preparation and earthwork such as grading, excavation, and backfill,
- Installation of facilities.

The following subsections describe the actions associated with each of these activities in greater detail.

Construction Staging and Access

Staging of materials and equipment would occur at key points during the construction schedule. Staging for the improvements would occur within the boundaries of the Project site, but outside of the area of key improvements. The area designated for staging would be cleared and prepared for receipt of construction equipment and building materials.

Excavated material would be reused, as possible, within the Project site for fill. During peak excavation and earthwork activities, the Proposed Project could generate up to 30 roundtrip truck trips per day for the onsite movement of material. However, during the majority of construction activities, the average daily truck trips per day would be approximately 10 to 15 round trips. Roadways that would be used by construction traffic include Jess Ranch Road, Grant Line Road and Highway I-580/Interstate 205.

Offsite road improvements for temporary access purposes during Phase 1 of construction includes Grant Line Road from the I-580 off-ramp to the termination of the road; this improvement would involve widening the existing road by 10 feet to accommodate truck traffic and vehicles parking on Grant Line Road. The offsite road shares an easement with Contra Costa Water District and would be utilized only temporarily during the early portion of Phase 1 construction. A new access road would be constructed to avoid crossing Contra Costa Water District property during construction of the facility.

Site Preparation and Earthwork

Site preparation and earthwork would consist of stripping the area of existing vegetation and either removing or storing the materials for later use in the finished grading phase. Grading would consist of cutting or filling the site to produce overall site gradients as specified in the final design. Surfaces would be graded to drain to a collection system and/or perimeter drainage ditch that would deliver the runoff to the catchment basins.

Grading includes the preparation of the primary operational areas, such as the arriving and unloading area, building and maintenance areas, grinding and processing areas, active composting pads, and curing and final product storage areas.

Grading would take place in the areas of the active composting, curing, and finished product storage pads. Level building pads are also required for the Mixing and

Receiving, bulking agent storage, and potential portable modular office and administration building and maintenance buildings. Grading of the overall site (about 30 acres) is estimated at about 91,000 cubic yards, summarized by phase and location below. The cut material would be utilized as fill required for the facility, thereby eliminating the need for soil export.

- Phase 1 Earthwork: It is estimated that up to 50,000 cubic yards of material would be graded (excavated and filled) for this phase of the Project.
- Phase 2 Earthwork: It is estimated that up to 30,000 cubic yards of material would be excavated for this phase of the Project.
- Access Road: It is estimated that 11,000 cubic yards of material would be excavated for the access road.
- Drainage: Additional site grading would include drainage swales to direct stormwater runoff away from the site as well as to control runoff from the active composting, curing, and finished product storage pads.

Installation of Facilities

- Permanent Main Entrance/Exit Road
 - A two lane, 25 foot wide, all-weather entrance road would be constructed from the southerly terminus of Grant Line Road to the entrance scale within the Project site (Figure 2.4-3). The entrance road would proceed westerly from Grant Line Road, and then turn south passing east of the existing windmill maintenance facility. This permanent facility access road would be constructed in accordance with Alameda County Public Works and Fire Department standards.
- Entrance Scales
 - The facility includes a truck scale station, which would weigh the trucks entering and exiting the compost facility to determine incoming and outgoing weights.
- Traffic Lanes
 - The compost facility would include internal traffic lanes (minimum of 20 feet wide) for circulation within the facility.
- Greenwaste Receiving Area
 - Clean greenwaste would be stored outside in a designated area adjacent to the processing building. Any mixed loads containing foodwaste would be placed into the processing building.
- Foodwaste/Biosolids Mixing and Receiving Building
 - The Mixing and Receiving building for foodwaste and biosolids consists of an enclosed building that provides three days of storage capacity for up to 1,000 tons of mixed greenwaste/foodwaste, foodwaste and biosolids materials. Blending would occur in the building prior to transportation of materials to the active composting area.

- Outside of, and adjacent to, the building, front-end loaders (FELs) or other operational equipment would be stored on a hardstand located adjacent to the Mixing and Receiving Building. A small fueling tank and other hazardous materials storage containers would also be located at the hardstand site.
- Screening/Load out Area
 - The screening/load out area would be located adjacent to the finished product storage area. Compost would be screened and then loaded into transport trucks for delivery to customers.
- Conveyor System
 - A conveyor system may be installed and utilized at the site that would allow materials to be moved easily from the receiving and pre-processing area to the primary compost area, then to the curing and finished screening areas.
- Composting Pads/Working Surfaces
 - The Proposed Project includes the installation of composting pads. All working surfaces would meet the hydraulic conductivity requirements of the Regional Water Quality Control Board (RWQCB), and be resistant to damage from movement of mobile operating equipment and weight of piles. Working surfaces would meet one of the following construction and material specifications in accordance with the RWQCB State General Order for Composting :
 - Soil Asphalt concrete or Portland cement concrete;
 - Compacted soils, with a minimum thickness of one foot; or
 - An equivalent engineered alternative.
 - In lieu of meeting the hydraulic conductivity methods, RWQCB allows Project proponents to propose implementation of a groundwater protection monitoring program; a work plan for such programs would be submitted to the RWQCB for approval prior to construction.
 - The active composting pads would also include a leachate collection system whereby leachate would be collected and reapplied to the compost piles or sent offsite to a wastewater treatment plant for disposal.
- Air conveyance
 - The air conveyance system would consist of a series of blowers and underground piping, which would be used to positively or negatively aerate the composting piles.
- Storage/Finished Product Loading Pad
 - The compost screening, storage and product loading pad would be constructed on approximately 8 acres.
- Greenwaste Stockpile Area
 - The greenwaste stockpile area would include storage capacity for three days of greenwaste deliveries. The piles would be up to 12 feet high, 50 feet wide and 250 feet long.

- Processing Area for Foodwaste
 - The foodwaste processing area would be contained within the mixing building and would consist of storage bays and feedstock mixers/blenders with a conveyor system.
- Bulking Agent Receiving, Grinding, and Storage Area
 - The Bulking Agent Receiving, Grinding, and Storage Area would contain grinders, conveyors and stockpiles.
- Non-compostable Residual Off-Haul Stockpile
 - It is anticipated that up to three percent of the incoming feedstock may contain non-compostable materials, which would be screened before or after the composting process. These non-compostable residual materials would be screened, stockpiled and loaded or conveyed into trailers for disposal or further processing offsite at a permitted facility.
- Maintenance Building, Storage Area, and Office and Administration Building
 - Administration and maintenance functions for the compost facility would be housed within facilities that would include employee offices (onsite or offsite), an onsite maintenance building, a storage area and employee parking.
 - The maintenance building would be a 1,000 square-foot fabric or metal covered structure. The maintenance building would include space for regular maintenance of operating equipment (blowers, conveyors, and pollution control equipment), fueling and storage of operating equipment, and storage of other operating supplies and spare parts.
 - The first option for an office and administration building would be to lease the existing building owned by Contra Costa Water District, located immediately adjacent to the Project Area parcel boundaries to the northwest (as shown in Figure 2.2-3). The second option for the office and administration building would consist of an approximately 800 square-foot pre-fabricated modular trailer unit that would be located within the Project Area. The office areas would include space for managers and employees to conduct regular business activities, as well as a break/dining and restroom facilities.
 - A total of 15 parking spaces are proposed to provide parking for 12 full time employees, as well as visitors to the site. Parking areas would be constructed in accordance with Alameda County requirements with materials that provide for all-weather access.
- Catchment Ponds
 - Stormwater in the Project site would be diverted and contained onsite in engineered catchment ponds, thereby preventing any contamination to off-site watercourses and ponds. Water from the catchment ponds would be reapplied to the active compost piles or evaporate. A total of two catchment ponds would be constructed to accommodate a 25-year, 24-hour peak storm event. The total combined capacity of the ponds would be approximately 20 acre-feet. Ponds would be designed to contain all precipitation within the operational areas to

prevent any overtopping or offsite flow of liquids. Water stored onsite will evaporate or be used in the composting process during summer months

All ponds would be designed and constructed with a pan lysimeter monitoring device located under the lowest point of the pond to detect potential discharge. Pond liners would meet the hydraulic conductivity requirements of the RWQCB. Catchment pond monitoring would include quarterly inspections of the pond's liner, available capacity and volume, and ancillary structures. Annual monitoring of liquid within the ponds would be conducted each spring (when there is sufficient water to sample). Pan lysimeters would be checked monthly during the wet season. If fluid is detected, the RWQCB would be contacted within 48 hours and a sample would be collected and sent for analysis.

- **Perimeter Drainage Ditch**

- A perimeter drainage ditch would collect runoff from the facility and direct it to one of the two catchment ponds. Drainage ditches would be designed to convey precipitation and runoff from a 25-year, 24-hour peak storm event, and meet a hydraulic conductivity of 1.0×10^{-5} cm/s or less. Ditches would be properly sloped to prevent ponding along reaches and would be kept free and clear of debris to allow for continuous flow of liquid to the catchment ponds. Ditches would be inspected and cleaned out prior to the rainy season every year.

- **Perimeter Berm**

- A perimeter buffer soil berm would be located just outside of the drainage ditches and surrounding the entire perimeter of the facility. The berm would be two feet high, approximately 4 feet wide and would serve to prevent offsite discharge.

- **Vegetation Screening**

Trees would be planted on the western side of the facility to create a windbreak and help screen the facility from public view.

- **Biofilters**

The Proposed Project includes the use of at least one biofilter, which is a control device that utilizes living organisms to capture and biologically degrade volatile organic compounds generated as part of the composting process. The biofilter will be sized adequately to throughput and site needs.

Construction Equipment

Table 2.2-2 lists the types of major equipment anticipated for each of the two construction phases, and an approximate count for each type. The equipment usage may vary, based on the construction schedule, the contractor's capabilities, and the availability of equipment.

Table 2.2-2. Types of Major Equipment Needed for Each Phase

Construction Phase	Anticipated Number and Type of Equipment That May Be Utilized By the Construction Contractor*	Anticipated Duration of Phase
Site Preparation	2 bulldozers 1 road grader 1 soil compactor 2 backhoes 1 crane	1 month
Phase 1 Construction – 500 TPD Facility	3 rubber-tired loaders 1 water truck 1 road grader 1 soil compactor 2 backhoes 1 crane	4 months
Phase 2 Construction – 1,000 TPD Facility	2 rubber-tired loaders	4 months
Site Cleanup	1 backhoe 1 road grader 1 soil compactor	1 month

*Equipment may be utilized concurrently

Construction Schedule

Grading of the site is planned to occur during non-rainy months between April 15th and October 15th. It is anticipated that construction for Phase 1 would begin in Spring 2020 and be completed in Fall 2020; construction for Phase 2 could then begin as early as Spring 2021 and be completed in Fall 2021. However, Phase 2 would not occur until the additional capacity is required for the facility, so that phase could be postponed up to 5 years following Phase 1.

It is estimated that construction activities could take place up to 10 hours per day, 6 days per week, Monday through Saturday. Construction activities would typically occur during daylight hours and as allowed by County ordinance. The specific number of hours that each piece of equipment would be used during a typical construction day is not known and would be determined by the construction contractor.

The typical crew size for each construction phase would be five to ten people, plus inspectors. It is expected that up two construction crews could be present during the most intense construction periods. Work hours would be determined by permits issued by regulatory agencies and County ordinances.

Detailed Construction Sequencing

Phase 1 construction activities are anticipated to follow the sequence outlined below:

- Site Preparation
- Grading and finishing of permanent access road (11,000 cubic yards)
- Grading of composting area (30,000 cubic yards)
- Grading of finished product storage area (10,000 cubic yards)

- Pouring foundation for primary composting and aeration area
- Pouring foundation for process building
- Installation of process building (fabric building)
- Installation of weigh scale and scale house
- Installation of electrical power
- Installation of water tank for fire storage
- Potential installation of portable modular office and administration building (depending on office and administration building option chosen)
- Installation of water line from existing well to office building
- Paving of secondary composting area
- Installation of fencing
- Construction of stormwater catchment ponds, perimeter ditch and berm.
- Site Cleanup.

Phase 2 construction activities are anticipated to follow the sequence outlined below:

- Grading of composting area (40,000 cubic yards)
- Grading of finished compost storage area (10,000 cubic yards)
- Pouring foundation for primary composting and aeration area
- Paving of secondary composting area
- Construction of stormwater catchment ponds.

2.2.5 Operation of the Proposed Project

Days and Hours of Operation

Operations at the Proposed Project are planned for 24 hours per day, 7 days per week. However, composting operations would occur in most instances during daylight hours. Delivery of materials would occur mostly during daytime hours, but also may be delivered during nighttime hours.

Current cattle grazing activities, and operations at the Jess Ranch unrelated to the composting operation would continue to occur on the portions of the property not used for the Proposed Project.

Delivery, Reception, and Onsite Distribution

The Proposed Project would involve approximately 12 employees and 5 visitors per day. Under normal operating conditions, the site would generate approximately 100 round trips (200 vehicle trips) per day for the 500 TPD facility (Phase 1) and 200 round trips (400 vehicle trips) per day for the 1,000 TPD facility at full build out (Phase 2). The vehicles would consist of trucks delivering feedstock and water, employee vehicles, trucks off-hauling finished compost products, and visitors to the site up to six days per

week. These trucks are anticipated to be end-dumps or live floor transfer type trailers that are tarped and/or sealed to prevent blowing or leaking of materials during transport to the site. The truck and trailer combinations have maximum payloads of up to approximately 25 tons. Trucks access the compost facility via an all-weather road connecting from the I-580 and Grant Line Road interchange to the site, for a distance of approximately 0.75 mile.

Composting operations would occur primarily during daylight hours; however, operations are planned for 24 hours per day, 7 days per week.

To minimize peak hour Project-related truck traffic, night delivery and unloading of organic feedstock materials may occur, as well as loading and shipping of finished compost product.

Night loading and unloading operations would be illuminated with shield light standards similar to those found on construction sites. Additionally, facilities would be provided with directional nighttime lighting for security and safety purposes. To minimize generation of fugitive light, fixtures proposed for the Proposed Project would be effectively shielded and directed inward toward the proposed facilities.

Trucks arriving to the site would be weighed at a scale located at the entrance of the facility. The vehicles would proceed to the Materials Receiving area. After unloading their contents, the trucks would be weighed again when departing. Similarly, vehicles arriving empty to purchase finished compost would be weighed when arriving and departing. Scale Attendants would conduct financial transactions for the delivery. The scale attendants would also serve as the first step in a materials screening program whereby the vehicle driver would be requested to verify the source of the materials and their appropriateness for processing at the facility.

Feedstock Receiving and Pre-Processing

Incoming feedstocks would be unloaded and consolidated in one of three receiving areas prior to being processed. All foodwaste, comingled food/greenwaste and biosolids would be received within an enclosed building. Clean greenwaste would be received outside in an open designated area. Bulking agents received at the compost facility would be processed as necessary in an outdoor area adjacent to the Mixing and Receiving Building.

The incoming feedstock would be prepared for composting using pre-processing methods such as sorting, grinding or shredding. Larger, bulkier fractions that are not suitable for composting, such as large pieces of wood, could be segregated and stockpiled for off-site use including biofuel or landscape mulch. Within the Mixing and Receiving Building, mixed feedstock materials would be loaded into pugmill mixers and combined with the amendment materials. The mixers would discharge the combined mixture onto a hardstand where it would be moved by a conveyor system or front end loader to the active composting area.

To help minimize odors, the mixing building would be under negative air pressure with internal air pressure less than exterior conditions, thereby acting to contain and control

odors and emissions that may generate from within these structures. For the proposed Mixing and Receiving Building, this negative air condition would be achieved by actively drawing air from the building. Air exhausted from the Mixing and Receiving Building would be captured and directed to a biofilter. The ventilation system for this building would be designed to achieve a minimum of six (6) air changes per hour.

Processed feedstock materials may be transported onsite by front-end loaders, loaded directly into a trailer, dump truck or conveyor system for delivery to the active composting pad, or stockpiled in the processing area for a short period of time for consolidation.

Active Composting

After the feedstock is pre-processing and prepared for composting, the organic materials would be moved to the active composting pad. During the active composting phase, the feedstock will be composted using an ASP system technology for a period of approximately 14-20 days.

The active composting pads would also include a leachate collection system, where any leachate would be collected and either reapplied to the compost piles, or transported off-site to a wastewater treatment plant for disposal.

Curing

Following the active composting phase, the compost would be transferred to the curing area. The curing phase allows for the compost product to stabilize following the primary composting phase in anticipation of the final screening. Curing areas would be smaller than the primary static piles, since there is a substantial reduction of material during the active composting phase.

Monitoring and Testing

The Proposed Project would be required to comply with CCR to ensure public health and safety (Title 14, Chapter 3.1, Article 7, Section 17868.1-17868.4). The regulations require regular sampling of finished compost material for compliance with heavy metals and pathogen reduction standards. Testing methods and parameters are described in further detail in Chapter 3, Environmental Setting and Impact Analysis.

Finished Product

Once the compost has completed the curing process it would be transferred to a finished product storage area. The product would be stored in this area until it is ready to be moved out to customers.

Most, though not all of the compost, would be screened prior to sale so that it is sized to meet market requirements. Screening would be conducted using a portable screening plant such as a trommel screen. The screen separates the compost into two fractions: the unders or undersize fraction passing through the screen and the overs, or larger fraction, or that which does not pass through the screen. The unders are typically what are sold as compost (3/8 inch screen size is typical but certain markets specify different screen sizes). The overs are typically used to add additional structure back into the earlier compost process; use as a biocover, sold for fuel; or sold for other uses.



The screened product would be temporarily held in an approximately eight-acre area onsite. Additional screening would occur within the finished material loading area to ensure higher end product materials, as needed.

Load-out

Finished compost (and other products) would be stockpiled onsite prior to being loaded out for delivery to end users. Load-out would include using front-end loaders to load a variety of trucks. It is anticipated that some of the finished compost would be back-hauled from the site in transfer trailers that have delivered feedstock to the facility.

Operations Equipment

The Proposed Project would utilize various pieces of equipment in order to receive and process the organic materials. Table 2.2-3 below provides a list of the equipment anticipated to operate the facility on a day-to-day basis.

Table 2.2-3. Operation Equipment

Electric Equipment	Number	Horsepower
Horizontal Grinder	1	500
Organics Mixer	2	125
Aeration Blowers	22	5
Diesel Powered Equipment	Number	Horsepower
Compost Turner	1	540
Trommel Screen	1	100
10-Wheel Dump Trucks	2	200
Wheel Loaders	3	250
Mobile Cover Winder	1	75

Fire Prevention

The Proposed Project will be operated in compliance with all relevant regulations for fire prevention. In accordance with CalRecycle regulations (Title 14, Chapter 3.1., Article 6, Section 17867(8)) and Section 1908.3 of Chapter 19 of the California Fire Code, facility operations will be done in such a way to provide fire prevention, protection and control measures, including but not limited to:

- Temperature monitoring and reporting of windrows and ASP systems
- Limits on sizing of composting, curing and storage piles
- Provide for adequate water supply for fire suppression
- Isolation of potential ignition sources from combustible materials
- Fire lanes at a minimum of 20 feet wide to allow fire control equipment access to all active composting areas.

Water Demand and Supply

The required water volume to serve the Proposed Project would need to accommodate an annual maximum throughput of up to 300,000 tons of material. Although the quantity of water can vary, depending on a variety of issues, such as material feedstock moisture content, wind, the use of covers, etc., a facility of this size would likely require availability of between 10,000 and 25,000 gallons of water per day. In addition, The Proposed Project includes a 120,000 gallon onsite water tank for fire suppression purposes.

Generally, composting facilities require additional moisture to be added to the composting process in order to reach an optimal moisture concentration of approximately 55 percent. The Proposed Project would utilize biosolids for feedstock as one of the primary feedstocks in their process, which contain approximately 80 percent water. Because of the high moisture content of biosolids, rather than requiring additional water, drier materials would need to be added to the process in order to reduce the moisture content to optimal levels for composting. Therefore, the water demand for the Project would be lower than other composting facilities that do not process biosolids.

The primary water supply for the Proposed Project would be provided by the Byron Bethany Irrigation District (BBID). Although the Project site is outside of the boundaries of the district, BBID water is generally available for users outside of its district boundaries. BBID would supply water from their canal located approximately 2.4 miles to the north, in Contra Costa County. The water would be delivered to the facility utilizing water tanker trucks.

In the event that BBID does not have water available due to extreme drought conditions, recycled water is available from the City of Tracy's (City) wastewater treatment plant. According to the City, the use of recycled water for the Proposed Project would be consistent with the City's General Plan, which encourages the use of recycled water for industrial purposes. The wastewater treatment plant is located approximately 8 miles east of the proposed facility. The City currently produces approximately 7 million gallons per day of recycled water. In addition, the City has recently been approved for an \$18 million grant to extend its recycled water infrastructure and pipelines to the western portion of the City. Once the pipeline extension is completed (2019), recycled water would be available at approximately 4 miles from the proposed facility. This water source would be available for the foreseeable future, and water trucks would transport the recycled water to the proposed facility.

The City of Livermore also has recycled water available for the Project. According to the City, there is sufficient surplus recycled water available at several sites within the city limits and there is no restriction that the water be used within the city boundaries.

During the three wettest winter months of the year, catchment ponds constructed on the site as part of the Project's stormwater control system could provide the facility's water supply. Stored stormwater from the retention ponds would be aerated and treated/conditioned prior to its reuse for onsite purposes. It is anticipated that all of the water used on site would be directed to and retained within the catchment ponds. The catchment ponds would be designed to meet or exceed RWQCB requirements.

The combined catchment pond capacity for the Proposed Project is preliminarily sized at approximately 20 acre-feet. This estimated capacity would be enough to support average

12-month cyclical water demands of the facility, as augmented by the BBID canal water supply. Consistent with the additional storage requirements that may be included in the stormwater permit, two feet of freeboard capacity would be provided within the storage area to contain excess stormwater flows. Any excess water would be made available for irrigation of the adjacent grazing land at the site or trucked off site for disposal at a waste water treatment facility.

Additionally, about 200 gallons per day of potable water would be required to support an estimated twelve full time employees and visitors. This potable supply would be provided from the existing onsite well that currently supplies water for cattle on Jess Ranch and has the capacity to support both uses. The estimated volume of water currently produced by the well is approximately five gallons per minute, a sufficient capacity to support the existing and proposed uses.

In order to provide sufficient water for fire protection, water would be obtained from the BBID irrigation canal, the City of Tracy (recycled water), or the City of Livermore and stored onsite. A 120,000-gallon water storage tank would be is proposed for fire protection purposes (1,000 gallons per minute for 2 hours in accordance with Alameda County Fire Department regulations).

Wastewater

Primary sources of wastewater generated by the Proposed Project includes compost leachate, truck washout wastewater, and wastewater from sanitation uses. To provide for flexibility in ultimate design and operation of the Proposed Project, combined systems are proposed to address reuse, treatment and/or disposal of wastewater resulting from truck washing and leachate generated by the composting process.

All active leachate and truck washing/area wash down wastewater would be held onsite for moisture conditioning of the compost piles. The preferred option is to reuse the wastewater onsite for operations. Any wastewater that cannot be recycled within the Project site would be temporarily held in tanks onsite for ultimate offsite treatment and disposal at an approved wastewater treatment facility.

Wastewater would also be generated by sanitation uses (e.g., toilets, employee washrooms). Wastewater from these activities would be treated by a septic system, held in a holding tank for disposal or through the use of portable chemical toilets. Solids from the septic tank would be periodically removed and transported to a wastewater treatment plant by a contract operator. All such sanitary wastewater treatment/disposal systems would be reviewed and approved by the Alameda County Department of Environmental Health. If holding tanks or chemical toilets are used, they would be periodically pumped out by toilet providers and the waste disposed of at an appropriate site.

2.3 2.3 Required Discretionary Actions

A summary of the anticipated permits and approvals that are likely to be required for the Proposed Project is provided below in Table 2.5-1. Agencies with jurisdiction over those permits or approvals would consider the information provided in the EIR in determining under what conditions to issue permits or approvals.

Table 2.3-1. Summary of Anticipated Permits and Approvals

Agency	Type of Approval
Federal	
United States Army Corps of Engineers	Clean Water Act Section 404 Permit
United States Fish and Wildlife Service	Section 7 Consultation for Federal Endangered Species Act compliance
State	
California Department of Fish and Wildlife	Consultation for State Endangered Species Act compliance
California Native American Heritage Commission	Consultation for effects on Native American burials or artifacts
Regional Water Quality Control Board	General Order Coverage or Waste Discharge Requirements National Pollutant Discharge Elimination System General Permit for Stormwater Discharge Associated with Construction Activities, and Industrial Stormwater Permit Clean Water Act Section 401 Water Quality Certification
CalRecycle	Solid Waste Facilities Permit
Local	
Bay Area Air Quality Management District	Authority to Construct, Pollution Control District Regulation VIII-Fugitive Dust Control, Rule 8010 Permit to Operate Permit to Construct
Alameda County	Conditional Use Permit Building and Grading Permits Review of Stormwater Pollution Prevention Plan
Alameda County Waste Management	Determination of Conformance with County Integrated Waste Management Plan (CoIWMP) CoIWMP Amendment (Non-Disposal Facility Element)
Alameda County Department of Environmental Health (Local Enforcement Agency)	Solid Waste Facilities Permit Approval and Permit for Septic System Design and Installation Registration with Certified Unified Program Agency (CUPA) Review and Approval of Vector Program
Alameda County Flood Control District, Zone 7	Approval for proposed onsite septic system

3 Environmental Setting and Impact Analysis

3.1 Introduction

This chapter of the Draft EIR contains 14 subchapters that describe those environmental resources with the potential for environmental impacts as a result of implementation of the Proposed Project. The environmental resource topics analyzed in detail are:

- 3.3 Aesthetics
- 3.4 Air Quality and Greenhouse Gases
- 3.5 Biological Resources
- 3.6 Cultural Resources
- 3.7 Energy
- 3.8 Geology and Seismicity
- 3.9 Hazards and Human Health
- 3.10 Hydrology and Water Quality
- 3.11 Land Use and Agriculture
- 3.12 Noise
- 3.13 Public Services and Utilities
- 3.14 Transportation and Circulation
- 3.15 Tribal Cultural Resources
- 3.16 Wildfire

Subchapters 3.3 through 3.16 contain the following information about each resource topic, as applicable:

- Description of the regulatory setting;
- Description of the environmental setting, as well as background information about the resource topic;
- Discussion of the criteria and thresholds used in determining the level of significance of the Proposed Project's environmental impacts;
- Discussion of the impacts of the Proposed Project on the resource, including the level of significance of each impact; and
- Mitigation measures that would avoid, minimize, or compensate for any significant impacts.

3.2 Impact Criteria Eliminated from Further Analysis

3.2.1 Aesthetics

The Initial Study (IS) prepared for the NOP dismissed one aesthetics impact criterion from further analysis because the Proposed Project is not located within a designated scenic highway, and therefore would not substantially damage scenic highway resources.

3.2.2 Agriculture and Forest Resources

The NOP IS dismissed three agriculture and forest resource criteria from further analysis because the Project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and there are no forest lands located in the Project area. However, the Proposed Project could conflict with existing zoning for agricultural use and with an existing Williamson Act Contract, and therefore, this agriculture criteria is relevant to the Proposed Project and is discussed in section 3.8 Land Use and Agriculture.

3.2.3 Hazards and Hazardous Materials

The NOP IS dismissed four hazards and hazardous materials impact criteria from further analysis because the Proposed Project is not located within one-quarter mile of an existing or proposed school, is not located on a site included on a list of hazardous materials sites, and is not located within an airport land use plan. Further, the Proposed Project would not interfere with an adopted emergency response or evacuation plan.

3.2.4 Hydrology and Water Quality

The NOP IS dismissed one hydrology and water quality impact criteria from further analysis because the Proposed Project is not located within a seiche, tsunami, or mudflow hazard area, and therefore would not increase exposure of people or structures to increased risks from these conditions.

3.2.5 Land Use and Planning

The NOP IS dismissed one land use and planning impact criteria from further analysis because the Proposed Project is not located within an established community, and therefore would not conflict with such land uses.

3.2.6 Mineral Resources

Mineral resources have been fully considered by Alameda County and all impact criteria were dismissed from further detailed evaluation in the NOP IS and this Draft EIR because no adverse impacts were identified that could potentially occur as a result of the Proposed Project. There are no known mineral resources near the Proposed Project.

3.2.7 Noise

The NOP IS dismissed one noise impact criteria from further analysis because the Proposed Project is not located within the vicinity of a private airstrip or an airport land use plan. Additionally, the Project is not located within two miles of a public airport or public use airport.

3.2.8 Population and Housing

Population and housing has been fully considered by Alameda County and all impact criteria were dismissed from further detailed evaluation in the NOP IS and this Draft EIR because no adverse impacts were identified that could potentially occur as a result of the Proposed Project. The Proposed Project does not provide for new housing or demolish any existing residences, and would not affect regional or local population projections. The Proposed Project would not affect the location, distribution, density, or growth rate of the population in the surrounding area or the region.

3.2.9 Public Services

The NOP IS checklist dismissed three public services criteria from further analysis because the Proposed Project would not include new housing and would not generate students or increase demands for schools, parks, or other public facilities.

3.2.10 Recreation

Recreation has been fully considered by Alameda County and all impact criteria were dismissed from further detailed evaluation in the NOP IS and this Draft EIR because no adverse impacts were identified that could potentially occur as a result of the Proposed Project. There are no recreational facilities on or near the Proposed Project, and the Proposed Project would not generate a demand for recreational facilities or services.

3.2.11 Wildfire

Wildfire has been fully considered by Alameda County and all impact criteria were dismissed from further detailed evaluation in the NOP IS and this Draft EIR because no adverse impacts were identified that could potentially occur as a result of the Proposed Project. According to the Cal Fire Alameda County Fire Hazard Severity Zones Map, the Proposed Project is located in a Moderate Fire Hazard Severity Zone of an SRA (Cal Fire 2007). The Project Area is also not located in the direct vicinity of very high fire hazard severity zones.

3.3 Aesthetics

This section addresses the subject of aesthetics and visual quality with respect to the Proposed Project. It includes a description of existing visual conditions of the site, a summary of adopted public policies that are pertinent to visual quality, and an evaluation of potential aesthetic effects associated with constructing the proposed compost facility.

3.3.1 Regulatory Framework

Regulations governing the Proposed Project have been established and are enforced at both the State level and the local or regional level; these are described in detail below.

Federal

No specific federal regulations related to aesthetics are applicable to the Proposed Project.

State

California Scenic Highway Program

The State Scenic Highways program, a provision of the California Streets and Highways Code, was established to preserve and enhance the natural beauty of California (Caltrans 2015). According to the California Department of Transportation (Caltrans) Scenic Highway Mapping System, a portion of I-580 that is north of the Project site is eligible for designation as a State Scenic Highway, but has not officially been designated as such. Therefore, it is not subject to Caltrans' Scenic Corridor Protection Program, which is designed to protect and preserve the aesthetic quality of designated scenic highways.

Local

The Proposed Project is subject to Alameda County's Land Use jurisdiction. Applicable plans include the County-wide *Alameda County General Plan*, as well as the supporting *East County Area Plan* (ECAP).

Scenic Route Element of the Alameda County General Plan

The *Alameda County General Plan* Scenic Route Element (Element) was adopted by the Alameda County Board of Supervisors in May 1966 and was last amended in 1994. This element, consisting of text and a map, is designed to serve as a guide for establishing programs and legislation for the development of a network of scenic routes. A primary goal of the Element is the preservation and enhancement of scenic qualities and natural scenic areas adjacent to and visible from scenic routes. The Element contains objectives, definitions, policies, standards, and implementation measures (Alameda County, 1966).

Scenic routes are defined as consisting of three components: the right-of-way, the adjacent scenic corridor, and areas extending beyond the scenic corridor. Scenic corridors are either 1) areas that extend beyond a scenic route right-of-way and are of

sufficient scenic quality to be acquired by state or local jurisdictions, or 2) areas to which development controls should be applied to preserve and enhance nearby views or maintain unobstructed distant views along a scenic route so as to provide a pleasant route of travel (Alameda County, 1966).

Roadway segments that are designated as scenic routes in the Project vicinity, as identified in the Element, include portions of I-580 and Altamont Pass Road (approximately 3,000 feet north of the Project). The Element outlines a series of principles for protecting the County's scenic roadway corridors. Excerpts of applicable principles are provided below:

- Provide for normal uses of land and protect against unsightly features.
- In both urban and rural areas, normal permitted uses of land should be allowed in scenic corridors except that panoramic views and vistas should be preserved and enhanced: 1) through supplementing normal zoning regulations with special height, area, and side yard regulations; 2) through providing architectural and site design review; and 3) through prohibition of unsightly development or use of land.
- Encourage owners of large holdings to protect and enhance areas of scenic values. Public agencies and private individuals that have control of large holdings should be encouraged to protect and enhance natural resources within their properties. Cooperation should also be sought with owners of smaller lots and with community improvement and conservation groups.
- Design Hill Area Access Roads to be Compatible with Natural Features. Hill area access roads should be designed to preserve stands of mature trees, and in such a manner as to be compatible with the existing natural topography. Narrow and one-way streets should be utilized in hill areas, where necessary, to preserve natural features.
- Preserve and Enhance Natural Scenic Qualities in Areas Beyond the Scenic Corridor. Views from scenic routes will comprise essentially all of the remainder of the County beyond the limits of the scenic corridor. The corridor is intended to establish a framework for the observation of the views beyond. Therefore, in all areas in the County extending beyond the scenic route corridors, scenic qualities should be preserved through retaining the general character of natural slopes and natural formations. Development of lands adjacent to scenic route corridors should not obstruct views of scenic areas and development should be visually compatible with the natural scenic qualities. In developed and undeveloped areas, outdoor advertising structures, utility and communication towers, poles and wires should be located only where they will not detract from significant scenic views.

In addition to these principles, the Element recommends the following general scenic development standards:

- Alteration to natural or artificial land contours should not be permitted without a grading permit issued by the local jurisdiction as a means of preserving and enhancing the natural topography and vegetation in developable areas. Mass grading should not be permitted. The following criteria should be applied in the review of grading permits in developable areas:

- As a means of preserving natural ridge skylines within the County, no major ridgeline should be altered to the extent that an artificial ridgeline results;
- Access roads should be located and designed to keep grading to a minimum;
- Natural ground contours in slope areas over 10 percent should not be altered more than 5 percent overall; and
- Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems, and should be planted with low maintenance, fire-resistant plant materials that are compatible with the existing environment.

Alameda County General Plan – East County Area Plan

In addition to the Alameda County General Plan, three area plans address specific goals for unincorporated areas of the County (i.e., the East County Area, the Castro Valley Area, and the Eden Area). The Proposed Project lies within the East County Area, where future development is governed by the East County Area Plan (“ECAP”). The ECAP includes the following sensitive viewshed goals and policies:

Goal: To preserve unique visual resources and protect sensitive viewsheds.

Policy 108: To the extent possible, including by clustering if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks and other public viewpoints. This policy does not apply to agricultural structures to the extent it is necessary for agricultural purposes that they be located in more visible areas.

Policy 114: The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardence.

Policy 115: In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. 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.

Policy 116: To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling, or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.

Policy 117: The County shall require that, where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes

shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.

Policy 119: The County shall require that access roads be sited and designed to minimize grading.

Policy 120: The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.

3.3.2 Environmental Setting

This subsection describes the existing conditions in the Proposed Project area as they pertain to aesthetic resources, including descriptions of the following aesthetic elements of the Project area: the existing visual character, selected key views, and viewer groups and their typical responses and sensitivity.

Visual Character

Visual character is a descriptive tool (rather than an evaluative tool) that is based on defined attributes that are neither good nor bad in themselves. The visual character of the region, as well as the visual character of the Project vicinity, is described below.

Regional Character

Situated within eastern Alameda County, the Proposed Project lies near the juncture of three distinct geographic regions: the San Francisco Bay Area, the San Francisco Bay Delta, and the California Central Valley. Eastern Alameda County is generally characterized by rolling hills, ridgelines, riparian corridors, and valleys.

The region's hillsides and ridgelines are recognizable landscape features seen from many locations, thus contributing to a strong sense of place and orientation within the vicinity. Ridgelines and peaks in the Project vicinity that reach elevations of approximately 1,000 to 1,800 feet include the Altamont Pass, Brushy Peak, and Maguire Peak. A mix of nonnative grassland and brush land characterizes the vegetation pattern found in this landscape region. During winter and spring months, the green hillsides include displays of scattered, seasonal wild flowers. Beginning in late spring through the fall, the hills turn golden and brown.

For the most part, the hillsides surrounding the area valleys have a natural appearance. The flat valley floor of the Livermore Valley and San Joaquin Valley, and the smaller valleys that merge into these larger valleys are characterized by a mix of recent suburban development and areas devoted to field crops, vineyards, and grazing.

Regional access to local communities in the region is provided by I-580, which generally runs east to west from the Alameda County/San Joaquin County border, through the cities of Livermore, Pleasanton and Dublin, before curving north through Oakland. The scenic aspects of the corridor feature the rolling Altamont Hills contrasted with the relatively flat Livermore Valley ringed by distant hills.

Local Character

The Proposed Project lies within the Altamont Hills, an area enclosed by ridges rising to over 1,000 feet covered in grass and brush. Ridgelines define the horizon in every direction. Undeveloped grassland with few trees comprises much of the regional landscape. Existing development, including a mixture of industrial uses, scattered rural residences, windmill development, and electric transmission facilities, punctuates the natural landscape. An unnamed tributary of Mountain House Creek lies about 600 feet west of the Project site.

The Project site is located approximately 3 miles east of the Altamont Pass, and approximately 8 miles east of the City of Livermore. I-580 winds through the undulating terrain, approximately one-half mile north of the Project site. Local roadways in the Project vicinity include Grant Line Road and Altamont Pass Road to the north and Midway Road to the east. Views from these winding roadways are screened by mature vegetation and topography in many places. When not obstructed by roadside topography and vegetation, views of the Project site from public roadways include a variety of natural and built landscape features, such as the wind turbine maintenance facility, power lines, and the former Jess family residence. Rolling, grass-covered hillsides and ridgelines are the prominent features visible in the backdrop.

Site Character

The 30-acre Project site consists of undeveloped land, currently used for cattle grazing. The site is primarily grass-covered. Approximately 8 acres was previously used to store empty truck trailers and other equipment. No trees currently exist within the Proposed Project site. The elevation of the relatively flat site varies between 430 and 470 feet. There are no existing structures on the Project site and the only improvement consists of a well that provides water for the cattle operation.

Although no distinguishing natural features define the site boundaries, a fence is located along the eastern boundary. The adjacent properties to the south and east are vacant and the development rights to these properties have been sold to conservation groups. The properties to the west are undeveloped, with the adjacent 400 acres held within a conservation easement, preventing any future development. The property is bounded on the north by grasslands with I-580 located approximately one half mile to the north of the Proposed Project site.

Scattered rural residences are located along Altamont Pass Road, Grant Line Road, and Midway Road in the Project vicinity. Most offsite residences are located at least one mile from the Project site.

Existing Viewer Groups and Responses

The levels of visual impacts on viewer groups are typically defined as low, moderate, moderately high, or high:

- Low – Minor change to the existing visual resource, with low viewer response to change in the visual environment. Would not require mitigation.
- Moderate – Moderate change to the visual resource with moderate viewer response. Impact can be mitigated within 5 years using conventional practices.

- Moderately High – Moderate change to the visual resource with high viewer response or high change to the visual resource with moderate viewer response. Additional mitigation practices may be required. Required landscape treatment would generally take longer than 5 years to mitigate.
- High – A high level of change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. An alternative Project design may be required to avoid significant impacts.

Listed below are specific viewer groups that may be impacted by changes to the Proposed Project area, their exposure to the potential changes that would occur as a result of the Proposed Project, and their awareness to the surroundings at the Project site:

- Residents: Residents include individuals whose homes are located near the Proposed Project area. Similar to recreational users, residents have moderately high viewer sensitivity because they are likely to place a high value on their local visual resources, appreciate the visual experience provided by the landscape, and be sensitive to changes in views.
- Motorists: Motorists include both non-recreational and recreational travelers. Motorists use roadways at varying speeds; normal roadway speeds differ based on the topography of the route, the traveler's familiarity with the route, and roadway conditions. Single views for motorists are typically of short duration. Motorists who frequently travel these routes generally possess low to moderate visual sensitivity to their surroundings, as the passing landscape becomes familiar to these viewers and their attention is typically less focused on passing views and more focused on roadway conditions. Recreational motorists generally have a higher visual sensitivity to their surroundings than non-recreational motorists because they are more likely to place a high value on the natural environment.
- Workers: Workers are individuals whose place of employment is located within or near the Proposed Project area, or who may come into contact with the Project area as part of their work activities. Viewer sensitivity is moderate among workers; they are typically less focused than recreational users and residents on the visual resources surrounding their workplace, and are less sensitive to changes in views.

Potentially Affected Public Views

From numerous locations in the surrounding vicinity, views of the Proposed Project site are obstructed by intervening topography and vegetation. However, intermittent glimpses of the site may be visible to motorists traveling on the eastbound lanes of I-580 and from a few residences on Midway Road. Thus, the primary affected views include a portion of I-580 and scattered single-family rural residences to the east and north of the Project site.

Interstate Highway 580

The I-580 freeway corridor winds through the valley, passing by the Proposed Project site at a distance of approximately 4,000 feet to the north. Intermittent glimpses of the

site may be available from certain points of the eastbound lanes. I-580 is typically traveled by non-recreational motorists and commuters, who are generally considered to have low visual sensitivity, as they have fleeting views and tend to focus on commute traffic, not on surrounding scenery.

Due to topography along I-580, there is an approximate 1,000 foot window in which motorists may have a view of the Proposed Project's facility building roof. Traveling at 65 mph motorists would be able to view a portion of the Project for approximately 10 seconds. The elevation along I-580 where the facility building roof could be viewed by motorists is approximately 365 feet. The elevation of the proposed building roof is approximately 100 feet higher than the highway elevation. Furthermore, the view of the Proposed Project facility building is blocked by two small hills that are at elevations of 482 feet and 471 feet, respectively. Because of natural topography in the area, the amount of time that motorists could possibly see the Proposed Project, and the distance to the Proposed Project, it is not expected that the Proposed Project would create a negative visual impact in the area.

Residences

Several scattered single-family residences are located approximately one mile east of the Project site along Midway Road. Midway Road runs north-south and crosses I-580 perpendicularly. Views of the Project site from residences north of I-580 are obstructed by intervening topography and the Interstate. Site visibility along Midway Road would be limited to several hilltop residences on the portion of the road that is south of I-580, all of which are located over one mile from the proposed facility. The former Jess family residence is located approximately one-half mile away on an adjacent property which was sold to the Contra Costa Water District for endangered species mitigation.

3.3.3 Impacts Analysis

This section describes the visual resource impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant aesthetics impact if it would:

- a) have a substantial adverse effect on a scenic vista;
- b) substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- c) substantially degrade the existing visual character or quality of public views of the site and its surroundings. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or
- d) create a new source of substantial light or glare that would adversely affect day or nighttime public views.

Topics Dismissed in the Initial Study Checklist

As outlined in Section 3.0, Resources Eliminated from Further Analysis, the NOP IS dismissed aesthetics impact criteria b) from further analysis because the Proposed Project would not significantly affect a state scenic highway.

Methodology

The visual analysis is based on field observations of the Proposed Project site and surroundings, in addition to review of the following materials: conceptual site plan drawings and technical data, aerial and ground-level photographs of the Project site, topographic data and public planning documents.

An inventory of existing visual conditions was prepared to assess the visual character and quality of the site and the relative sensitivity of viewers. In evaluating the Project-related visual changes, consideration was given to the following factors: the anticipated extent of Proposed Project visibility and the expected level of visual contrast, the relative number of viewers and their activities, view duration, and the Project conformance with adopted plans and policies concerning visual quality.

Impacts and Mitigation Measures

This section identifies all visual resource impacts resulting from the construction and operation of the Proposed Project and provides proposed mitigation measures to minimize impacts. This section also identifies cumulative impacts that may result from the implementation of the proposed composting facility.

Impact AES-1: Permanent Alteration of the Visual Character and Quality of the Proposed Project Area – Less than Significant with Mitigation Incorporated

The Proposed Project would alter the existing visual character of the site by introducing composting operations on essentially undeveloped land. The site's existing appearance would be transformed from undeveloped grassland to an active compost processing facility. The site would be devoted primarily to composting windrows and related facilities and equipment. Several new structures are proposed on a portion of the site. In addition, paved parking and storage areas, an access road, and an area devoted to processing of material related to composting activities are also proposed.

Proposed access would be provided at the northwest corner of the site, via an all-weather road that would connect with Jess Ranch Road. Construction of the Proposed Project would require earthwork and grading that would be divided into two phases. Phase 1 would involve grading of the access road, active composting, and curing areas, finished product storage area, stormwater catchment basins, perimeter ditch, and construction of earthen berms around the facility. Phase 2 would involve grading for additional active composting and curing areas and finished product storage.

The conversion of rural, undeveloped grassland to an active composting facility, as described above, may not be perceived by travelers on I-580 and local residents as a substantial degradation of the visual character or quality of the site due to the abundance of grasslands in the surrounding area. The former Jess Ranch residence is located adjacent to and north of the Project site, and although the change to existing visual

resources on the property itself would be high, the viewer response level would be considered low because the Proposed Project is not visible from the residence. Other area residents and travelers through the area would perceive changes in the visual environment attributable to Proposed Project development as adverse due to the loss of an aesthetically pleasing view, though for the most part, topography obstructs roadway views toward the site. Based on intermittent visibility of the site from I-580, its designation as a scenic corridor in the Alameda County General Plan Scenic Route Element (see Section 3.3.1 *Regulatory Framework*), and the potential for motorists and occupants of adjacent land uses to perceive the Project changes as a substantial degradation of the existing visual character and/or quality of the site and its surroundings, this impact is conservatively assumed to be significant. Implementation of Mitigation Measure AES-1 would reduce the Proposed Project's potential visual impacts to a less-than-significant-level.

Mitigation Measure AES-1: Provide visual screening of Project facilities.

In order to partially screen views of the Proposed Project where it will be visible from I-580, a berm, which will be at least 4 feet tall, will surround the facility and will appear against a hillside landscape backdrop. In order to minimize glare, non-reflective, non-glare finishes shall be used for all compost facility structures. The color of proposed building facades and roofs shall be designed to minimize the potential for visual contrast between the compost facility and its natural landscape surroundings. Bright or very light colors (including white) shall be avoided. Re-contouring and revegetation of temporarily disturbed, graded areas shall be completed to provide a natural appearing landform upon completion of construction.

Impact AES-2: Introduction of New Sources of Light and Glare at the Site – Less than Significant with Mitigation Incorporated

Under existing conditions, the Project site does not generate significant sources of light, glare, or light trespass into the night sky. Development of the Proposed Project would introduce nighttime light sources related to the proposed outdoor security lighting and lighting associated with the proposed buildings. In addition, even though non-reflective, non-glare finishes would be used on all facilities, some glare associated with the new buildings could occur on sunny days. Due to the relatively dark appearance of the Jess Ranch property currently, the introduction of new light sources would be noticeable to motorists on I-580. The lights would also be visible to residences with a direct line of sight to the Project area and would be perceived as a slight glow on the horizon for those residents that cannot see the facility directly. However, because lighting at the facility would not be expected to be intensive, the nighttime lighting would not be expected to diminish the visibility of stars and other features of the night sky. Implementation of Mitigation Measure AES-2 would reduce the Proposed Project's light and glare effects to a less-than-significant level.

Mitigation Measure AES-2: Reduce light and glare effects.

In order to reduce the potential light and glare effects of the Proposed Project, the following measures shall be incorporated:

1. All lighting shall be focused towards the site and outdoor lighting shall be directed downward;

2. The design of exterior light fixtures shall incorporate shielding to prevent glare and offsite light spillage;
3. Outdoor Project lighting shall include non-glare fixtures; and
4. The Project lighting design, including the location and specific fixture types to be used, shall be subject to review by the County Planning Department.

3.4 Air Quality and Greenhouse Gases

This section identifies and describes existing local and regional air quality, evaluates the air quality greenhouse gas (GHG) impacts resulting from construction and operation of the Proposed Project, and proposes measures to mitigate significant impacts. Impacts from both stationary and mobile sources of emissions associated with the Proposed Project were evaluated. Development of this section was based on a review of existing documentation of air quality conditions in the region, air quality regulations from the EPA, the California Air Resources Board (ARB), the BAAQMD, and Project design information. Emissions calculated for Proposed Project construction and operation activities are provided in Appendix C.

This section also describes the existing conditions at the Proposed Project and Project area that may affect the perception of odor (e.g., topography, climate, proximity of sensitive receptors, potential sources as result of the Proposed Project). This section also identifies mitigation measures capable of minimizing odor impacts potentially generated by the Proposed Project.

3.4.1 Regulatory Framework

Federal

Federal Clean Air Act

The Federal Clean Air Act (FCAA) is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the EPA and the ARB, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM) which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}), and sulfur dioxide (SO₂). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for Project-level air quality analysis under the National Environmental Policy Act. In addition to this environmental analysis, a parallel Conformity requirement under the FCAA applies.

The FCAA requires the EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in Table 3.4-1.

Non-road Diesel Rule

To reduce emissions from off-road diesel equipment, the EPA established a series of emission standards for new off-road diesel equipment, on-road diesel trucks, and locomotives. Manufacturers of off-road diesel engines are required to produce engines meeting certain emission standards based on the model year the engine was manufactured.

State

California Clean Air Act

In California, the CCAA is administered by the ARB at the State level and by the air quality management districts and air pollution control districts at the regional and local levels. The ARB, which became part of the California Environmental Protection Agency (Cal/EPA) in 1991, is responsible for meeting the State requirements of the FCAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. ARB regulates mobile air pollution sources, such as motor vehicles. ARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. ARB established passenger vehicle fuel specifications, which became effective in March 1996. ARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The State standards are summarized in Table 3.4-1. The CCAA requires ARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment.

Table 3.4-1. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard ⁸	Federal Standard ⁹	Principal Health and Atmospheric Effects	Typical Sources	SFBAAB Attainment Status
Ozone (O ₃) ²	1 hour 8 hours	0.09 ppm 0.070 ppm	--- 0.070 ppm ⁴ (4 th highest in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal: Nonattainment (8-hour) State: Nonattainment (1-hour and 8-hour)
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm ¹ 6 ppm	35 ppm 9 ppm ---	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment State: Attainment
Respirable Particulate Matter (PM ₁₀) ²	24 hours Annual	50 µg/m ³ 20 µg/m ³	150 µg/m ³ --- ² (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Federal: Unclassified State: Nonattainment
Fine Particulate Matter (PM _{2.5}) ²	24 hours Annual Secondary Standard (annual)	--- 12 µg/m ³ ---	35 µg/m ³ 12.0 µg/m ³ 15 µg/m ³ (98 th percentile over 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the PM _{2.5} size range. Many toxic and other aerosol and solid compounds are part of PM _{2.5} .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides (SO _x), ammonia, and ROG.	Federal: Nonattainment State: Nonattainment
Nitrogen Dioxide (NO ₂)	1 hour Annual	0.18 ppm 0.030 ppm	100 ppb ⁶ (98 th percentile over 3 years) 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the NO _x group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment State: Attainment

Table 3.4-1. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard ⁸	Federal Standard ⁹	Principal Health and Atmospheric Effects	Typical Sources	SFBAAB Attainment Status
Sulfur Dioxide (SO ₂)	1 hour 3 hours 24 hours Annual Arithmetic Mean	0.25 ppm --- 0.04 ppm ---	75 ppb ⁷ (99 th percentile over 3 years) 0.5 ppm ⁹ 0.14 ppm 0.03 ppm	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
Lead (Pb) ³	Monthly Calendar Quarter Rolling 3-month average	1.5 µg/m ³ --- ---	--- 1.5 µg/m ³ 0.15 µg/m ³¹⁰	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
Sulfate	24 hours	25 µg/m ³	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries, and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Federal: N/A State: Attainment/ Unclassified
Hydrogen Sulfide (H ₂ S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Federal: N/A State: Attainment/ Unclassified
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 percent	---	Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other Class I areas.	See particulate matter above.	Federal: N/A State: Attainment/ Unclassified
Vinyl Chloride ³	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	Federal: N/A State: Attainment/ Unclassified

Source 1: California Air Resources Board (ARB). Website: www.arb.ca.gov/research/aaqs/aaqs2.pdf (May 4, 2016).

Source 2: ARB, Area Designations. Website: <http://www.arb.ca.gov/desig/desig.htm> (accessed August 2018).

¹ Rounding to an integer value is not allowed for the State 8-hour CO standard. Violation occurs at or above 9.05 ppm.

- ² Annual PM₁₀ NAAQS revoked October 2006; was 50 µg/m³. 24-hour. PM_{2.5} NAAQS tightened October 2006; was 65 µg/m³. Annual PM_{2.5} NAAQS tightened from 15 µg/m³ to 12 µg/m³ December 2012, and secondary standard set at 15 µg/m³.
- ³ The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both the ARB and the EPA have identified lead and various organic compounds that are precursors to ozone and PM_{2.5} as toxic air contaminants. There are no exposure criteria for substantial health effects due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.
- ⁴ Prior to June 2005, the 1-hour NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still in use in some areas where 8-hour ozone emission budgets have not been developed, such as the San Francisco Bay Area. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- ⁵ The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (July 20, 2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with a emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the Interim period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.
- ⁶ Final 1-hour NO₂ NAAQS published in the Federal Register on February 9, 2010, effective March 9, 2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot-spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.
- ⁷ The EPA finalized a 1-hour SO₂ standard of 75 ppb in June 2010. Nonattainment areas have not yet been designated as of September 2012.
- ⁸ California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ⁹ National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.
- ¹⁰ Lead NAAQS are not considered in Transportation Conformity analysis.

California State Implementation Plan

The 1990 amendments to the FCAA set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. The promulgation of the national 8-hour ozone standard and the fine particulate matter (PM_{2.5}) standards in 1997 resulted in additional statewide air quality planning efforts. In response to new federal regulations, State Implementation Plans (SIPs) began to address ways to improve visibility in national parks and wilderness areas. SIPs are not single documents, but rather a compilation of new and previously submitted plans, programs, district rules, State regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes ARB the lead agency for all purposes related to the SIPs. Local air districts and other agencies prepare SIP elements and submit them to ARB for review and approval. ARB then forwards SIP revisions to the EPA for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items that are included in the California SIP.

Toxic Air Contaminant Regulations

California regulates toxic air contaminants (TACs) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987. The Tanner Act created the state's program to reduce exposure to air toxics, including diesel particulate matter (DPM), which ARB identified as a TAC in 1998. ARB has adopted a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles.

To assist the lead agency in evaluating air quality impacts at the community scale, the BAAQMD has established thresholds of significance for local community risks and hazards associated with TACs and PM_{2.5}, with respect to siting a new source and/or receptor, as well as for assessing both individual source and cumulative multiple source impacts. The thresholds focus on TACs and PM_{2.5} because more so than other emission types, these pose significant health impacts at the local level.

Greenhouse Gas Regulation

Although GHGs are not explicitly regulated under the CAA, the EPA has clearly indicated that GHG emissions and climate change are issues that need to be considered in future planning. GHGs are produced by the burning of fossil fuels and through industrial and biological processes. In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. California has adopted statewide legislation addressing various aspects of climate change and the mitigation of GHG emissions. This legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The Global Warming Solutions Act of 2006, also commonly referred to as Assembly Bill (AB) 32, establishes a statewide GHG reduction goal of achieving 1990 emissions levels by 2020.

Regional and Local

Bay Area Air Quality Management District

The BAAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations. The BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa—and portions of Solano and Sonoma Counties.

AIR QUALITY MANAGEMENT PLAN

The BAAQMD's most recently adopted clean air plan is the 2017 Clean Air Plan, which the BAAQMD adopted in April 2017. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—reactive organic gases (ROG) and nitrogen oxide (NO_x)—and reduce transport of ozone and its precursors to neighboring air basins. The BAAQMD uses the Clean Air Plan to evaluate a project's potential cumulative air quality impacts. The BAAQMD CEQA Guidelines state that “for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impacts should be based on an evaluation of the consistency of the project with the local general plan and the general plan with the regional air quality plan.” A proposed project would be consistent with the Attainment Plan, if the project is consistent with assumptions used in the General Plan.

CEQA GUIDELINES

The BAAQMD CEQA Air Quality Guidelines (Guidelines) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. In June 2010, the BAAQMD adopted updated Guidelines, including new thresholds of significance, and revised them in May 2011 (BAAQMD 2011). The thresholds BAAQMD adopted were called into question by a minute order issued January 9, 2012, in *California Building Industry Association v. BAAQMD*, Alameda Superior Court Case No. RGI0548693. The minute order stated that, “[t]he Court finds [the BAAQMD's adoption of thresholds] is a CEQA project, the court makes no further findings or rulings.”

The claims made in the case concerned the CEQA impacts of adopting the thresholds, and in particular, how the thresholds would affect land use development patterns. Petitioners argued that the thresholds for Health Risk Assessments encompassed issues not addressed by CEQA. As a result, the BAAQMD resolutions adopting and revising the significance thresholds in 2011 were set aside by a judicial writ of mandate on March 5, 2012. In May 2012, the BAAQMD updated its Guidelines to continue to provide direction on recommended analysis methodologies, but without recommended quantitative significance thresholds. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA thresholds (*California Building Industry Association v. Bay Area Air Quality Management District*, Case No. A135335 & A136212 [Court of Appeal, First District, August 13, 2013]).

The California Supreme Court granted review of the appeal, but only to address whether or not CEQA requires an analysis of how existing environmental conditions would impact future residents or users of a proposed project and did not review or address the adequacy of specific thresholds adopted by the BAAQMD in 2011. On December 17, 2015, the Supreme Court concluded that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents, reversing the Court of Appeal's judgment on that issue. However, the court did acknowledge that when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users.

The case was the remanded back to the Court of Appeal on August 12, 2016. The Court of Appeal concluded that "the challenged thresholds are not invalid on their face, but may not be used for the primary purpose envisioned by District, namely, to routinely assess the effect of existing environmental conditions on future users or occupants of a project" (CBIA v. BAAQMD [2016] 2Cal.App.5th 1067).

In May of 2017 the BAAQMD released its 2017 update to the Guidelines which once again contain the thresholds of significance formally presented in the 2011 Guidelines for the consideration of lead agencies in assessing air quality impacts.

OPERATIONAL IMPACT THRESHOLDS

Table 3.4-2 presents the Thresholds of Significance for operational-related criteria air pollutant and precursor emissions. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the San Francisco Bay Area Air Basin's (SFBAAB's) existing air quality conditions. If daily average or annual emissions of operational-related criteria air pollutants or precursors would exceed any applicable Threshold of Significance listed in Table 3.4-2, the Proposed Project would result in a cumulatively significant impact.

Table 3.4-2. Thresholds of Significance for Operational-Related Criteria Air Pollutants and Precursors

Pollutant/Precursor	Maximum Annual Emissions (tpy)	Average Daily Emissions (lb/day)
ROG	10	54
NO _x	10	54
PM ₁₀	15	82
PM _{2.5}	10	54

Notes: tpy = tons per year; lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases.

CONSTRUCTION IMPACT THRESHOLDS

Table 3.4-3 presents the Thresholds of Significance for construction-related criteria air pollutant and precursor emissions. If daily average emissions of construction related criteria air pollutants or precursors would exceed any applicable Threshold of

Significance listed in Table 3.2-3, the Proposed Project would result in a significant cumulative impact.

Table 3.4-3. Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors

Pollutant/Precursor	Average Daily Emissions (lb/day)
ROG	54
NO _x	54
PM ₁₀	82*
PM _{2.5}	54*

Notes:

*Applies to construction exhaust emissions only

lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases.

LOCAL COMMUNITY RISK AND HAZARD IMPACT THRESHOLDS

The Thresholds of Significance for local community risk and hazard impacts are identified below, which apply to the siting of a new source. Local community risk and hazard impacts are associated with TACs and PM_{2.5} because emissions of these pollutants can have significant health impacts at the local level. If emissions of TACs or fine particulate matter (PM_{2.5}) exceed any of the Thresholds of Significance listed below, the proposed Project would result in a significant impact.

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk level of more than 10 in 1 million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a cumulatively considerable contribution; or
- An incremental increase of greater than 0.3 micrograms per cubic meter (µg/m³) annual average PM_{2.5} would be a cumulatively considerable contribution.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000 foot radius from the fence line of a source plus the contribution from the Project, exceeds the following:

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk levels of more than 100 in 1 million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 µg/m³ annual average PM_{2.5}. A lead agency should enlarge the 1,000-foot radius on a case-by-case basis if an unusually large source or sources of risk or hazard emissions that may affect a proposed project is beyond the recommended radius.

LOCAL CARBON MONOXIDE IMPACT THRESHOLDS

The Thresholds of Significance for local CO emissions are the 1- and 8-hour CAAQS of 20.0 parts per million (ppm) and 9.0 ppm, respectively. By definition, these represent levels that are protective of public health. If a project would cause local emissions of CO

to exceed these Thresholds of Significance, the proposed Project would result in a significant impact on air quality.

ODOR IMPACT THRESHOLDS

The Thresholds of Significance for odor impacts are qualitative in nature. A project that would result in the siting of a new source should consider the screening level distances and the complaint history of the odor sources:

- Projects that would site a new odor source farther than the applicable screening distance shown in Table 3.4-4 from an existing receptor, would not likely result in a significant odor impact
- A type of odor source with five or more confirmed complaints in the new source area per year averaged over 3 years is considered to have a significant impact on receptors within the screening distance shown in Table 3.4-4.

Table 3.4-4 presents odor screening distances recommended by BAAQMD for a variety of land uses. Projects that would site a new odor source or a new receptor farther than the applicable screening distance shown in Table 3.4-4 from an existing receptor or odor source, respectively, would not likely result in a significant odor impact. The odor screening distances in Table 3.4.4 should not be used as absolute screening criteria, rather as information to consider along with the odor parameters and complaint history.

Table 3.4-4. Odor Screening Distances

Land Use/Type of Operation	Project Screening Distance (miles)
Wastewater Treatment Plant	2
Wastewater Pumping Facilities	1
Sanitary Landfill	2
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	2
Chemical Manufacturing	2
Fiberglass Manufacturing	1
Painting/Coating Operations	1
Rendering Plant	2
Coffee Roaster	1
Food Processing Facility	1
Confined Animal Facility/Feed Lot/Dairy	1
Green Waste and Recycling Operations	1
Metal Smelting Plants	2

CLIMATE CHANGE IMPACT THRESHOLDS

In May 2017, the BAAQMD released its 2017 update to the Guidelines, which contain the thresholds of significance formally presented in the 2011 Guidelines for the consideration of lead agencies in assessing climate change impacts. The BAAQMD thresholds are presented in Table 3.4-5. As shown, the BAAQMD has not proposed GHG thresholds for construction emissions. Because the Proposed Project is a stationary source of emissions, the 10,000 MT CO₂e per year threshold is used for this assessment.

Table 3.4-5. BAAQMD Greenhouse Gas Thresholds of Significance

Pollutant/Precursor	Construction Related	Operational Related
GHGs – Projects other than Stationary Sources	None	Compliance with Qualified GHG Reduction Strategy OR 1,100 MT of CO ₂ e per year OR 4.6 MT of CO ₂ e/Service Population/Year
GHGs – Stationary Sources	None	10,000 MT of CO ₂ e per year

Local

ALAMEDA COUNTY COMMUNITY CLIMATE ACTION PLAN

The County's Community Climate Action Plan (CAP) was adopted in 2014 as an element of the Alameda County General Plan (Alameda County, 2014b). The CAP outlines a course of action to reduce community-wide GHG emissions generated within the unincorporated areas of the County. With successful implementation, the CAP would reduce GHG emissions to 15 percent below 2005 levels by 2020, with an ultimate goal of reducing emissions to 80 percent below 1990 levels by 2050.

The CAP's proposed course of action for achieving stated goals includes providing guidance to County staff regarding implementation of key plan provisions, demonstrating the County's commitment to compliance with state GHG reduction efforts, and inspiring residents and businesses to participate in community reduction efforts. To achieve the stated goals, the county proposes to take action in six areas: transportation, land use, building energy, water, waste, and green infrastructure. With regard to waste diversion, the County proposes to raise its diversion target to 90 percent of all waste from landfills by 2030, with an interim goal of 82.5 percent by 2020, and also to improve foodwaste collection programs.

ALAMEDA COUNTY GENERAL PLAN – EAST COUNTY AREA PLAN

The ECAP contains the following goal and supporting policies, which would be applicable to the development of the Proposed Project and address air quality:

Goal: To ensure that air pollution levels do not threaten public health and safety, economic development, or future growth.

Policy 291: The County shall strive to meet federal and state air quality standards for local air pollutants of concern. In the event that standards are exceeded, the County shall require appropriate mitigation measures on new development.

Policy 294: The County shall require new development projects to include traffic and air pollutant reduction measures to help attain air quality standards. For non-residential projects, these measures could include Transportation Demand Management programs such as ridesharing and transit promotion; for residential projects, these measures could include site plan features to reduce traffic trip generation such as mixed use development and transit-oriented development.

Policy 296: The County shall review the cumulative impact of proposed projects for their potential effect on air quality conditions.

Policy 299: The County shall require projects that generate high levels of air pollutants, such as manufacturing facilities, hazardous waste handling operations, and drive-through restaurants and banks, to incorporate air quality mitigations in their design.

Policy 300: The County shall review proposed projects for their potential to generate hazardous air pollutants.

Policy 301: The County shall only approve new air pollution point sources such as manufacturing and extracting facilities when they are located away from residential areas and sensitive receptors

Policy 303: The County shall incorporate the provisions of the Association of Bay Area Government's (ABAG) Bay Area Air Quality Plan and the BAAQMD Air Quality and Urban Development Guidelines into project review procedures.

Policy 304: The County shall notify cities and the BAAQMD of proposed projects which may significantly affect air quality.

3.4.2 Environmental Setting

Air Quality

The Proposed Project is located in the SFBAAB. Air quality regulation in the SFBAAB is administered by the BAAQMD.

Climate

Bay Area topography is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the Bay Area. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The only major break in California's Coast Range occurs in the Bay Area. Here the Coast Range splits into western and eastern ranges. Between the two ranges lies San Francisco Bay. The gap in the western coast range is known as the Golden Gate, and the gap in the eastern coast range is the Carquinez Strait. These gaps allow air to pass into and out of the Bay Area and the Central Valley.

During the summer, the large-scale meteorological condition that dominates the West Coast is a semi-permanent high pressure cell centered over the northeastern Pacific Ocean. This high pressure cell, or Pacific high, keeps storms from affecting the California coast. Hence, the Bay Area experiences little precipitation in the summer months. Winds tend to blow on shore out of the north/northwest.

The steady northwesterly flow induces upwelling of cold water from below. This upwelling produces a band of cold water off the California coast. When air approaches the California coast, already cool and moisture-laden from traversing the Pacific, it is further cooled as it crosses this bank of cold water. This cooling often produces condensation resulting in a high incidence of fog and stratus clouds along the Northern California coast in the summer.

Generally in the winter, the Pacific high weakens and shifts southward, winds tend to flow offshore, upwelling ceases, and storms occur. During the winter rainy periods, inversions (layers of warmer air over colder air) are weak or nonexistent, winds are usually moderate, typically between 10 and 20 miles per hour (mph), and air pollution potential is low (Table 3.4-6). The Pacific high does periodically become dominant; however, bringing strong inversions, light winds, and high pollution potential.

Summertime temperatures in the Bay Area are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. Thus, on summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (°F) cooler than temperatures 15 to 20 miles inland. At night the contrast between the coast and inland temperatures is usually less than 10 degrees. Winds in the summer are higher than in the winter, typically ranging from 20 to 30 mph from May through August (Table 3.4-6).

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

Table 3.4-6. Typical Monthly and Diurnal Wind Speeds at Altamont Pass Site (mph)

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1	11.9	10.0	14.4	19.1	24.8	27.5	30.0	27.3	23.4	18.3	12.8	11.6	19.6
2	11.9	9.8	13.9	18.7	24.3	27.1	29.7	27.0	22.9	17.9	12.9	11.9	19.3
3	11.9	9.7	13.3	18.5	23.7	26.7	29.1	26.6	22.1	17.3	12.6	11.9	18.9
4	12.0	9.6	13.3	17.6	23.1	26.1	28.6	26.0	21.2	16.7	12.0	11.5	18.5
5	12.1	9.4	12.8	16.7	22.4	25.5	28.0	24.8	20.7	16.4	11.9	11.4	18.0
6	11.9	9.3	12.7	16.3	21.3	24.9	27.4	24.0	19.8	16.2	12.1	11.6	17.5
7	11.8	9.1	12.3	15.7	20.8	23.8	26.1	23.0	19.0	15.8	11.9	11.7	17.0
8	12.2	8.9	12.7	15.4	20.2	22.6	24.8	21.7	18.4	15.4	11.4	11.5	16.5
9	12.5	9.1	12.3	15.2	19.6	21.5	23.4	20.0	17.5	14.9	11.4	11.4	15.9
10	12.6	9.7	12.3	14.9	19.0	20.5	21.8	18.9	17.0	14.8	12.2	11.8	15.6

11	13.5	10.0	12.4	14.6	18.2	19.5	20.5	17.9	16.1	14.4	12.4	11.8	15.3
12	13.7	10.3	12.4	14.5	17.8	19.2	19.7	17.1	15.6	14.4	12.2	11.9	15.1
13	14.1	10.5	12.4	14.9	17.9	19.1	19.3	17.1	15.3	14.3	12.1	12.4	15.1
14	13.2	9.9	12.6	15.3	18.2	19.5	19.5	17.4	15.5	14.4	11.9	12.0	15.1
15	12.5	9.8	12.6	15.5	19.4	20.5	20.3	17.8	15.9	14.5	11.9	11.2	15.4
16	12.3	9.2	12.6	16.1	20.5	21.8	21.3	19.1	16.7	14.9	11.6	10.3	15.8
17	11.4	9.3	12.7	16.5	21.6	22.9	23.0	20.6	17.6	15.1	11.3	10.5	16.3
18	11.6	9.3	13.2	17.1	22.3	24.1	24.4	21.9	18.7	15.2	11.6	11.1	17.0
19	11.7	9.3	13.5	17.3	23.2	24.7	25.4	23.2	19.7	16.0	12.0	10.6	17.5
20	12.2	9.7	14.1	17.7	23.9	25.6	26.8	24.8	21.3	16.5	12.6	10.8	18.3
21	12.9	10.0	14.2	18.5	24.2	26.5	28.3	25.9	22.1	17.1	12.6	11.4	19.0
22	12.6	10.0	14.6	19.2	24.6	27.1	29.3	26.9	23.1	17.5	12.7	11.2	19.4
23	12.1	10.2	14.5	19.1	25.2	27.5	29.8	27.3	23.8	17.8	12.6	11.6	19.7
24	12.3	10.3	14.6	19.4	25.1	27.8	30.1	27.5	23.8	17.9	12.7	11.9	19.8
Mean	12.4	9.7	13.2	16.8	21.7	23.8	25.3	22.7	19.5	16.0	12.1	11.5	17.3

Air Pollutants of Concern

As discussed above, federal and state agencies have established NAAQS and CAAQS, respectively, for six criteria pollutants: O₃, Pb, CO, NO₂, SO₂, and PM, which are described in further detail below. Ozone and NO₂ are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. NO₂ reacts photochemically with ROG to form O₃, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, SO₂, and Pb are considered local pollutants that tend to accumulate in the air locally. Based on data and monitoring in the Proposed Project region, the primary criteria pollutants of concern near the Proposed Project are O₃ and PM.

- Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections. It can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOCs, also called ROG), such as xylene, and NO_x, such as nitric oxide. ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, such as ozone. Ground level ozone in conjunction with suspended particulate matter in the atmosphere leads to hazy conditions generally termed as smog.

- Nitrogen dioxide is an air quality concern because it acts as a respiratory irritant and is a precursor of ozone. Nitrogen dioxide is produced by fuel combustion in motor vehicles, industrial stationary sources (such as boilers, turbines, and some industrial processes); and fuel combustion in ships, aircraft, and rail transit.
- Sulfur dioxide is a combustion product of sulfur or sulfur-containing fuels such as coal and oil, which are restricted in the Bay Area. Its health effects include breathing problems and may cause permanent damage to lungs. Sulfur dioxide is an ingredient in acid rain (acid aerosols), which can damage trees, lakes and property. Acid aerosols can also reduce visibility.
- As discussed previously, PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. A micron is one-millionth of a meter, or less than one-25,000th of an inch. For comparison, human hair is 50 microns or larger in diameter. PM_{10} and $PM_{2.5}$ represent particulate matter of sizes that can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of aerosol-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles ($PM_{2.5}$) of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility. Large dust particles (diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. This large dust is of more concern as a soiling nuisance rather than a health hazard. The remaining fraction, PM_{10} and $PM_{2.5}$, are a health concern particularly at levels above the federal and state ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus, are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM_{10} and $PM_{2.5}$ because their immune and respiratory systems are still developing.

Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope 2006). ARB has estimated that achieving the ambient air quality standards for PM_{10} could reduce premature mortality rates by 6,500 cases per year (ARB 2002).

PM_{10} emissions in the Project area are mainly from urban sources, dust suspended by vehicle traffic and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the

winter, when more fireplaces are in use and meteorological conditions prevent the dispersion of directly emitted contaminants.

- Lead: Lead gasoline (currently phased out), paint (houses, cars), smelters (metal refineries), and the manufacture of lead storage batteries have historically been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects; children are at special risk. Some lead-containing chemicals cause cancer in animals.
- Carbon monoxide: Ambient carbon monoxide concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence carbon monoxide concentrations. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses.

Carbon monoxide concentrations have declined dramatically in California due to existing controls and programs and most areas of the state including the Project region have no problem meeting the state and federal carbon monoxide standards. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, lower emissions from new vehicles and improvements in fuels. The clear success in reducing CO levels is evident in the first paragraph of the executive summary of ARB's *2004 Revision to the California State Implementation Plan for Carbon Monoxide Updated Maintenance Plan for Ten Federal Planning Areas* (ARB 2004):

The dramatic reduction in carbon monoxide (CO) levels across California is one of the biggest success stories in air pollution control. Air Resources Board ([ARB] or Board) requirements for cleaner vehicles, equipment, and fuels have cut peak CO levels in half since 1980, despite growth. All areas of the State designated as non-attainment for the federal 8-hour CO standard in 1991 now attain the standard, including the Los Angeles urbanized area. Even the Calexico area of Imperial County on the congested Mexican border had no violations of the federal CO standard in 2003. Only the South Coast and Calexico continue to violate the more protective State 8-hour CO standard, with declining levels beginning to approach that standard. (ARB 2004)

Although NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. As described above, many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. The principal TACs associated with the Proposed Project are DPM, which is generated by diesel engines.

- The primary GHGs of concern associated with the Project are carbon dioxide, methane, and nitrous oxide. Carbon dioxide primarily enters the atmosphere through fossil fuels (oil, natural gas, and coal) combustion. Methane is emitted during the production and

transport of coal, natural gas, and oil, as well as from landfills, livestock, and other agricultural practices. Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Existing Air Quality Conditions

Criteria pollutant concentrations in the SFBAAB are measured at various monitoring stations throughout the region. The nearest station to the Proposed Project is the Livermore-Rincon Avenue Monitoring Station in the City of Livermore, which monitors the air quality index for PM_{2.5}, as well as meteorological conditions. Air quality monitoring for the last three years indicates that there have been some violations of state and federal air quality standards during this time period for PM_{2.5}.

Climate change and GHG emissions

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

GHG Emission Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, California, and local GHG emission inventories.

GLOBAL EMISSIONS

Worldwide emissions of GHGs in 2017 were 32.53 billion metric tons (MT) of CO₂e per year.¹ Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

¹ <http://www.iea.org/topics/climatechange/>, accessed August 2018

FEDERAL EMISSIONS

In 2015, total United States emissions of GHGs were 6,586.7 million MT of CO₂e.² Total United States emissions increased by 3.5 percent from 1990 to 2015, and decreased from 2014 to 2015 by 2.3 percent (153.0 MMT CO₂e). The decrease in total GHG emissions between 2014 and 2015 was driven in large part by a decrease in CO₂ emissions from fossil fuel combustion.

CALIFORNIA EMISSIONS

California uses the annual statewide GHG emission inventory to track progress toward meeting statewide GHG targets. The inventory for 2016 shows that California's GHG emissions continue to decrease, a trend observed since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 mMMTCO₂e, 12 MMTCO₂e lower than 2015 levels. This puts total emissions just below the 2020 target of 431 million metric tons. Emissions vary from year-to-year depending on the weather and other factors, but California will continue to implement its GHG reductions program to ensure the state remains on track to meet its climate targets in 2020 and beyond. These reductions come while California's economy grows and continues to generate jobs. Compared to 2015, California's GDP grew 3 percent while the carbon intensity of its economy declined by 6 percent.³

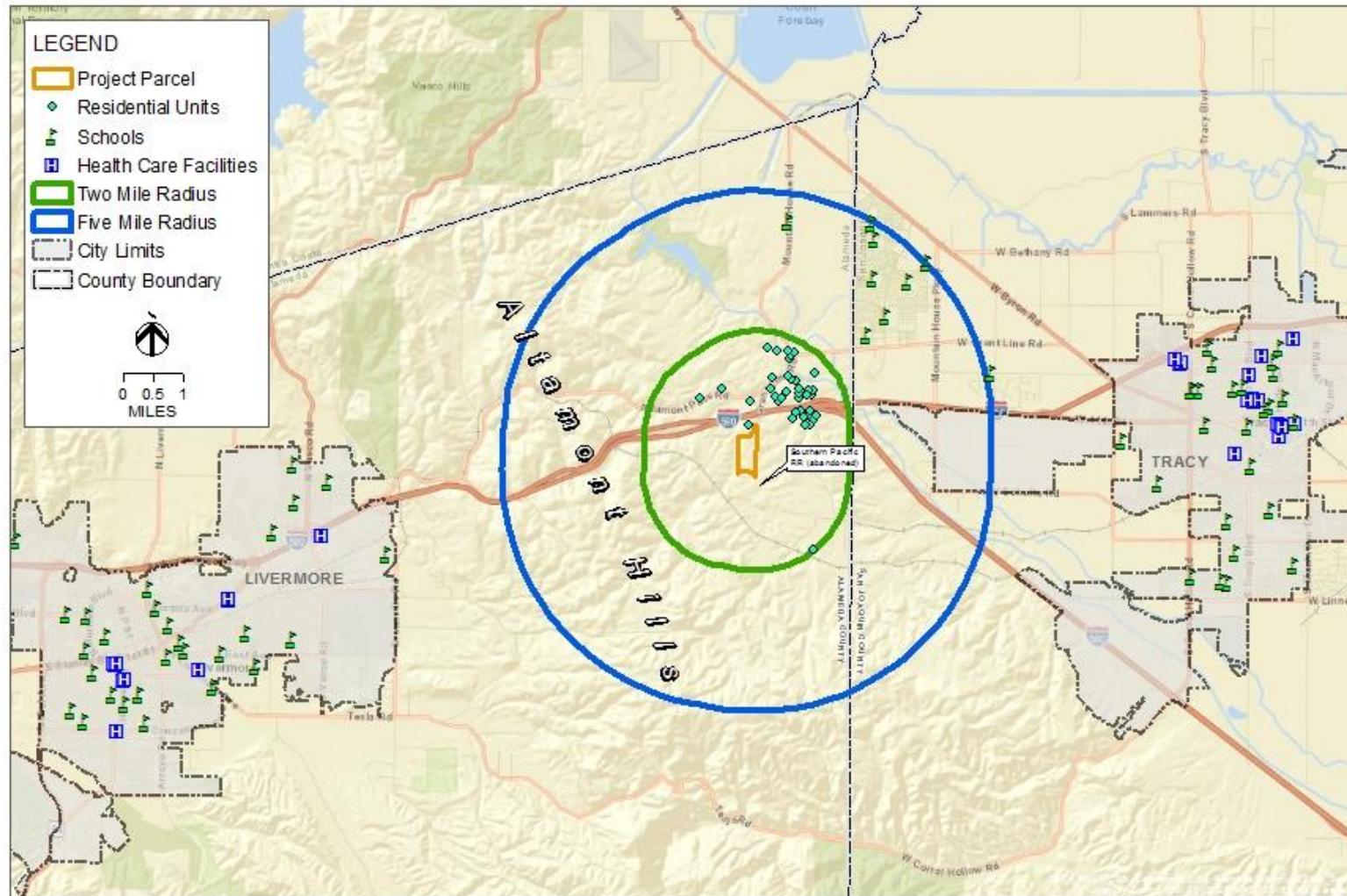
Sensitive Receptors

For the purposes of air quality analysis, sensitive land uses are defined as locations where human populations, especially children, seniors, and sick persons are located and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-hour, 8-hour, and 1-hour). Typical sensitive receptors include residences, hospitals, and schools. However, the Project area is located in the rural setting of the Altamont Pass, and sensitive receptors in the Project area include scattered residences, the nearest of which is the offsite residence located approximately 2,500 feet north of the operations area of the Proposed Project (see Figure 3.4-1).

² EPA, United States Greenhouse Gas Inventory Report Archive, Inventory of United States Greenhouse Gas Emissions and Sinks: 1990-2013, April 2015.

³ ARB, California Greenhouse Gas Emission Inventory - 2018 Edition, July 2018.

Figure 3.4-1. Sensitive Receptors near the Project Area



Odor Assessment

Concepts of Odor Assessment

Perception of odors by individuals varies considerably, so it is difficult to quantitatively define an offensive odor with precision. However, there are standard methods used to evaluate the intensity of odors (e.g., American Standard Testing Materials Method 679). The measurement of odors does not describe the characteristics of the odor. Therefore, it is possible to have the same intensity value for an unpleasant or a pleasant odor.

Odor Detection, Recognition, and Annoyance Thresholds

An odor threshold is a sensory property that refers to the minimum concentration that produces an olfactory response or sensation. Although an odor may be detected, it may not be offensive. The three main thresholds for odor are described below.

- The detection threshold is the minimum amount of odor-free dilution air needed to prevent an individual from detecting the odor. The detection threshold is the point where an individual detects an odor. This threshold varies for each individual.
- The recognition threshold occurs at lower dilutions (higher concentrations). At the recognition threshold, other odor parameters discussed below, such as odor character and relative pleasantness, are noticeable.
- The annoyance threshold may be below, but is most likely above the recognition threshold. At the annoyance threshold, people complain about an odor. This can even occur when the odor is pleasant. For example, a person passing by an industrial bakery or chocolate factory may experience the odor as pleasant. However, individuals living near these facilities and constantly subjected to the odor would likely consider it a nuisance.

Potential Sources of Odor at Composting Facilities

The primary sources of composting-related odors are: (1) feedstock management (e.g., delivery, storage and handling); (2) active composting (e.g., surface emissions, turning windrows, tearing down piles); and (3) curing (e.g., surface emissions, turning windrows, and tearing down piles). Other minor sources of composting-related odor include mixing of feedstocks into windrows; finished product loading; and poor site management conditions (e.g., runoff, leachate, surface ponding, and road spillage).

The compounds that may produce odors differ depending on the type of feedstock, condition of the feedstock, and the stage of composting (i.e., pre-processing stage, active composting stage, and curing stage). Feedstocks that decompose rapidly are likely to produce odors at higher concentrations than those feedstocks that decompose at a slower rate. In general, grass, green material, food waste, and biosolids produce more odors than woody waste. The delivery, storage, and handling of feedstocks can also greatly affect odors. If incoming feedstocks are not expeditiously processed, they may begin to decompose and produce odors.

Table 3.4-7 identifies sources of odors during the composting process and the relative contribution of individual sources in comparison to total odor generation by composting

facility operations (Epstein1997). The relative odor contributions are expressed as a percentage of the total odor emissions typically generated.

Table 3.4-7. Sources of Odor during the Composting Process

Odor Sources and Area Sources	Relative Odor Contribution	Potential Odor Characteristics
Feedstock Storage	4%	Woody
Composting Windrows, 0-6 days old	30%	Stinky, sulfurous, fishy, ammonia
Composting Windrows 7-11 days old	10%	Stinky, sulfurous
Composting Windrows 12-27 days old	40%	Earthy, mulch
Curing Windrows 28-61 days old	11%	Earthy, soil-like
Curing Windrows 61-90 days old	3%	Earthy, soil-like
<i>Volume Sources</i>	(<2% all sources Combined)	
Grinding Operation	<1%	Woody
Feedstock Tipping	<1%	Stinky
Feedstock Mixing	<1%	Stinky
Compost Windrow Building	<1%	Stinky
Compost Windrow Turning	<1%	Ammonia, sulfurous
Compost Windrow Teardown	<1%	Mulch
Curing Windrow Turning	<1%	Mulch, woody
Curing Windrow Teardown	<1%	Earthy, soil
Screening	<1%	Woody, mulch
Product Load-out	<1%	Earthy, soil-like

Source: Tetra Tech, Inc. (Formerly E&A Environmental Consultants, Inc.)

As shown in Table 3.4-6, the greatest odor source is the composting windrows, especially during the first few days of feedstock decomposition.

3.4.3 Impact Analysis

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant air quality impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute significantly to an existing or projected air quality violation;
- Result in a cumulative net increase of any nonattainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Appendix G of the CEQA Guidelines also indicated that the Proposed Project would have a significant GHG emissions impact if it would:

- a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reduction the emissions of GHG.

Methodology

The Alameda County Planning Department agrees that the significance thresholds contained in BAAQMD's May 2017 CEQA Guidelines, summarized in Tables 3.4-2 through 3.4-5, are supported by substantial evidence and will use those significance thresholds for determining the significance of air quality and climate change impacts in this EIR.

For odors, the operational threshold is based on complaint history, whereby five confirmed (by the BAAQMD or the LEA) complaints per year averaged over three years would be considered significant. Notably, composting facilities, which are regulated by CalRecycle, are required to have an Odor Impact Minimization Plan (OIMP) in place and have procedures that establish fence line odor detection thresholds. The BAAQMD recognizes a Lead Agency's discretion under CEQA to use established odor detection thresholds as thresholds of significance for CEQA review for CalRecycle regulated facilities with an adopted OIMP.

Emissions were estimated using existing conditions information, Project construction details, and Project operations information, as well as a combination of emission factors from the following sources.

- CalEEMod (Version 2016.3.2) emission model for estimating exhaust emissions from off-road construction equipment and on-road motor vehicles
- CalEEMod (Version 2016.3.2) emission model for calculating the long-term mobile, energy, and area source emissions

Impacts and Mitigation Measures

This section identifies air quality and GHG impacts resulting from construction and operation of the Proposed Project, and provides proposed mitigation measures to minimize significant impacts.

Impact AQ-1: Would the Proposed Project conflict with or obstruct implementation of the BAAQMD 2017 Clean Air Plan? – Significant Impact

BAAQMD recommends that the agency approving a project where an air quality plan consistency determination is required analyze the project with respect to the following questions. If all the questions are concluded in the affirmative, and those conclusions are supported by substantial evidence, the BAAQMD considers the project consistent with air quality plans prepared for the Bay Area.

1. Does the project support the primary goals of the Air Quality Plan (AQP)?
2. Does the project include applicable control measures from the AQP?

3. Does the project disrupt or hinder implementation of any AQP control measures?

The BAAQMD prepared the 2017 Clean Air Plan (CAP) to address nonattainment in the SFBAAB for both the 1- and 8-hour state ozone standards. The 2017 CAP details a control strategy to address ozone and ozone precursors (ROGs and NO_x), particulate matter (primarily PM_{2.5}), air toxics, and GHGs. The Proposed Project would conflict with or obstruct the 2017 CAP if construction of the Proposed Project generates criteria pollutant that exceed numerical thresholds defined by BAAQMD to attain the goals and objectives of the 2017 CAP (see Tables 3.4-2, 3.4-3, and 3.4-5).

As indicated under Impact AQ-2 and AQ-3, the Proposed Project would exceed the BAAQMD's significance criteria for criteria air pollutant emissions during operation. Therefore, the Proposed Project would conflict with or obstruct implementation of the applicable air quality plan, impacts are anticipated to be significant with Project implementation.

Impact AQ-2: Would the Proposed Project violate any air quality standard or contribute substantially to an existing or projected air quality violation? – Significant Impact

Construction Impacts

As discussed above, the Proposed Project would be constructed in two distinct phases. Although different composting technologies are being considered for the Proposed Project, construction activities would be similar for the composting technologies under consideration. Anticipated construction activities include site preparation, grading, facility construction, paving, and architectural coating. The emissions from these activities would include:

- Fugitive dust (including PM₁₀ and PM_{2.5}), primarily from fugitive sources such as soil disturbance and vehicle travel over unpaved surfaces.
- Combustion emissions of criteria air pollutants (including ROG, NO_x, CO, PM₁₀, and PM_{2.5}), potentially carcinogenic pollutants (diesel particulate matter, represented as exhaust PM_{2.5}) and GHGs, primarily from the operation of heavy construction machinery (primarily diesel fueled), portable auxiliary equipment, haul trucks, and construction worker vehicles.
- Evaporative emissions (ROG) from asphalt paving and architectural coating.

Emissions for the construction-related activities were modeled with the CalEEMod (Version 2016.3.2) emission model using a combination of Project specific information and model defaults.

The modeled unmitigated construction-related emissions of criteria pollutants for the two phases of the Proposed Project are summarized below in Table 3.4-8. As shown in the table, peak day construction-related criteria pollutant emissions would exceed BAAQMD significance thresholds, resulting in a significant impact. However, with implementation of Mitigation Measures AQ-1 and AQ-2, construction-related criteria pollutant emissions during construction of both Phase 1 and Phase 2 of the Proposed Project would not exceed any of the BAAQMD threshold criteria.

The modeled mitigated construction-related emissions of criteria pollutants for the two phases of the Proposed Project are summarized below in Table 3.4-9. As shown in the table, with implementation of Mitigation Measures AQ-1 and AQ-2, peak day construction-related criteria pollutant emissions would not exceed BAAQMD significance thresholds. Therefore, construction-related criteria pollutant emissions impacts would be less than significant with mitigation incorporated.

Table 3.4-8. Peak Day Construction-Related Criteria Pollutant Emissions and Significance Determination, unmitigated (lb/day)

Phase/ Year	ROG	NOx	Exhaust PM ₁₀	Exhaust PM _{2.5}
Phase 1	4.8	54.6	2.4	2.2
Phase 2	2.1	22.8	1.1	1.0
BAAQMD Significant Threshold	54	54	82	54
Significant Impact?	No	Yes	No	No

NOTE: The maximum value from winter or summer is listed.

Table 3.4-9. Peak Day Construction-Related Criteria Pollutant Emissions and Significance Determination, mitigated (lb/day)

Phase/ Year	ROG	NOx	Exhaust PM ₁₀	Exhaust PM _{2.5}
Phase 1	2.7	51.3	1.3	1.3
Phase 2	0.8	20.0	0.6	0.6
BAAQMD Significant Threshold	54	54	82	54
Significant Impact?	No	No	No	No

NOTE: The maximum value from winter or summer is listed.

Mitigation Measure AQ-1: Implement BAAQMD's Basic Construction Mitigation Measures

During construction, the construction contractor would be required to implement BAAQMD's recommended Basic Construction Mitigation Measures (listed in Table 8-2 of BAAQMD's current *CEQA Air Quality Guidelines*) to address construction-related PM₁₀/PM_{2.5} (fugitive dust) emissions. The applicable measures are as follows:

- 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 haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- 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.

- Idling times shall be minimized by either shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure 13 CCR 2485). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: Use of Tier 2 or Better Equipment

The construction contractor would be required to use Tier 2 or better engines in all off-road equipment.

Operation Impacts

As discussed above, the Proposed Project would be constructed in two distinct phases. For the purposes of evaluating the impacts of the facility operations, only the full build-out (i.e. 1,000 TPD) case was considered.

The emissions anticipated from the composting operations include:

- Fugitive dust (including PM₁₀ and PM_{2.5}), primarily from fugitive sources such as soil disturbance and vehicle travel over facility and local roads.
- Combustion emissions of criteria air pollutants (including ROG, NO_x, CO, PM₁₀, and PM_{2.5}), potentially carcinogenic pollutants (diesel particulate matter, represented as exhaust PM_{2.5}) and GHGs, primarily from the operation of off-road equipment (primarily diesel fueled) and on-road vehicles.
- Area sources such as landscaping equipment and architectural coatings.
- Composting off-gas.

Emissions for the operations-related fugitive dust, combustion emissions, and area sources were modeled with the CalEEMod (Version 2016.3.2) emission model using a combination of Project specific information and model defaults. Calculated emissions are provided in Appendix C. As shown in Table 3.4-9, the ROG emissions from the composting and the NO_x emissions from the haul trucks and off-road equipment would exceed the BAAQMD thresholds.

Mitigation Measure AQ-3: Composting Control Measures

Composting off-gas emissions were calculated using various sources of emissions factors and control efficiency values for the control equipment alternatives being considered for the Proposed Project. A number of composting options are being considered for use at the proposed facility:

- Windrow composting (represents the worst-case, unmitigated emissions)
- Windrows with micro-porous fabric cover (mitigated)

- Positive ASP with micro-porous cover (mitigated)
- Positive ASP with biocover (mitigated)
- Negative ASP vented to biofilter (mitigated)
- Rotating drum vented to biofilter (mitigated)

In each of the mitigated cases, only the emissions from the active phase of composting are controlled by the listed option. Emissions generated during the curing phase were assumed uncontrolled. The mitigated criteria pollutants for operation of the Proposed Project are summarized in Table 3.4-10.

Table 3.4-10. Composting Peak Day Operations Criteria Pollutant Emissions and Significance Determination (lb/day)

Operation	ROG	NO _x	PM ₁₀	PM _{2.5}
BAAQMD Significant Threshold	54	54	82	54
Area Sources	2.7	0.0	0.0	0.0
Energy	0.1	0.7	0.1	0.1
Mobile Sources	1.7	47.1	23.3	6.0
Off-road Equipment	2.2	18.6	0.7	0.7
Subtotal	6.6	66.5	24.1	6.7
Unmitigated				
<i>Windrows</i>				
Composting Off-gas	2,600			
Total	2,607	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
Mitigated				
<i>Windrows with Micro-Porous Fabric Cover</i>				
Composting Off-gas	582			
Total	589	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
<i>Positive ASP with Micro-Porous Fabric Cover</i>				
Composting Off-gas	568			
Total	575	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
<i>Positive ASP with Biocover</i>				
Composting Off-gas	600			
Total	607	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
<i>Negative ASP Vented to Biofilter</i>				
Composting Off-gas	839			

Table 3.4-10. Composting Peak Day Operations Criteria Pollutant Emissions and Significance Determination (lb/day)

Operation	ROG	NO _x	PM ₁₀	PM _{2.5}
Total	846	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
<i>Rotating Drum Vented to Biofilter</i>				
Composting Off-gas	839			
Total	846	66.5	24.1	6.7
Significant Impact?	Yes	Yes	No	No
NOTE: The maximum value from winter or summer is listed for the information obtained from CalEEMod.				

As shown in the table above, after mitigation, ROG and NO_x emissions during operation of the Proposed Project would exceed the BAAQMD threshold. This impact would be significant and unavoidable.

Long-Term Microscale (CO Hot Spot) Analysis

Vehicular trips associated with the Proposed Project would contribute to congestion at intersections and along roadway segments in the Project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the Proposed Project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (residents, schoolchildren, the elderly, and hospital patients, etc.).

According to the BAAQMD, the Proposed Project would result in a less-than-significant impact on localized CO concentrations if the following screening criteria are met:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Proposed Project would not conflict with the Alameda County Transportation Commission's (ACTC) program for designated roads or highways, a regional transportation plan, or other agency plans, as the Proposed Project would not cause the level of service (LOS) to significantly deteriorate on any regional roadway. In addition, the Proposed Project would not increase traffic volumes at affected intersections to more

than 44,000 vehicles per hour. Finally, the Project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, there would be no Project-related impacts on CO concentrations if the Proposed Project was constructed on the Project site.

Impact AQ-3: Would the Proposed Project result in a cumulatively significant net increase of any nonattainment pollutant? – Significant Impact

With regard to regional criteria air pollutants, according to the BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. There are many projects throughout the San Francisco Bay area that have been identified as having significant and unavoidable operational and construction-related regional pollutant impacts. Consequently, for assessment of cumulative regional pollutant impacts, BAAQMD has developed a methodology of assessing whether a project would have a cumulatively considerable contribution. According to the 2017 BAAQMD CEQA Guidelines, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions (BAAQMD, 2017).

As indicated under Impact AQ-2, the project's operational emissions would exceed the BAAQMD's thresholds of significance. As such, combining project emissions with emissions from other projects would result in cumulatively significant air quality operational impacts.

Impact AQ-4: Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations? – Less than Significant Impact

Construction Impacts

Exposure levels of TACs generated by construction of the Proposed Project were estimated by conducting dispersion modeling (using EPA's SCREEN3 model) of potential TAC sources (diesel particulate matter (DPM) as exhaust PM_{2.5}). DPM is the only TAC associated with construction activities and it does not have an acute health impact. Therefore, only the chronic risk, increase in cancer risk, and ambient PM_{2.5} concentration risks and hazards criteria were evaluated.

The nearest receptor is the offsite residence, located northwest of the Proposed Project. The analysis was performed assuming that all of the annual emissions (obtained from the CalEEMod output) were emitted in a single year. The risks and hazards resulting from the Phase 1 and Phase 2 construction activities, evaluated at the nearest receptor, are summarized below in Table 3.4-11.

Table 3.4-11. Phase 1 Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Phase 1 Project Impact	Phase 2 Project Impact	BAAQMD Significance Threshold	Significant?
Non-Cancer Chronic (Hazard Index)	0.0	0.1	1.0	No
Increased Cancer Risk (per million)	0.1	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.1	0.1	0.3	No

As shown in the table above, the Proposed Project risks and hazards criteria during construction of both Phase 1 and Phase 2 of the Proposed Project would not exceed any of the BAAQMD threshold criteria and would therefore constitute a less than significant impact, and no mitigation would be required.

The cumulative risks and hazards were evaluated by adding the Proposed Project's impacts on those of other local sources located within the Proposed Project's zone of influence. The only existing source located within the Proposed Project's zone of influence is the eastbound lane of Highway 580. The cumulative risks and hazards resulting from the Phase 1 and Phase 2 construction activities, evaluated at the nearest receptor, are summarized below in Table 3.4-12.

Table 3.4-12. Phase 1 Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Phase 1 Project Impact	Phase 2 Project Impact	BAAQMD Significance Threshold	Significant?
Non-Cancer Chronic (Hazard Index)	0.1	0.1	10.0	No
Increased Cancer Risk (per million)	21	21	100	No
Ambient PM _{2.5} (µg/m ³)	0.3	0.2	0.8	No

As shown in the table above, the cumulative risks and hazards criteria during construction of both Phase 1 and Phase 2 of the Proposed Project would not exceed any of the BAAQMD threshold criteria and would therefore constitute a less than significant impact, and no mitigation would be required.

Operation Impacts

Exposure levels of TACs generated by operation of the Proposed were estimated by conducting dispersion modeling (using EPA's SCREEN3 model) of potential TAC sources (diesel particulate matter (DPM) as exhaust PM_{2.5}). DPM is the only TAC associated with operation and it does not have an acute health impact. Therefore, only the chronic risk, increase in cancer risk, and ambient PM_{2.5} concentration Risks and Hazards criteria were evaluated.

The nearest receptor is the offsite residence, located approximately 430 feet northwest of the nearest point on the property line of the Proposed Project. The analysis was performed using the annual emissions obtained from the CalEEMod output. The risks and hazards resulting from operation of the proposed facility, evaluated at the nearest

receptor, are summarized in Table 3.4-13. As shown, the Project risks and hazards criteria resulting from operation of the Project (regardless of the composting process chosen) would not exceed any of the BAAQMD threshold criteria and would therefore constitute a less than significant impact, and no mitigation would be required.

The cumulative risks and hazards were evaluated by adding the Proposed Project's impacts on those of other local sources located within the Project's zone of influence. The only existing source located within the Project's zone of influence is the eastbound lane of Highway 580. The cumulative risks and hazards resulting from the operation of the Proposed Project, evaluated at the nearest receptor, are summarized in Table 3.4-14. As shown, the cumulative risks and hazards criteria resulting from operation of the Proposed Project (regardless of the composting process chosen) would not exceed any of the BAAQMD threshold criteria and would therefore constitute a less than significant impact, and no mitigation would be required.

Table 3.4-13. Project Peak Day Operations Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Cumulative Impact	BAAQMD Significance Threshold	Significant?
<i>Unmitigated</i>			
<i>Windrows</i>			
Non-Cancer Acute (Hazard Index)	0.3	1.0	No
Non-Cancer Chronic (Hazard Index)	0.7	1.0	No
Increased Cancer Risk (per million)	0.2	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No
<i>Mitigated</i>			
<i>Windrows with Micro-Porous Fabric Cover</i>			
Non-Cancer Acute (Hazard Index)	0.1	1.0	No
Non-Cancer Chronic (Hazard Index)	0.2	1.0	No
Increased Cancer Risk (per million)	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No
<i>Positive ASP with Micro-Porous Fabric Cover</i>			
Non-Cancer Acute (Hazard Index)	0.1	1.0	No
Non-Cancer Chronic (Hazard Index)	0.2	1.0	No
Increased Cancer Risk (per million)	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No
<i>Positive ASP with biocover</i>			
Non-Cancer Acute (Hazard Index)	0.1	1.0	No
Non-Cancer Chronic (Hazard Index)	0.2	1.0	No
Increased Cancer Risk (per million)	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No

Table 3.4-13. Project Peak Day Operations Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Cumulative Impact	BAAQMD Significance Threshold	Significant?
<i>Negative ASP Vented to Biofilter</i>			
Non-Cancer Acute (Hazard Index)	0.1	1.0	No
Non-Cancer Chronic (Hazard Index)	0.2	1.0	No
Increased Cancer Risk (per million)	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No
<i>Rotating Drum Vented to Biofilter</i>			
Non-Cancer Acute (Hazard Index)	0.1	1.0	No
Non-Cancer Chronic (Hazard Index)	0.2	1.0	No
Increased Cancer Risk (per million)	0.1	10.0	No
Ambient PM _{2.5} (µg/m ³)	0.2	0.3	No

Table 3.4-14. Cumulative Peak Day Operations Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Cumulative Impact	BAAQMD Significance Threshold	Significant?
<i>Unmitigated</i>			
<i>Windrows</i>			
Non-Cancer Acute (Hazard Index)	0.4	10.0	No
Non-Cancer Chronic (Hazard Index)	0.8	10.0	No
Increased Cancer Risk (per million)	20.9	100	No
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No
<i>Mitigated</i>			
<i>Windrows with Micro-Porous Fabric Cover</i>			
Non-Cancer Acute (Hazard Index)	0.1	10.0	No
Non-Cancer Chronic (Hazard Index)	0.2	10.0	No
Increased Cancer Risk (per million)	20.8	100	No
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No
<i>Positive ASP with Micro-Porous Fabric Cover</i>			
Non-Cancer Acute (Hazard Index)	0.1	10.0	No
Non-Cancer Chronic (Hazard Index)	0.2	10.0	No
Increased Cancer Risk (per million)	20.8	100	No

Table 3.4-14. Cumulative Peak Day Operations Risks and Hazards Evaluation and Significance Determination

Risk/Hazard	Cumulative Impact	BAAQMD Significance Threshold	Significant?
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No
<i>Positive ASP with biocover</i>			
Non-Cancer Acute (Hazard Index)	0.1	10.0	No
Non-Cancer Chronic (Hazard Index)	0.2	10.0	No
Increased Cancer Risk (per million)	20.8	100	No
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No
<i>Negative ASP Vented to Biofilter</i>			
Non-Cancer Acute (Hazard Index)	0.1	10.0	No
Non-Cancer Chronic (Hazard Index)	0.3	10.0	No
Increased Cancer Risk (per million)	20.8	100	No
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No
<i>Rotating Drum Vented to Biofilter</i>			
Non-Cancer Acute (Hazard Index)	0.1	10.0	No
Non-Cancer Chronic (Hazard Index)	0.3	10.0	No
Increased Cancer Risk (per million)	20.8	100	No
Ambient PM _{2.5} (µg/m ³)	0.4	0.8	No

Impact AQ-5: Would the Proposed Project create objectionable odors affecting a substantial number of people? – Less than Significant Impact

Odor can be generated during the initial mixing process, depending on the feedstock and the time over which incoming feedstock materials have been stored prior to mixing. For example, grass cuttings decay rapidly, and if stored prior to mixing, may emit ammonia and other types of sharply odorous compounds. Consequently, it is important for odor control that such incoming feedstock be mixed as soon as possible upon arrival at the site.

Processing, grinding, and conveying the materials to the windrows also have the potential to generate odors, especially for putrescible materials such as grass clippings and food waste. Odors can be carried in the dust generated during the conveyance and grinding processes.

Newly formed windrows containing fresh organic material can potentially generate odors when improperly managed. Odors produced at this stage are principally the result of the decomposition or breakdown of proteins and fats that contain sulfur and nitrogen compounds. These compounds generally break down during the first 6-14 days of the active composting phase, and odor generation is significantly reduced after this initial stage of decomposition. Forced aeration helps to add aeration to the windrow as well as help break down the organic feedstock, minimizing odor event potential. However, if

improperly managed, portions of the pile can become anaerobic, and may result in the release of odors because some of the organic material within the pile may be in an anaerobic state. Compounds formed under anaerobic conditions and their characteristic odors may include hydrogen sulfide (rotten egg), carbon disulfide (disagreeable sweet), dimethyl sulfide (rotten cabbage), and ammonia (pungent, sharp).

Odors can also be generated if runoff and leachate remain on the composting facility surface in sufficient amounts to form ponds.

When the windrows are torn down, the potential for odors is considerably lower than for the initial composting process, because the compost has become more stable with time. The rate of decomposition is less and many of the odor-producing compounds have already broken down. There is less potential for odor generation during the final (curing) stage of composting, since organic compounds have already been degraded and curing piles require relatively infrequent turning. In addition, odors from finished compost are usually not considered to be offensive, unlike fresh composting feedstocks.

Odor levels are generally minimal during final loading of the finished compost product for shipment offsite, and the characteristics of the odor from this process is that of an earthy, soil-like material.

The nearest receptor is located approximately 2,500 feet north of the operations area of the Proposed Project. This receptor is located within the BAAQMD's 1 mile screening distance for composting facilities listed in Table 3.4-4. When the owners accepted biosolids for land application in the past, no odor complaints were recorded. Any odors that may have occurred at the Project site were quickly dissipated due to the frequent winds in the Altamont Pass area. Any odors generated during operation of the Proposed Project would be minimized by proper management and housekeeping, the composting option(s) used and would also be dissipated by these frequent winds. As a result, no odor complaints are anticipated to result from Proposed Project operation, and the Proposed Project would meet the BAAQMD threshold. Implementation of the minimization measures outlined below would further reduce odor related impacts on nearby receptors as a result of Proposed Project operation.

The following composting option(s) that would be used at the proposed facility to minimize VOC emissions would also minimize odors:

- Windrow composting (represents the worst-case, unmitigated emissions)
- Windrows with micro-porous fabric cover (mitigated)
- Positive ASP with micro-porous cover (mitigated)
- Positive ASP with biocover (mitigated)
- Negative ASP vented to biofilter (mitigated)
- Rotating drum vented to biofilter (mitigated)

In addition, the receiving and processing of incoming foodwaste and biosolids inside a building, with negative air conveyed to a biofilter, will help to minimize potential odors from the receiving of potentially odorous feedstock.

As required by CalRecycle, the proposed facility would also develop and implement an OIMP that would include procedures to establish fence line odor detection thresholds.

Therefore, impacts related to the creation of objectionable odors during operation would be less than significant, and no mitigation would be required.

Impact AQ-6 Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? – Less than Significant Impact

GHG emissions would be generated by the combustion of fuel in off-road equipment and on-road vehicle engines and through the decomposition of the compost. The GHG emissions estimated for operation of the Proposed Project are summarized in Table 3.4-15. As shown, the GHG emissions resulting from operation of the Proposed Project (regardless of the composting process chosen) would not exceed any of the BAAQMD threshold criteria and would therefore constitute a less than significant impact, and no mitigation would be required.

Table 3.4-15. Operations GHG Evaluation and Significance Determination (MTCO₂e)

Activity	Project Impact	BAAQMD Significance Threshold	Significant?
Area	0.0102		
Energy	391		
Mobile	3,257		
Off-groad	658		
Waste	64		
Water	11		
Composting Off-Gas	3,484		
TOTAL	7,865	10,000	No

Impact AQ-7 Would the Proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? – Less than Significant Impact

As indicated under Impact AQ-6, the Proposed Project's long-term operational emissions would not exceed the BAAQMD's significance thresholds. Therefore, the Proposed Project would not conflict with the GHG reduction goals of AB 32.

3.5 Biological Resources

This section provides technical information and reviews the Proposed Project to determine the extent that the Proposed Project may affect special-status species and sensitive habitats. This section presents technical information upon which later decisions regarding Project impacts were developed.

3.5.1 Regulatory Framework

Regulations governing the Project area at the federal, state, local, and/or regional level are described below.

Federal

Endangered Species Act

The Endangered Species Act of 1973 provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code [USC] Sections 1531–1544). The act defines take to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Title 50, Part 222, of the Code of Federal Regulations (CFR) (50 CFR 222) further defined harm to include “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering.”

Section 7(a)(1) of the act requires federal agencies to utilize their authority to further the conservation of listed species; while Section 7(a)(2) requires consultation with the United States Fish and Wildlife Service (USFWS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species, or designated critical habitat. For projects that may result in the incidental take of threatened or endangered species, or critical habitat, and that lack a federal nexus; a Section 10(a)(1)(b) incidental take permit can be obtained from the USFWS.

Clean Water Act

The basis of the Clean Water Act was established in 1948; however, it was referred to as the Federal Water Pollution Control Act. The act was reorganized and expanded in 1972 (33 USC 1251), and at this time the Clean Water Act became the commonly used name. The basis of the Act is the regulation of pollutant discharges into waters of the United States, as well as the establishment of surface water quality standards.

SECTION 404

Section 404 of the Clean Water Act (33 USC 1344) established the program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Under this regulation, certain activities proposed within waters of the United States require the obtainment of a permit prior to initiation. These activities include, but

are not limited to, placement of fill for the purposes of development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and bridges), and mining operations.

The primary objective of this program is to ensure that the discharge of dredged or fill material is not permitted if a practicable alternative to the proposed activities exists that results in less impact on waters of the United States or the proposed activity would result in significant adverse impacts on these waters. To comply with these objectives, a permittee must document the measures taken to avoid and minimize impacts on waters of the United States and provide compensatory mitigation for any unavoidable impacts.

SECTION 401

Under Section 401 of the Clean Water Act (33 USC 1341), federal agencies are not authorized to issue a permit and/or license for any activity that may result in discharges to waters of the United States, unless a state or tribe where the discharge originates either grants or waives Section 401 certification. Section 401 provides states or tribes with the ability to grant, grant with conditions, deny, or waive certification. Granting certification, with or without conditions, allows the federal permit/license to be issued and remain consistent with any conditions set forth in the Section 401 certification. Denial of the certification prohibits the issuance of the federal license or permit, and waiver allows the permit/license to be issued without state or tribal comment. Decisions made by states or tribes are based on the Proposed Project's compliance with EPA water quality standards as well as applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and any other appropriate requirements of state or tribal law. In California, the SWRCB is the primary regulatory authority for Clean Water Act Section 401 requirements (additional details below).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 USC 703–711) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Solicitor's Opinion M 37050 was released on December 22, 2017, stating that the act does not prohibit incidentally killing birds. Thus, the statute's prohibitions on pursuing, hunting, capturing, taking, killing, or attempting to do any of the aforementioned, apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs.

Executive Order 13112 – Invasive Species

This executive order directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and the United States Army Corps of Engineers (USACE) would issue permits and, therefore, would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

Fish and Wildlife Coordination Act of 1958 (16 USC 661 et seq.)

The Fish and Wildlife Coordination Act requires that whenever any body of water is proposed or authorized to be impounded, diverted, or otherwise controlled or modified, the lead federal agency must consult with USFWS, the state agency responsible for fish and wildlife management, and the National Marine Fisheries Service. Section 662(b) of the Act requires the lead federal agency to consider the recommendations of USFWS and other agencies. The recommendations may include proposed measures to mitigate or compensate for potential damages to wildlife and fisheries associated with a modification of a waterway.

Executive Order 11990 Protection of Wetlands (42 Federal Register 26961, May 25, 1977)

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural qualities of these lands. Federal agencies are required to avoid undertaking or providing support for new construction located in wetlands unless (1) no practicable alternative exists and (2) all practical measures have been taken to minimize harm to wetlands.

State

California Endangered Species Act

Under the California Endangered Species Act, the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of endangered and threatened species (Fish and Game Code [FGC] Section 2070). CDFW maintains a list of candidate species, which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of species of special concern, which serve as species watch lists.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts on species listed on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

California Fish and Game Code

LAKE AND STREAMBED ALTERATION AGREEMENT

State and local public agencies are subject to FGC Section 1602, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as waters of the state by CDFW. Under FGC Section 1602, a discretionary Streambed

Alteration Agreement must be issued by CDFW to the project proponent prior to the initiation of construction activities within lands under CDFW jurisdiction. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

NATIVE PLANT PROTECTION ACT

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

MIGRATORY BIRDS AND BIRDS OF PREY

Sections 3503 and 3503.5 of the FGC provide regulatory protection to resident and migratory birds and all birds of prey within the state of California, including the prohibition of the taking of nests and eggs, unless otherwise provided for by the FGC. Specifically, these sections of the FGC make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code.

FULLY PROTECTED SPECIES

California statutes also afford fully protected status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit. FGC Section 3505 makes it unlawful to take “any egret or egret, osprey, bird of paradise, goura, numidi, or any part of such a bird. FGC Section 3511 protects from take the following fully protected birds: (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle; (*Aquila chrysaetos*) (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite (*Elanus leucurus*); and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

FGC Section 4700 identifies the following fully protected mammals that cannot be taken: (a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*); (b) bighorn sheep (*Ovis canadensis*), except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*); (d) Guadalupe fur seal (*Arctocephalus townsendi*); (e) ring-tailed cat (genus *Bassariscus*); (f) Pacific right whale (*Eubalaena sieboldi*); (g) salt-marsh harvest mouse (*Reithrodontomys raviventris*); (h) southern sea otter (*Enhydra lutris nereis*); and (i) wolverine (*Gulo gulo*).

FGC Section 5050 protects from take the following fully protected reptiles and amphibians: (a) blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*); (b) San Francisco garter snake (*Thamnophis sirtalis tetrataenia*); (c) Santa Cruz long-toed

salamander (*Ambystoma macrodactylum croceum*); (d) limestone salamander (*Hydromantes brunus*); and (e) black toad (*Bufo boreas exsul*).

FGC Section 5515 identifies certain fully protected fish that cannot lawfully be taken, even with an incidental take permit. The following species are protected in this fashion: (a) Colorado River squawfish (*Ptychocheilus lucius*); (b) thicktail chub (*Gila crassicauda*); (c) Mohave chub (*Gila mohavensis*); (d) Lost River sucker (*Catostomus luxatus*); (e) Modoc sucker (*Catostomus microps*); (f) shortnose sucker (*Chasmistes brevirostris*); (g) humpback sucker (*Xyrauchen texanus*); (h) Owens River pupfish (*Cyprinodon radiosus*); (i) unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*); and (j) rough sculpin (*Cottus asperimus*).

California Wetlands and Other Policies

The California Resources Agency and its various departments do not authorize or approve projects that fill or otherwise harm or destroy coastal, estuarine, or inland wetlands. Exceptions may be granted if all of the following conditions are met:

- The project is water-dependent.
- No other feasible alternative is available.
- The public trust is not adversely affected.
- Adequate compensation is proposed as part of the project.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code Section 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15) is the primary state regulation that addresses water quality. The requirements of the act are implemented by the SWRCB at the state level and at the local level by the RWQCB). The RWQCB carries out planning, permitting, and enforcement activities related to water quality in California. The act provides for waste discharge requirements and a permitting system for discharges to land or water. Certification is required by the RWQCB for activities that can affect water quality.

CLEAN WATER ACT, SECTION 401 WATER QUALITY CERTIFICATION

Clean Water Act Section 401 (33 USC 1341) requires that any applicant for a federal license or permit, which may result in a pollutant discharge to waters of the United States, obtain a certification that the discharge will comply with EPA water quality standards. The state or tribal agency responsible for issuance of the Clean Water Act Section 401 certification may also require compliance with additional effluent limitations and water quality standards set forth in state and tribal laws. In California, the RWQCB is the primary regulatory authority for Clean Water Act Section 401 requirements.

The Central Valley RWQCB is responsible for enforcing water quality criteria and protecting water resources near the Proposed Project. In addition, the RWQCB is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements or commonly by issuing conditional waivers. The RWQCB requires that a project proponent obtain a Clean Water Act Section 401 water quality certification for Section 404 permits issued by USACE. A request for water quality

certification (including waste discharge requirements) by the RWQCB and an application for a General Permit for Storm Water Discharges Associated with Construction Activities and an Industrial Stormwater Permit application are prepared and submitted following completion of the CEQA environmental document.

STATE DEFINITION OF COVERED WATERS

Under California state law, waters of the state means “any surface water or groundwater, including saline waters, within the boundaries of the state.” Therefore, water quality laws apply to both surface water and groundwater. After the United States Supreme Court decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, the Office of Chief Counsel of the SWRCB released a legal memorandum confirming the state’s jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the state are subject to state regulation, and this includes isolated wetlands. In general, the SWRCB regulates discharges to isolated waters in much the same way as they do for waters of the United States, using the Porter-Cologne Water Quality Control Act rather than Clean Water Act authority.

Nongovernmental Agency

California Native Plant Society

The California Native Plant Society (CNPS) is a nongovernmental agency that classifies native plant species according to current population distribution and threat level in regard to extinction. These data are utilized by the CNPS to create and maintain a list of native California plants that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2019). Potential impacts on populations of CNPS-listed plants receive consideration under CEQA review.

The following identifies the definitions of the CNPS listings:

- List 1A: Plants believed to be extinct
- List 1B: Plants that are rare, threatened, or endangered in California and elsewhere
- List 2: Plants that are rare, threatened, or endangered in California, but are more numerous elsewhere

All of the plant species on List 1B and List 2 meet the requirements of the Native Plant Protection Act Section 1901, Chapter 10, or FGC Section 2062 and Section 2067 and are eligible for state listing. Plants appearing on List 1B or List 2 are considered to meet the criteria of CEQA Section 15380, and effects on these species are considered significant. CNPS List 1A plants are not considered in this document because they are extinct species. Classifications for plants on List 3 (plants about which more information is needed) and/or List 4 (plants of limited distribution), as defined by the CNPS, are not currently protected under state or federal law. Therefore, no detailed descriptions or impact analysis was performed on species with these designations.

Local

East County Area Plan

The following policies included in the Alameda County ECAP are applicable to the Proposed Project and, specifically, biological resources:

Goal: To preserve a variety of plant communities and wildlife habitat.

Policy 125: The County shall encourage preservation of areas known to support special status species.

Policy 126: The County shall encourage no net loss of riparian and seasonal wetlands.

East Alameda County Conservation Strategy

The Proposed Project is located in Conservation Zone 10 of the East Alameda County Conservation Strategy (EACCS). The EACCS is intended to provide an effective 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 includes provisions for focal species: species that are protected under federal and state laws, with a goal to protect and enhance the habitats of these species. Although the EACCS is a framework for guidance by regulatory agencies and does not provide for incidental take permits for threatened or endangered species as would a Habitat Conservation Plan, the USFWS issued a programmatic biological opinion (PBO) in 2012 for USACE permitted projects utilizing the EACCS. The PBO offers a streamlined permitting process with the USFWS for projects considered suitable to be appended. According to the EACCS, in order for individual projects to be appended to the PBO, they must be consistent with the EACCS and must first be reviewed by USACE and USFWS via specific procedures outlined in the PBO.

3.5.2 Studies Performed to Date

The following biological studies and/or surveys have been completed to date for the Project area.

2005 Biological Assessment

On May 3, 2005, Water Research Associates, Inc. (WRA Environmental Consulting or WRA) performed a biological site assessment of the Project area. The purpose of the biological assessment was to determine:

- Habitat suitability and subsequent likelihood of occurrence of special status wildlife and plant species potentially occurring at the site;
- The presence of wetlands potentially subject to federal jurisdiction under Section 404 of the Clean Water Act;
- The presence of stream or riparian areas potentially subject to state jurisdiction under FGC Section 1602; and

- The mitigation habitat value for special status species, including the California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), and burrowing owl (*Athene cunicularia*).

This biological assessment provided general information on the potential presence of sensitive species or habitats but, was not an official protocol level survey for listed species. The WRA biological assessment concluded that there were seasonal wetlands and perennial stock ponds that could be considered sensitive habitat in the study area, and the potential for 17 special-status wildlife and 3 special-status species to occur. It is important to note that the WRA 2005 biological assessment study area was larger than the currently defined Project area; therefore, some of the sensitive habitats and special-status species identified in that report may not have the potential to occur in the current Project area. Please see **Appendix D** for a copy of the 2005 WRA biological assessment.

2008 Rare Plant Survey

In the spring and summer of 2008, Monk & Associates, Inc. completed focused surveys for special-status plants in the Project area. Surveys were conducted by Monk & Associates biologists Isabelle de Geofroy and Stephanie Scolari on March 28, April 25, May 30, 2008, and by Ms. De Geofroy and Sarah Lynch on September 11, 2008. The surveys followed the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (2000), and CNPS' *Botanical Survey Guidelines* (2001). These guidelines state that special-status plant surveys be conducted at the proper time of year, when plants are evident and identifiable. The guidelines also state that surveys be floristic in nature, documenting and identifying every plant observed to species, subspecies, or variety, as necessary, to determine their status.

Following these guidelines, Monk & Associates conducted surveys during the months when special-status plant species from the region are known to be evident and flowering. All areas of the Project site were examined by walking transects through potential habitat. Most species documented in the Project area were identified to species level, and all were identified to the level needed to determine whether they qualify as special-status plants. No special-status plant species were identified during the surveys conducted by Monk & Associates in the Project area. Please see **Appendix D** for a copy of the 2008 Rare Plant Survey report.

2016 Biological Resources Assessment

On November 11, 2015, WRA conducted an assessment of biological resources in the Project area. The purpose of the biological resources assessment was to provide an analysis of natural community and special-status species issues in the Project area. In addition, an aquatic resources delineation was performed on February 5, 2016, and observations were made during this site visit that were incorporated into the biological assessment. WRA observed five biological communities, three of which were considered sensitive, 36 plant species, and 20 wildlife species. Eight special-status wildlife species and nine special-status plant species as having the potential to occur in the Project area. Please see **Appendix D** for a copy of the 2016 WRA biological resources assessment.

2016 Waters of the United States Reverification

A preliminary jurisdictional determination was issued by USACE on April 30, 2009, and expired on April 30, 2014. On February 5, 2016, WRA surveyed the Project area to determine if site conditions had changed substantially since the previous jurisdictional determination was issued. WRA determined that no property modifications had been made to the Project area since 2008, although the Project boundary had been revised. The results of the WRA survey indicated no substantial changes to the locations of previously delineated waters of the United States, with the exception of an extension of one previously mapped feature. As a result, the total acreage of waters of the United States had changed slightly. Because the Project boundary had been revised, some features that were delineated and verified in 2008 are no longer located within the Project boundary. Please see **Appendix D** for a copy of the WRA reverification letter submitted to USACE.

Species Database Queries

Queries of the following databases were completed to identify special-status species with the potential to occur in the area:

- USFWS Information Planning and Consultation (IPaC) System (2018a)
- USFWS Critical Habitat Portal (2018b)
- CDFW California Natural Diversity Database (CNDDB) QuickView Tool in BIOS 5 (2019)
- CNPS Inventory of Rare, Threatened, and Endangered Plants of California (2019)

The USFWS IPaC System was queried on April 5, 2019 to identify special-status species within USFWS jurisdiction that have the potential to occur in the Project vicinity. The USFWS Critical Habitat Portal was also queried to identify designated critical habitat in or adjacent to the Proposed Project, and a portion of the Arroyo Valley critical habitat unit for California red-legged frog was identified as overlapping a portion of the Project area. A query of the CNDDB provided a list of processed and unprocessed occurrences for special-status species within the Byron Hot Springs, Clifton Court Forebay, Union Island, Altamont, Midway, Tracy, Mendehall Springs, Cedar Mountain, and Lone Tree Creek, California United States Geological Survey 7.5-minute quadrangles. Lastly, the CNPS database was queried to identify special-status plant species with the potential to occur in the aforementioned quads. Raw data from the database queries are provided in **Appendix D**. Please see the Special-Status Species subsection for a summary of the database search results and conclusions regarding the potential for each species to be impacted by Project-related activities.

3.5.3 Environmental Setting

The Project area is located in eastern Alameda County in the foothills of the Altamont Pass. Cattle grazing lands are present to the east and south the Project area; cattle grazing land and an unnamed tributary to Mountain House Creek are present to the west; and a windmill maintenance facility and I-580 are present north. Vegetation on the majority of the site can be characterized as California annual grassland and dense mustard. Elevations range from 330 to 480 feet.

The Project area is used for cattle grazing and a portion was previously used for biosolids placement to improve cattle forage. Biosolids placement has since been discontinued. Soils in the central Project area and comprising a majority of the site have been tilled annually for several years prior to placement of biosolids. Three berms have been built at the heads of drainages within the Project area to capture and filter runoff; these catchments were constructed as part of the Waste Discharge Requirements by the RWQCB and, therefore, are not considered potentially jurisdictional features. Power lines are present in the northern portion of the Project area, and a north-south oriented dirt road traverses the length of the site. The following sections describe the onsite vegetation communities, sensitive habitats, movement corridors, an analysis of special-status species potential to occur, and general descriptions of each species with the potential to occur in the Project area.

Non-Sensitive Vegetation Communities

Non-sensitive vegetation communities described in the WRA 2016 *Biological Resources Assessment* are described below. Please refer to Figure 3 in the WRA 2016 report for the location and extent of mapped communities (**Appendix D**).

Mustard

One or more non-native mustard (Brassicaceae) species form stands in much of California, including the coast, the Central Valley, the Sierra Nevada, and the Sonoran Desert. Mustard stands often occur in disturbed areas but may also occur in wildland settings (Appendix D). Such stands are classified as upland mustards (*Brassica nigra* and other mustards Herbaceous Semi-Natural Alliance) by *A Manual of California Vegetation, Online Edition* (WRA 2016). In the Project area, the mustard community is present in the central and eastern portions, primarily in areas that have been tilled and had biosolids applied to them; although, it has expanded outside of such areas to a limited degree. A dirt road is present in part of this community. In addition, two of the small, bermed catchments described above are present in California annual grassland. These features appear to retain water longer than the surrounding areas, but the duration appears to be brief, and the plant composition does not differ greatly from the surrounding plant community. The mustard community is composed primarily of dense black mustard (*Brassica nigra*). Other plant species observed in this community include London rocket (*Sisymbrium irio*), foxtail barley (*Hordeum murinum*), and ripgut brome (*Bromus diandrus*). Wildlife species observed in mustard stand portions of the Project area include house finch (*Haemorhous mexicanus*) and mourning dove (*Zenaidura macroura*).

Ruderal/Developed

Ruderal/developed areas have been partially developed or have been significantly disturbed in some way. In the Project area, the ruderal/developed community is located near the southern boundary, in an area that is used for storage of fill and truck trailers (as cited in WRA 2016) and is regularly disturbed. Because of this regular disturbance, the vegetation is often sparse and is typically composed of non-native annual species such as Italian thistle (*Carduus pycnocephalus*), Russian thistle (*Salsola australis*), dooryard knotweed (*Polygonum aviculare*), and foxtail barley. Wildlife species observed in ruderal

and disturbed portions of the Study Area include side-blotched lizard (*Uta stansburiana*), Bewick's wren (*Thryomanes bewickii*), house finch, and mourning dove.

Sensitive Communities

Sensitive habitats included are those that are of special concern to resource agencies or those that are protected under CEQA, Sections 1600–1603 of the FGC, Sections 401 and Section 404 of the Clean Water Act, and/or the EACCS.

California Annual Grassland

California annual grassland typically occurs in open areas of valleys and foothills throughout California, except in the north coastal and desert regions, usually on fine textured clay or loam soils that are somewhat poorly drained (WRA 2016). California annual grassland is typically dominated by non-native annual grasses and forbs along with scattered native wildflowers. This community is not considered sensitive by the USFWS, CDFW, or other federal or state organizations. However, it is considered sensitive under the EACCS, which has the conservation goal to protect and enhance this community type since it can benefit focal species and promote native biodiversity. As a result, impacts on this community will be analyzed in relation to special-status species in this section.

California annual grassland is present in the southern, western, and northern portions of the Project area, where tilling and fertilization does not occur. A dirt road is present in the central and northern portions of this community. In addition, one of the small, bermed catchments described above is present in California annual grassland. This feature appears to retain water longer than the surrounding areas, but the duration appears to be brief, and the plant composition does not differ greatly from the surrounding plant community. Plant species observed in California annual grassland include slender oat (*Avena barbata*), ripgut brome, soft chess (*B. hordeaceus*), and foxtail barley. Wildlife species observed in this community in the Study Area include northern harrier (*Circus cyaneus*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*).

Aquatic Resources

Aquatic resources provide a variety of functions for plants and wildlife including habitat, foraging, cover, migration, and movement corridors for both special-status and common species. In addition to habitat functions, these features provide physical conveyance of surface water flows capable of handling large storm water events. Large storms can produce extreme flows that cause bank cutting and sedimentation of open waters and streams. Furthermore, aquatic resources can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources. Two types of aquatic resources were identified by WRA (2016) in the Project area: ephemeral drainage and seasonal wetland and are described below.

EPHEMERAL DRAINAGE

An ephemeral drainage typically exhibiting flow only during and immediately following precipitation events was observed in the Project area. This ephemeral drainage occurs on a steep slope in the northwestern portion of the Project area, in an obvious

topographic draw that drains a cattle pond. Plant species observed in the ephemeral drainage include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian rye grass (*Festuca perennis*), and dooryard knotweed. Though plant cover was observed as being greater than 5 percent during the site visit(s), this feature shows typical conditions of ephemeral non-wetland drainages, characterized by a slight meander pattern and a narrow channel that exhibits sediment sorting and rill erosion. No wildlife species were observed in the ephemeral drainage by WRA (2016).

SEASONAL WETLAND

Two seasonal wetland features were documented in the Project area: one occurs in a linear depression on a steep slope in the western portion of the Project area, and the other occurs in the northeaster portion of the Project area. The upper portion of the seasonal wetland in the northeastern portion of the Project area is narrower and located on a steep slope, while the lower portion is shallower and broader as the slope becomes gentler. Seasonal wetlands were densely vegetated and dominated by non-native annual wetland species including Italian rye grass, Mediterranean barley, and annual bluegrass (*Poa annua*). No wildlife species were observed in the seasonal wetlands by WRA (2016).

California Red-legged Frog Critical Habitat

A portion of Project area has been designated as critical habitat for the California red-legged frog (*Rana draytonii*) by USFWS. The Arroyo Valley (ALA-2) critical habitat unit is comprises approximately 153,624 acres of land and is located in southwestern Alameda County, south of Highway 580 at Altamont Pass southeast into San Joaquin County, and southwest into Santa Clara County near Arroyo Hondo and Calaveras Reservoir. This unit contains features that are essential to the conservation of California red-legged frogs.

Movement Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to (a) sustain species with specific foraging requirements, (b) preserve a species' distribution potential, and (c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

Available data on movement corridors and linkages was accessed via the CDFW QuickView Tool in BIOS 5 (2019). Data layers reviewed included:

- Missing Linkages in California [ds420]
- Natural Landscape Blocks [ds621]
- Essential Connectivity Areas [ds623]
- Landscape Blocks for the California Bay Area Linkage Network [ds853]
- American Badger Connectivity Modeling for the California Bay Area Linkage Network [ds854]

- San Joaquin Kit Fox Connectivity Modeling for the California Bay Area Linkage Network [ds862]
- Burrowing Owl Connectivity Modeling for the California Bay Area Linkage Network [ds871]
- Loggerhead Shrike Connectivity Modeling for the California Bay Area Linkage Network [ds874]
- Northern Harrier Connectivity Modeling for the California Bay Area Linkage Network [ds875]
- Alameda Whipsnake Connectivity Modeling for the California Bay Area Linkage Network [ds883]
- California Tiger Salamander Connectivity Modeling for the California Bay Area Linkage Network [ds885]
- San Joaquin Coachwhip Connectivity Modeling for the California Bay Area Linkage Network [ds887]

The Project area intersects with a natural landscape block and the eastern edge of an essential connectivity area. Additionally, there is an identified missing linkage Carrizo Plain – West San Joaquin Valley just west of the Project area. The data layers for the Bay Area Linkage Network revealed that all or some of the Project area overlaps with core habitat for California tiger salamander (*Ambystoma californiense*), northern harrier (*Circus hudsonius*), loggerhead shrike (*Lanius ludovicianus*), and American badger (*Taxidea taxus*). In addition, the Project area intersects patch habitats in the Bay Area Linkage Network for Alameda whipsnake (*Masticophis lateralis euryxanthus*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

Special-Status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area, or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as CDFW, USFWS, and private organizations such as the CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined by the following codes:

- Listed, proposed, or candidates for listing under the federal Endangered Species Act (50 CFR 17.11 – listed; 61 Federal Register 7591, February 28, 1996 candidates)
- Listed or proposed for listing under the California Endangered Species Act (CESA) (FGC 1992 Section 2050 et seq.; 14 CCR 670.1 et seq.)
- Designated as Species of Special Concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)

- Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including CNPS species given a California Rare Plant Rank of 1B or 2

The results of the USFWS, CDFW, and CNPS database queries identified several special-status species with the potential to be affected by Project-related activities.

Appendix D includes a summary of all special-status species returned in the database queries, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be affected by the Proposed Project. Only species that were determined to have the potential to be affected by Project-related activities in **Appendix D** will be discussed further.

A brief description of the habitat requirements and range for each special-status species identified as having the potential to be affected by Project-related activities is provided below.

Plants

The database queries and preliminary analysis of habitat suitability in the Project area, revealed the potential for 18 special-status plant species to occur in the Project area. Descriptions of each species are provided below and are based on information obtained from the CNPS Inventory of Rare, Threatened, and Endangered Plants of California (2019).

LARGE-FLOWERED FIDDLENECK

Large-flowered fiddleneck (*Amsinckia grandiflora*) is a federal and state endangered species, and CNPS 1B.1. This is an annual forb in the forget-me-not family (Boraginaceae) that blooms from April to May. It typically occurs in open areas within cismontane woodland and valley and foothill grassland underlain by various soil types at elevations ranging from 900 to 1,800 feet. Large-flowered fiddleneck has potential to occur in the Project area because of the presence of annual grassland habitat.

BENT-FLOWERED FIDDLENECK

Bent-flowered fiddleneck (*Amsinckia lunaris*) is a CNPS 1B.2 listed species. This is an annual forb in the forget-me-not family that blooms from March to June. It typically occurs in open areas within cismontane woodland, valley and foothill grassland, and coastal bluff scrub habitat often underlain by clay substrate at elevations ranging from 10 to 1,625 feet. Bent-flowered fiddleneck has the potential to occur in the Project area because of the presence of annual grassland habitat and clay substrate.

ALKALI MILK-VETCH

Alkali milk-vetch (*Astragalus tener* var. *tener*) is a CNPS 1B.2 listed species. This is an annual herb in the pea family (Fabaceae) that blooms between March and June. It typically occurs in playas, adobe clay grasslands, and vernal pools underlain by alkaline soils at elevations ranging from 0 to 195 feet. Alkali milk-vetch has the potential to occur in the Project area because of the presence of grassland habitats underlain by mildly alkaline clay soils.

BRITTLESCALE

Brittlescale (*Atriplex depressa*) is a CNPS 1B.2 listed species. This is an annual herb in the goose foot family (Chenopodiaceae) that blooms between April and October. It typically occurs in chenopod scrub, meadows, seeps, playas, vernal pools, and grassland habitats underlain by alkaline or clay soils at elevations ranging from 3 to 1,049 feet. Brittle scale has the potential to occur in the Project area because of the presence of grassland habitats underlain by mildly alkaline clay soils.

BIG-SCALE BALSAMROOT

Big-scale balsamroot (*Balsamorhiza macrolepis*) is a CNPS 1B.2 listed species. This is a perennial herb in the aster family (Asteraceae) that blooms between March and June. It typically occurs in serpentinite soils, chaparral, cismontane woodland, and grassland habitats at elevations ranging from 295 to 5,100 feet. Big-scale balsamroot has the potential to occur in the Project area because of the presence of grassland habitats.

BIG TARPLANT

Big tarplant (*Blepharizonia plumose*) is a CNPS 1B.1 listed species. This is an annual herb in the aster family that blooms between July and October. It typically occurs in grassland habitats underlain by clay soils at elevations ranging from 95 to 1,655 feet. Big tarplant has the potential to occur in the Project area because of the presence of grassland habitats underlain by clay soils.

LEMMON'S JEWELFLOWER

Lemmon's jewelflower (*Caulanthus lemmonii*) is a CNPS 1B.2 listed species. This is an annual herb in the mustard family (Brassicaceae) that blooms between March and May. It typically occurs in pinyon and juniper woodlands, and grassland habitats at elevations ranging from 262 to 4,002 feet. Lemon's jewelflower has the potential to occur in the Project area because of the presence of grassland habitats.

CONGDON'S TARPLANT

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) is a CNPS 1B.1 listed species. This is an annual herb in the aster family that blooms between May and November. It typically occurs in grassland habitats underlain by alkaline soils at elevations ranging from 0 to 755 feet. Congdon's tarplant has the potential to occur in the Project area because of the presence of grassland habitats underlain by mildly alkaline soils.

RECURVED LARKSPUR

Recurved larkspur (*Delphinium recurvatum*) is a CNPS 1B.2 listed species. This is a perennial herb in the buttercup family (Ranunculaceae) that blooms between March and June. It typically occurs in chenopod scrub, cismontane woodland, and grassland habitats at elevations ranging from 9 to 2,591 feet. Recurved larkspur has the potential to occur in the Project area because of the presence of suitable grassland habitats.

DIAMOND-PETALED CALIFORNIA POPPY

Diamond-petaled California poppy (*Eschscholzia rhombipetala*) is a CNPS 1B.1 listed species. This is an annual herb in the poppy family (Papaveraceae) that blooms from

March to April. It typically occurs in valley and foothill grassland on alkaline, clay substrates at elevations ranging from 0 to 3,200 feet. Diamond-petaled California poppy has the potential to occur in the Project area because of the presence of annual grassland on alkaline, clay substrate.

SAN JOAQUIN SPEARSCALE

San Joaquin spearscale (*Extriplex joaquinana*) is a CNPS 1B.2 listed species. This is an annual herb in the goose foot family that blooms between April and October. It typically occurs in chenopod scrub, meadows, seeps, playas, and grassland habitats at elevations ranging from 0 to 2,740 feet. San Joaquin spearscale has the potential to occur in the Project area because of the presence of annual grassland habitats.

BREWER'S WESTERN FLAX

Brewer's western flax (*Hesperolinon breweri*) is a CNPS 1B.2 listed species. This is an annual herb in the flax family (Linaceae) that blooms between May and July. It typically occurs in serpentinite soils, chaparral, cismontane woodland, and valley and foothill grassland habitats at elevations ranging from 98 to 3,100 feet. Brewer's western flax has the potential to occur in the Project area because of the presence of annual grassland habitats.

SHOWY GOLDEN MADIA

Showy golden madia (*Madia radiata*) is a CNPS 1B.1 listed species. This is an annual herb in the sunflower family that blooms between March and May. It typically occurs in openings in cismontane woodland and valley and foothill grassland on adobe clay soil at elevations ranging from 80 to 3,990 feet. Showy golden madia has the potential to occur in the Project area because of the presence of annual grassland habitat on clay substrate.

SHINING NAVARRETIA

Shining navarretia (*Navarretia nigelliformis* ssp. *radians*) is a CNPS 1B.2 listed species. This is an annual herb in the phlox family (Polemoniaceae) that blooms between March and July. It typically occurs in vernal pools, grasslands, and cismontane woodlands underlain by clay soils at elevations ranging from 210 to 3,280 feet. Shining navarretia has the potential to occur in the Project area because of the presence of annual grassland habitats on clay soils.

CALIFORNIA ALKALI GRASS

California alkali grass (*Puccinellia simplex*) is a CNPS 1B.2 listed species. This is an annual herb in the grass family (Poaceae) that blooms between March and May. It typically occurs on alkaline and vernal mesic soils in sinks flats, and lake margins in chenopod scrub, meadows, seeps, grassland, and vernal pools at elevations ranging from 5 to 3,050 feet. California alkali grass has the potential to occur in the Project area because of the presence of annual grassland habitats on mildly alkaline soils.

LONG-STYLED SAND-SPURREY

Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*) is a CNPS 1B.2 listed species. This is a perennial herb in the carnation family (Caryophyllaceae) that blooms between February and May. It typically occurs in meadows, seeps, marshes, and swamps at elevations ranging from 0 to 835 feet. Long-styled sand-spurrey has the potential to occur in the Project area because of the presence of annual grassland habitats on mildly alkaline soils.

SALINE CLOVER

Saline clover (*Trifolium hydrophilum*) is a CNPS 1B.2 listed species. This is an annual herb in the pea family that blooms between April and June. It typically occurs in marshes, swamps, vernal pools, and grasslands with mesic or alkaline soils at elevations ranging from 0 to 985 feet. Saline clover has the potential to occur in the Project area because of the presence of annual grassland habitats on mildly alkaline soils.

CAPER-FRUITED TROPIDOCARPUM

Caper-fruited tropidocarpum (*Tropidocarpum capparideum*) is a CNPS 1B.1 listed species. This is an annual herb in the mustard family that blooms between March and April. It typically occurs on hills in valley and foothill grassland habitats on alkaline, clay substrate at elevations ranging from 0 to 1,490 feet. Caper-fruited tropidocarpum has the potential to occur in the Project area because of the presence of annual grassland habitat on alkaline, clay substrate.

Wildlife

The database queries and preliminary analysis of habitat suitability in the Project area, revealed the potential for 10 special-status wildlife species to occur in the Project area. Descriptions of each species are provided below.

CALIFORNIA RED-LEGGED FROG

The California red-legged frog (*Rana draytonii*) is a federally threatened species and a California species of special concern. This species is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. California red-legged frogs estivate (period of inactivity) during the hot, dry months in upland habitats typically within 300 feet of aquatic and riparian habitat. Upland habitats are composed of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance, including small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds. The Project area does not contain suitable aquatic habitat for this species. Pools resulting from berms installed in drainages within the Project area to filter biosolids are not of sufficient depth for the California red-legged frog to breed, and do not appear to hold water for a sufficient length of time for successful metamorphosis. The nearest potential breeding pool is approximately 200 feet northwest of the Project area. Ground squirrel burrows and upland refugia are present in the broader Project area, but are

extremely limited within the California annual grassland habitats; no refugia is present within the upland mustard habitat. Therefore, there is a potential for the California red-legged frog to occur in burrows within the California annual grassland habitat in the Project area (WRA 2016).

CALIFORNIA TIGER SALAMANDER

The California tiger salamander is a federally and California threatened species, as well as an EACCS focal species. This species is restricted to grasslands and low-elevation foothill regions in California (generally under 1,500 feet), where it uses seasonal aquatic habitats for breeding. This species inhabits valley and foothill grasslands and the grassy understory of open woodlands, usually within 1 mile of water. The California tiger salamander requires two primary habitat components: aquatic breeding sites and upland terrestrial estivation or refuge sites. The salamanders breed in natural ephemeral pools, or ponds that mimic ephemeral pools such as stock ponds that go dry, and occupy substantial areas surrounding the breeding pool as adults. Adults migrate from upland habitats to aquatic breeding sites during the first major rainfall events, between November and February, and return to upland habitats after breeding. Adult California tiger salamanders spend most of their time underground in upland subterranean refugia. This species primarily uses California ground squirrel burrows as upland refuge sites, but can also be found under logs and piles of lumber. The Project area does not contain aquatic habitat for the California tiger salamanders in most years. Pools resulting from berms installed in drainages in the Project area to filter runoff do not appear to hold water for sufficient periods for breeding, although one pool in the southeast portion of the Project area may hold water for a sufficient length in years of high rainfall. Breeding pools are documented approximately 200 feet northwest of the Project area, and CTS may disperse to ground squirrel burrows in the Project area after the breeding period. Ground squirrel burrows and upland refugia for the California tiger salamander are present in the Project area, but are extremely limited within the California annual grassland habitats; upland refugia is not present within the upland mustard habitat. Therefore, there is a potential for the California tiger salamander to occur in Project area (WRA 2016).

CALIFORNIA GLOSSY SNAKE

The California glossy snake (*Arizona elegans occidentalis*) is a California species of special concern. This species is nocturnal and inhabits arid scrub, rocky washes, grasslands, chaparral in microhabitats of open areas and areas with soil loose enough for easy burrowing (Nafis 2019). During the daytime it hides under rocks, in existing burrows, or uses its specialized nose to make its own burrow. They are typically active from late February to November, depending on weather, with the highest activity in May (Nafis 2019). The Project area does not contain highly friable (loose) soils or a healthy burrowing small mammal population; however, the potential for burrowing owls (*Athene cunicularia*) to occur results in a determination that the California glossy snake could also occur in the Project area.

SAN JOAQUIN COACHWHIP

The San Joaquin coachwhip is a California species of special concern. This species typically occurs in open, dry, vegetative associations with little or no tree cover. The San

Joaquin whipsnake is originally believed to have occurred throughout the Sacramento and San Joaquin Valleys extending into surrounding foothills; however, it is now restricted to unconverted lands and predominantly in the foothills bordering the San Joaquin Valley. It is most common in northeastern Alameda County near the border with San Joaquin County south to Kern County. This species probably requires one or more mammal associates because it uses burrows for refuge and probably for oviposition sites, and may sometimes be dependent on mammals for food. Although not much is known about the habitat use of the San Joaquin whipsnake, the Project area contains potentially suitable grassland and burrow refugia within the California annual grassland habitat (WRA 2016).

GRASSHOPPER SPARROW

The grasshopper sparrow (*Ammodramus savannarum*) is a California species of special concern. This species is typically associated with short to mid-height, moderately open grasslands with scattered shrubs. The range for grasshopper sparrows is wide-spread across California and encompasses Mendocino, Trinity, and Tehama counties south, west of the Cascade-Sierra Nevada axis and southeaster deserts, to San Diego County, from 0 to 4,900 feet in elevation (Shuford and Gardali 2008). The grassland habitats in the Project area could provide suitable nesting habitat for grasshopper sparrows.

BURROWING OWL

The burrowing owl is a California species of special concern and an EACCS focal species. This species typically favors flat, open grassland or gentle slopes and sparse shrub-land ecosystems. These owls prefer annual or perennial grasslands, typically with sparse or nonexistent tree or shrub canopies; however, they also colonize debris piles and old pipes. Burrowing owls exhibit high site fidelity and usually nest in abandoned burrows of ground squirrels or pocket gophers. Burrowing owls are comparatively easy to see because they are active in daylight, and are often bold and approachable. The California annual grassland and ruderal/developed habitats in the Project area contain ground squirrels and suitable burrow habitat for burrowing owl (WRA 2016).

NORTHERN HARRIER

The northern harrier is a California species of special concern. This species occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands. Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates. The Project area provides suitable foraging habitat for northern harrier and two were observed foraging during the WRA 2015 surveys. The California annual grassland in the Project area may provide suitable nesting habitat; however, suitability is dependent upon level of cattle grazing and heavy grazing will reduce cover and lower the potential for nesting by northern harrier (WRA 2016).

LOGGERHEAD SHRIKE

The loggerhead shrike is a California species of special concern. This species is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Loggerhead shrike nests in trees and large shrubs; nests are usually placed three to ten feet off the ground. The Project area contains suitable foraging habitat for the loggerhead shrike. In addition, two trees suitable for nesting are present adjacent to the access road in the northeastern edge of the Project area resulting in the potential for this species to be affected by the Proposed Project.

AMERICAN BADGER

The American badger is a California species of special concern and EACCS focal species. This species occur throughout California in drier open stages of most scrub, forest, and herbaceous habitats, where loose, gravelly soils suitable for burrowing are present, as well as suitable prey populations. Badger prey includes small mammals like ground squirrel, rats, gophers, and mice, which it digs out of the ground using its claws. Badgers have very large home ranges, depending on the habitat available. Density averages one per square mile in prime open country. The California annual grassland habitat in the Project area provides suitable habitat for American badger. Although no potential burrows or sign of badger were observed during the WRA 2015 surveys, there is the potential for badgers to occur in the Project area (WRA 2016).

SAN JOAQUIN KIT FOX

The San Joaquin kit fox is a federally endangered and California threatened species, as well as an EACCS focal species. This species is found in the San Joaquin Valley and in surrounding foothills, from Alameda east to Stanislaus County. It is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short (generally less than 1.5 feet tall), but may also use an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands. This species uses dens year-round and needs loose-textured soils suitable for burrowing. In San Joaquin, Alameda and Contra Costa Counties, kit foxes now occur primarily in foothill grasslands, valley oak savanna, and alkali grasslands. Habitats with loose-textured soils that are suitable for excavating dens are preferred. The grassland and ruderal/developed habitats in the Project area are both suitable for the kit fox, and grazing by cattle likely maintains grasses at suitable height within these areas; however, the upland mustard habitat in the Project area is not suitable for the kit fox. Burrows of suitable den size and with potential to be used by this species were observed along the edge of the disturbed habitat in the southeastern portion of the Project area. The potential dens did not appear suitable to be used as natal dens based upon single entrances into the dens. Although no sign of the San Joaquin kit fox was observed at these potential dens, there is the potential for this species to occur in the California annual grassland and ruderal/developed habitats within the Project area (WRA 2016).

3.5.4 Impacts Analysis

This impact analysis below discusses impacts from implementation of the Proposed Project. The impact analysis was based on the Project description (Section 2.0), information described in the environmental setting, and the standards of significance described below. In addition, the impact analysis is organized by the significance criteria noted below: special-status plant and wildlife species, sensitive vegetation communities, state and/or federally protected aquatic resources, wildlife movement corridors, and compliance with local plans and policies, or existing habitat conservation plans. Each impact category includes a description of the specific potential impacts as well as avoidance, minimization, and mitigation measures that can potentially reduce and mitigate potentially significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant biological resources impact if it 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 California Department of Fish and Game or United States Fish and Wildlife Service;
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or USFWS;
- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- 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.

Impacts and Mitigation Measures

This section identifies biological resource impacts that could result from construction and operation of the Proposed Project and provides proposed mitigation measures to minimize impacts.

Impact BIO-1: Impacts on Candidate, Sensitive, or Special-Status Species — Less than Significant with Mitigation Incorporated

The species or species groups identified below were determined to have the potential to be significantly impacted by Project-related activities, either directly or through habitat modification. Impacts on these species would be considered a potentially significant

impact. The following general avoidance and minimization measures would be implemented to reduce effects on special-status species, in accordance with the requirements of the EACCS.

Mitigation Measure BIO-1: Prior to construction, a construction employee education program would be conducted in reference to special-status species onsite. At minimum, the program would consist of a brief presentation by persons knowledgeable in endangered species biology and legislative protection to explain avoidance and minimization Measures (AMMs) that must be followed by all personnel to reduce or avoid effects on special-status species during construction activities. The program would include: a description of the species and their habitat needs; any reports of occurrences in the Project area; an explanation of the status of each listed species and their protection under the Act; and a list of measures being taken to reduce effects to the species during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all listed species in the work area(s) would be prepared for distribution to the above-mentioned people and anyone else who may enter the Project area. A list of employees who attend the training sessions would be maintained by the applicant to be made available for review by the Service upon request. Contractor training would be incorporated into construction contracts and would be a component of weekly Project meetings.

Mitigation Measure BIO-2: Environmental tailboard trainings would take place on an as-needed basis in the field. The environmental tailboard trainings would include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects to these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen would be responsible for ensuring that crewmembers comply with the guidelines.

Mitigation Measure BIO-3: Contracts with contractors, construction management firms, and subcontractors would obligate all contractors to comply with these requirements, AMMs.

Mitigation Measure BIO-4: A qualified biological monitor would remain onsite during all construction activities in or adjacent to habitat for special-status species. The biological monitor(s) would be given the authority to stop any work that may result in the take of listed species. If the biological monitor(s) exercises this authority, the appropriate resource agencies would be notified by telephone and electronic mail within one working day. The biological monitor would be the contact for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped individual.

Mitigation Measure BIO-5: Prior to the initiation of ground clearing activities, the construction area would be delineated with high visibility temporary fencing at least 4 feet in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment outside of the construction area. Such fencing would be inspected and maintained daily until completion of the Proposed Project. The fencing would be removed only when all construction equipment is removed from the site.

In places where wildlife exclusionary fencing is necessary, as determined by the biological monitor(s), silt fencing or other appropriate wildlife exclusion fencing materials would be used in place of the high visibility temporary construction fencing to prevent listed species from entering the Project area. Exclusion fencing would be at least 3 feet high and the lower 6 inches of the fence would be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet would be left above ground to serve as a barrier for animals moving on the ground surface. The fence would be pulled taut at each support to prevent folds or snags. Fencing would be installed and maintained in good condition during all construction activities. Such fencing would be inspected and maintained daily until completion of the construction for the Proposed Project. The fencing would be removed only when all construction equipment is removed from the site.

Mitigation Measure BIO-6: All construction activities must cease one half hour before sunset and should not begin prior to one half hour after sunrise. There would be no nighttime construction.

Mitigation Measure BIO-7: Grading would be restricted to the minimum area necessary and be limited to the dry season, typically April-October.

Mitigation Measure BIO-8: Significant earth moving-activities would not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1-inch of rain or more).

Mitigation Measure BIO-9: Pipes, culverts and similar materials greater than four inches in diameter, would be stored so as to prevent covered wildlife species from using these as temporary refuges, and these materials would be inspected each morning for the presence of animals prior to being moved.

Mitigation Measure BIO-10: Erosion control measures would be implemented to reduce sedimentation in wetland habitat occupied by covered animal and plant species when activities are the source of potential erosion problems. Plastic mono-filament netting (erosion control matting) or similar material containing netting would not be used at the Proposed Project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

Mitigation Measure BIO-11: All vegetation which obscures the observation of wildlife movement within the affected areas containing or immediately adjacent aquatic habitats would be completely removed by hand just prior to the initiation of grading to remove cover that might be used by special-status species. The biological monitor(s) would survey these areas immediately prior to vegetation removal to find, capture and relocate any observed listed species, as approved by the appropriate resource agencies.

Mitigation Measure BIO-12: All trash and debris within the work area would be placed in containers with secure lids before the end of each work day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left onsite. Containers would be emptied as necessary to prevent trash overflow onto the site and all rubbish would be disposed of at an appropriate off-site location.

Mitigation Measure BIO-13: Stockpiling of material would occur such that direct effects on covered species are avoided. Stockpiling of material in riparian areas would occur outside of the top of bank, and preferably outside of the outer riparian dripline and would not exceed 30 days.

Mitigation Measure BIO-14: To prevent the accidental entrapment of listed species during construction, all excavated holes or trenches deeper than 6 inches would be covered at the end of each work day with plywood or similar materials. Foundation trenches or larger excavations that cannot easily be covered would be ramped at the end of the work day to allow trapped animals an escape method. Prior to the filling of such holes, these areas would be thoroughly inspected for listed species by Service-approved biologists. In the event of a trapped animal is observed, construction would cease until the individual has been relocated to an appropriate location.

Mitigation Measure BIO-15: The following would not be allowed at or near work sites for covered activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).

Mitigation Measure BIO-16: Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.

Mitigation Measure BIO-17: Off-road vehicle travel would be minimized.

Mitigation Measure BIO-18: Vehicles would not exceed a speed limit of 15 mph on unpaved roads within natural land-cover types, or during off-road travel.

Mitigation Measure BIO-19: Vehicles or equipment would not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.

Mitigation Measure BIO-20: Vehicles would be washed only at approved areas. No washing of vehicles would occur at job sites.

Mitigation Measure BIO-21: To discourage the introduction and establishment of invasive plant species, seed mixtures/straw used within natural vegetation would be either rice straw or weed-free straw. Any invasive mustard (family Brassicaceae) identified within the project area will be removed prior or during construction of the facility.

Mitigation Measure BIO-22: Project sites would be revegetated with an appropriate assemblage of native riparian wetland and upland vegetation suitable for the area. A species list and restoration and monitoring plan would be included with the Project proposal for review and approval by USACE, USFWS, and/or CDFW as appropriate. Such a plan must include, but not be limited to, location of the restoration, species to be used, restoration techniques, time of year the work would be done, identifiable success criteria for completion, and remedial actions if the success criteria are not achieved.

Mitigation Measure BIO-23: Special-status species translocation would be approved on a project specific basis. The applicant would prepare a translocation plan for the Project to be reviewed and approved by the appropriate resource agencies prior to Project implementation. The plan would include trapping and translocation methods, translocation site, and post translocation monitoring.

SPECIAL-STATUS PLANTS

Suitable habitat for up to 18 species of special-status plant species occurs in the Project area. These plants could occur throughout the Project area; therefore, implementation of Project-related activities may result in adverse impacts on these species should they be present in areas proposed for disturbance, which would be considered a potentially significant impact. In addition to the general mitigation measures outlined above, implementation of mitigation measures **BIO-24** and **BIO-25** is recommended to further minimize the potential for adverse effects on special-status plant species.

Mitigation Measure BIO-24: A qualified botanist would be retained to perform focused surveys to determine the presence/absence of special-status plant species with potential to occur in and adjacent to (within 100 feet, where appropriate) the proposed impact area, including new construction access routes. These surveys would be conducted in accordance with CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys would be scheduled to coincide with known flowering periods, and/or during appropriate developmental periods that are necessary to identify the plant species of concern.

Mitigation Measure BIO-25: If any state listed, federally listed, and/or CNPS List 1 or CNPS List 2 plant species are found within 100 feet of proposed impact areas during the surveys, these plant species would be avoided to the greatest extent possible and the following would be implemented:

Before the approval of grading plans or any ground-breaking activity within Project work areas, a mitigation plan would be submitted concurrently to CDFW and USFWS (if appropriate) for review and comment. The plan would include mitigation measures for the population(s) directly or indirectly affected. Possible mitigation for impacts on special-status plant species can include implementation of a program to transplant, salvage, cultivate, or re-establish the species at suitable sites (if feasible), or through the purchase of credits from an approved mitigation bank, if available. The actual level of mitigation may vary depending on the sensitivity of the species, its prevalence in the area, and the current state of knowledge about overall population trends and threats to its survival. The final mitigation strategy for directly impacted plant species would be determined by CDFW and USFWS (if appropriate) through the mitigation plan approval process.

Any special-status plant species that are identified adjacent to Project work areas, but not proposed to be disturbed by the Project, would be protected by barrier fencing to ensure that construction activities and material stockpiles do not impact any special-status plant species. These avoidance areas would be identified on Project plans.

Implementation of mitigation measures **BIO-24** and **BIO-25** would minimize impacts on special-status plants by requiring preconstruction surveys. If special-status plants are discovered they would be completely avoided and all workers would be instructed on proper avoidance. If special-status plants cannot be completely avoided, the appropriate agency would be consulted to determine appropriate mitigation, which may include any

of the measures detailed in mitigation measure **BIO-25**. As shown, implementation of the aforementioned mitigation measures would reduce impacts to a less than significant level.

SPECIAL-STATUS AMPHIBIANS AND REPTILES

California red-legged frogs and California tiger salamanders were documented by WRA (2016) in a pool approximately 200 feet northwest of the Project area, and small mammal burrows in the Project area could provide upland refugia for these species. In addition, the California glossy snake and San Joaquin coachwhip have the potential to occur in the Project area. Lastly, USFWS designated critical habitat for California red-legged frog overlaps the Project area. As a result, ground disturbing activities within Project area would result in temporary and permanent impacts on suitable habitat for these species, which would be considered a potentially significant impact. In addition to the general mitigation measures outlined above, implementation of mitigation measures **BIO-26** through **BIO-29** is recommended to further minimize and mitigate potential adverse effects on the California red-legged frog, California tiger salamander, California glossy snake, and San Joaquin coachwhip.

Mitigation Measure BIO-26: A qualified biologist would survey the work site immediately prior to construction activities. If any life stages of California red-legged frog, California tiger salamander, California glossy snake, and/or San Joaquin coachwhip are found, the biologist would contact the appropriate resource agencies to determine if moving any of the life-stages is appropriate. In making this determination the resource agencies would consider if an appropriate translocation site exists as provided in the translocation plan. If the resource agencies approve moving animals, a qualified biologist would be allowed sufficient time to move individuals from the work site before ground disturbing activities begin. Only resource agency-approved biologists would participate in activities associated with the capture, handling, and monitoring of California red-legged frogs and/or California tiger salamanders.

Mitigation Measure BIO-27: Bare hands would be used to capture California red-legged frog, California tiger salamander, California glossy snake, and/or San Joaquin coachwhip. Biologists would not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within 2 hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens of handling of the amphibians, biologists would follow the Declining Amphibian Populations Task Force's Code of Practice.

Mitigation Measure BIO-28: If ground disturbing activities would occur within the typical dispersal distance (contact USFWS/CDFW for latest research on this distance) and/or within 500 feet of suitable aquatic habitat for California red-legged frogs and California tiger salamanders, a qualified biologist would stake and flag an exclusion zone prior to initiation of ground disturbing activities. The exclusion zone would be fenced with orange construction zone and erosion control fencing (to be installed by construction crew), in accordance with MM BIO-5. The exclusion zone would encompass the maximum practicable distance from the work site and at least 500 feet from the aquatic feature wet or dry. Barrier fencing would be removed within 72 hours of completion of work.

Mitigation Measure BIO-29: Mitigation for permanent impacts on California red-legged frog and California tiger salamander habitat would be provided at a minimum 3:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a USFWS approved mitigation bank. Mitigation as required in regulatory permits issued through the USFWS and/or USACE may be applied to satisfy this measure.

Implementation of mitigation measures **BIO-26** through **BIO-28** would minimize potential adverse effects on the California red-legged frog, California tiger salamander, California glossy snake, and/or San Joaquin coachwhip by requiring preconstruction surveys. If individuals are discovered they would be translocated and avoided to the greatest extent practicable, and all workers would be instructed on proper avoidance techniques. Mitigation measure **BIO-29** would further serve to fully mitigate the loss of California red-legged frog and California tiger salamander habitat as a result of Project-related activities. As shown, implementation of the aforementioned mitigation measures would reduce impacts to a less than significant level.

MIGRATORY BIRDS AND RAPTORS

The Project area may provide nesting, wintering and/or foraging habitat for grasshopper sparrows, burrowing owls, northern harriers, loggerhead shrikes, as well as nesting, other migratory birds and raptors not identified in Appendix D. All native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under California Fish and Game Code 3503. Ground disturbance, as well as vegetation clearing during the nesting season could result in direct impacts on nesting birds should they be present in or adjacent to construction disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present within 200 feet (500 feet for raptors) of a work site. In addition to the general mitigation measures outlined above, implementation of mitigation measures **BIO-30** and **BIO-31** is recommended to further minimize and mitigate potential adverse effects on the migratory birds and raptors.

Mitigation Measure BIO-30: If clearing and/or construction activities occur during the migratory bird nesting season (March 15 to September 1), then preconstruction surveys to identify active migratory bird and/or raptor nests, including burrowing owl burrows, would be conducted by a qualified biologist within 14 days of construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites or burrowing owl burrows within the proposed work area, including construction access routes and a 500-foot buffer, where feasible.

Mitigation Measure BIO-31: If an active nest is identified near a proposed work area, work would be conducted outside of the nesting season (March 15 to September 1), if feasible. If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a no-activity zone would be established by a qualified biologist. The no-activity zone would be large enough to avoid nest abandonment and would at a minimum be 250-foot radius from the nest. If burrowing owls are present at the site during the non-breeding period, a qualified biologist would establish a no-activity zone of at least 150 feet.

If an effective no-activity zone cannot be established in either case, a qualified biologist would develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the birds, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the nesting birds.

Implementation of the general avoidance measures outlined above, combined with **Mitigation Measure BIO-30** and **Mitigation Measure BIO-31** would minimize impacts on nesting birds by requiring preconstruction nesting surveys and nest avoidance. As shown, implementation of the aforementioned mitigation measures would reduce impacts to a less than significant level.

SAN JOAQUIN KIT FOX AND AMERICAN BADGER

Surveys conducted by WRA (2016) did not reveal the presence of potential den sites for either the San Joaquin kit fox or American badger. However, the presence of documented occurrences for these species within 5 miles of the Project area and suitable grassland habitats onsite, results in the potential for these species to become established in the Project area. As a result, Project-related activities have the potential to result in adverse effects on San Joaquin kit fox and American badger. In addition to the general mitigation measures outlined above, implementation of mitigation measures **BIO-32** through **BIO-35** is recommended to further minimize and mitigate potential adverse effects on these species.

Mitigation Measure BIO-32: Prior to implementation of Project-related activities, a qualified biologist would be retained to determine if active dens for San Joaquin kit fox and/or American badger occur within 500 feet of the proposed work areas, including construction access routes. Surveys would be conducted in accordance with current resource agency protocols.

Mitigation Measure BIO-33: If potential dens are present, their disturbance and destruction would be avoided. If potential dens are located within the proposed work area and cannot be avoided during construction, qualified biologist would determine if the dens are occupied or were recently occupied using methodology coordinated with USFWS and CDFW. If unoccupied, the qualified biologist would collapse these dens by hand in accordance with current USFWS procedures.

Mitigation Measure BIO-34: Exclusion zones would be implemented following current USFWS procedures or the latest USFWS procedures available at the time. The radius of these zones would follow current standards or would be as follows: Potential Den – 50 feet; Known Den – 100 feet; Natal or Pupping Den – to be determined on a case-by-case basis in coordination with USFWS and CDFW.

Mitigation Measure BIO-35: Mitigation for permanent impacts on San Joaquin kit fox habitat would be provided at a minimum 3:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a USFWS approved mitigation bank. Mitigation as required in regulatory permits issued through the USFWS and/or USACE may be applied to satisfy this measure.

Implementation of the general avoidance measures outlined above, combined with **Mitigation Measure BIO-32** through **Mitigation Measure BIO-35** would minimize

impacts on San Joaquin kit fox and American badger by requiring preconstruction surveys, avoidance/exclusionary zones, and compensatory mitigation for permanent impacts on suitable habitats. As shown, implementation of the aforementioned mitigation measures would reduce impacts to a less than significant level.

Impact BIO-2: Impacts on Riparian, Aquatic or Wetland Habitat, or other Sensitive Natural Community- Less than Significant with Mitigation Incorporated

Implementation of Project activities would result in the loss of riparian vegetation, aquatic or wetland habitat, and/or sensitive natural communities, which would be considered a potentially significant impact. Sensitive habitats include (a) areas of special concern to resource agencies; (b) areas protected under CEQA; (c) areas designated as sensitive natural communities by the CDFW; (d) areas outlined in FGC Section 1600; (e) areas regulated under Clean Water Act Section 404; and (f) areas protected under local regulations and policies. Annual grassland and ruderal/developed areas are not considered to be natural communities of special concern; however, annual grassland may provide potential habitat for special-status species, which is discussed under significance criteria (a) above. The Project area contains two aquatic resource classes: seasonal wetlands and an ephemeral drainage.

All aquatic resources in the Project area are considered sensitive natural communities. Impacts on aquatic resources as a result of Project-related activities have not been quantified; however, the Proposed Project, would be designed to avoid impacts on these resources, where feasible. Despite this, there is the potential for Project activities to impact sensitive communities should they occur in or near the final Project footprint, including temporary and permanent access roads. Impacts on sensitive natural communities would be minimized through the implementation of aforementioned general avoidance, minimization, and mitigation measures, as well as **Mitigation Measure BIO-36**.

Mitigation Measure BIO-36: Mitigation for permanent impacts on sensitive communities would be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a USACE approved mitigation bank. Mitigation as required in regulatory permits issued through the USACE and/or CDFW may be applied to satisfy this measure.

Implementation of the general avoidance and minimization measure above would reduce the area of disturbance to the smallest footprint feasible to avoid unnecessary encroachment into sensitive habitat areas; instruct all workers on proper avoidance techniques of sensitive areas. Additionally, the above mitigation measures would minimize the potential for sensitive communities from becoming degraded by erosion, sedimentation, or other harmful materials. Finally, mitigation measure MM BIO-36 would provide for no net loss of sensitive natural communities. As shown, implementation of the aforementioned mitigation measures would reduce impacts on sensitive natural communities to a less than significant level.

– Standard of Significance (c)

Impact BIO-3: Impacts on State and/or Federally Protected Wetlands – Less than Significant with Mitigation Incorporated.

Implementation of Project-related activities would result in the permanent loss of state or federally protected wetlands, which would be considered a potentially significant impact. As stated under significance criteria (b) above, impacts on state/federally protected aquatic resources as a result of Project-related activities have not been quantified. The Proposed Project would be designed to avoid impacts on these resources, where feasible. Despite this, there is the potential for Project activities to impact aquatic resources should they occur in or near the final Project footprint, including temporary and permanent access roads. Impacts on aquatic resources would be minimized through the implementation of aforementioned general avoidance, minimization, and mitigation measures, as well as **Mitigation Measure BIO-36** to reduce impacts on state or federally protected wetlands to a less than significant level. No additional mitigation measures are proposed.

– *Standard of Significance (d)*

Impact BIO-4: Impacts on Wildlife Movement – No Impact

Implementation of the Proposed Project would not substantially interfere with the movement of native resident or migratory wildlife species. The review of available data layers for the Bay Area Linkage Network revealed the presence of core habitat for California tiger salamander (*Ambystoma californiense*), northern harrier (*Circus hudsonius*), loggerhead shrike (*Lanius ludovicianus*), and American badger (*Taxidea taxus*) as defined in the. In addition, the Project area intersects patch habitats for San Joaquin coachwhip (*Masticophis flagellum ruddocki*) and San Joaquin kit fox (*Vulpes macrotis mutica*). The Proposed Project has largely been sited to impact mustard and ruderal/developed habitats that do not provide high value movement corridors or habitat for the aforementioned species. In addition, the Proposed Project is not anticipated to significantly alter the permeability of the site and or adjacent properties for wildlife movement. As a result, no impact is anticipated, and no additional avoidance and minimization measures are proposed.

– *Standard of Significance (e)*

Impact BIO-5: Conflict with Local Policies and Ordinances – No Impact

Implementation of Project activities would not conflict with local policies and ordinances. The ECAP has two policies centered on the preservation of areas known to support special-status species, and encourage no net loss of riparian and seasonal wetlands. Project-related impacts on special-status species and sensitive communities have been analyzed under significance criteria (a) and (b) above. As a result, there would be no conflict with any local policies and no impact is anticipated. No additional avoidance, minimization, and/or mitigation measures are proposed.

Conflict with Conservation Plans – Standard of Significance (f)

Impact BIO-6: Conflict with Conservation Plans – No Impact

Implementation of the Proposed Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The Proposed Project is within conservation zone 10 of the EACCS; however, the impacts analyzed under

significance criteria (a) and (b) above, and the avoidance and minimization measures presented in this section are consistent with those outlined in the EACCS and PBO. As a result, there would be no conflict with any adopted conservation plan and no impact is anticipated. No additional avoidance, minimization, and/or mitigation measures are proposed.

3.6 Cultural Resources

This section provides the cultural history and resources at and near the Project site, and assesses potential impacts on cultural resources that could result from implementation of the Proposed Project. A Determination of Eligibility and Effect was prepared for the Proposed Project and is included in Appendix E (Peak and Associates 2016).

3.6.1 Regulatory Framework

Regulations governing the Project area are implemented and enforced at the federal, State, and local or regional level, and are described in detail below.

Federal

Archaeological and architectural resources are protected through the National Historic Preservation Act (NHPA) of 1966 (16 USC 470f). Prior to implementing an undertaking (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties, and to offer the Advisory Council on Historic Preservation (ACHP), the State Historic Preservation Officer (SHPO), and other interested parties an opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the National Register of Historic Places (NRHP).

The Section 106 review process is implemented using a five-step procedure:

- 1) identification and evaluation of historic properties;
- 2) assessment of the effects of the undertaking on properties that are eligible for listing in the National Register;
- 3) consultation with SHPO and other agencies for the development of a memorandum of agreement (MOA) that addresses the treatment of historic properties;
- 4) receipt of ACHP comments on the MOA or results of consultation; and
- 5) the project implementation according to the conditions of the MOA.

The Section 106 review process may not consist of all the steps above, depending on the situation. For example, if identification and evaluation result in the documented conclusion that no properties included in or eligible for inclusion are present, the process ends with the identification and evaluation step.

NRHP Evaluation Criteria

To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (archaeological, historical, architectural, and traditional cultural properties) must be inventoried and evaluated for the NRHP. To be listed in the NRHP, a property must be at least 50 years old (or be of exceptional historic significance if less than 50 years old) and meet one or more of the NRHP criteria, as outlined below:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures,

and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

State

In California, the Office of Historic Preservation within the Department of Parks and Recreation implements the policies of the NHPA on a statewide level. The Office of Historic Preservation maintains the California Historical Resources Inventory. SHPO is an appointed official that implements historic preservation programs within the State's jurisdiction.

The California Native American Heritage Commission (NAHC) identifies and catalogs cultural resources (i.e., places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands). The NAHC is charged with preserving and ensuring accessibility of sacred sites and burials, the disposition of Native American human remains and burial items, maintain an inventory of Native American sacred sites located on public lands, and review current administrative and statutory protections related to these sacred sites. Tribal cultural resources are specifically discussed in Section 3.13.

Historical Resource Evaluation Criteria

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

- a) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
- b) Meets any of the following criteria:
 - 1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - 2. Is associated with the lives of persons important in our past;
 - 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

California Public Resources Code Section 21084.1

A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

Local

The following policies included in the Alameda County ECAP are applicable to the Proposed Project and, specifically, cultural resources.

Goal: To protect cultural resources from development.

Policy 136: The County shall identify and preserve significant archaeological and historical resources, including structures and sites which contribute to the heritage of East County.

Policy 137: The County shall require development to be designed to avoid cultural resources or, if avoidance is determined by the County to be infeasible, to include implement appropriate mitigation measures that offset the impacts.

3.6.2 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to cultural resources, as described in the Determination of Eligibility and Effect prepared for the Proposed Project provided in Appendix E (Peak and Associates, 2016).

Archeology

Early archeological work in the Bay Area concentrated on shell mounds around the shores of San Francisco Bay and San Pablo Bay. By the time archeological interest began to be directed toward the interior valleys, early urbanization and even earlier agricultural use of the land had destroyed or seriously altered much of the archeological record. It is only in relatively recent years that techniques of archeological analysis and the volume of excavation work done in the area, largely as a result of environmental laws, have allowed a synthesis of regional prehistory.

Major archeological projects by the Corps of Engineers (Walnut Creek area), the Department of Water Resources (Los Vaqueros Reservoir area), and others have greatly

expanded our knowledge of the archeology of the East Bay interior. This has led to a fairly detailed description of the archeological sequences of coastal and most of interior Contra Costa and Alameda counties.

The early phases of prehistory, before about 4000 B.C., are not very well represented in the Bay Region, probably due in part to fluctuations in mean sea level. By that date the Bay Area was occupied by a relatively sparse population that did not make efficient use of the marine resources available in the area. In interior Contra Costa County, the earliest dated component is Stratum C at the Stone Valley site, CA-CCO-308, where a radiocarbon date of 2500 ± 400 B.C. was associated with flexed burials and artifacts that reflected both the later cultures of the Bay Area (the Berkeley Pattern) and early cultures of the Central Valley (the Windmill Pattern). The excavator concluded that the component, along with bayshore sites of similar time depth, represented very early Berkeley Pattern and that this either derived from Windmill or was heavily influenced by contemporaneous Windmill people. Others considered CCO-308 to represent very late Windmill Pattern, Stone Valley Aspect.

Over the long time span when Berkeley Pattern cultures occupied the Bay Area (the pattern lasts until about A.D. 500) there was a gradual elaboration of material culture along with local and regional variations. The main characteristics of the material culture, however, remained essentially unchanged over this time span, which is why it can be described as a Pattern. These characteristics include the use of primarily non-stemmed projectile points with the dart and atlatl (throwing board), the predominance of grinding implements over hunting implements and the predominance of the cobble pestle with minimally shaped mortar over other grinding implements. As compared to the Windmill Pattern, the polished stone industry is minimal but, over time, the industry in bone becomes much more elaborate. The greater density and depth of sites suggests a higher population for Berkeley Pattern. Long range trade relationships, on the other hand, do not appear to be very well established. There are relatively fewer trade goods and these almost always arrive as finished artifacts rather than raw material. The mortuary complex is characterized by flexed burials within the village and few, if any, grave goods.

Over time, Berkeley Pattern sites become more numerous in the Bay Area and the material culture becomes more elaborate, appearing to reflect a relatively mobile population moving into the area and then becoming sedentary and developing a more elaborate culture. Using radiocarbon dates for initial occupation of Berkeley Pattern sites, previous research indicates a movement of Utian people from the Delta to interior Contra Costa County then to the East Bay and finally to the coast, spreading north into the San Francisco peninsula and south to the Monterey Bay region. A similar expansion is also seen on the north side of San Pablo Bay and extending finally to the Bodega Bay vicinity and the Napa Valley. If this view is correct, by the end of Berkeley Pattern times Utian speakers occupied essentially the same territory that they controlled at the time the Spanish arrived more than a thousand years later.

Initial settlement in an area would have been at a location with a maximum of resource zones within easy reach of the population, typically, a bay-side or marsh location near a freshwater stream. As the population of this settlement grew, smaller settlements in less ideal ecological settings would be established. As the population approached the carrying capacity of the environment, given the technology available to exploit the

environment, pressure would grow for more formal, non-egalitarian social systems to organize the population for more efficient resource exploitation.

In the Bay Area, the introduction of new technologies or social systems that allow for a different and more efficient pattern of resource use resulted in the Augustine Pattern, which develops out of the Berkeley Pattern with no evidence of movement of people into the area. Socially, trends observed in the later Berkeley Pattern continue and are intensified. These trends include development of status distinctions based on wealth, emergence of group-oriented religions (as opposed to individualistic shamanism), greater complexity of exchange systems to equalize access to resources and regularization of trade relationships between different populations. Archeologically, the transition to the Augustine Pattern is marked by the introduction of the bow and arrow, resulting in a sudden change in projectile point styles at about A.D. 500. The greater complexity of the ordering of society continues through this period until interrupted by the arrival of the Spanish.

Ethnography

The Native Americans who occupied much of the San Francisco Bay area were known to early ethnographers as Costanoan. The designation Costanoan derives from the Spanish term for coastal people and was not used by the Indian people. Today, most of them prefer to be called Ohlone, after an important village in the San Francisco area.

Ancestors of the Ohlone people moved into the San Francisco and Monterey Bay areas from the Delta of the San Joaquin and Sacramento rivers about A.D. 500. The Ohlone territory extended from the Carquinez Strait in the northeast to just south of Chalome Creek in the southeast and from San Francisco to the Sur River along the Coast. This vast territory was broken into eight different language based zones. These eight branches of the Ohlone language family were separate languages, not dialects.

The group that inhabited the project vicinity was the Ssaoam tribelet of the Ohlone. This little known group held the far northeastern portion of Costanoan territory and was bordered by Coast Miwok and Yokuts speakers as well as other Ohlone tribelets.

The Ohlone preferred to situate their permanent villages on high ground above seasonal marshes that were inundated by highwater for a few months of the year. Access to fresh drinking water was a criterion for selecting a village location. The tribelet was the basic unit of Ohlone political organization. Territorial boundaries of tribelets were defined by physiographic features.

Tribelet chiefs might be either men or women. The office was inherited patrilineally, usually passing from father to son. When there were no male heirs, the position went to the man's sister or daughter. Accession to the office of chief required the approval of the community. The chief was responsible for feeding visitors, providing for the impoverished, directing ceremonial activities, caring for captive grizzly bears and coyote, and directing hunting, fishing, gathering, and warfare expeditions. In all these matters the chief acted as the leader of a council of elders. The chief and council served mainly as advisors to the community.

Ohlone had mixed relations with various peoples. Wars were waged both among the various Ohlone tribelets and with Esselen, Salinan, and Northern Valley Yokuts. At the same time, however, they traded with the Plains Miwok, Sierra Miwok, and Yokuts. They

augmented the wealth of locally available resources by trading with the Miwok and Yokuts. The Ohlone supplied mussels, abalone shells, salt, and dried abalone to the Yokuts, bows to the Plains Miwok, and olivella shells to the Sierra Miwok. In return, they received piñon nuts from the Yokuts and probably clam shell disk beads from the Miwok.

The Ohlones followed a seasonal round of subsistence activities, gathering plant and animal foods and materials for baskets and other manufactures. They insured a sustained yield of plant and animal foods by careful management of the land. Large mammals consumed by the Ohlones included black-tailed deer, Roosevelt elk, antelope, grizzly bear, mountain lion, sea lion, and whale. Other mammals eaten included dog, wildcat, skunk, raccoon, brush rabbit, cottontail, jackrabbit, tree squirrel, ground squirrel, woodrat, mouse, and mole. Some of the types of fowl they ate include the Canadian goose, snow goose, pintail mallard, and the mourning dove. In addition to animals, the Ohlones also ate seeds including acorns and buckeye, and berries including blackberries, strawberries, and wild grapes among others.

Religion and ceremony played important roles in life and death. Ohlones observed rituals at important life events such as birth, puberty, and death. Treatment of the dead varied, with northern Ohlone groups, including the Karkin, reportedly cremating their dead except when there were no kinsman to gather wood for a funeral pyre, in which case the corpse was buried.

Shamans controlled the weather and could cause rain to start or stop. They cured disease by cutting the skin of the patient, sucking out the disease objects, and exhibiting them to onlookers. Shamans also used herbs in curing disease and conducted performances to insure good crops of acorns, an abundance of fish, or the stranding of whales.

Spanish explorers of coastal California between 1767 and 1776 described the Ohlones living a traditional existence. Between 1770 and 1797, the Franciscans established seven missions in Ohlone territory and effectively changed the Indian way of life. Unwilling recruits to the missions resisted control by Franciscans. In 1793, a runaway neophyte named Charquin began a three-year struggle during which tribes in the northeast Bay Area engaged in sporadic warfare with the Spanish. The Ohlones also mounted resistance against Mission San Jose in 1800. Research indicates that the last Ohlone tribelets living an aboriginal existence had disappeared by 1810, and that by 1832 the Ohlone population had decreased to one-fifth or less than its pre-contact size.

After the Mexican government secularized the missions (between 1834 and 1836), some Ohlones returned to traditional religious and subsistence practices while others worked on Mexican ranchos. Former mission residents formed multi-tribal Indian communities in Pleasanton and other locations within Ohlone territory. Although the Ohlone languages were probably extinct by 1935, it has been estimated that more than 200 persons of Ohlone descent were living in 1973. In addition, there is an on-going program among modern Ohlone to revive their languages to the extent possible.

Historic Context

The lands of the Project site are still in use for the same purpose as they have since the earliest non-Native occupancy of the region: cattle grazing. To the south, the missions ran herds of cattle in the grassy valley and surrounding hills.

The various maps available show little development ever in this region. Most of the Project site was held in large tracts by various landowners, who sold to adjacent owners at different points in time. The 1857 General Land Office plats, Official County maps and other maps dating to 1874, 1878, 1880, 1889, 1900, 1907, 1914, and 1917 have been reviewed, with each showing section 25, containing the major portion of the Project site, as a 640 acre single owner holding. The 1880 agricultural schedule for the federal census for Murray Township indicates that most landowners had at least 800 acres of land, with most holding 3,000-5,000 acres. No buildings or structures are indicated to exist within the Project site.

As the grasses died back in the spring and summer months, cattle apparently were taken to other locations, such as to Delta islands. The cattle would have been brought back to the home ranges after the rainy season began and grass re-grew for grazing.

An early branch line of the Central Pacific Railroad crosses section 25 to the south of the Project site, completed in 1869. The line was the route from Sacramento to Niles. This railroad later was taken over by the Southern Pacific Railroad.

The community closest to the Proposed Project site is the small village of Mountain House in Alameda County. The Elk Horn post office, which operated from 1852 to 1853, was reported to be located in this small community.

3.6.3 Methodology

Research

A record search was conducted for the Proposed Project area at the Northwest Information Center of the California Historical Resources Information System on February 1, 2016. The Northwest Information Center reported that the major portion of the Proposed Project area had been completely surveyed in 1981 by Miley Holman, with only a small acreage in the southeast corner of section 24 not covered by any previous study. Holman did not find any prehistoric or historic period resources in the Project site. The railroad line to the south of the Project area has been formally recorded as P-01-001783. Crossing the Project area is another recorded resource: the Pittsburg-Tesla transmission line (P-01-010947), constructed in 1959-1960. This resource is not eligible for the National Register of Historic Places or for the California Register of Historical Resources.

The NAHC was contacted by Peak & Associates to request a review of their sacred land files and to provide the names of individuals and/or organizations in the area that may have knowledge concerning cultural resources in the Project vicinity. To date, no responses have been received.

A paleontological resource assessment was also prepared for the Proposed Project and is included with the Determination of Eligibility and Effect prepared for the Proposed Project and is included in Appendix E (Peak and Associates 2016). The paleontological resource assessment included a review of previous investigations in the Project area and a review of museum records held in the University of California, Museum of Paleontology.

Field Assessment

On January 30, 2016, an experienced archeological field archeologist completed a survey of the Proposed Project's Area of Potential Effect (APE). The Project site and vicinity is mostly in natural state, with the exception of a few modern industrial and agricultural buildings, cattle feeders, gravel roads, stored earth moving equipment, and an abandoned house trailer.

The south end has been leveled and has at least two reservoirs excavated next to the flat area, near the equipment and trailer. The north end of the property has been leveled to house an industrial building. A 30-foot line of chicken sheds sits next to the access road close to I-580.

The terrain is similar throughout the Project area with dark brown sandy loam soil, occasional stone content, and thick grass and weed growth. Grazing cattle and a large ground squirrel population have disturbed the soil enough to provide fair to good visibility in the thickest vegetation areas.

In the center and north of the Project area are rock outcroppings with small ledges, flat spots, and cobble scatters. All of these formations were carefully scrutinized for artistic, food processing, quarrying, or any other sort of modification with negative results.

Two small seasonal drainages run through the parcel, not deep enough to expose stone for human use.

Pedestrian survey employed 10- to 15-meter-wide transects in sloped areas, and more closely spaced along drainages, in flat areas or near rock outcroppings. The survey confirmed the previous negative survey results for the property: there are no prehistoric or historic period archaeological resources in the Project area.

The Pittsburg-Tesla transmission line (P-01-010947) was built in 1959–1960 and traverses the Project area; however it is not eligible for listing on the either the California Register of Historical Resources or NRHP (Peak 2016:15).

The paleontological resource assessment included a separate field survey of the Project site and vicinity to validate the existing geologic mapping and to collect data on the presence or absence of fossils. Combined with the review of published geologic maps, the field survey results indicate that the geologic formations typical of the Project area indicate a high sensitivity for paleontological resources.

3.6.4 Impacts Analysis

This section describes the cultural resource impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant cultural resources impact if it would:

- a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- c) Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures

Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical or Archaeological Resource – Less than Significant with Mitigation Incorporated

Implementation of the Proposed Project is not anticipated to result in disturbance of eligible/significant cultural resources. No cultural resources were identified within the Proposed Project's APE. Nonetheless, while unlikely, buried or previously unidentified cultural resources could exist. Record search and survey results indicate that there are no significant cultural resources on the surface of the APE, and there are few known cultural resources in the immediate area. While the surface of the Project area has been altered through previous agricultural use, prehistoric and historic period archaeological sites could occur in buried contexts. Thus, the potential exists that buried resources could be discovered during construction. Implementation of Mitigation Measure CR-1 outlined below would reduce potential Project impacts related to unknown cultural resources to a less-than-significant level.

Mitigation Measure CR-1: Halt Construction Activities if Any Cultural Materials Are Discovered.

Prior to construction, construction personnel shall be briefed regarding the proper procedure in the event buried cultural materials are encountered. If previously undocumented archaeological materials are encountered during Project construction, all ground-disturbing activity shall be suspended temporarily within an appropriate distance determined by a qualified professional archaeologist based on the potential for disturbance of additional resource-bearing soils. The qualified professional archaeologist shall identify the materials, determine their possible significance, and formulate appropriate mitigation measures. Appropriate mitigation may include no action, avoidance of the resource, and/or potential data recovery. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

Impact CR-2: Disturb Human Remains – Less than Significant with Mitigation Incorporated

Although no evidence of human remains or recorded cemeteries were found in documentary research and during the intensive field investigation, future ground-disturbing activities in the Project area could adversely affect presently unknown prehistoric burials. California law recognizes the need to protect interred human remains, particularly Native American burials, and associated items of patrimony, from vandalism and inadvertent destruction. In light of the potential to uncover unknown or undocumented Native American burials, this impact would be potentially significant. Implementation of Mitigation Measure CR-2 would reduce this impact to a less-than-significant level.

Mitigation Measure CR-2: Halt Construction Activities if Any Human Remains Are Discovered.

If human remains are uncovered during Project construction, all ground-disturbing activities shall immediately be suspended within an appropriate distance determined by a qualified professional archaeologist based on the potential for disturbance of additional remains. The Alameda County Coroner, and a qualified professional archaeologist, if one is not already onsite, shall be notified. The coroner shall examine the discovery within 48 hours. If the Coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours. The NAHC shall contact the most likely descendant of the remains. The most likely descendant shall be consulted regarding the removal or preservation and avoidance of the remains, and the parties shall rebury or preserve the remains as appropriate. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

3.7 Energy

This section provides an overview of energy resources in the Project area, and assesses potential impacts on energy that could result from implementation of the Proposed Project.

3.7.1 Regulatory Framework

Federal

United States Department of Energy

The United States Department of Energy is a cabinet-level department of the United States Government concerned with the United States' policies regarding energy and safety in handling nuclear material. Primary responsibilities include the nation's nuclear weapons program, nuclear reactor production for the United States Navy, energy conservation, energy-related research, radioactive waste disposal, and domestic energy production.

Federal Energy Regulatory Commission

The Commission's legal authority comes from the Federal Power Act and major amendments made to it by the United States Congress. President George W. Bush signed the Energy Policy Act of 2005 into law on October 8, 2005. The Commission has a major role in implementing this legislation. The Commission is also required to comply with other federal statutes covering environmental reviews and protection, financial reporting, information technology reporting, and historic preservation.

Energy Policy Act of 2005 (42 USC 13201 et seq.)

The Energy Policy Act addresses energy production in the United States, including: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Tribal energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology. For example, the Act provides loan guarantees for entities that develop or use innovative technologies that avoid the by-production of GHGs. Another provision of the Act increases the amount of biofuel that must be mixed with gasoline sold in the United States.

State

Warren-Alquist Act of 1974 and California Energy Commission

In 1974 the Warren-Alquist Act established the California Energy Commission (CEC). The first five commissioners were appointed in 1975 by Governor Edmund G. Brown, Jr. The CEC serves as the state's primary energy policy and planning agency and is committed to reducing energy costs and environmental impacts of energy use, such as GHG emissions. The commission is also responsible for ensuring a safe, resilient, and reliable supply of energy for California.

Climate Change Scoping Plan

The Scoping Plan released by ARB in 2008 and updated in 2011 and 2014 (ARB 2008, 2011, 2014) outlines the State's strategy to achieve the AB 32 goals. The Scoping Plan included measures to address GHG emission-reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (for example, the low carbon fuel standard, advanced clean car standards, and cap-and-trade) have been adopted since approval of the Scoping Plan.

Senate Bill 350

SB 350 (Chapter 547, Statutes of 2015) was signed into law in September 2015. SB 350 establishes tiered increases to the Renewables Portfolio Standard of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. The former target was 33 percent by 2020. SB 350 also set a new goal to double the electricity and natural gas savings for existing buildings through energy efficiency and conservation measures.

Local

Community Climate Action Plan Integration Resolution (Adopted 2014)

The Alameda County Community Climate Action Plan for unincorporated areas establishes local programs and policy measures to reduce GHG emissions in the areas of transportation, land use, building energy, water, waste, and green infrastructure. This resolution adopts the Climate Action Plan as part of the Alameda County General Plan, with the goal of reducing GHG emissions by 15 percent by 2020.

3.7.2 Environmental Setting

Electricity in California is supplied through a complex grid of transmission lines and power plants. Approximately 93 percent of electricity consumed in California in 2016 was produced within the state, while the remaining 6 percent was imported. In 2016, electricity generated through nuclear, hydroelectric, solar, wind, and other renewable and non-CO₂-emitting sources accounted for approximately 50 percent of the total in-state electricity generation, an increase of approximately 10 percent since 2015 (CEC 2018).

California generated a total of 290,567 gigawatt-hours (GWh) of electricity in 2016, a decrease of approximately 1.6 percent since the previous year. Between 2015 and 2016, energy imports decreased by 6,869 GWh to 92,341 GWh, showing trends towards in-state electricity generation. Between 2015 and 2016, in-state solar and wind generation increased by 31.5 percent and 10.8 percent, respectively (CEC 2018). According to CEC's electricity demand forecast for 2017 through 2027, annual electricity consumption in California has declined, which indicates an increase in the utilization of energy-efficient sources and self-generation, such as the use of solar photovoltaic power systems. CEC predicts that this trend will continue through 2027. However, while electrical consumption is projected to decrease, California's electricity demand is projected to increase by approximately 1 percent per year through 2027 due to population growth. This equates to an estimated demand of approximately 319,256 GWh of electricity in California in 2027 (CEC 2016a). According to the CEC, Alameda consumed a total of approximately 11112.7 GWh of energy in 2017, and 10814 GWh in 2016 (CEC2016).

Pacific Gas and Electric (PG&E) provides energy services for Alameda County, including natural gas and electricity for residential, commercial, and industrial customers. PG&E's sources of electricity include hydroelectric, nuclear, renewable, natural gas, and coal facilities. In 2016, 33 percent of PG&E's energy was generated from renewable sources such as solar, geothermal, and biomass facilities; 24 percent was generated from nuclear plants; 12 percent was generated from large hydroelectric operations; 17 percent was generated from natural gas sources; and the remaining 14 percent was generated from unspecified sources (PG&E 2018).

3.7.3 Impacts Analysis

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant energy impact if it would:

- a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during Project construction or operation; or
- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impacts and Mitigation Measures

Impact ENRG-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during Project construction or operation – Less than Significant

The Proposed Project would require limited amounts of energy during construction for the operation of construction equipment. Phase 1 of construction activities would include the installation of electrical power at the Project site. As described in Section 2.4.1, electrical power is typically needed for process equipment such as grinders and pumps, site lighting, scale houses, lighting in processing and storage buildings, and overall machinery operation and maintenance. Electricity is also necessary to operate blowers for ASP systems and to run certain material handling equipment like mixers and conveyors. Front-end loaders that are used to build and take down the compost piles and to load product for shipping offsite would require diesel fuel storage facilities. An onsite septic system or holding tank and telephone service would also be required for a fully functional facility. Electric and diesel powered equipment types, quantity and associated horsepower are shown in Table 2.4-2. PG&E would provide energy services for the Proposed Project. The Proposed Project would not use energy in a wasteful, inefficient, or unnecessary manner. Rather, energy used during construction and operation of the Proposed Project would be necessary, conserved when not in use, and would independently stress energy resources provided by PG&E. Therefore impacts on Impact ENRG-1 would be less than significant.

Impact ENRG-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency – Less than Significant

The Proposed Project would not conflict with a state or local plan for renewable energy or energy efficiency such as the Community Climate Action Plan Integration Resolution and State Climate Change Scoping Plan. The Proposed Project would require energy usage for the activities described under Impact ENRG-1. Energy usage under the Proposed Project would be consistent with that of other compost facilities in the region and would implement energy conservation and efficiency measures to the extent feasible. Equipment requiring energy would also be turned off when not in use. As a result, impacts on a local or state renewable energy or energy plan would be less than significant.

3.8 Geology and Seismicity

This section identifies the geologic environment of the Proposed Project based on geologic reports, and topographic and geologic maps. This section assesses potential impacts that could result from rupture of a known local fault, strong ground shaking, liquefaction, landslides, soil erosion, and unstable soils.

3.8.1 Regulatory Framework

The following sections provide brief descriptions of the federal, State and local regulations and general planning efforts that are applicable to the Proposed Project.

Federal

Following is an overview of the Federal Earthquake Hazards Reduction Act and resultant oversight program.

Earthquake Hazards Reduction Act

In October 1977, the United States Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA) by refining the description of agency responsibilities, program goals, and objectives.

The mission of the NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and, accelerated application of research results. The NEHRPA designated the Federal Emergency Management Agency as the lead agency of the program and assigned them several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and United States Geological Survey (USGS 2015a).

State

Following is an overview of the state Alquist-Priolo Earthquake Fault Zoning Act, Seismic Hazards Act, National Pollutant Discharge Elimination System (NPDES) permit program, and California Building Standards Code.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The

Alquist-Priolo Act requires the California State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and State agencies for their use in planning. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. (Department of Conservation 2015a)

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6), addresses earthquake hazards from a non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geological hazards. The Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils. (Department of Conservation 2015b)

National Pollutant Discharge Elimination System Permit

In California, the SWRCB administers regulations that are mandated by EPA (55 CFR 47990) and require the permitting of stormwater-generated pollution under NPDES. In turn, the SWRCB's jurisdiction is administered through nine regional water quality control boards. Under these federal regulations, an operator must obtain a General Permit through the NPDES Stormwater Program for all construction activities with ground disturbance of one acre or more. The General Permit requires the implementation of best management practices (BMPs) to reduce sedimentation into surface waters and control site erosion. One element of compliance with the NPDES permit is preparation of a Storm Water Pollution Prevention Plan (SWPPP) that addresses control of water pollution, including sediment, in runoff during construction (SWRQB 2015). Because much of the Project area will require grading activities during construction, these regulations are discussed here in the context of erosion; see Chapter 11 Hydrology and Water Quality, for more information about the NPDES and SWPPPs as they pertain to water pollution and runoff BMPs.

California Building Standards Code

The State of California mandates minimum standards for building design through the California Building Standards Code (CBC) (CCR Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the state and is based on the International Conference of Building Officials Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The International Conference of Building Officials Uniform Building Code was incorporated as part of the CBC, which has been modified for California conditions with more detailed and/or more stringent regulations.

Specific minimum seismic safety and structural design requirements, as well as seismic factors that must be considered in structural design are set forth in the CBC. The CBC regulates the excavation of foundations and retaining walls, along with grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction (CBC 2015).

Local

Alameda County General Plan – East County Area Plan

The Alameda County General Plan is a long term policy document which identifies current and future needs of Alameda County, and establishes goals and policies for its development. Three area plans address circulation, open space, conservation, safety, and noise elements for their respective areas. The Proposed Project is located within the East County Area and is subject to safety policies outlined in the ECAP.

The Environmental Health and Safety section of the ECAP includes the following policies pertaining to seismic and geologic hazards:

SOIL AND SLOPE STABILITY

Policy 308: The County shall not permit development within any area outside the Urban Growth Boundary exceeding 25 percent slopes to minimize hazards associated with slope instability.

SEISMIC AND GEOLOGIC HAZARDS

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

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

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

Policy 315: The County shall require that buildings be designed and constructed to withstand ground-shaking forces of a minor earthquake without damage, or a moderate earthquake without structural damage, and of a major earthquake without collapse of the structure.

Alameda County Municipal Code

Chapter 15.36 Grading, Erosion and Sediment Control of the Alameda County General Ordinance Code requires that:

Except for the specific exceptions listed hereinafter, no person shall do or permit to be done any grading on any site in the unincorporated area of this county without a valid permit obtained from the director of public works.

The Proposed Project would not be exempt from this ordinance since construction of the facility includes grading in excess of 150 cubic yards (Section 15.36.050(1)). The ordinance requires mitigation of potential grading-related impacts, including measures directed at controlling dust emissions, erosion and sedimentation, and creation of unstable slope conditions (Section 15.36.170).

In addition, all construction activities associated with the Proposed Project would be subject to the requirements of the CBC.

3.8.2 Environmental Setting

The Proposed Project is located in eastern Alameda County, close to the eastern border of the Coast Range Geomorphic Province of California (Jennings 1938). Bordering this province to the east is the Great Valley Geomorphic Province. The geological and topographic character of the province is characterized by northwest to southeast trending mountain ranges and valleys which run roughly parallel to the San Andreas Fault (the tectonic plate boundary between the North American and Pacific lithospheric plates).

Site Topography

The terrain near the Project site ranges from relatively flat land to gently rolling hills. The hills east and south of Livermore gradually become steeper as they trend eastward to form the Altamont Hills of the Diablo Range. Wind turbines north and south of the Altamont Pass punctuate the eastern horizon and have become part of the eastern valley landscape identity. The general topography of the Project site is a relatively flat to rolling plateau.

Site Geology

Based on a review of the Department of Conservation's 2010 Geologic Map of California, the Project site is underlain in part by marine sedimentary rocks of the Mesozoic era, and in part by non-marine (continental) sedimentary rocks of the Cenozoic era. The marine sedimentary rocks consist of Upper Cretaceous sandstone, shale, and conglomerate. The non-marine rocks are made up of Pliocene and/or Pleistocene sandstone, shale, and gravel deposits; mostly loosely consolidated. (Department of Conservation 2010a)

Site Soils

Soil types and their distribution in the Project area were identified through a review of the NRCS Alameda Area Soil Survey (NRCS 1966) and the online Web Soil Survey (NRCS 2015). Soil types within the Project area mainly include the Altamont series, which consists of deep, well drained soils that formed in material weathered from fine-grained sandstone and shale, and the Linne series, which consists of moderately deep, well drained soils that formed in material weathered from fairly soft shale and sandstone. Specifically, the majority of soils at the Project site are identified as Altamont Rocky Clay, 7 to 30 percent slopes (ArD) and Linne Clay Loam 3 to 15 percent slopes (LaC). The Linne Series soils make up approximately 60 percent of the site, while Altamont series soils make up the remaining 40 percent (United States Department of Agriculture [USDA] 2015).

Slope Stability

The stability of hill slopes is a function of several interrelated factors, including the strength and structure of underlying materials, steepness of the slope, and surface and subsurface drainage. In addition to these general factors, slope stability can also be influenced by human activities, including placement of loads (e.g., buildings and other improvements) and excavation activities. While all slopes respond to the force of gravity by some amount of down-slope movement of materials, it is the relatively rapid slope failures that present engineering challenges for developments on slopes. In general, the relatively level and gently sloping portions of the Project site are not susceptible to landslide activity.

Seismic Conditions

Alameda County is considered part of the Bay Area, which is known to be seismically active due to the regional tectonic activity controlled by the San Andreas Fault Zone, a complex of active faults forming the boundary between the North American and Pacific lithospheric plates. The Project site is located within impact distance (defined as within a distance of the fault in which primary or secondary seismic waves can be detected) of the San Andreas Fault Zone, which is approximately 45 miles away. Movement of the plates relative to one another results in the accumulation of strain along the faults, which is released during earthquakes. The San Andreas Fault Zone has generated numerous moderate to strong historic earthquakes in northern California. The level of active seismicity results in classification of the area as seismic risk Zone 4 (the highest risk category) in the CBC (discussed in 3.5.1 Regulatory Framework). More local to the Project site, the geological character is defined by the Greenville Fault, a less seismically active fault about 4.5 miles from the Project site.

According to the Safety Element of the Alameda County General Plan, the County has been subjected to numerous seismic events, originating both on faults within the County and in other parts of the region. Six major Bay Area earthquakes have occurred since 1800 that have affected the County, and at least two of the faults that produced them run through or into the County. The Safety Element further states that it has been determined that earthquakes of equally destructive forces are a certainty within the region, such as the Hayward-Rodgers Creek fault system that is estimated to have a probability of 31 percent of producing an earthquake of a magnitude of 6.7 or higher within the next 30 years (Alameda County, 2013). Table 3.8-1 shows the active and potentially active faults within Unincorporated Alameda County, which includes the Project site. Faults that have been active during the Holocene period, approximately the last 11,000 years, are considered to be active faults, and those faults that have been active during the Quaternary period, approximately the last 1.8 million years, are considered to be potentially active faults.

Table 3.8-1. Active and Potentially Active Faults within Unincorporated Alameda County

Fault Name	Classification	Probability of Earthquake with Magnitude Greater than or Equal to 6.7 (Richter)	Estimated Maximum Magnitude (Richter)
Hayward-Rodgers Creek	Active	31%	6.5-7.3

Table 3.8-1. Active and Potentially Active Faults within Unincorporated Alameda County

Fault Name	Classification	Probability of Earthquake with Magnitude Greater than or Equal to 6.7 (Richter)	Estimated Maximum Magnitude (Richter)
Calaveras	Active	7%	5.7-7.0
Greenville-Las Positas	Active	3%	6.8-7.0
Verona	Potentially Active	Undetermined	Undetermined
Williams	Potentially Active	Undetermined	Undetermined
Midway	Potentially Active	Undetermined	Undetermined
Mocho	Activity Unknown	Undetermined	Undetermined
Mission	Inactive	Not Applicable	Not Applicable

Source: Alameda County 2013

SURFACE RUPTURE AND GROUND SHAKING

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface ruptures generally can be assumed to be along an active or potentially active major fault trace. The closest active fault to the Project site is the Greenville fault; however, no active faults have been mapped on the Project site. Therefore, the potential for surface rupture at the Project site is negligible, and no portion of the site is located within an Alquist-Priolo Earthquake Fault Zone. (Department of Conservation 1982)

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geological conditions. Magnitude is a measure of the energy released by an earthquake, assessed by seismographs that measure the amplitude of seismic waves. Intensity is a more subjective measure of the perceptible effects of seismic energy at a given point and varies with distance from the epicenter and local geological conditions. Based on the presence of several active faults in the Project area, the potential exists for the Project site to experience significant ground shaking during earthquakes on the regional faults identified above.

LIQUEFACTION

Liquefaction is the temporary transformation of loose, saturated granular sediments (soils) from a solid state to a liquid state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is deep. Based on regional hazard mapping, the subsurface materials underlying the Project site have very low to moderate liquefaction potential (ABAG 2015).

PALEONTOLOGICAL RESOURCES

Paleontological resources are the fossilized remains or impressions of plants and animals, including vertebrates, invertebrates and microscopic plants and animals. The University of California Museum of Paleontology database includes more than 120 fossil localities in Alameda County. More than half the localities contain megafossils, which are vertebrates or invertebrates that can be identified without the aid of a microscope. Approximately 75 percent of these localities are located on the west slope of the Coast Ranges or in the valleys near Walnut Creek and Livermore in the undivided Quaternary deposits or the Livermore Gravel. All are vertebrate fossil sites, mostly containing incomplete records of large vertebrates. Fossils identified in these areas include the following:

- Extinct camel (Camelidae);
- Horse (Equus sp.);
- Giant ground sloth (Xenarthra);
- Tapir (Tapirus sp.); and
- Mammoth (Mammuthus sp.).

These discoveries suggest a Pleistocene rather than Holocene age for the fossil assemblage (San Francisco Bay Area Rapid Transit District [BART] 2010).

3.8.3 Impacts Analysis

This section describes the geology and seismicity impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant geology and seismicity impact if it would:

- a) Directly or indirectly cause 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;
 - ii. Strong seismic ground shaking;
 - iii. Seismic-related ground failure, including liquefaction;
 - iv. Landslides;
- b) Result in substantial soil erosion or the loss of topsoil;
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; or
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
- f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impacts and Mitigation Measures

This section evaluates impacts related to geology and seismicity as a result of implementation of the Proposed Project.

Impact GEO-1: Structures, facilities, and workers could be subject to seismic hazards – Less than Significant Impact

Most sites in the Bay Area could be affected by ground shaking in the event of a major earthquake. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of rock and soil materials between the epicenter and the areas affected. Violent to very violent ground shaking could occur on the Project site during large magnitude earthquakes on the Greenville and other regional faults.

However, due to the relatively low-intensity uses proposed on the Project site, the potential for substantial building damage or injury to workers would be low. The Proposed Project would not create new residences or a large number of jobs that would draw more people to the Project site. Onsite workers would primarily be working outside within the compost facility's receiving, processing, and curing areas with few to no overhead hazards. The administrative and maintenance buildings and facility infrastructure to be constructed on the site would conform to the seismic requirements identified in the CBC for the Project area. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC, which identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction. With adherence to these standards, the potential impacts on structures, facilities, and workers as a result of seismic hazards would be considered less than significant, and no mitigation would be required.

Impact GEO-2: Project construction activities could result in soil erosion or loss of top soil – Less than Significant Impact

Construction activities often increase the runoff potential of disturbed areas. During construction, clearing, grubbing, and grading activities would remove ground cover, and expose and disturb soil. Exposed and disturbed soils are vulnerable to erosion from runoff during construction. Altered drainage patterns as a result of construction could also cause redirection and concentration of runoff, potentially further exacerbating erosion.

As part of the Proposed Project, coverage under the NPDES Construction General Permit would be obtained from the SWRCB. As described above, this permit requires implementation of a SWPPP to control stormwater runoff within the Project area, thus minimizing soil erosion to the extent possible. The Proposed Project would also comply with the Alameda County grading ordinance, which requires that a valid grading permit be obtained from the Public Works Agency and that mitigation for potential grading-related impacts be implemented.

BMPs for erosion and runoff, as outlined in the SWPPP and grading permit would be implemented during construction to minimize erosion and sediment migration from the construction and staging areas. These erosion and storm water pollution control measures would be consistent with the NPDES requirements, and would be included in the site specific SWPPP. With implementation of the SWPPP and the BMPs, erosion and sediment-related effects would be less than significant and no mitigation would be required.

Impact GEO-3: Structures and facilities could be subject to damage related to shrink-swell potential and/or settlements of site soils – Less than Significant with Mitigation Incorporated

Site grading would consist of a balanced cut and fill that would remove soil material from higher areas and relocate it to lower areas. The maximum vertical cut (to approximately 15 feet below ground level) would occur along the western side of the site at the location of an existing hill with a mound with a peak elevation of approximately 478 feet above mean sea level. The maximum fill thickness (approximately 20 feet above ground level) would occur along the eastern edge of the site within an existing draw. Areas of fill would be graded at a minimum of a 2:1 slope to prevent soil movement or landslides. The entire site may be disturbed during grading, as material either would be removed (cut) or placed (fill).

Soils underlying portions of the compost facility site, as discussed in Section 3.5.2 Environmental Setting, are mapped as having high shrink/swell potential, having good water holding capacity and cracking when they dry. In addition, the Project site includes an area mapped as very low to moderate for liquefaction potential; this area underlies the Proposed Projects' compost windrows. Failure of the sediments beneath the composting pad could cause a break in the pad surface. Maintaining the integrity of the composting pad is important to protect groundwater quality, as the low-permeability pad prevents leachate from seeping into groundwater from the base of the compost piles. The issue of compost pad maintenance, including repair of cracks in the pad, is further discussed in Section 3.7 Hydrology and Water Quality of this EIR. The potential for adverse impacts related to shrink-swell potential and/or settlements of soil associated with expansive soils and liquefaction potential would be considered potentially significant. With implementation of Mitigation Measure GEO-1, impacts associated with expansive soils and liquefaction on the Project site would be reduced to a less-than-significant level.

Mitigation Measure GEO-1: Perform geotechnical investigation and reporting.

Prior to initiation of grading, a design-level geotechnical investigation and report shall be prepared that includes measures to ensure potential damages related to expansive soils, non-uniformly compacted fill, and liquefiable sediments are minimized. Measures may range from complete removal of the problematic soils during grading operations, to

conditioning the soils, or designing and constructing improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements. In addition, the following measures shall be incorporated into the Project: 1) all soil handling and conditioning measures, and structural foundations shall be designed by a licensed professional engineer; 2) all designs shall be submitted to, and approved by, the Alameda County Public Works Department prior to implementation; and 3) onsite soil management and/or conditioning activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

In addition, the condition of all surfaces related to operations on the site, including at the active composting pad, curing area and storage pads, shall be inspected on a monthly basis (the condition of the catchment basin liner shall be inspected on an annual basis). The results of the inspections shall be recorded on an appropriate data form. Any cracking in pavements or liners, potholes, wheel ruts, or other conditions that could cause ponding on the active surfaces, lead to damage to facilities or structures, or allow infiltration of runoff into the subsurface shall be noted and corrective action initiated within seven days.

Impact GEO-4: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature – Less than Significant with Mitigation Incorporated

According to the University of California Museum of Paleontology database, paleontological resources are known to exist in Alameda County near the Project area in Livermore, California. Construction activities requiring ground disturbance such as, clearing, grubbing, and grading activities would remove ground cover, and have the potential to impact undiscovered paleontological resources, if present. In the event that paleontological resources are discovered during implementation of the Proposed Project, application of the Society of Vertebrate Paleontology Resources Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources would reduce impacts to a less than significant level.

Mitigation Measure GEO-2: Follow the Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts on Paleontological Resources

Temporary and permanent impacts on a unique paleontological resource or site during construction and ground disturbance would be mitigated by implementing the following measures:

1. Conduct an intensive field survey and surface salvage prior to earth moving, if applicable;
2. Hire a qualified paleontological resource monitor to monitor excavations in previously disturbed rock units;
3. Salvage unearthened fossil remains and/or traces (for example, tracks, trails, burrows, etc.);
4. Wash screens to recover small specimens, if applicable;

5. Prepare salvaged fossils to a point of being ready for curation (that is, removal of the enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate);
6. Identify, catalog, curate, and provide for repository storage of prepared fossil specimens; and
7. Prepare a final report of the finds and their significance.

Impact GEO-5: Damage to structures, pavements, and/or utilities could occur at the Project site if cut and fill slopes failed, resulting in landsliding – Less than Significant with Mitigation Incorporated

Construction of buildings or site improvements within or adjacent to landslides or slopes prone to landsliding could result in damage during new or continued slope movement. The Proposed Project does not include construction of improvements in the path of existing mapped landslides. However, site grading would create cut and fill slopes around the site perimeter. If not appropriately designed, these slopes could be susceptible to failure when saturated following a storm event or when exposed to seismic activity. Slope failure would be considered a significant Project impact. Implementation of Mitigation Measure GEO-3 would reduce potential impacts associated with slope instability to a less-than-significant level.

Mitigation Measure GEO-3: Perform geotechnical investigation for slope stability.

As part of the design level geotechnical investigation discussed in Mitigation Measure GEO-1, an analysis of the stability of all slopes that would be created under the selected grading plan shall also be prepared. Proposed cut and fill slope designs shall have factors of safety not lower than 1.5 under static conditions and 1.0 under seismic shaking conditions. All grading plans, cut and fill slopes, compaction procedures, and retaining structures shall be designed by a licensed professional engineer. All designs shall be submitted to, and approved by, the Alameda County Public Works Department prior to implementation. Grading and slope preparation activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

3.9 Hazards and Human Health

This section addresses potential hazards associated with the construction and operation of the Proposed Project. The hazards assessment presented in this section summarizes the Proposed Project's operations, with a focus on the potential hazards associated with the waste stream, and evaluates the risk of human exposure to these hazards. This section also addresses fire risks associated with the Project site.

3.9.1 Regulatory Framework

Regulations governing the Project area originate at both the federal and State level and are described in detail below. However, many regulations are implemented and enforced at the local or regional level. Most hazardous materials regulation and enforcement in Alameda County are managed by its Environmental Health Department.

Federal

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). Federal laws regulating hazardous wastes also include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Additional agencies oversee worker safety and regulate the transportation of hazardous materials. These regulations are described in further detail below.

Resource Conservation and Recovery Act

The RCRA of 1976 (42 USC 6901 et seq.) establishes the framework for a national system of solid waste control. EPA has developed regulations to set minimum national technical standards for how disposal facilities should be designed and operated. States issue permits to ensure compliance with EPA and state regulations. RCRA provides for cradle to grave regulation of hazardous wastes. Under RCRA, individual states may implement their own hazardous substance management programs as long as they are consistent with, and at least as strict as, RCRA. EPA must approve state programs intended to implement RCRA requirements. If a state program does not exist, EPA directly implements the hazardous waste requirements in that state. Subtitle C regulations set criteria for hazardous waste generators, transporters, and treatment, storage, and disposal facilities. This includes permitting requirements, enforcement and corrective action or cleanup. Subtitle D is dedicated to non-hazardous solid waste requirements.

Comprehensive Environmental Response, Compensation, and Liability Act

The CERCLA of 1980 (42 USC 9601 et seq.) is often referred to as Superfund, and is intended for the cleanup of contaminated sites such that public health and welfare are not compromised. Specifically, CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

Occupational Safety and Health Administration

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for ensuring worker safety. OSHA sets federal standards for implementation of training in the work place, exposure limits, and safety procedures in the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Hazardous Materials Transportation Act

The United States Department of Transportation regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA.

State

The Cal/EPA and the State Office of Emergency Services establish rules governing the use of hazardous substances. The SWRCB has primary responsibility to protect water quality and supply. The Cal/EPA was created to better coordinate state environmental programs, reduce administrative duplication, and address the greatest environmental and health risks. The Cal/EPA unifies the California's environmental authority under a single Cabinet-level agency. The Secretary for Environmental Protection oversees the following agencies: Air Resources Board, Department of Resources Recycling and Recovery (CalRecycle), Department of Pesticide Regulation, SWRCB, Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment. Applicable state laws include the following:

- Porter Cologne Water Quality Control Act (California Water Code Section 13000-14076/ 23 CCR): Under the Porter-Cologne, the SWRCB has the ultimate authority over State water rights and water quality policy, including oversight of water monitoring and contamination cleanup and abatement. Porter-Cologne also establishes nine RWQCBs to oversee water quality on a day-to-day basis at the local/regional level.
- Hazardous Waste Control Law (California Health and Safety Code Section 25100 et seq./ 22 CCR): California requirements and statutory responsibilities are outlined in the Statute implemented by the Department of Toxic Substances Control in Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control Law. Regulations adopted from the Statute are found in Title 22 of the CCR. The Hazardous Waste Control Law is similar to RCRA, in that it regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State.
- Safe Drinking Water and Toxic Enforcement Act Proposition 65 (California Health and Safety Code Sections 25180.7, 25189.5, 25192, 25249.5-25249.13/8, 22 California CCR): The Safe Drinking Water and Toxic Enforcement Act, also known as Proposition 65, was enacted as in 1986 with the intent to protect California citizens and the State's drinking water sources from chemicals known to cause cancer, birth

defects or other reproductive harm, and to inform citizens about exposures to such chemicals.

Within Cal/EPA, the Department of Toxic Substances Control has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law.

The State OSHA (Cal/OSHA) assumes primary responsibility for developing and enforcing work place safety regulations within the state. Cal/OSHA regulations concerning the use of hazardous substances include requirements for safety training, availability of safety equipment, hazardous substances exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous substances, describing the hazards of chemicals, and documenting employee training programs.

California law requires that hazardous waste (as defined in California Health and Safety Code Division 20, Chapter 6.5) be transported by a state-registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance that includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing. A complete list of requirements can be found in Title 22 CCR, Chapter 13. State agencies with primary responsibility for enforcing federal and state regulations, and responding to hazardous materials transportation emergencies are the California Highway Patrol and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads.

Local

Unified Program

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of several environmental and emergency response programs. Cal/EPA and other state agencies set the program standards, while local governments implement them. The local implementing agencies are called Certified Unified Program Agencies. In the Project area, the Alameda County Department of Environmental Health has been granted responsibility for implementation and enforcement of many common hazardous materials regulations under the Certified Unified Program Agencies Program.

The ACWMA is responsible for the preparation of the County's Integrated Waste Management Plan and Hazardous Waste Management Plan, and provides support and assistance to agencies within the County in the implementation of those plans. The ACWMA manages a long-range program for development of solid waste facilities, and offers a wide variety of programs in the areas of waste reduction, market development, technical assistance, and public education.

Title 14 Composting Regulations

Current CalRecycle regulations pertaining to nonhazardous waste management are outlined in 14 CCR Division 7. Chapter 3.1 of Title 14 outlines compostable materials handling operations and facilities regulatory requirements that would be applicable to the Proposed Project (CalRecycle 2015). In California, EPA has granted most of the enforcement authority over federal solid waste regulations to CalRecycle, formerly the CIWMB. CalRecycle is responsible for regulation and oversight of solid waste facilities, including composting operations. The Alameda County Department of Environmental Health is the LEA for CalRecycle, and has responsibility for enforcement of many of the state regulations regarding composting operations within the County.

Alameda County General Plan – East County Area Plan

The following policies from the ECAP are applicable to the Proposed Project for Hazards and Human Health considerations:

Policy 244: The County shall require that new developments are designed to maximize safety and security and minimize fire hazard risks to life and property

Policy 247: The County shall conform its solid waste policies and programs to the Recycling Plan prepared by the Recycling Board, and generally coordinate its hazardous and solid waste management with the Alameda County Waste Management Authority's goals, policies, and plans, except to the extent that they are inconsistent with the Initiative or the Recycling Plan.

Policy 248: The County shall promote use of solid waste source reduction, recycling, composting, and environmentally safe transformation of wastes.

Policy 249: The County shall support efforts to provide solid waste resource recovery facilities and household hazardous waste collection facilities convenient to residences, businesses, and industries.

Policy 250: The County shall encourage development of innovative technologies to reclaim contaminated soils and sewage sludge.

3.9.2 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to hazards and hazardous materials.

General Site Conditions

The Project site is located on the eastern edge of the Altamont Hills, and drains into the San Joaquin Delta watershed by way of Mountain House Creek. The average elevation of the Project site is approximately 450 feet. Seasonal drainages traverse the Project site, carrying water primarily during the rainy season, and drying out during the summer and fall. Perennial vegetation primarily consists of grasses and forbs. The Project site does not have any woody vegetation, typical for the Altamont Hills area.

The Project site is located within California's Altamont Pass Wind Resource Area, and at one time, included wind-generating turbines on much of its acreage. The wind turbines are no longer in operation and the owners have removed remnant structures. The Project

site has historically been used for cattle grazing and dry land farming. No hazardous materials are stored onsite. A portion of the site has also been used previously for the application of biosolids as a soil amendment for the enhancement of pasture grass growth.

Other land uses in the general vicinity of the Proposed Project include wind farms, grazing lands, and rural residences. There are no schools or airports near the Project site. The nearest schools and airports are generally located either to the west of the Project site in the City of Livermore, or to the east of the Project site in the Cities of Mountain House and Tracy.

The Project site is located in an area that has been mapped by the State as a Wildland Area That May Contain Substantial Forest Fire Risks and Hazards, and is classified as a Moderate fire risk (Cal Fire 2015). The California Department of Forestry and Fire Protection (Cal Fire) has responsibility for fire protection and suppression activities within State-designated high fire hazard severity zones known as State Responsibility Areas (SRAs). The Project site is located within an SRA (Cal Fire 2015).

Records Review

The objective of the hazardous materials historical records search is to obtain and review records that will help identify any previously recorded environmental conditions at or near and potentially affecting the Proposed Project area. Publicly available federal, State, and local regulatory agency records were reviewed for the Proposed Project. The SWRCB's GeoTracker, an online database for regulated facilities in California, was consulted for records located within or near the Project site. There are no records for the Project site; however, one record was located near the Project site and is described in further detail below.

The Chevron #9-7127 site is located at 10 Grant Line Road in Mountain House. This site is located at the Grant Line Road and I-580 interchange more than 0.5 mile to the east of the Project site, and is listed as a Leaking Underground Storage Tank cleanup site. The cleanup status of the site is Open – Assessment and Interim Remedial Action. The site is a former gas station where hydrocarbons were initially detected in soil in 1987. Monitoring was ongoing until 1991, when the station was demolished and three 10,000-gallon gasoline, one 1,000-gallon waste oil, and one 750-gallon fuel oil underground storage tanks were removed from the site, along with related product piping and dispenser island. Monitoring and cleanup efforts are ongoing. Based on factors, such as distance and hydraulic gradient, this listing is not of concern to the Proposed Project.

3.9.3 Impacts Analysis

This section describes the hazards and human health impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant hazards and/or human health impact if it would:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the Project area;
- f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

In addition to the CEQA criteria outlined above, this analysis also considered whether or not the Proposed Project would:

- a) Create a significant hazard to the public or the environment through exposure to, or release of pathogenic materials, including bioaerosols; or
- b) Result in a substantial increase in the populations of potentially disease-carrying vectors near nearby residences and businesses.

Topics Dismissed in the Initial Study Checklist

As outlined in Section 3.0, Impact Criteria Eliminated from Further Analysis, the NOP IS dismissed four hazards and hazardous materials impact criteria from further analysis because the Proposed Project is not located within one-quarter mile of an existing or proposed school, and is not located on a site included on a list of hazardous materials sites, and is not located within an airport land use plan, and therefore would not result in a hazard to the public or the environment for these land uses (items c, d, and e, above). Further, the Project site is not located within the boundaries of an emergency response or evacuation plan area (item f above), and therefore would not interfere with implementation of these plans.

Impacts and Mitigation Measures

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction and operation – Less than Significant Impact

During excavation, grading, and other construction activities for the Proposed Project it is anticipated that limited quantities of miscellaneous hazardous substances (such as petroleum-based products/fluids, solvents, and oils) would be employed in the Project and staging areas. As with any liquid or solid, the potential for an accidental release exists during handling and transfer from one container to another. Depending on the relative toxicity of the material, if a spill were to occur of significant quantity, the accidental release could pose a hazard to construction employees and the environment, resulting in a significant impact.

Hazardous materials would also be used, stored, and disposed of during operation of the Proposed Project. These materials include fuels, lubricants, antifreeze, and other materials used for vehicles and heavy machinery, and pesticides used to control vectors. Waste oil and other hazardous wastes are likely to be generated at the Project site due to routine equipment maintenance and facility cleaning, and hazardous materials could potentially affect facility worker health and the environment.

The applicant shall prepare and implement a SWPPP, which is discussed in detail in Section 3.7 Hydrology and Water Quality and included in a corresponding Mitigation Measure (HWQ-1) in that section. Among other things, the SWPPP shall include BMPs for site housekeeping practices, hazardous material storage, inspections, maintenance, worker training in pollution prevention measures, and containment of releases to prevent run off into existing storm drains and sewers. Although designed primarily to protect water quality in local waterways, the SWPPP would also serve to minimize the number and severity of potential hazardous material releases that could affect construction workers.

The Proposed Project would comply with all relevant federal, State, and local statutes and regulations related to transport, use, and disposal of hazardous materials. Therefore, impacts related to these activities would be reduced to less than significant.

Impact HAZ-2: Construction and operation of the Proposed Project could 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 – Less than Significant Impact

The operation and storage of construction equipment on the Project site has the potential to result in accidental or inadvertent release of oil, grease, or fuel. However, spill prevention measures as outlined in Mitigation Measure HWQ-1 would be implemented during construction and operation of the Proposed Project to address the accidental or inadvertent release of oil, grease, or fuel. Such measures may include storing fuel and refueling of construction equipment within designated construction and staging areas, and routine inspection of vehicles for oil and fuel leaks. Therefore, impacts related to

accidental release of hazardous materials into the environment would be less than significant.

Impact HAZ-3: Composting facility workers and end users of compost could be exposed to chemical contaminants and/or pathogens potentially present in compost feedstocks – Less than Significant with Mitigation Incorporated

Chemical contaminants may be present in the various sources of composting feedstocks. Feedstocks may contain pesticides, heavy metals, chemical and organic compounds, and pathogens. Composting feedstocks may also be contaminated through improper storage or handling (e.g., if composting feedstocks are stored in the same area as previous materials found to be contaminated, feedstocks could become contaminated).

Chemically contaminated feedstocks may potentially pose a health risk to composting facility workers and future users of the compost. VOCs, which are contained in many solvents, paints, and cleaners, tend to volatilize into the air within 1 to 2 days of composting, potentially posing a threat to composting facility workers who may breathe in the compounds. Other contaminants, such as polychlorinated biphenyls, dioxins, pesticides, heavy metals, and polynuclear aromatic hydrocarbons are more persistent and remain in the composted material, potentially affecting both composting facility workers and the end users of the compost. Pesticides in green waste feedstocks may also pose a health risk. Studies have found that most commonly used pesticides degrade during the composting process. However, some organochlorine insecticides do not significantly degrade. On the other hand, heavy metals have been determined not to pose a significant health risk to composting facility workers. Studies reviewed by the EPA, evaluating airborne lead, and cadmium concentrations and workers' exposure to heavy metals in compost, found exposure to metals is below levels of concern.

The most effective method of controlling potential contaminants in compost is to control their presence in the feedstock, by limiting composting operations to high quality residential and commercial feedstocks, instituting source separation, load checking provisions, and implementing effective household hazardous waste education and collection programs.

Pathogens, which are bacteria, viruses, and parasites that cause disease, may also be present in composting feedstocks, such as foodwastes or biosolids. Generally, pathogens that could be present in composting feedstocks are destroyed by the high temperatures created during the composting process. However, if all of the material in a compost pile does not reach an appropriate temperature, or if the proper temperatures are not sustained for minimal periods of time, some pathogens in feedstocks may not be destroyed, potentially causing illness in composting facility workers and end users who come into direct contact with the compost.

The potential for exposure of composting facility workers and end users of compost to chemical contaminants and/or pathogens that may be present in compost feedstocks is considered a significant impact. Implementation of Mitigation Measure HAZ-1 would reduce potential impacts associated with exposure of workers and end users of compost to chemical contaminants and pathogens in compost feedstocks to less than significant.

Mitigation Measure HAZ-1: Prepare and implement screening, monitoring, testing, and training procedures

Prior to operation of the facility, procedures for complying with CCR Title 14, Chapter 3.1 Composting Operations Regulatory Requirements shall be prepared by the facility operator and submitted to the Alameda County Department of Environmental Health for approval as part of the facility's Report of Composting Site Information (RCSI). At a minimum, these procedures shall include:

- procedures for screening feedstocks for contaminants;
- monitoring temperature and moisture content during the composting process;
- sampling composts for pathogens and heavy metals; and
- a training program to train workers to identify contaminants in feedstocks and implement and document screening, monitoring, and sampling procedures. Employee training shall include proper handling of potentially contaminated compost feedstocks and chemical agents used in the composting process (e.g., lime), including safe work practices and use of personal protective equipment, if warranted.

Work practices shall be designed to prevent exposure to employees in excess of Permissible Exposure Limits, which are the legal exposure limits for airborne contaminants set forth in Cal/OSHA regulations. Sampling requirements shall meet or exceed requirements in the ACWMA's Draft Compost Quality Standards and Testing Protocol, which include screening for chemical contaminants and pathogens.

Impact HAZ-4: Composting facility workers could suffer health effects as a result of exposure to bioaerosols – Less than Significant with Mitigation Incorporated

Bioaerosols are microorganisms, biological agents, or biological components that are dispersed through the air. They can contain fungi, actinomycetes, bacteria, viruses, protozoa, endotoxins, microbes, enzymes, and mycotoxins. While many of these organisms are harmless, and some are even useful, some bioaerosols can carry pathogens that can cause illness in humans. Bioaerosols are prolific in the environment; they have been found to occur in indoor air where there are domestic pets and outdoors, where organic dust occurs. Bioaerosol dispersion is affected by weather and climate and can be carried on dust by wind, while precipitation reduces the dispersion of bioaerosols.

The two bioaerosols of potential concern in composting are the fungus, *Aspergillus fumigatus* (*A. fumigatus*) and endotoxins. *A. fumigatus* is a ubiquitous organism and, as a result of being heat tolerant, survives the composting process. It is commonly found outdoors on decaying organic matter such as grass, forest and yard leaves, woodchips, potting soil, mulch, and other organic materials. Employees are the most sensitive to exposure of *A. fumigatus* because of their frequent proximity to decaying organic matter. Endotoxins are found in organic dust produced in operations such as municipal solid waste processing, poultry facilities, grain and hay production, biosolids processing, and poultry waste piles, composting facilities, and recycling facilities.

Cal/EPA conducted an intensive evaluation of the public health implications of composting and concluded that properly operated composting and co-composting operations present little health risk to normal compost facility employees, and negligible,

if any, risk for nearby residences (Ault and Schott 1993). However, studies indicate that inhalation of airborne *A. fumigatus* spores can cause skin rashes and burning eyes for immunocompromised individuals (EPA 2002), and inhaled endotoxins may cause respiratory inflammation in immunocompromised individuals.

Operation of the proposed compost facility does have the potential to generate both *A. fumigatus* and endotoxins. Bioaerosols generated by the facility would primarily result from grinding and screening materials and from turning windrows. Given their proximity to composting operations, onsite workers have the greatest potential for exposure to bioaerosols resulting in a significant impact. Because no residents are located within 500 feet of the proposed composting facility, the exposure of residents to bioaerosol concentrations in excess of ambient levels would not be anticipated with Project implementation.

Potential harmful effects on workers from bioaerosols can be minimized by reducing particulate matter emissions, or dust, during compost operations. The Proposed Project includes installation of water misting devices on the grinding, screening, and conveying equipment used during feedstock preparation. Misting significantly reduces dust emitted during these operations. This combined with implementation of Mitigation Measure HAZ-2 would reduce public health impacts on onsite workers resulting from exposure to bioaerosols to less than significant.

Mitigation Measure HAZ-2: Provide worker training and protective equipment

In accordance with recommendations by the California Department of Health Services, all applicants for employment at the compost facility shall be trained and educated on hazards associated with the job. Training shall include information on the nature of the organic decay process and the increased potential for exposure to bioaerosols in some job categories. New employees with debilitating conditions, especially those on immunosuppressant medication, shall be cautioned and restricted from certain activities, such as screening or in locations where considerable dust emissions occur.

The facility operator shall install protective equipment in accordance with OSHA requirements to minimize risks to onsite workers. Examples of this equipment include dust-collecting equipment, such as bag houses, in vicinity of screens and other major dust-producing equipment; dust filters in cabs of front-end loaders and other vehicles; and masks, respirators, and other personal protective equipment.

Impact HAZ-5: Composting operations may attract vectors, which may pose a health risk to facility workers and the general public – Less than Significant with Mitigation Incorporated

Vectors are small animals and insects that have the potential to carry diseases. Mice, rats, flies, and mosquitos may be attracted by the food, water, and shelter provided by the composting facility. In the absence of control measures, these rodents and insects can transmit and spread diseases to facility workers and the general public, which would be considered a significant impact.

Rodents and insects that have the potential to transmit and spread diseases may be transported to the facility in composting feedstocks, or may be attracted to the feedstocks from nearby areas. Enclosing the foodwaste receiving and grinding areas in buildings would assist in controlling vector access to the composting materials when they first

arrive. However, if rodent or insect infestations still occur and are not properly controlled, they may pose a health risk to facility workers and the general public. Improper use of insecticides to address infestations could also pose a health risk to facility workers and the environment. Rodent and insect infestations are most likely to occur in preprocessing areas or in ponded areas on the site (e.g., recycled water basins), as the high temperatures generated during the composting process itself discourage rodent burrowing activities and destroy housefly eggs and larvae.

The Proposed Project design and operations include enclosing the foodwaste receiving and grinding areas in buildings, along with good housekeeping practices and measures that include management of the cycling of the water (drawing down the water in the basin for use in moistening the windrows) to minimize the amount of time water is standing in the catchment basins. This, and other measures, will ensure that water in the catchment basins does not serve as a breeding site for mosquitos. Implementation of Mitigation Measure HAZ-3 would further reduce potential impacts associated with vectors to less than significant.

Mitigation Measure HAZ-3: Prepare a Vector Control Plan

Prior to operation of the facility, a Vector Control Plan for the facility shall be prepared by the facility operator and approved by the Alameda County Department of Environmental Health. The Vector Control Plan shall include:

- housekeeping procedures to prevent processing areas and recycled water basins from attracting potential vectors;
- measures to minimize standing water and prevent mosquito breeding at the site, including frequent drawdown of the recycled water basins;
- operating procedures designed to destroy fly eggs and larvae before they can become adult flies, such as the prompt processing and mixing of the feedstock so that the compost pile temperature is raised quickly;
- the use of fly traps to attract and capture adult flies;
- a monitoring program to measure vectors near the site perimeter, including action levels (such as number of flies collected in off-site traps) for determining whether significant off-site vector migration is occurring;
- a contingency program for mitigating off-site vector migration when action levels are exceeded, including use of insecticides and rodent traps, if warranted; and
- a program to train workers to properly implement and document the procedures of the Vector Control Plan.

Impact HAZ-6: Composting operations may expose workers, residents, and structures to increased fire hazards – Less than Significant

Construction activities for the Proposed Project include the use of mechanized construction equipment and vehicles that contain flammable fuels. During construction, equipment and vehicles may come in contact with vegetated areas and may accidentally spark and ignite the vegetation. A wildland fire that starts on a nearby parcel may spread to the Project site and endanger workers and structures. In addition, composting material may spontaneously combust at high temperatures and low moisture content, and could

create a wildland fire that could endanger persons and structures near the Project site. The temperature in the composting material can be kept at safe levels by limiting the height of compost piles, by monitoring and controlling moisture content, and by turning the compost when temperatures reach a designated level.

The Proposed Project has been designed to provide access for emergency equipment. The main entrance would provide access to a perimeter road that surrounds the entire facility. Each of the rows of composting windrows would also be accessible via travel lanes. Also, the Proposed Project includes the installation of a fire suppression water tank.

The Proposed Project would comply with State regulatory requirements for the proposed facility, as specified in the CCR Titles 14 and 22, as well as the County Fire Department requirements for facility design and fire safety. To reduce the danger of fire, implementation of fire protection standards in accordance with the regulatory requirements would be required, including establishment of an emergency response plan. Implementation of these measures and installation of fire suppression systems (sprinklers, alarms, etc.) would minimize the risk of wildland fire. Staging areas or other areas slated for construction using spark-producing or intense heat-producing equipment are to be cleared of dried vegetation or other materials that could serve as fire fuel. The contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment and vehicles that normally include a spark arrester shall be equipped with an arrester in good working order. This impact would be less than significant, and no mitigation would be required.

3.10 Hydrology and Water Quality

This section provides the hydrologic and water quality environment of the Project site and assesses potential impacts from grading, drainage alteration, and potential exposure of compost materials to runoff and leaching that could result from implementation of the Proposed Project.

3.10.1 Regulatory Framework

Regulations governing the Project area are implemented and enforced at the federal, State, and local or regional level, and are described in detail below.

Federal

Federal regulations applicable to the Proposed Project include the Clean Water Act, as described below.

Clean Water Act

The Clean Water Act (33 USC 1251–1376) is the major federal legislation governing water quality. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Important applicable sections of the act are as follows, and are discussed in further detail below under State regulatory framework:

- Section 401, which requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the Act. In California, certification is provided by the RWQCB, and is discussed in detail below.
- Section 402, which establishes NPDES, a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. In California, this permit program is administered by the RWQCBs, and is discussed in detail below.
- Section 404, which establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is administered by USACE.

State

State regulations applicable to the Proposed Project include the Water Quality Certification and NPDES programs, as described below.

Water Quality Certification

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act

Section 404 permits issued by the USACE. The 401 permit certifications are required before USACE issues a 404 permit.

Under Section 402 of the Clean Water Act, RWQCB concerns with discharges associated with a project may result in the issuance of a set of requirements known as Waste Discharge Requirements (WDRs) under the California Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

WASTE DISCHARGE REQUIREMENTS

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. Discharges under the Porter-Cologne Act are permitted by WDRs and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The SWRCB and the RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a Project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use.

The California Water Code Section 13260 states that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, must file a report of waste discharge with the appropriate RWQCB. The California Water Code Section 13263 states that the SWQCB or a RWQCB may prescribe general WDRs for a category of discharges that meet specified criteria.

The SWQCB adopted a composting General Order that applies to composting operations that accept, store, and process materials to produce a compost product such as soil amendments or soil blends. Acceptable materials would include green material, food material, residentially co-collected or food and green materials, vegetative food material, paper material, agricultural material, manures, and biosolids. These materials have the potential to affect the quality of waters of the State; as such, discharges from operations accepting these materials are regulated by the RWQCB and SWQCB.

The General Order has been developed to create a streamlined and efficient permit process, and to achieve statewide consistency in regulating composting operations. The order provides a streamlined statewide notification and permit review process for private and public entities or persons intending to compost for certain types of operations. There are two levels of compliance, Tier I and Tier II, based on the types of feedstocks used, volume of compost on site, and hydrogeologic site conditions. The General Order also contains prohibitions, specifications, and general procedures to protect surface water and groundwater quality related to composting facility operations, and specifies the terms and conditions of discharges from composting operations.

Dischargers would request coverage under the General Order by submitting a Notice of Intent, a technical report, and the appropriate fees to the RWQCB, who would review the Notice of Intent and technical report, confirm that the individual composting operation met all of the terms and conditions of the General Order, and issue a Notice of Applicability.

NPDES Permit Program

Section 402 of the Clean Water Act establishes the NPDES permit program, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters. The Central Valley RWQCB is delegated with the responsibility of protecting the quality of surface and ground waters of the State in the Proposed Project area. As a construction project that disturbs one or more acres of soil, the Proposed Project would be required to obtain coverage under a General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit). The permit requires the development and implementation of a SWPPP and covers construction activities including clearing, grading, grubbing, and disturbances to the ground (e.g., stockpiling or excavation). The permit coverage does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Local

ALAMEDA COUNTY GENERAL PLAN – EAST COUNTY AREA PLAN

The following policies and implementation programs are included in the ECAP and are applicable to the Proposed Project and, specifically, storm drainage and flood control and water quality.

STORM DRAINAGE AND FLOOD CONTROL

Policy 277: The County shall work with the Alameda County Flood Control and Water Conservation District (Zone 7) to provide for development of adequate storm drainage and flood control systems to serve existing and future development.

Policy 278: The County shall promote flood control measures that advance the goals of recreation, resource conservation (including water quality and soil conservation), groundwater recharge, preservation of natural riparian vegetation and habitat, and the preservation of scenic values of the county's arroyos and creeks.

Policy 280: The County shall regulate new development on a case-by-case basis to ensure that, when appropriate, project storm drainage facilities shall be designed so that peak rate flows of storm water from new development will not exceed the rate of runoff from the site in its undeveloped state.

Policy 282: The County shall encourage use of natural or nonstructural storm water drainage systems to preserve and enhance the natural features of a site.

Policy 316: The County shall require new residential, public, commercial, and industrial development to have protection from a 100-year flood.

Implementation Programs

Program 97: The County shall develop design criteria for onsite flood control features such as catchment and retention ponds and for stream channels improved for multi-purposes. Criteria shall address integrated visual and other multi-use concerns into the physical design of flood control features and shall encourage use of permeable materials to enhance onsite percolation.

Program 99: The County shall identify the agency responsible for maintenance of onsite retention and detention basins prior to project approval.

WATER QUALITY

Policy 306: The County shall protect surface and groundwater resources by: preserving areas with prime percolation capabilities and minimizing placement of potential sources of pollution in such areas; minimizing sedimentation and erosion through control of grading, quarrying, cutting of trees, removal of vegetation, placement of roads and bridges, use of off-road vehicles, and animal-related disturbance of the soil; not allowing the development of septic systems, automobile dismantlers, waste disposal facilities, industries utilizing toxic chemicals, and other potentially polluting substances in creekside, reservoir, or high groundwater table areas when polluting substances could come in contact with flood waters, permanently or seasonally high groundwaters, flowing stream or creek waters, or reservoir water: and, avoiding establishment of excessive concentrations of septic systems over large land areas.

Implementation Programs:

Program 108: The County shall implement all federal, State and locally imposed statutes, regulations, and orders that apply to storm water quality.

3.10.2 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to hydrology and water quality.

Surface Water

The Jess property is located on the eastern edge of the Altamont Hills, draining into the San Joaquin Delta watershed by way of Mountain House Creek. The approximately 160-acre ranch is characterized by rolling hills with drainages and seasonal stock ponds. The ranch is dominated by nonnative annual grassland. The majority of the ranch is within the Mountain House Creek watershed. The average elevation of the ranch is approximately 450 feet above mean sea level, with the Project site located on a higher portion of the property. A drainage channel located directly west of the Project site traverses the site from south to north.

Perennial vegetation primarily consists of grasses and forbs near the springs, seeps, and ponds. The ranch does not have any woody vegetation, typical for the Altamont area.

Current and historical land use has primarily been dry pasture, hay and grain farming, equestrian activities, and a wind farm. In addition, portions of the Jess Ranch, including the Proposed Project location, have been used in the past for land application of

biosolids. The WDRs that were issued for the biosolids application at Jess Ranch contained provisions to control drainage and operations. However, the WDRs have since been rescinded by the RWQCB at the request of the property owners.

Flooding

Based on the Federal Emergency Management Agency flood hazard mapping, the Project site is not located within an area of identified flood hazard. The Flood Insurance Rate Maps (1981a) place the site entirely outside of the 100-year flood hazard zone (floodplain). The elevation and distance of the Project site from the San Francisco Bay and Pacific Ocean preclude potential inundation by coastal hazards, such as tsunamis.

Groundwater

Groundwater on the site is generally found at a depth of 30 to 60 feet below ground surface. A subsurface exploration was conducted on the Jess Ranch by Cal Engineering and Geology in July 2007. Three subsurface borings were drilled near the Jess residence and equestrian barn. The drilling locations are at a substantially lower elevation than the Project site. The borings were drilled to a depth of 25 feet below the existing grade. The geologic observations revealed that the three areas are underlain with between 2 and 14 feet of native soil materials consisting of interbedded sandstone and siltstone to the depth explored. Near surface soil materials consisted of a variable mixture of sand, silt and clay. The auger cuttings and bore holes were monitored prior to backfilling. There was no evidence of any shallow groundwater conditions at the locations explored.

3.10.3 Impacts Analysis

This section describes the hydrology and water quality impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant hydrology and/or water quality impact if it would:

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin;
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - i. result in substantial erosion or siltation on- or off-site;
 - ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

- iii. 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;
- iv. impede or redirect flows
- d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

Topics Dismissed in the Initial Study Checklist

As outlined in Section 3.0 Impact Criteria Eliminated from Further Analysis, the NOP IS dismissed one hydrology and water quality impact criteria from further analysis because the Proposed Project is not located within a seiche, tsunami, or mudflow hazard area, and therefore would not increase exposure of people or structures to increased risks from these conditions (item d above).

Impacts and Mitigation Measures

Impact HWQ-1: Degradation of water quality during Construction and Operation – Less than Significant with Mitigation Incorporated

Grading, earthmoving, roadway excavation, and facility construction would disturb the existing vegetative cover, soil, and drainage characteristics of the Project site. By removing the existing vegetative cover, the proposed construction activities would expose the site's soils to wind and storm water erosion. Construction activities could result in substantial storm water discharges of suspended solids and other pollutants into local drainage channels from the Project construction site. In addition, intense rainfall and associated storm water runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. The potential for chemical releases from construction equipment and materials is also a concern at construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to surface waters and/or groundwater in storm water runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. Therefore, construction impacts on water quality would be potentially significant. Implementation of Mitigation Measure HWQ-1 would reduce this impact to less than significant.

During operation, the primary sources of wastewater generated by the Proposed Project would be leachate from the composting piles; truck washout wastewater; and any wastewater from sanitation uses. To provide for flexibility in ultimate design and operation of the Project, combined systems are proposed to address treatment/disposal of wastewater resulting from truck washing and leachate generated by the active composting processes. All leachate and truck washing/area wash down wastewater would be held onsite for use in reapplication of the compost piles. Any wastewater not recycled within the Project site would be temporarily held onsite for periodic removal and transportation to an approved, offsite wastewater treatment facility.

All Project area storm water runoff would be diverted and contained onsite in catchment basins, thereby preventing any offsite discharges. Water in the catchment basins would

be reapplied to the active compost piles or evaporate. Up to two, lined catchment basins would be constructed to accommodate a 25-year, 24-hour storm event on the active composting areas. The total combined capacity of the ponds would be approximately 20 acre feet. A perimeter drainage ditch would collect runoff from the facility and direct it to the catchment basins. Ditches would be properly sloped to prevent ponding and kept free and clear of debris to allow for continuous flow of liquid. Ditches would be inspected and cleaned out prior to the rainy season every year. Water within the basins would be managed to prevent the overtopping or overflow of liquids. A Water Management Plan would be prepared and provided to the RWQCB for review and approval, and which would describe how the water in the ponds would be managed to prevent discharge. The Proposed Project would also include a buffer berm around the entire perimeter of the facility external to the drainage ditches to ensure that storm water, process water, and any compost leachate be contained onsite. Although the Proposed Project would generate a new source of storm water requiring drainage, storm water runoff would be managed through careful facility design and operation. Therefore, the Proposed Project's impact related to operational impacts on water quality would be less than significant. Implementation of Mitigation Measure HWQ-1 would further reduce the Proposed Project's operational impacts on water quality.

Mitigation Measure HWQ-1: Prepare and implement a SWPPP

As required by the County, a grading permit application shall be prepared and submitted to the County for review and approval prior to initiation of any earthwork at the site. The grading permit application shall include measures to control storm water drainage from the site and to minimize the potential for sediment discharges from the site. In addition, the applicant shall prepare a SWPPP designed to reduce potential impacts on surface water quality during construction. The SWPPP would act as the overall program document designed to provide measures to mitigate potential water quality impacts associated with implementation of the proposed composting facility.

The SWPPP shall include specific and detailed BMPs designed to mitigate construction-related pollutants. At a minimum, BMPs shall include practices to minimize the contact of construction and operation materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with receiving waters.

An important component of the storm water quality protection effort is construction workers' knowledge of the site. To educate onsite personnel and maintain awareness of the importance of storm water quality protection, site supervisors shall conduct regular meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP. The SWPPP shall also specify a routine monitoring program to be implemented by the construction contractor.

Impact HWQ-2: Degradation of Groundwater Quality during Operation – Less than Significant Impact

The Proposed Project would process a variety of organic feedstock materials, including, but not limited to, greenwaste, foodwaste and biosolids, but would also receive untreated scrap wood, natural fiber products, non-recyclable paper waste, and inert material, such as sediment, gypsum, wood ash, and clean construction debris. Feedstocks would be delivered to the receiving/pre-processing area and subsequently transported to the active compost pad to be placed in windrows and later to the product storage pad.

Drainage from the pads would be collected and directed to the two catchment basins, which would be lined to prevent contents from percolating to the groundwater. The contact and runoff water collected in the basins would be periodically removed and reused in operations for reapplication to the windrows or evaporated. No discharge from the recycling basin system would be allowed by the RWQCB.

The incoming waste processing area and active composting pad would be constructed of concrete, asphalt or compacted cement treated base soil that would meet RWQCB requirements for permeability and provide a hard surface for composting operations equipment. This low permeability composting pad would cause storm and operational waters to flow off the pad to the perimeter drainage ditch. This would minimize the amount of water on the composting pad area that could potentially percolate below the pad to groundwater. Given the low permeability of the site soils and the construction of a low permeability composting pad surface, the potential for percolation is negligible. Further, general water quality WDRs or composting facilities' General Order WDRs for this facility would include site design requirements and/or a water quality monitoring program. Therefore, through site design and operational standards, impacts of the Proposed Project on groundwater quality would be less than significant and no mitigation would be required.

Impact HWQ-3: Alteration of the Existing Drainage Pattern of the Site – Less than Significant Impact

Seasonal drainages traverse the Project site, carrying water primarily during the rainy season, and drying out during the summer and fall. Construction of the Proposed Project would introduce new structures and features to the Project site which would alter the existing drainage pattern. However, the Proposed Project has been designed to divert and contain all Project generated storm water runoff, thereby preventing any offsite discharges.

As described in Impact HWQ-1, although the Proposed Project would generate a new source of storm water requiring drainage, storm water runoff would be managed through a network of catchment basins, and perimeter drainage ditches and external berms. Therefore, the Proposed Project's impact related to alteration of the existing drainage pattern would be less than significant, and no mitigation would be required.

Altered drainage patterns as a result of construction could cause redirection and concentration of runoff, potentially further exacerbating erosion. Additionally, construction activities often increase the runoff potential of disturbed areas. During construction, clearing, grubbing, and grading activities would remove ground cover, and expose and disturb soil. Exposed and disturbed soils are vulnerable to erosion from runoff during construction.

As part of the Proposed Project, coverage under the NPDES Construction General Permit would be obtained from the SWRCB. This permit requires implementation of a SWPPP to control stormwater runoff within the Project area, thus minimizing soil erosion to the extent possible. As a result, impacts would be less than significant.

Impact HWQ-4: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge

Water is needed at the Project site for basic sanitary services, fire protection, pile moisture content, and dust control. The volume of water needed for the composting process depends on the raw materials as well as climate. The required water volume to serve the Proposed Project would need to accommodate an annual throughput of up to 300,000 tons of material.

The primary water supply for the Proposed Project would be water supplied by the BBID. BBID would supply water from their canal located approximately 2.4 miles to the north, in Contra Costa County. The water would be delivered to the facility utilizing water tanker trucks.

During the three wettest winter months of the year, catchment basins constructed on the site as part of the Proposed Project's stormwater control system could provide the facility's water supply. Collected and stored stormwater in the catchment basins would be aerated and treated/conditioned prior to its reuse for onsite purposes. It is anticipated that all of the water used on site would be directed to and retained within the catchment basins. The combined catchment basin capacity for the Proposed Project is preliminarily sized at approximately 20 acre-feet. The estimated capacity is necessary to support the average 12-month cyclical water demands of the Project, as augmented by the BBID canal water supply.

An existing groundwater well that currently supplies water for cattle on the site would be used as an alternate water supply source. The use of the well would be limited to employee domestic uses only. The estimated volume of water currently produced by the well is approximately 5 gallons per minute. Additionally, the addition of impervious surfaces associated with the Proposed Project would not substantially reduce groundwater recharge.

Although the Project site is not served by a public water supply, adequate water supply sources, and conservation/reuse methods are available to serve the Proposed Project, and groundwater resources would not be depleted. Therefore, impacts related to groundwater supplies and groundwater recharge would be less than significant and no mitigation would be required.

3.11 Land Use and Agriculture

This section describes the potential impacts on land use and agricultural resources resulting from implementation of the Proposed Project. Where feasible, mitigation measures are identified to reduce the level of anticipated impacts.

3.11.1 Regulatory Framework

Regulations governing the Project area are implemented and enforced at both the State and the local or regional level, and are described in detail below.

Federal

There are no federal regulations applicable to this section.

State

State regulations applicable to the Proposed Project include the California Land Conservation Act of 1965 (Williamson Act) and the Farmland Mapping and Monitoring Program.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 (Government Code Sections 51200-51297.4) allows local governments to enter into contracts with private landowners that restrict specific parcels of land to agricultural or related open-space use. In return, these landowners receive property tax assessments that are much lower than normal because they are based upon farming and open-space uses rather than the property's full market value. The Act establishes principles for compatible uses allowed on lands under contract. Generally, uses are compatible if they will not significantly compromise the long-term productive agricultural capability, displace or impair current or reasonably foreseeable agriculture operations, or result in removal of adjacent contracted land from agriculture open-space uses (Department of Conservation 2015a).

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program was established in 1982 to continue farmland mapping efforts initiated in 1975 by the Soil Conservation Service (since renamed NRCS) of the United States Department of Agriculture. Since 1982, the State has assisted the NRCS with completing its mapping in California. The Farmland Mapping and Monitoring Program was created within the California Department of Conservation to carry on the mapping activity on a continuing basis and with a greater level of detail. (Department of Conservation 2015b).

Local

The Project site is subject to Alameda County's planning jurisdiction. Applicable plans include the ECAP and the *Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts*.

Alameda County General Plan/East County Area Plan (ECAP)

The Alameda County General Plan addresses long term goals, policies, and actions for the physical development of Alameda County. The Proposed Project is located within the East County Area, therefore it is subject to land use policies outlined in the ECAP.

The ECAP was originally adopted as a replacement to the 1977 *Livermore-Amador Valley Planning Unit General Plan*. T. Minor policy amendments have occurred throughout the years, but the ECAP was significantly modified in November 2002 by passage of the 2000 Measure D Initiative. The passage of the 2000 Measure D effectively revised the Urban Growth Boundary in eastern Alameda County, and modified land use restrictions applicable to rural areas. The policies referenced in this section include amendments that followed the passage of this Measure D.

The policies and implementation programs in the ECAP that are directly applicable to land use and agricultural issues are outlined below. To provide context for the applicable policies and programs, it should be noted that the Project area is located within the General Plan land use designation of Large Parcel Agriculture. A detailed description of land use designations and zoning are also provided in the Environmental Setting section below.

POLICIES

Policy 13: The County shall not provide nor authorize public facilities or other infrastructure in excess of that needed for permissible development consistent with the Initiative.⁴ This policy shall not bar 1) new, expanded or replacement infrastructure necessary to create adequate service for the East County, 2) maintenance, repair or improvements of public facilities which do not increase capacity, and 3) infrastructure such as pipelines, canals, and power transmission lines which have no excessive growth-inducing effect on the East County area and have permit conditions to ensure that no service can be provided beyond that consistent with development allowed by the Initiative. Infrastructure shall include public facilities, community facilities, and all structures and development necessary to the provision of public services and utilities.

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.

⁴ In November 2000, the Alameda County electorate approved the Save Agriculture and Open Space Lands Initiative (Measure D; effective date, December 22, 2000). The Initiative amended portions of the County General Plan, including the East County Area Plan (ECAP).

Policy 79: The County shall require any proposal for agricultural support service uses within areas designated Large Parcel Agriculture: or Resource Management to meet at a minimum the following criteria:

- The project will not require the extension of public sewer or water.
- The project will not detract from agricultural production onsite or in the area
- The project will not create a concentration of commercial uses in the area
- The project is compatible with and will not adversely affect surrounding uses.

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 agricultural enhancing commercial uses that primarily support the area's agricultural production, are not detrimental to existing or potential agricultural uses, demonstrate an adequate and reliable water supply, and comply with other policies and programs of the Initiative.

Policy 86: The County shall not approve cancellation of Williamson Act contracts within or outside the County Urban Growth Boundary except where findings can be made in accordance with state law, and the cancellation is consistent with the Initiative. In no case shall contracts outside the Urban Growth Boundary be canceled for purposes inconsistent with agriculture or public facility uses. Prior to canceling any contract inside the County Urban Growth Boundary, the Board of Supervisors shall specifically find that there is insufficient non-contract land available within the Boundary to satisfy state-mandated housing requirements. In making this finding, the County shall consider land that can be made available through reuse and rezoning of non-contract land.

Rural Development Implementation Programs 29: The County shall develop guidelines for establishing buffers between existing agricultural uses and potentially incompatible uses. Buffers may take the form of precluding incompatible uses within a certain distance of agricultural operations, erecting physical barriers to nuisances such as berms or foliage, or mitigation of impacts on non-agricultural uses (e.g., noise insulation). Buffers may consist of a topographic feature, a substantial tree stand, watercourse, or similar feature.

IMPLEMENTATION PROGRAMS

The applicable portions of the Implementation Programs that are related to parcel size are summarized below.

Program 40: The Zoning Ordinance shall have an A-160 (Agriculture - 160-acre minimum parcel size) District and an A-320 (Agriculture - 320-acre minimum parcel size) District. The A-160 (Agriculture - 160-acre minimum parcel size) District shall cover the following area: the Wind Resource Area, except lands easterly of the California Aqueduct, and lands to the south of Tesla Road that are within one mile of Tesla Road between the San Joaquin County boundary and the South Livermore Valley Plan.

The Zoning Ordinance shall include grandfather clauses to recognize the rights of property owners. Lands rezoned to A-160 and A-320 shall maintain the designations shown on the ECAP Land Use Diagram.

Program 41: The Zoning Ordinance and Subdivision Ordinance shall specify that the 100 acre minimum parcel size permitted for the A-100 (Agriculture - 100-acre minimum parcel size) District, the 160 acre minimum parcel size permitted for the A-160 (Agriculture - 160-acre minimum parcel size) District, and the 320 acre minimum parcel size permitted for the A-320 (Agriculture - 320-acre minimum parcel size) District are minimums and that the actual size of agricultural parcels shall be determined through an evaluation of individual circumstances of the property and surrounding land and may be larger than 100 acres in the A-100 District, 160 acres in the A-160 District, or 320 acres in the A-320 District.

Alameda County Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts

Although the California Land Conservation Act of 1965 (Williamson Act) was passed at the State level, Alameda County provides the standards for property eligibility, the uses to be considered compatible on contracted land, and the administrative procedures for implementing the program through the *Alameda County Uniform Rules and Procedures*. The *Alameda County Uniform Rules and Procedures* was last updated in 2011 and reflects the Williamson Act legislation as it had been amended to date. There are three kinds of Williamson Act contracts for which an applicant may qualify: an Agricultural contract, a Recreational contract, or an Open Space contract. The Proposed Project area is on lands under an Agricultural contract.

Compatible uses for Agricultural contracts are outlined in Uniform Rule 2 of the Alameda County Uniform Rules and Procedures, as described below.

I. General Requirements for Compatible Uses

The intent of the Williamson Act is the preservation of a maximum amount of the State's limited supply of agricultural land (*Government Code Section 51220 (a)*). In order to preserve agricultural lands for future generations, uses of the land for other than agricultural uses must be compatible with the agricultural use and in a scale that maintains agriculture as the primary use of the land.

The County shall not approve applications for non-agricultural uses on contracted land, including use permits, development permits, Site Development Review, or subdivisions, unless there is an existing agricultural use that meets one of the commercial agricultural thresholds established in Rule 1 of this document.

The conditions for composting facilities in the Alameda County zoning designation of Agricultural or A-District (Project area is in A-District) are as follows:

D. Composting Facilities and Land Reclamation Fill

1. Commercial Composting Facilities

A commercial composting facility shall be deemed a compatible use in the A-District providing that:

- The facility is consistent with the compatibility criteria set forth in Section I of this Rule. Specifically, non-building types of uses sited outside the building envelope may not significantly compromise the long-term productive agricultural capability of the contracted property or other contracted lands in agricultural preserves (see Section I.B.3.c. of this Rule).
- The facility is not sited on soils that qualify as Class I or Class II under the NRCS classification system.
- Construction of use areas outside the building envelope does not require grading or other ground disturbance that results in a significant loss of top soil;
- The use areas are appropriately scaled and sited in a manner that does not interfere with agricultural operations on the contracted land or with adjacent agricultural operations; and,
- All ancillary structures that qualify as buildings are located in the 2-acre building envelope and the remaining use area is calculated as part of the cumulative total of acreage allowed for compatible non-agricultural uses (see Section I.B.3.c. of this Rule).

Section I.B.3.c:

Compatible non-agricultural uses that qualify as buildings (for example, stables for horses not related to the agricultural operation or a packing house for fruit or vegetables not produced on the contracted land) shall be located within the 2-acre building envelope.

Compatible non-agricultural uses that do not qualify as buildings (for example, solar panels and uncovered horse training arenas) may be located outside the 2-acre building envelope but shall be cumulatively restricted to no more than 10 percent of the contracted property, or 10 acres, whichever is less. These uses shall be clustered in an area set aside for this purpose so that the remaining land may be devoted to agriculture, to uses accessory to agriculture, and to open space. Where clustering is not feasible due to land features, siting of non-agricultural compatible uses shall avoid locations where they can potentially interfere with agricultural operations.

The following condition for Williamson Act contracts, as cited in the *Alameda County Uniform Rules and Procedures* – Uniform Rule 1, is important to the Proposed Project and is further discussed below in Impact

LU-1.

II. Williamson Act Contracts for Agriculture

A. Duration of Contract

1. Each contract shall be for an initial term of no less than 10 years. Each contract shall provide that on the anniversary date of the contract, established as January 1st, a year shall be added automatically to the initial term unless notice of non-renewal is given as provided in Uniform Rule 6 of this document.
(*California Government Code Section 51244*)

3.11.2 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to land use and agricultural resources.

Regional Setting

The Proposed Project would be located in an unincorporated area of Eastern Alameda County. In a regional context, the East County is situated between the denser urban areas surrounding the Bay Area and the rapidly urbanizing Central Valley east of Altamont Pass in San Joaquin County.

Alameda County

Within the urban, suburban, and urban edge landscapes of the Bay Area, Alameda County has historically existed as a productive and diverse agricultural region. Though much of the county has been converted from agricultural use due to urbanization throughout the late nineteenth and twentieth centuries, it has maintained an active agricultural industry. Today, Alameda County's agricultural landscape is mainly characterized by the wine vineyards around south Livermore and many hillside cattle ranches in the East County. According to the USDA Census of Agriculture, Alameda's 525 farms and ranches constitute more than 250,000 acres and cover 48 percent of Alameda County (USDA 2007). According the 2013 Alameda County Crop Report (Department of Agriculture/Weights and Measures), fruit and nut crops were the top grossing commodity group in 2013 valued at \$16.1 million, which can mostly be attributed to successful wine grape yields. Livestock and poultry production was second-highest in value at \$11 million, followed by nursery products (\$8.4 million), vegetable crops (\$1.2 million), and field crops (\$5.4 million) (Alameda County 2014a).

PROJECT AREA LAND USES AND AGRICULTURAL RESOURCES

The Project area encompasses 30 acres of the southeastern portion of the Jess Ranch property, owned by Joe and Connie Jess. The entirety of the 160+ acre Jess Ranch property is designated in the ECAP as Large Parcel Agriculture (A-160 District), as defined below. The property is currently under an active Williamson Act contract, which is further discussed below in Impact LU-1.

Large Parcel Agriculture requires a minimum parcel size of 100 acres, except as provided in Programs 40 and 41. The maximum building intensity for non-residential buildings shall be .01 FAR but not less than 20,000 square feet. Where permitted, greenhouses shall have a maximum intensity of 0.025. One single family home per parcel is allowed provided that all other County standards are met for adequate road access, sewer and water facilities, building envelope location, visual protection, and public services. Residential and residential accessory buildings shall have a maximum floor space of 12,000 square feet. Additional residential units may be allowed if they are occupied by farm employees required to reside onsite. Apart from infrastructure under Policy 13, all buildings shall be located on a contiguous development envelope not to exceed 2 acres except they may be located outside the envelope if necessary for security reasons or, if structures for agricultural use, necessary for agricultural use. Subject to the provisions of the Initiative, this designation permits agricultural uses, agricultural processing facilities (for example wineries, olive presses), limited agricultural support service uses (for example animal feed facilities, silos, stables, and feed stores), secondary residential units, visitor-serving commercial facilities (by way of illustration, tasting rooms, fruit stands, bed and breakfast inns), recreational uses, public and quasi-public uses, solid waste landfills and related waste management facilities, quarries, windfarms and related facilities, utility corridors, and similar uses compatible with agriculture. Different provisions may apply in the South Livermore Valley Plan Area, or in the North Livermore Intensive Agriculture Area.

Land use districts are outlined in the Title 17 Zoning Ordinance of the Alameda County Code of Ordinances (Alameda County 2015). Agricultural districts, hereinafter designated as A districts, are established to promote implementation of general plan land use proposals for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.

The ECAP identifies the northeastern corner of Alameda County as the Altamont Pass Wind Resource Area. The Project site is located within this area and though the Jess Ranch property contained wind turbines at one time, it is no longer being used for this purpose. The wind turbines are no longer in operation and the owners have removed remnant structures. There are many active wind farms throughout the Altamont Pass area which are owned and operated by PowerWorks, LLC; these properties will not be affected by the Project.

According to the California Department of Conservation's Important Farmland Finder, the Project area does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Project site is on lands designated as Grazing Land, which is defined as "land on which the existing vegetation is suited to the grazing of livestock" (Department of Conservation 2012). As such, Jess Ranch has historically been used as a cattle grazing operation. The majority of the ranch is currently used for a cow-calf operation, including cattle grazing and breeding. The ranch typically has 50 head of cattle year-round.

The Project site is surrounded on all sides by lands also designated as Large Parcel Agriculture by the ECAP and Grazing Lands by the Farmland Mapping and Monitoring Program. Land uses on these surrounding annual grasslands are mainly livestock grazing and breeding, as well as wind farms. Adjacent property owned by the Contra

Costa Water District contains a residence and a service center structure for wind turbine operators that is currently available for lease. The closest change in land use designation within Alameda County is Urban and Built up Land about 8 miles west of the Project site in the City of Livermore (California Department of Conservation 2012).

The entirety of the Proposed Project site is located on lands currently under a Williamson Act Contract. There are 30 acres of Williamson Act Lands in the Project footprint, 20 acres of which are subject to permanent conversion. As noted above, commercial composting is a compatible use for Agricultural contracts as outlined in Uniform Rule 2 of the Alameda County Uniform Rules and Procedures. However, Section 1.B.3.c limits commercial composting sites to a maximum of 10 acres. Because the Proposed Project would utilize a total of 30 acres, the Project proponent would need to request a cancellation of the 20 acres that exceed the allowable 10 acres.

3.11.3 Impacts Analysis

This section describes the land use and agriculture impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant land use and/or agricultural impact if it would:

- a) Physically divide an established community; or
- b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

For evaluation of potential agriculture and forestry resource impacts, this analysis also considered whether or not the Proposed Project would:

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

Topics Dismissed in the Initial Study Checklist

As outlined in Section 3.0, Resources Eliminated from Further Analysis, the NOP IS checklist dismissed one land use and planning criteria from further analysis because there are no established communities located in the Project area (item a under land use and planning impact criteria).

The NOP IS checklist also dismissed three agriculture and forest resource criteria from further analysis because the Project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and there are no forest lands located in the Project area (items a, c, and d under agricultural and forest resource impact criteria).

Impacts and Mitigation Measures

This section evaluates impacts related to land use and agricultural resources as a result of implementation of the Proposed Project.

Impact LU-1: Conflict with existing zoning for agricultural use, or a Williamson Act contract – Less than Significant Impact

Zoning Consistency

There are two regulations from agencies with jurisdiction over the Project which apply to the Proposed Project—the Large Parcel Agriculture land use designation as defined by the ECAP, and the Agricultural (A-District) zoning designation as defined by the Title 17 Zoning Ordinance of the Alameda County Code of Ordinances.

The Proposed Project is located on lands designated as Large Parcel Agriculture in the ECAP. The ECAP lists solid waste landfills and related waste management facilities as permitted uses for this land designation.

The Proposed Project fits two of these permitted uses, as it would be considered a related waste management facility, as well as an agricultural processing facility. As a related waste management facility, it would help manage waste by processing organic materials from regional municipal solid waste collection transfer stations and other sources, diverting this waste from landfills. This waste would be converted into compost, which would then be applied as a soil conditioner and fertilizer to gardens, crops, and rangelands, making it a beneficial resource for agricultural lands throughout Alameda Counties and other nearby counties.

As stated in the Environmental Setting section above, The Alameda County zoning designation for the Project area is Agricultural or A District. Composting facilities are not one of the permitted uses for A District land; however, it is a conditionally allowed use as stated in Code 17.06.035:

The following are conditional uses and shall be permitted in an A district only if approved by the Planning Commission, sitting as a board of zoning adjustments.

- A. Sanitary landfill not to include processing salvaged material;
- B. Flight strip;
- C. Cemetery;

D. Composting facility. Title 17 Zoning Ordinance (Alameda County 2015).

The Project Applicant is requesting a Conditional Use Permit be issued by the County for the operation of a compost facility on the Project site. Because compost facilities are permitted uses within the Agricultural zoning designation, the Proposed Project would be consistent with the Alameda County Zoning Ordinance upon issuance of the Conditional Use Permit.

Williamson Act Consistency

The California Department of Conservation has oversight responsibility for Williamson Act Program administration and compliance. However, local governments are authorized to adopt rules governing the administration of agricultural preserves within their jurisdiction. The Jess Ranch is currently under a Williamson Act contract. Alameda County has determined that commercial composting is consistent with the Williamson Act contract lands. However, the commercial composting area is limited to ten acres. In order for the Proposed Project to be completed, a cancellation of 20 acres of the site's Williamson Act Contract would need to be approved by the County and California Department of Conservation.

The property owner has filed a Notice of Non-Renewal, dated October 10, 2014, with the Clerk of the Board of Supervisors. The document was recorded on November 20, 2014. The Alameda County Board of Supervisors authorized the Notice of Non-Renewal on December 16, 2014.

In addition, the property owner has prepared a Petition for Cancellation of the Williamson Act contract for twenty acres of 160-acre property (Partial Cancellation). The Petition has been reviewed by Alameda County staff and it was determined that the Petition is complete and ready for submittal to the Board of Supervisors and Department of Conservation. Pending the approval of the Petition for Partial Cancellation, impacts with respect to conflict with an existing Williamson Act contract would be considered less than significant.

Impact LU-2: Conversion of Farmland to non-agricultural use – Less than Significant Impact

As described in Chapter 2 Project Description, the majority of the Project site is currently operated as a cow-calf operation. The current primary land use is for cattle grazing and breeding. The Project site does not include land being used currently or historically for active agricultural production. Implementation of the Proposed Project would result in the conversion of land zoned by Alameda County as agricultural to a non-agricultural use. However, as described above, compost facilities are permitted uses within the Agricultural zoning designation, and therefore the Proposed Project would be consistent with the Alameda County Zoning Ordinance, upon issuance of the Conditional Use Permit. Further, implementation of the Proposed Project would not remove any agricultural land from active production. Impacts resulting from the conversion of agricultural land to non-agricultural use would be less than significant and no mitigation would be required.

3.12 Noise

This section includes a description of ambient-noise conditions, a summary of applicable regulations, and an analysis of potential short-term construction and long-term operation noise impacts of the Proposed Project. An Environmental Noise Assessment was conducted for the Proposed Project and is included in Appendix F (Charles M. Salter Associates Inc. 2015).

3.12.1 Overview of Sound, Noise, and Vibration

The following glossary describes several acoustical terms and descriptors used in this document.

- Sound (in air): fluctuations in air pressure usually generated by a vibrating object and transmitted outward as waves. The air pressure fluctuations can be detected by a sound-sensitive receiver (e.g., the human ear or a microphone).
- Noise: Sound that is unpleasant, unexpected, or otherwise undesirable.
- Decibel (unit symbol is dB): A unit used in electrical engineering and acoustics to express the ratio of two quantities on a logarithmic scale. The pair of quantities can be electrical or acoustical (e.g., sound pressure). When the decibel is associated with the term, sound pressure level, it is explicitly defined to be 20 times the common logarithm of the ratio of the root-mean-square sound pressure divided by the reference sound pressure. The terms *sound level*, *noise level*, and *sound pressure level* all imply a standard reference sound pressure at the threshold of human hearing (i.e., 20 micropascals = 0 dB). The decibel can also be used to express the logarithmic change between one level and another level (e.g., a 3 dB increase).
- A-Weighted Sound Level (Noise Level): The term for the A-weighted sound pressure level. It is obtained by use of a standard sound level meter and is expressed in dB. Sometimes the unit of sound level is [incorrectly] written as dB(A). A-weighting is a standard frequency filter commonly employed to scale the loudness or noisiness of sounds. A-weighting is required by regulations promulgated by the EPA, the California Department of Aeronautics, Caltrans, and others. A 10 dB increase in sound level is perceived by people to be twice as loud.
- Maximum sound level (L_{max}): The maximum sound level measured during the measurement period.
- Minimum sound level (L_{min}): The minimum sound level measured during the measurement period.
- Equivalent continuous sound level (unit symbol is Leq): A descriptor established by EPA to express the average A-weighted sound pressure level over a specified time interval. The fluctuating sound pressures in an acoustical environment are used to compute (on an energy basis) a single value that is equivalent to the average of the fluctuating sound pressure. Also called the time-average sound level (e.g., as in hourly average sound level). Unless otherwise stated, it is usually presumed that the average sound level is A-weighted. The unit for the time-average sound level is the decibel.

- Day-Night Average Sound Level (DNL): A descriptor established by the EPA to express the average 24-hour, A-weighted sound/noise level with a 10-dB penalty applied to levels occurring during the nighttime hours (10 p.m. to 7 a.m.) (see definition of A-weighted sound/noise level). The penalty is intended to account for the increased sensitivity of people during sleeping hours. DNL is the descriptor currently used for Noise Elements included in the General Plan required for all California communities.
- Community noise equivalent level: The average of the A-weighted sound/noise levels occurring during a 24-hour period with 5 dB added to the A-weighted levels occurring between 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted levels occurring between 10:00 p.m. to 7:00 a.m.

Sound from multiple sources operating in the same area, such as multiple pieces of construction equipment, will result in a combined sound level that is greater than that of any individual source. Sound perception also depends on factors such as whether a new sound is similar to existing sounds in an area; the presence or absence of vegetation or topographic features and structural barriers that absorb, reflect, or scatter sound waves; and atmospheric conditions.

In addition to generating noise, construction equipment can generate ground-borne vibration. Human perception of ground-borne vibration typically includes sensations of movement in building floors and walls, rattling of windows, and rumbling sounds. The overall perception of vibration caused by construction activities is generally limited to people located relatively close to the vibration sources. Ground vibration could feasibly lead to building damage, but only at exceptionally high vibration levels or involving delicate structures located close to intense vibration sources (e.g., explosions).

3.12.2 Regulatory Framework

Regulations governing the Project area have been established and are enforced at the local or regional level; these are described in detail below.

Federal

No specific federal regulations related to noise are applicable to the Proposed Project.

State

No specific State regulations related to noise are applicable to the Proposed Project.

Local

Alameda County General Plan – East County Area Plan

The purpose of the ECAP is to present a clear statement of the County's intent concerning future development and resource conservation within East Alameda County. The goals and policies in the ECAP are intended to inform decision-makers, the general public, public agencies, and those doing business in the area of the County's position on land use-related issues and to provide guidance for day-to-day decision-making.

The ECAP contains a noise element that identifies a set of specific actions the County will undertake to achieve the goals and policies of the plan. In addition to issues that directly address physical development, the plan also addresses social, environmental and economic issues related to land use considerations. The plan also serves as an important source of detailed information regarding existing conditions and trends in the East County area. The ECAP contains the following goal and supporting policies and implementation programs, which would be applicable to the development of the composting/processing facility and address noise:

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

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

Policy 289: The County shall limit or appropriately mitigate new noise sensitive development in areas exposed to projected noise levels exceeding 60 dB based on the California Office of Noise Control and 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 noise sensitive 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.

Acoustical criteria for the County are contained in the County's Safety and Noise Element of the Alameda County General Plan and the ECAP. Table 8-1 of the Alameda County General Plan Safety and Noise Element identifies the California Office of Noise Control Land Use Compatibility Guidelines for outdoor noise environments. The normally acceptable standard for *Single Family Residential* is expressed as a day-night average sound level (DNL or Ldn) of 60 dB or less. Aside from these land use policies, the County has no specific noise standards with which to assess the potential noise impact from the agencies discussed in this study. For this reason, it was considered prudent to mitigate noise from the Project so, at the closest noise-sensitive receptor, Project-generated noise would not exceed the existing noise environment (i.e., within a three-dB tolerance). The three dB tolerance is commonly used in CEQA documents as a threshold for determining the significance of a noise impact.

Alameda County Noise Ordinance

Alameda County adopted Ordinance 82-7, which relates to the control of noise. The ordinance restricts the amount of noise that can be generated by one property and received by another. The Alameda County Noise Ordinance establishes policies to control unnecessary, excessive, and annoying noise in the County, as well as to maintain quiet in areas which exhibit low noise levels currently. The County Noise Ordinance also contains programs to reduce noise levels in areas where noise levels are above acceptable levels. The County Noise Ordinance is enforced by the Alameda County Department of Environmental Health.

The County has designated noise level standards for both commercial and non-commercial properties. Non-commercial properties generally include noise-sensitive properties, such as single- or multiple-family residential, school, hospital, church, or public library. In general, for receiving land uses such as single or multifamily residences, schools, or hospitals, the A-weighted noise level generated by non-commercial properties for any 30 minutes in 1 hour cannot exceed 50 dB during the daytime hours (7 a.m. to 10 p.m.) and 45 dB during nighttime hours (10 p.m. to 7 a.m.). In no case shall the maximum A-weighted noise level at any time exceed 70 dB during daytime hours and 65 dB during nighttime hours. The noise level standards for commercial and non-commercial properties are shown in Table 3.12-1. The County Noise Ordinance also exempts noise sources associated with construction, provided the activities do not take place before 7 a.m. or after 7 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday.

The language in the County Noise Ordinance states:

It is unlawful for any person at any location within the unincorporated area of the County to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any single- or multiple-family residential, school, hospital, church, public library or commercial properties situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in Tables 8-3 and 8-4. (County Noise Ordinance)

Noise level standards outlined in the County's Tables 8-3 and 8-4 are summarized in Table 3.12-1 below.

Table 3.12-1. Non-Commercial* and Commercial Noise Ordinance Limits A-weighted Sound Pressure Level, dB re: 20 micropascals

Cumulative Number of Minutes in any one hour time period	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
30	50 (non-commercial)	45 (non-commercial)
	65 (commercial)	60 (commercial)
15	55 (non-commercial)	50 (non-commercial)
	70 (commercial)	65 (commercial)
5	60 (non-commercial)	55 (non-commercial)
	75 (commercial)	70 (commercial)
1	65 (non-commercial)	60 (non-commercial)
	80 (commercial)	75 (commercial)
0	70 (non-commercial)	65 (non-commercial)
	85 (commercial)	80 (commercial)

Source: Alameda County Noise Ordinance

*Non-commercial uses include single- or multi-family residential, school, hospital, church or public library properties.

The language in the County Noise Ordinance further states:

In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal said ambient noise level. Each of the noise level standards specified in Tables 8-3 and 8-4 shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.

If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the applicable noise level standards in Table 8-3 and 8-4.

3.12.3 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to noise sources and receptors.

Noise Sensitive Receptors

Noise-sensitive land uses generally include those uses where exposure would result in adverse effects (e.g., sleep disturbance or annoyance), as well as uses where quiet is an essential element of their intended purpose. Residences are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses typically considered sensitive to noise include

hospitals, convalescent facilities, parks, auditoriums, amphitheaters, public meeting rooms, motels, hotels, churches, schools, libraries, and other uses where low interior noise levels are essential.

The Proposed Project area is located in rural east Alameda County and is primarily dominated by lands under rural or agricultural use. The Project site is located in Alameda County near the Altamont Pass, approximately one mile west of the junction between I-205 and I-580. The topography of the general area can be characterized as rolling hills that is vegetated with annual grasses. The ambient noise environment in this area is dominated by traffic noise from the adjacent interstate roadways, as well as the variable sound of the wind coming off of the Altamont Pass. Wind generated noise in the Project area is highly variable and is influenced by factors such as sustained wind speed, wind direction, meteorological conditions, and topography (Alameda County 2015).

The Project site consists of 30 acres of open grazing land and contains no sound-generating land uses other than those associated with the cattle grazing operation. No other existing major sound generators are located within one mile of the site other than I-580, which is approximately 4,500 feet north of the site.

There are three noise-sensitive receptors located in the Project vicinity. The closest noise-sensitive receptor is an onsite residential building (a double-wide mobile home) located adjacent to and approximately 2,500 feet to the north of the composting area, and 500 feet west of the proposed access road. The second-closest noise-sensitive receptor is a residence located on Altamont Pass Road, approximately 1,100 feet north of I-580 and 4,500 feet north of the proposed facility. The third closest noise-sensitive receptor is a residence located on Midway Road near the entrance to the Altamont Speedway, approximately 1,600 feet south of the junction of I-205 and I-580 and 6,000 feet northeast of the proposed facility.

Existing Noise Environment

Within the County, major sources of noise include roadway traffic on I-580, major arterials, and other roadways; railroad noise; aircraft operations; and fixed noise sources from commercial and farming activities.

Vehicular traffic is the primary noise source in the Project area. The major roadways in the Project area are I-580 and Grant Line Road. Traffic on Project area roadways includes agricultural equipment, truck traffic, recreational vehicles, and vehicular traffic associated with people traveling between eastern Alameda County and the Central Valley.

In order to characterize the ambient noise conditions near the Project site, noise levels were measured at the three noise-sensitive receptors located in the Project vicinity, including one onsite and two offsite receptors. The measurements conducted for these onsite and offsite locations provided the data required to characterize the baseline noise conditions. Details of these measurements are provided in Appendix F. For the two offsite receptors, 24-hour noise levels were measured. At the residence on Altamont Pass Road, the measured DNL was 64 dB and was controlled solely by traffic on I-580. At the residence on Midway Road, the measured DNL was 61 dB, also controlled by traffic from I-580 and I-205. For the onsite receptor, two short-term measurements were conducted at the existing double-wide mobile home. The average A-weighted noise level

during each measurement was 58 dB due to traffic noise on I-580. Assuming the dominant noise source over a 24-hour period is traffic, the estimated DNL at this receptor would be 63 dB.

3.12.4 Impacts Analysis

This section describes the criteria for determining the significance of Project impacts, identifies topics that were dismissed from further analysis, and identifies the noise impacts that would result from construction and operation of the Proposed Project.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant noise impact if it would:

- a) Generation of a substantial temporary or permanent increase in ambient noise levels near the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b) Generation of excessive groundborne vibration or groundborne noise levels.

Methodology

Potential noise and vibration impacts as a result of temporary construction and permanent operation activities at the Proposed Project were evaluated to determine if they would conflict with the Alameda County Noise Ordinance. Typically, if construction of the Proposed Project would occur during the noise-sensitive hours or if operation of the Proposed Project would result in long-term noise levels that exceed Alameda County's applicable noise standards, then a project would result in an adverse noise impact.

Impacts and Mitigation Measures

This section identifies the noise impacts that would result from construction and operation of the Proposed Project.

Impact NO-1: Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity during Construction – Less than Significant Impact

For the Proposed Project, which would generate altered noise conditions during Project construction activities, the Alameda County Noise Ordinance (described above) is the applicable local noise standard. Construction activities for the Proposed Project would occur during the daytime, would last between 8 and 10 hours per day, and would not occur during the noise-sensitive hours designated by the County.

Construction activity noise levels associated with the Proposed Project would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. In addition, construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. Development of the compost facility, including construction of the onsite access road, would require the use of heavy construction equipment for site

grading activities. Proposed construction activities by phase are provided in Chapter 2 Project Description.

Equipment anticipated to be used for construction of the Proposed Project would include bulldozers, rubber-tired loaders, trucks with end-dump trailers, a water truck, a road grader, a soil compactor, backhoes, and a crane. The typical noise levels produced by various types of construction equipment are shown in Table 3.12-2.

Table 3.12-2. Typical Noise Levels from Construction Equipment A-weighted Sound Pressure Level, dB re: 20 micropascals

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Truck	88
Air Compressor	81
Grader	85
Dozer	85
Generator	81
Loader	85

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006

The applicant has proposed grading plans, which consist mainly of leveling the site to accommodate buildings, stormwater catchment basins and windrow areas. The nearest residence is located approximately 2,500 feet from the proposed facility. Noise associated with the grading activities would increase the hourly A-weighted noise levels at the nearest residence from the existing range of 58 to 63 dB to approximately 64 dB. The earth removed during grading activities would be taken to other parts of the site and used as fill. Equipment used would include bulldozers, scrapers, loaders, trucks, and similar heavy machinery. The A-weighted noise level from the combined operation of this equipment is estimated to be 90 dB at 50 feet. The majority of the construction grading operations would occur at more than 2,500 feet from the nearest residence. Maximum combined earth-moving equipment noise would be approximately 64 dB at the nearest noise sensitive receptor. For residences located further from the site, construction noise would generate an hourly average A-weighted level less than 60 dB. After grading and paving is completed, compost equipment would be installed and buildings erected. These construction activities would occur 2,500 feet or more from the nearest residence and would generate noise levels less than 55 dB.

Based on the distance between the Proposed Project and sensitive receptors, construction activities are not anticipated to cause groundborne vibration impacts.

Since construction equipment would cause less than a three dB increase in the ambient noise level at any noise-sensitive receptor, increases in ambient noise levels would be less than significant; therefore, no mitigation would be required.

Impact NO-2: Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity due to Operations at the Compost Facility – Less than Significant Impact

Future noises generated by operations at the Proposed Project were estimated by using data measured at another compost facility in the Bay Area. The noise levels were then

projected to the locations of noise-sensitive receivers near the Proposed Project. The contributions from each noise source were combined to determine the total noise emitted from the site. Table 3.12-3 shows the types and numbers of operational equipment anticipated for use onsite.

Table 3.12-3. Operation Equipment

Electric Equipment	Number	Horsepower
Horizontal Grinder	1	500
Organics Mixer	1	75
Aeration Blowers	20	5
Diesel Powered Equipment	Number	Horsepower
Compost Turner	1	540
Trommel Screen	1	50
10-Wheel Dump Trucks	2	200
Wheel Loaders	3	250
Mobile Cover Winder	1	75

The following material discusses the composting processes and the corresponding equipment usage.

Aerated Static Pile

The composting process to be used at the proposed facility is a covered ASP. The process involves three discrete noise-generating equipment items including a pre-screener/horizontal shredder, a trommel screen, and a compost turner (the latter being a mobile, self-powered machine).

The distance between the Project site and the offsite Altamont Pass Road residence is approximately 4,500 feet. At this distance, the projected A-weighted noise level of the combined trommel screen, pre-screener/horizontal shredder, and tumbler assembly would be 39 dB. Similarly, the compost turner is projected to generate an A-weighted noise level of 36 dB.

The distance between the Project site and the offsite Midway Road residence is approximately 6,000 feet. At this distance, the combination of all engine-powered equipment would generate an A-weighted noise level of less than 35 dB. Based on these projections, the combined operation of this engine-powered equipment would have a negligible effect upon the existing noise environment at the two closest noise-sensitive, off-site locations (i.e., the increase in the existing noise level would be a fraction of a dB, a change in loudness that is barely detectable, even under laboratory conditions).

The approximate distance between the future engine-powered composting equipment and the offsite residence is approximately 2,500 feet. At this distance, the projected hourly average, A-weighted noise level of the equipment would be less than 50 dB. Considering that the existing DNL at the offsite residence is 63 dB, the operation of the facility would have no impact on the existing noise environment at this residence.

Air Circulation

In addition to the engine-powered equipment described above, the ASP technique involves a series of small-sized blowers (less than 5 horsepower) to help circulate air through the composting piles. It is anticipated that approximately 32x, blowers will be used at the site, one for each aerated compost pile, and would operate 80 percent of the time.

The A-weighted noise level generated by each blower is estimated to be 75 dB at five feet. This information was corroborated by independent calculations based on generic blower noise data; thus the blower noise level is calculated to be 40 dB when projected to a 500-foot distance.

The blowers are also estimated to generate a noise level of 30 dB at the offsite residence, assuming the closest blower is located at least 2,000 feet away. The projected fan noise level at the closest offsite residence (Altamont Pass Road residence) is also less than 30 dB, well below the existing background noise level. Therefore, operation of the blowers would not have an acoustical impact on either the onsite or offsite residential receptors.

Movement of Materials

Another Project-related noise source is the diesel-powered bulldozer that would be used to move material within the compost area. Noise levels generated by the bulldozer during operation would be similar to levels generated during construction. Assuming a worst-case scenario for operation activities, the bulldozer would generate an A-weighted noise level of 90 dB at 50 feet. The bulldozer would be operating approximately 3,000 feet from the nearest receptor (the offsite residence), resulting in a projected noise level of less than 55 dB. Given the intermittent operational nature of the bulldozer's diesel engine, the increase in the hourly average, A-weighted noise level is estimated to be less than one dB at this receptor.

Summary

Composting operations are projected to generate an hourly average, A-weighted noise level of 39 dB at the nearest offsite residence with all equipment operating. Since the operational noise level near the site would be significantly less than the existing ambient noise levels, the Proposed Project would not cause a permanent increase in environmental noise. In summary, no further noise mitigation would be required since there would be no impact.

Impact NO-3: Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity due to Traffic Volume Associated with the Project – Less than Significant Impact

A new potential noise source for the nearby residences would be the haul truck traffic along Jess Ranch Road, which would enter and depart the Proposed Project near the existing maintenance facility. At the point of entry to the facility access road, the trucks would be within 500 feet of the nearest sensitive receptor, the offsite residence. The peak haul truck volume is estimated to be 10 per hour (based on the ultimate material flow of 1,000 TPD). Based on information from the United States Traffic Noise Model, the hourly average, A-weighted noise level generated by the haul trucks is estimated to be

less than 52 dB at the offsite residence. This projection is 6 dB below the existing hourly average noise level generated by vehicular traffic on I-580.

The Proposed Project would contribute a negligible amount of traffic to I-580. Peak haul truck volume was estimated to be 10 per hour (based on the ultimate material flow of 1,000 TPD). At the time the noise assessment was prepared, peak hourly traffic on I-580 was estimated to be 7,700 vehicles with a daily volume of 140,000 vehicles. The Proposed Project's traffic would represent approximately 0.25 percent of the peak hour traffic on I-580 and less than 0.3 percent of the total daily traffic. The increase in freeway noise associated with the Proposed Project would be substantially less than one dB and, therefore, imperceptible. The noise caused by traffic associated with the Proposed Project would not exceed the existing noise environment by more than a fraction of a decibel, which is similar to the significance threshold of three dB. In summary, no further noise mitigation would be required since there would be no impact.

Impact No-4: Generation of excessive groundborne vibration or groundborne noise levels – Less than Significant

As discussed under Impact No-1, activities with the potential to cause groundborne vibration and groundborne noise during construction include grading to accommodate building and stormwater catchment basins and use of bulldozers, scrapers, loaders, trucks, and similar heavy equipment. Composting operations are projected to generate an hourly average, A-weighted noise level of 39 dB at the nearest offsite residence with all equipment operating, which would be significantly less than the existing ambient noise levels. Additionally, based on the distance between the Proposed Project and sensitive receptors, construction and operational activities are not anticipated to cause groundborne vibration or noise impacts, and impacts would be less than significant.

3.13 Public Services and Utilities

This section discusses impacts related to public services and utilities, including water, wastewater, solid waste, electricity, natural gas, telecommunications, police and fire protection, schools, parks, and libraries. Stormwater infrastructure is discussed below, while water quality for stormwater drainage is discussed in further detail in Section 3.7 Hydrology and Water Quality.

3.13.1 Regulatory Framework

Regulations governing the Project Area have been established and are enforced at both the State level and the local or regional level; these are described in detail below.

Federal

No specific federal regulations related to aesthetics are applicable to the Proposed Project.

State

California laws related to waste management include all of the CCR pertinent to CalRecycle. Current CalRecycle regulations pertaining to nonhazardous waste management are outlined in 14 CCR Division 7. Chapter 3.1 of Title 14 outlines compostable materials handling operations and facilities regulatory requirements that would be applicable to the Proposed Project (CalRecycle 2015). Further discussion of Title 14 and compost facility-related regulations is provided in Section 3.6 Hazards and Human Health.

Local

The Public Services and Facilities Element of the Alameda County ECAP includes goals and policies intended to ensure adequate provision of public services and utilities to the East County area (Alameda County 2000). Applicable goals and policies are outlined below.

Water

Goal: To provide an adequate, reliable, efficient, safe, and cost-effective water supply to the residents, businesses, institutions, and agricultural uses in East County.

Policy 253: The County shall approve new development only upon verification that an adequate, long-term, sustainable, clearly identified water supply will be provided to serve the development, including in times of drought.

Sewer

Goal: To provide efficient and cost-effective sewer facilities and services.

Policy 268: The County shall continue to pursue adequate sewage export capacity for unincorporated residential, commercial, and industrial development, consistent with the ECAP, through participation in the Tri-Valley Wastewater Authority or by other means.

Storm Drainage and Flood Control

Goal: To provide efficient, cost-effective, and environmentally sound storm drainage and flood control facilities.

Policy 277: The County shall work with the Alameda County Flood Control and Water Conservation District (Zone 7) to provide for development of adequate storm drainage and flood control systems to serve existing and future development.

Policy 280: The County shall regulate new development on a case-by-case basis to ensure that, when appropriate, project storm drainage facilities shall be designed so that peak rate flow of storm water from new development will not exceed the rate of runoff from the site in its undeveloped state.

Solid Waste Facilities

Goal: To ensure the safe and efficient disposal or recycling of wastes.

Policy 248: The County shall promote use of solid waste source reduction, recycling, composting, and environmentally safe transformation of wastes.

Police, Fire, and Emergency Medical Services

Goal: To ensure the prompt and efficient provision of police, fire, and emergency medical facility and service needs.

Policy 241: The County shall provide effective law enforcement, fire, and emergency medical services to unincorporated areas.

Policy 244: The County shall require that new developments are designed to maximize safety and security and minimize fire hazard risks to life and property.

3.13.2 Environmental Setting

This subsection describes the existing conditions in the Project area as they pertain to public services and utilities, including descriptions of the following services: water; wastewater; solid waste; electricity and natural gas; police and fire protection; and schools, parks, and public facilities.

Water

The Project site and vicinity are not currently served by a public water supplier. The Project site and surrounding properties within Alameda County obtain water from private groundwater wells.

Wastewater

The Project site and vicinity are not served by municipal wastewater systems. The Project site and surrounding properties within Alameda County utilize onsite septic systems.

Solid Waste

Within Alameda County are two permitted, active landfills: the Vasco Road Landfill and the Altamont Landfill. The Vasco Road Landfill is located at 4001 North Vasco Road in Livermore, and is estimated to have sufficient capacity through 2022 (CalRecycle 2015). The Altamont Landfill is located at 10840 Altamont Pass Road in Livermore, and is estimated to have sufficient capacity through 2025 (CalRecycle 2015).

Electricity, Natural Gas, and Telecommunications

Electrical and natural gas service in Alameda County, including the Project site, are provided by Pacific Gas & Electric (PG&E). Propane gas delivery and telecommunications services are provided by various private providers.

Police and Fire Protection

The Alameda County Sheriff's Office provides law enforcement services to unincorporated areas of Alameda County, including the Project site (Alameda County Sheriff's Office 2015). The Alameda County Fire Department provides emergency medical services to unincorporated areas of Alameda County, including the Project Site (Alameda County Fire Department 2015). Cal Fire has responsibility for fire protection and suppression activities within State-designated high fire hazard severity zones known as SRAs. The Project site is located within an SRA (Cal Fire 2015).

Schools, Parks, and Public Facilities

There are no schools, parks, or libraries near the Project site. The nearest schools, parks, and libraries are generally located either to the west of the Project site in the City of Livermore (8 miles away), or to the east of the Project site in the Cities of Mountain House and Tracy (more than 8 miles away).

3.13.3 Impacts Analysis

This section describes the criteria for determining the significance of impacts, identifies topics that were dismissed from further analysis, and identifies the public services and utilities impacts that would result from construction and operation of the Proposed Project.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant public services and/or utilities impact if it would:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection;

Police protection;

Schools;

Parks; or

Other public facilities.

For evaluation of potential utilities and service systems impacts, this analysis also considered whether or not the Proposed Project would:

- b) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- c) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- d) 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;
- e) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure;
- f) Negatively impact the provisions of solid waste services or impair the attainment of solid waste reduction goals; or
- g) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Topics Dismissed in the Initial Study Checklist

As outlined in Section 3.0, Resources Eliminated from Further Analysis, the NOP IS checklist dismissed one utilities and service systems criteria from further analysis because the Proposed Project would not include new housing and would not generate students or increase demands for schools, parks, or other public facilities (item a). The NOP IS determined that the Project would not be served by public water supply or wastewater treatment infrastructure (items c and dc above), and would be required to comply with CalRecycle regulations regarding composting operations found at Title 14. However, items d and f are retained in the analysis.

Impacts and Mitigation Measures

This section identifies all public services and utilities impacts resulting from the construction and operation of the Proposed Project and provides proposed mitigation measures to minimize impacts.

Impact PSU-1: Increase demand for police and fire protection and emergency medical services – Less than Significant Impact

Construction and operation of the Proposed Project is not anticipated to increase the demand for police protection and emergency medical services substantially above current conditions, and is not anticipated to require the construction or alteration of police protection facilities. The Proposed Project is generally consistent with the land use designations and zoning for the site. Workers that would be employed during construction and operation of the Proposed Project are anticipated to reside locally or regionally, and therefore would be included with the existing regional demand for police protection and emergency medical services. Therefore, impacts on police protection and emergency medical services would be less than significant and no mitigation would be required.

Construction and operation of the Proposed Project is not anticipated to increase the demand for fire protection services substantially above current conditions, and is not anticipated to require the construction or alteration of fire protection facilities. Composting facilities in California are required to comply with CalRecycle compost facility regulations (Title 14, Chapter 3.1), which requires compost operations to provide fire prevention, protection and control measures.

Given the nature of the facility, storing large quantities of potentially combustible materials, site specific fire mitigations and safety features would likely be developed as part of the Conditional Use Permit process and the Solid Waste Facility Permit process. Fire prevention controls incorporated into the Proposed Project would also reduce risks from fire to less than significant. Wildland fire risks are discussed in further detail in Section 3.6 Hazards and Human Health. Therefore, impacts on fire protection services would be less than significant and no mitigation would be required.

Impact PSU-2: Require a sufficient water supply to serve the Project site – Less than Significant Impact

Water is needed for the Proposed Project for basic sanitary services, fire protection, pile moisture content, and dust control. The volume of water needed for the composting process depends on the raw materials as well as climate. The required water volume to serve the Proposed Project would need to accommodate an annual throughput of up to 300,000 tons of material.

Although the quantity of water needed can vary depending on a variety of issues such as material feedstock moisture content, wind, the use of covers, etc. a facility of this size would require approximately 10,000-25,000 gallons per day. In addition, a 120,000 gallon water tank for fire suppression purposes would be located on site. Water demands for the Proposed Project are based on estimates from similar uses in other settings, as well as use of standard professional practices for estimating water needs. Estimates were determined based off of assumed feedstock moisture content and the amount of water

needed to keep the compost piles sufficiently moist for the composting process. The numbers were compared to other compost facility operations and found to be consistent with those facilities.

The primary water supply for the Proposed Project would be water supplied by the BBID. BBID would supply water from their canal located approximately 2.4 miles to the north, in Contra Costa County. The water would be delivered to the facility utilizing water tanker trucks.

In the event that BBID does not have water available due to extreme drought conditions, recycled water is available from the City of Tracy's wastewater treatment plant. The treatment plant is located approximately 8 miles east of the proposed facility. The City currently produces approximately 7 million gallons per day of recycled water. In addition, the City has recently been approved for an \$18 million grant to expand its recycled water infrastructure and pipelines to the western portion of the city. Once the pipeline expansion is completed (2020) recycled water would be available for the Project approximately 4 miles from the proposed facility.

During the three wettest winter months of the year, catchment basins constructed on the site as part of the Proposed Project's stormwater control system could provide the facility's water supply. Collected and stored stormwater in the catchment basins would be aerated and treated/conditioned prior to its reuse for onsite purposes. It is anticipated that all of the water used on site would be directed to and retained within the catchment basins. The combined catchment basin capacity for the Proposed Project is preliminarily sized at approximately 20 acre-feet. The estimated capacity is necessary to support the average 12-month cyclical water demands of the Proposed Project, as augmented by the BBID canal water supply.

An alternate water supply source would include the existing well that currently supplies water for cattle on the site, the use of which would be limited to employee domestic uses only. The estimated volume of water currently produced by the well is approximately five gallons per minute.

Although the Project site is not served by a public water supply, adequate water supply sources and conservation/reuse methods are available to serve the Proposed Project. Therefore, impacts related to sufficient water supplies to serve the Proposed Project would be less than significant and no mitigation would be required.

Impact PSU-3: Generate wastewater requiring treatment – Less than Significant Impact

Primary sources of wastewater generated by the Proposed Project would be leachate generated by the composting process; truck washout wastewater; and any wastewater from sanitation uses. To provide for flexibility in ultimate design and operation of the Project, combined systems are proposed to address treatment/disposal of wastewater resulting from truck washing and leachate generated by the active composting processes.

All active compost leachate and truck washing/area wash down wastewater would be held onsite for use in irrigation of the compost piles. The preferred operating mode under this general concept provides for recycling and reuse of wastewater in operations. Any

remaining wastewater not recycled within the Project site would be temporarily held onsite for periodic removal and transportation to an approved, offsite wastewater treatment facility.

Wastewater would also be generated by sanitation uses, i.e., toilets, employee washrooms, etc. Wastewater from these activities would be treated by an onsite septic system. Solids from the septic tank would be periodically removed and transported to a wastewater treatment facility by a contract operator. All proposed wastewater treatment and disposal systems would be reviewed and approved by the Alameda County Department of Environmental Health.

The Proposed Project is not anticipated to generate a significant amount of wastewater that would be treated by public wastewater treatment facilities, and as such, is not anticipated to result in a determination by the wastewater treatment provider which may serve the Proposed Project that it does not have adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments. Further, the wastewater generated by the Proposed Project is not anticipated to exceed the RWQCB wastewater treatment requirements. This impact would be less than significant. No mitigation would be required.

Impact PSU-4: Generate stormwater drainage requiring the construction of drainage facilities – Less than Significant Impact

All Project area stormwater runoff would be diverted and contained onsite in catchment basins, thereby preventing any offsite discharges. Water in the catchment basins would be reapplied to the active compost piles or evaporated. Provisions would also be made to recycle any leachate generated for process water makeup (including biofilter irrigation), dust control, or other onsite irrigation uses.

A total of up to two lined catchment basins would be constructed to accommodate a 100-year storm event. The total combined capacity of the ponds would be approximately 20 acre-feet. A perimeter drainage ditch would collect runoff from the facility and direct it to the catchment basins. Drainage ditches would be designed to convey all precipitation and runoff from a 25-year, 24-hour peak storm event. Ditches would be properly sloped to prevent ponding and kept free and clear of debris to allow for continuous flow of liquid. Ditches would be inspected and cleaned out prior to the rainy season every year and managed to prevent the overtopping or overflow of liquids during storm events. A Water Management Plan would be prepared and provided to the RWQCB for review and approval; the plan would describe, among other things, how water in the ponds would be managed to prevent discharge.

The Proposed Project would also include a buffer berm around the entire perimeter of the drainage ditches to ensure that stormwater, process water, and leachate be contained onsite. Berms would prevent run-on to and runoff from a 25-year, 24-hour peak flow storm event.

Although the Proposed Project would generate a new source of stormwater requiring drainage, stormwater runoff can be managed through careful facility design and operation. Water quality for stormwater drainage is discussed in further detail in Section 3.7 Hydrology and Water Quality. In the case of the Proposed Project, construction of

onsite catchment basins and stormwater drainage facilities would reduce any potential impact on offsite public stormwater drainage facilities. Therefore, the Proposed Project's impact related to construction of new stormwater drainage facilities would be less than significant and no mitigation would be required.

Impact PSU-5: Generate solid waste requiring landfill disposal – Less than Significant Impact

The Proposed Project's primary source of solid waste requiring disposal would be residual waste which cannot be composted. Because these wastes are currently sent to regional landfills, they do not represent a new waste stream. However, employees would generate a minor amount of new waste which would require disposal. Both of the Alameda County active landfills have capacity through at least 2022, and this minor addition to the waste stream is not anticipated to result in exceeding capacity at either landfill. Additionally, solid waste generated by the Proposed Project would not be in excess of State or local standards. Therefore, this impact would be less than significant and no mitigation would be required.

Impact PSU-6: Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities – Less than Significant Impact

Construction and operation of the Proposed Project is not anticipated to require or result in the relocation or construction of new or expanded electric power natural gas, or telecommunications facilities. The Proposed Project would be constructed entirely on a field zoned for agricultural purposes, where electric power, natural gas, and telecommunications facilities are not present. As a result, none would be disturbed or relocated as a result of implementation of the Project.

Electric power and natural gas would be required on a temporary, intermittent basis during construction during use of construction vehicles and equipment. The Proposed Project would also require electric, natural gas and telecommunications services during operations. The Proposed Project would utilize various pieces of equipment in order to process the organic material and transport it through the series of composting processes. Electric equipment utilized during operations includes a horizontal grinder, organics mixers, and aeration blowers. The composting facility would be operated 24 hours per day and 7 days per week; however most composting operations would occur during daylight hours. Electric power and natural gas services are provided by PG&E and the Proposed Project would not independently stress these resources, requiring new or expanded facilities. Similarly, the Proposed Project would not independently stress telecommunications services provided by private companies. As a result, impacts on electric power, natural gas, and telecommunications facilities would be less than significant.

3.14 Transportation and Circulation

This section presents the current transportation network and regulatory setting and summarizes the effects on the existing and future expected circulation system that would result from the Proposed Project. This section refers to the previous traffic impact studies of Jess Ranch Composting Facility conducted by Hexagon Transportation Consultants, Inc. summarized in Jess Ranch Composting Facility Traffic Impact Assessment as presented in Appendix G.

3.14.1 Regulatory Framework

The following is a summary of State and local regulations that apply to the Proposed Project within the Project study area. Highways fall under the jurisdiction of Caltrans, while most roads within the study area are under the jurisdiction of Alameda County.

State

State Senate Bill 743

As described above in Section A.2, Environmental Setting, Travel Conditions under vehicle miles traveled (VMT), SB 743 (Steinberg 2013), which added Public Resources Code Section 21099 to CEQA, proposed a change in how transportation impacts are analyzed in transit priority areas to better align local environmental review with statewide objectives. These alignment considerations include reductions to GHG emissions, encouragement of infill mixed-use development in designated priority development areas, reductions of regional sprawl land development, and reductions in mobile source VMT. As it relates to regional sprawl, SB 743 suggests that the traditional LOS analysis methods do not reflect the true traffic operations condition and encourages sprawl. Thus, SB 743 recommends VMT as a more adequate measure of effectiveness to support higher urban density. In addition, SB 743 supports and complements the following State Bills and Executive Orders relevant to this Proposed Project:

- AB 32 requires statewide GHG emission reductions to be below 1990 levels by 2035 according to SB 375 and ARB established GHG emission reduction targets for Metropolitan Planning Organizations to achieve in Regional Transportation Plans and Sustainable Community Strategies, including targets for the largest Metropolitan Planning Organizations ranging from 13 percent to 16 percent reductions
- SB 391 requires that the California Transportation Plan supports an 80 percent reduction in GHG emissions below 1990 levels by 2050
- Executive Order B-30-15 sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030
- Executive Order S-3-05 sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050
- Executive Order B-16-12 specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

In November 2017, California Governor's Office of Planning and Research released the final proposed update to CEQA Guidelines consistent with SB 743, recommending VMT, both within and outside of transit priority areas, as the most appropriate metric of transportation impact. This metric will align with local environmental review under CEQA and with California's long-term GHG emissions reduction goals.

Regional

The ACTC, Alameda County Transportation Authority, prepares, updates, and monitors the Congestion Management Program (CMP) including overseeing the County's regional routes of significance functions in its jurisdictions and unincorporated areas. In the CMP process, ACTC requires local jurisdictions to consistently evaluate and monitor the impact of proposed land use changes (i.e., General Plan amendments, and developments with trip-generating potential of more than 100 new peak-hour vehicle trips) and define any resulting deficiencies on the regional transportation system.

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency in the San Francisco Bay Area that functions as both the state-mandated regional transportation planning agency and the federally mandated Metropolitan Planning Organization for the region. MTC regularly updates the Regional Transportation Plan, which is a comprehensive blueprint for the development of regional transportation facilities, and screens requests from local agencies for state and federal grants for transportation projects to determine their compatibility with the plan and consistency with the regional plans. Transportation 2035, the most recent version of MTC's Regional Transportation Plan, was adopted in April of 2009. MTC is responsible for updating and prioritizing projects within the Regional Transportation Improvement Program.

The Tri-Valley Transportation Council is a joint council of San Ramon, Dublin, Pleasanton, Livermore, Danville, and the unincorporated areas of Alameda and Contra Costa Counties within the Tri-Valley region founded in 1991. The Tri-Valley Transportation Council oversees the expenditures of Tri-Valley Transportation Development Funds and evaluates the impacts of projected land uses on regional transportation infrastructure in this area. The Tri-Valley Transportation Council completed the Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance earlier in 2018 to establish shared traffic service objectives and present a list of transportation improvement project.

Local

The Alameda County Community Development Agency's ECAP provides guidelines for goals and policies for the future development within the Project area. The Transportation Systems chapter of the ECAP identifies the overarching goal of providing a multimodal transportation system that safely moves both people and goods regionally. The goals and policies listed in the area plan are consistent with the Alameda County General Plan. The following policies from this Transportation Systems chapter are of high significance to the Project:

- **Policy 183** – The County shall seek to minimize traffic congestion levels throughout the East County Street and Highway System
- **Policy 184** – The County shall seek to minimize the total number of Average Daily Traffic trips throughout East County
- **Policy 185** – The County shall seek to minimize peak hour trips by exploring new methods that would discourage peak hour commuting and single vehicle occupancy trips
- **Policy 194** – The County shall require traffic impact studies for all detailed development plans (e.g., specific plans) and major projects to determine compliance with Level of Service standards.

3.14.2 Environmental Setting

This section describes the existing conditions for the major transportation facilities near the Project site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Regional Setting

Regional vehicular access to and from the Project site is provided primarily by I-580. Figures 2.3-1, 2.3-2, and 2.4-3 show Project access routes and local roads and highways in the vicinity of the Project Area. Congestion in this area has increased over the several decades and is expected to grow into the future as Central Valley cities such as Tracy and Manteca continue to expand. This congestion has affected the regional freeway system, with impacts on commuters and other trip purposes traveling to and from neighboring cities including Livermore and Manteca, as well as truck movements that connect to and from the regional freeways. The facility is summarized below:

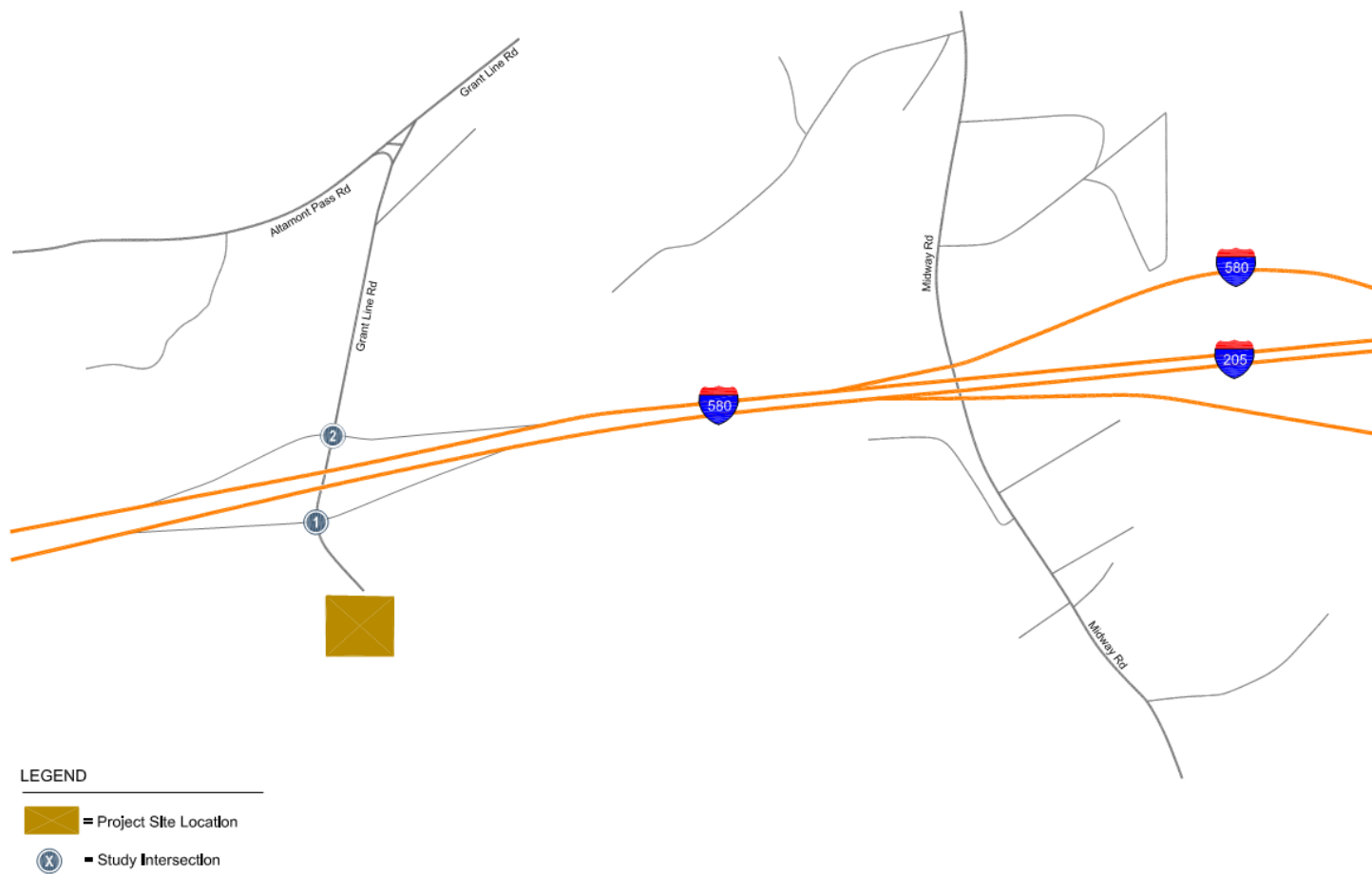
- I-580 is a primarily eight-lane freeway that extends from United States Highway 101 in San Rafael (Marin County, California) to Interstate 5 (I-5) in Tracy through the East Bay Cities of Richmond, Berkeley, Oakland, San Leandro, and the Tri-Valley Cities of Dublin, Pleasanton, and Livermore. I-580, an east/west freeway adjacent to the study area through Altamont Pass, merges with Interstate 205 (I-205) and provides a key regional linkage from East Bay and Tri-Valley cities to destinations in San Joaquin County. To the east, I-580 provides a key linkage to I-5, which functions as part of the backbone of the United States west coast cities. Direct access to the Project site is provided via the I-580 interchange with Grant Line Road.

Local Setting

- The Proposed Project will be located near Grant Line Road south of the I-580/Grant Line Road interchange in the unincorporated area of Alameda County. The local transportation network consists of two intersections, one to the north of I-580 and one to the south of I-580, both on Grant Line Road. Both intersections provide direct access to I-580. Grant Line Road, which becomes Jess Ranch Road closer to the Project, is the only local access route to the Proposed Project (Figure 2.4-3). The characteristics of Grant Line Road and Jess Ranch Road are presented below:

Figure 3.14-1. Site Location and Study Intersections

Jess Ranch



- **Grant Line Road** is a two-lane north-south roadway located to the north of the Project. The street becomes Jess Ranch Road to the south, merges with Altamont Pass Road to the north and provides access to the Mountain House residential development located approximately 2.5 miles to the northeast of the Project. The Interchange on this roadway provides access to and from I-580 in both westbound and eastbound directions.
- **Jess Ranch Road** is an unmarked north-south roadway located to the north of the Proposed Project. This roadway becomes Grant Line Road to the north and is a cul-de-sac to the south. There is a continued gated access route to the south and the roadway extends beyond the gate to other existing facilities to support the windmills on the hill. The field observation revealed that many vehicles were parked on both sides of this street near the Proposed Project. The roadway will provide direct access to the Proposed Project site.

Travel Conditions

This section presents the transportation system impact analysis of the Proposed Project including analyses of VMT, intersection and roadway level of service (LOS), and pedestrian, bicycle, and transit conditions.

Vehicle Miles Traveled

VMT refers to the amount of distance of automobile travel attributable to any given project. In 2013, Senate Bill 743 (SB 743), was codified in Public Resources Code Section 21099 to require a new method of transportation impact analysis under CEQA Guidelines. SB 743 suggests that the traditional LOS analysis methods do not reflect the true traffic operations condition and encourages sprawl. Thus, SB 743 recommends VMT as a more adequate measure of effectiveness to support higher urban density. This Bill was signed to change the way that transportation impacts are analyzed in transit priority areas under CEQA to better align local environmental review with statewide objectives to reduce GHG emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce VMT in California.

The MTC Travel Model One was used to evaluate the VMT impacts of this Project. The MTC Travel Model One is an activity-based travel demand model that contains travel demand and VMT results for each of the 1,454 Traffic Analysis Zones (TAZs) in the entire San Francisco Bay Area region and adjacent regions in northern California.

The travel behavior from MTC Travel Model One includes the following inputs:

- Socioeconomic data developed by ABAG
- Population data was created using the 2000 United States Census and modified using the open source PopSyn software
- Zonal accessibility measures for Study Area destinations of interest
- Travel characteristics and vehicle ownership rates derived from the 2000 Bay Area Travel Survey

- Observed vehicle counts and transit boardings.

The Proposed Project is located in the MTC Model One's TAZ 715 which covers the east side of Livermore and the adjacent unincorporated area. TAZs are used to represent geography and geographically specific transportation activities in the travel demand modeling process. TAZ 715 mostly exhibits an industrial land use that includes major facilities such as Lawrence Livermore National Laboratory which has more than 6,000 employees. Table 3.14-1 summarizes the regional and TAZ 715 total daily employee VMT as presented in the MTC Travel Model One. The Project is located in the rural unincorporated area of TAZ 715, and therefore, Project's VMT impacts were evaluated for this zone.

In 2020, based on projections from the MTC Travel Model One, there will be 790,842 employees each travelling 24.6 miles per day in Alameda County and 21,890 employees each travelling 33.8 miles daily in TAZ 715. Employees contribute to 19,417,195 daily VMT in Alameda County and 739,989 daily VMT in TAZ 715 in 2020. In 2040, there will be 900,794 employees projected to each be travelling 22.7 miles daily in Alameda County and 25,114 employees each travelling 31.6 miles daily in TAZ 715. Employees will contribute to 20,472,102 daily VMT in Alameda County and 793,650 daily VMT in TAZ 715 in 2040. A significant impact will be identified if the Proposed Project generated VMT increases of the daily employee VMT of either Alameda County or TAZ 715 by more than 5 percent.

Table 3.14-1. 2020 and 2040 Travel Model One Employee VMT Information of Alameda County and TAZ 715

Zone	Year	VMT per Employee	Number of Employee	Total Daily Employee VMT
Alameda County	2020	24.6	790,842	19,417,195
	2040	22.7	900,794	20,472,102
TAZ 715	2020	33.8	21,890	739,989
	2040	31.6	25,114	793,650

Intersection Operations Analysis

Unsignalized and signalized intersection operations analysis was conducted for the two study area intersections (one to the north of I-580 and one to the south of I-580, both on Grant Line Road) using the operational analysis procedure outlined in the Highway Capacity Manual and implemented the TRAFFIX traffic analysis software. These commonly accepted methods were implemented to grade intersection operations from LOS A (best operating) through LOS F (worst operating), characterized by the average stopped delay per vehicle. LOS is a measure of a driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time. Table 3.14-2 presents the LOS definition and criteria used for the analysis of unsignalized intersections.

Table 3.14-3 presents the LOS definition and criteria used for the analysis of signalized intersections. Alameda County considers an intersection LOS D or better acceptable, with LOS E being acceptable if the intersection is on a CMP-designated roadway.

Since both study area intersections are interchanges with I-580, which is a CMP designated Tier 1 facility, an impact will be identified if the Project generated traffic degraded the intersection operations from LOS E (or better) to LOS F. If the intersection was already operating at LOS F without the Project, an impact will be identified if the Proposed Project generated traffic increased the intersection delay by four or more seconds.

Table 3.14-2. Definition of Unsignalized Intersection LOS

Level of Service	Description	Average Total Delay per Vehicle (seconds)
A	Operations with very low delay occurring with favorable progression.	0-10
B	Operations with low delay occurring with good progression.	>10 – 15
C	Operation with average delays resulting from fair progression.	>15 – 25
D	Operations with longer delays due to a combination of unfavorable progression or high v/c ratios.	>25 – 35
E	Operations with high delay values indicating poor progression and high v/c ratios. This is considered to be the limit of acceptable delay.	>35– 50
F	Operations with delays unacceptable to most drivers occurring due to oversaturation and poor progression.	>50

Source: Transportation Research Board, 2000 Highway Capacity Manual, p. 17-2

Table 3.14-3. Definition of Signalized Intersection LOS

Level of Service	Description	Average Total Delay per Vehicle (seconds)
A	Signalized progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	0 - 10
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	>10 - 20
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicle stopping is significant, though may still pass through the intersection without stopping.	>20 - 35
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/c) ratios. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (v/c) ratios. Individual cycle failures occur frequently.	>55 – 80

F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	>80
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Source: Transportation Research Board, 2000 Highway Capacity Manual, p. 10-16

Existing peak hour conditions and impacts were identified on the local roadway network for the following two intersections in the study area on Grant Line Road as illustrated in Figure 3.14-2:

- 1) Grant Line Road and I-580 EB
- 2) Grant Line Road and I-580 WB

The study area intersections represent the traffic route to and from the Proposed Project site, potential localized traffic operation impacts, or locations that may be affected by diverted traffic bypassing congestion on the I-580 mainline.

The 2018 existing volumes were collected on October 9, 2018, during the AM peak period from 7:00 AM to 9:00 AM, and the PM peak period from 4:00 PM to 6:00PM. The AM peak hour was determined to be 8:00 AM to 9:00 AM and the PM peak hour was determined to be 4:30 PM to 5:30 PM. Appendix G provides the detailed information of traffic counts.

Table 3.14-4 presents a summary of Intersection LOS during the AM and PM peak hours in 2018 Existing Conditions. Both intersections are unsignalized in the 2018 Existing Condition. The Grant Line Road and I-580 EB intersection currently operates at LOS A during the AM peak hour but operates at unacceptable LOS F, with a 133 second delay, during the PM peak hour. The high volumes coming from the I-580 off ramp, with vehicles attempting to find gaps in the uncontrolled southbound traffic, contributes to the intersection delay. No spillback on the I-580 EB exit ramp to the I-580 mainline was observed.

The Grant Line Road and I-580 WB intersection currently operates at LOS D during the AM peak hour and LOS A during the PM peak hour. The LOS D operations during the AM peak hour is due to the increased westbound volume on the I-580 off-ramp, which consisted of 50 percent right turning vehicles and 50 percent through vehicles re-entering the freeway. Field observations show that the drivers are using this intersection to bypass traffic congestion on the I-580 WB mainline during the AM peak hour. The detailed LOS calculation sheets are shown in Appendix G.

Figure 3.14-2. 2018 Existing Lane Configurations



Table 3.14-4. 2018 Existing Intersection Level of Service

Intersection		Peak Hour	Average Delay	LOS
1	Grant Line Road and I-580 EB	AM	8.6	A
		PM	133.4	F
2	Grant Line Road and I-580 WB	AM	34.3	D
		PM	0.9	A

Freeway Segment Analysis

Freeway segment operations analysis was conducted for two freeway segments on I-580 using average travel speeds for 2018 Existing Conditions. This method has been traditionally applied to assess roadway segment operations. The ACTC uses travel time information collected by floating car surveys and commercial speed data to formulate average speeds of traffic for specific roadways and roadway segments. The average speed is then utilized to define grades for freeway segment operations from LOS A (best operating) to LOS F (worst operating).

Freeway segment operations analysis for Future Conditions was conducted using the volume-to-capacity (v/c) ratios due limited reliable information to estimate the future average travel speeds. For the v/c method, 2,000 vehicle per hour per lane was used as the capacity for freeway mixed-flow lane segments. The acceptable LOS standard for both segments on I-580 is LOS E, because I-580 from I-680 to I-205 is classified as a Tier 1 CMP network roadway. The Proposed Project would have an impact if it degrades the segment from LOS E (or better) to LOS F. If the segment was already operating at LOS F, then the Proposed Project would have an impact if it increases the v/c ratio of the segment by 0.01 or more. Table 3.14-5 presents the LOS definition and criteria used for the analysis of freeway segments.

Table 3.14-5. Definition of Freeway Level of Service Based on Travel Speed and v/c Ratio

Level of Service	Description	Average Travel Speed (mph)	V/C ratio	Maximum Traffic volume (vphpl)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≥ 60	0.35	700
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	≥ 55	0.58	1000
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	≥ 49	0.75	1500

Level of Service	Description	Average Travel Speed (mph)	V/C ratio	Maximum Traffic volume (vphpl)
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and driver experiences reduced physical and psychological comfort levels.	>=41	0.9	1800
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	>=30	1	2000
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	<30	Variable	-

Source: Highway Capacity Manual (HCM) 1985

Table 3.14-6 presents a summary of existing AM and PM peak hour LOS for each freeway segment in the study area. Two freeway segments in this study area include I-580 from North Flynn Road to Grant Line Road, and I-580 from Grant Line Road to I-205 in both eastbound and westbound directions. The average travel speed information on the freeway mainline was obtained from the Alameda County CMP 2018 Monitoring Report. The traffic volumes on the freeway mainline were obtained by observed traffic counts conducted in October 2018 by Hexagon Transportation Consultants. The data summarized in Table 3.14-6 shows a peak directional travel pattern on I-580 segments where heavier traffic is observed in the westbound direction during the AM peak hour and in the eastbound direction during the PM peak hour. In the 2018 Existing Condition, the following segment operates at LOS F:

I-580 WB from I-205 to Grant Line Road during the AM peak hour.

Table 3.14-6. 2018 Existing Freeway Segment Level of Service

Segment	Peak Hour	Average Speed	LOS	# of Lanes	Volume
I-580 EB - North Flynn Road to Grant Line Road	AM	69.2	A	4	2,875
	PM	33.7	E	4	9,070
I-580 EB – Grant Line Road to I-205	AM	66.8	A	4	2,854
	PM	58.8	B	4	9,345
I-580 WB – I-205 to Grant Line Road	AM	19.2	F	5	9,525
	PM	69.3	A	5	3,631
I-580 WB – Grant Line Road to North Flynn Road	AM	33.8	E	4	9,211
	PM	66.8	A	4	3,676

Pedestrian, Bicycle, and Transit Travel Condition

There are currently no residential land uses within a 2-mile radius of the Project site and the only regional access to the Project site is by the I-580 and West Grant Road which merges with Altamont Pass Road. The nearest cities to the Proposed Project are Tracy

and Livermore, both more than 6 miles from the Project site. The Mountain House residential development is located approximately 2.5 miles northeast of the Proposed Project and is the nearest residential development to the Proposed Project.

In addition, there are no existing or planned sidewalks or trails that connect to the Project site from nearby cities. There are no existing or planned bike routes that connect to the Project site from nearby cities, but Altamont Pass Road is occasionally used by cyclists as a recreational route. There is no direct transit access to the Project site. Tri Delta Transit and San Joaquin Regional Transit District operate bus routes on I-580 near the Project site, but there are no bus stops in proximity to the Proposed Project. The closest BART access is located 18 miles west of the Project site at Dublin-Pleasanton BART station. The closest Altamont Commuter Express bus that provides service to San Jose and Stockton is 9 miles west of the Project site in Livermore. The rural and physically isolated characteristics of the Proposed Project strictly limit pedestrian, bicycle, and transit activities in its vicinity.

3.14.3 Impacts Analysis

This section describes the transportation and circulation impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Appendix G of the CEQA Guidelines indicates that the Proposed Project would result in a significant transportation and circulation impact if it would:

- a) Conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths;
- b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1);
- c) For a transportation project, would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(2);
- d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- e) Result in inadequate emergency access.

Threshold of Significance

As documented in this EIR, the Proposed Project would have a significant transportation impact if it has one or more of the following impacts:

- **VMT.** The Proposed Project would increase the daily employee VMT of the TAZ or the County by more than 5 percent.
- **Automobile LOS.** The Proposed Project would degrade the LOS at both unsignalized and signalized intersection from LOS E or better to LOS F. If the

intersection were already LOS F, an impact would be considered significant if the intersection delay would increase by four seconds.

- **Transit Travel Speed.** The Proposed Project would degrade transit speeds by 10 percent or more along transit corridors serving the Project site during peak congestion periods.
- **Pedestrian LOS and Safety.** The Proposed Project would cause the pedestrian LOS to degrade to worse than LOS B at any signalized intersection; if the intersection were already operating worse than LOS B, an impact would be considered significant if the delay at any crosswalk would increase by 10 percent.
- **Bicycle LOS and Safety.** The Proposed Project would cause a bicycle segment LOS to degrade to worse than LOS B; if a street segment were already worse than LOS B, an impact would be considered significant if the bicycle segment LOS score increases by 10 percent or more in value.
- **CMP Roadways (e.g., Regional Routes of Significance).** The Proposed Project would degrade the LOS of the freeway segment from LOS E or better to LOS F. If the segment were already LOS F, an impact would be considered significant if the v/c ratio would increase by 0.01.

Methodology

Vehicle Miles Traveled

The MTC Travel Model One was used to assess the VMT impacts of the Proposed Project. The MTC Travel Model One assigns all predicted trips in the nine counties that make up the San Francisco Bay Area region onto the roadway network and transit system. The VMT output from the MTC Travel Model One represents a tour-based measure that identifies the individual's travelled distance across an entire tour. A tour-based analysis evaluates the entire chain of trips over the course of a day, not just a single trip from an origin to a destination. For example, a tour considers the sum of distance travelled by an individual who leaves home, stops for coffee, and travels to the office for work in the morning, and returns from work to home in the afternoon. Using this tour-based approach, the total number of tour miles driven is assigned to represent the daily VMT for the region, including all and portions of, Alameda County.

The unique and rural land use characteristics of the Proposed Project requires specific truck activity information from the Proposed Project applicant to evaluate the VMT impact. The Proposed Project is expected to serve waste materials to and from the San Francisco Bay Area and the Central Valley. Trips from Stanislaus County, Sacramento County, and Merced County are anticipated to be pass-by trips on the driver routes to other facilities. In the future, there would be a total of 85 daily trucks to the Proposed Project and it is anticipated that, based on anticipated service area information, each truck would be travelling approximately 70 vehicle roundtrip miles daily to the Proposed Project. Based on this information, these trucks would generate 5,950 daily VMT (e.g., 85 trucks with an average trip length of 70 miles). The 12 employees anticipated to be located at the Project site are expected to exhibit similar travel patterns as employees in this geographic area, MTC Model One's TAZ 715. The average VMT per employee in

TAZ 715 is forecasted to be 33.8 by the Travel Model One Analysis as presented in Section 3.14.2. Thus, 12 employees are anticipated to generate approximately 406 daily VMT (e.g., 12 employees representing 33.8 VMT per employee). The Project is anticipated to generate a total of 6,356 daily VMT, including the 5,950 daily truck and 406 daily employee VMT.

Automobile Intersection Level of Service

Traffic operations at the intersections in the study area were assessed and graded in terms of LOS, a commonly used intersection analysis method to assess intersection operations from LOS A (good) through LOS F (poor, failing). LOS is a measure of a driver and/or passenger frustration, discomfort, fuel consumption, and lost travel time based on signal timing information, intersection lane configuration, hourly traffic volumes, and other factors. As discussed above, VMT is perceived as a more appropriate measure of transportation impact compared to the traditional LOS measures. While this is the case, intersection LOS analysis was applied to provide a complimentary measure to assess traffic operations.

Transit, Pedestrian, and Bicycle Level of Service

Potential impacts on transit, pedestrian, and bicycle activities were not evaluated due to the Proposed Project's unique land use as a composting facility and the remote location in the rural setting. Located in Altamont Pass with the only regional access to the site through I-580 and West Grant Line Road, and located more than 2 miles away from any residential development, the Proposed Project is not expected to generate or impact any transit, pedestrian, and bicycle activities.

Freeway Segment Analysis (ACTC CMP LOS Standards for Monitoring)

The ACTC CMP requires a standard of LOS E for all Tier 1 CMP-designated network roadways in Alameda County. In 1991, 232 miles of roadways were designated to be included in the County's Tier 1 network. These designated roadways carried 72 percent of the countywide VMT and each carried minimum of 30,000 vehicles per day at the time the CMP was adopted in 1991. I-580 from I-680 to I-205 through the Tri Valley and Altamont Pass is classified as a Tier 1 CMP-designated network roadway. Therefore, study segments include an established LOS E as the standard.

The impact of the Proposed Project would be considered significant if an addition of Project-related traffic would degrade the operation level from LOS E (or better) to LOS F. Because the CMP does not define the threshold of significance for roadways that already exceed the LOS standard, local agencies can define applicable significance criteria. Most jurisdictions consider the impact of a Project to be significant if an addition of Project-related traffic would increase the v/c ratio by one to three percent for a roadway currently operating at LOS F, without the Project. In this analysis, it was assumed that the impact of the Proposed Project would be considered significant if an addition of Project-related traffic would increase the v/c ratio by more than 0.01.

Project Trip Generation

The Project trip generation was developed using specific information provided by the Project applicant due to the Proposed Project's unique land uses as a compost facility. The information included the number of expected future employee, number of visitor and truck trips, as well as employee work and truck delivery schedules.

Table 3.14-7. Project Daily Trip Generation Estimate presents the daily roundtrip generation estimate for the Proposed Project. It is anticipated that the Proposed Project would generate 170 truck, 24 employee, and 10 visitor daily trips for a total of 204 daily trips. Trucks are scheduled to only arrive or depart the Project site outside of the AM and PM peak commute periods; therefore, no truck trips are expected to access and/or egress the Project during the peak hours.

Employees would be separated into four different shifts. The first shift consists of 8 employees working from 7:00AM to 3:30PM, the second shift consists of 2 employees working from 9:30 AM to 6:00 PM, the third shift consists of 1 employee working from 3:30 PM to 12:00 AM, and the last shift consists of 1 employee working from 12:00 AM to 6:30 AM. The composting facility would also have specific visitor hours outside of the AM and PM peak hours and no visitors are anticipated to travel to or from the Project during both AM and PM peak hours.

Although the Proposed Project is not likely to generate any trips during the AM and PM peak hours (based on the anticipated schedules presented above), the beginning and end of some employee shifts are very close to the peak periods. Therefore, it is anticipated that some employees may depart later than the scheduled time resulting in some of these trips likely occurring during the peak hours. To account for this potential travel characteristic, all of the employees with the exception of the last shift (e.g., from 12:00 AM to 6:30 AM) are expected to each make one trip during a peak hour. Furthermore, to account for unpredictable travel characteristics of the visitors, all visitors are assumed to make trips during the peak hour as well for a conservative measure.

Table 3.14-8 summarizes the Project peak hour trip generation. It is anticipated that the Project would generate 15 trips during the AM peak hour and 17 trips during the PM peak hour.

Project Trip Distribution

Trip distribution identifies the travel patterns of the generated trips to and from the Proposed Project. It is anticipated that 60 percent of the Project trips would originate from Alameda County and 40 percent of the Project trips would originate from San Joaquin County, and would be composed of approximately 170 truck, 24 employee, and 10 visitor daily trips for a total of 204 daily trips, as described above. It is assumed that the Project trips would return to their same origin. The peak hour trips were assigned to the appropriate routes (I-580, I-205, etc.) to identify the trip distribution to and from the Project site. Figure 3.14-3 presents the trip distribution and assignment of Project generated trips at the study area intersections

Table 3.14-7. Project Daily Trip Generation Estimate

Trip Description	# of Vehicles	Trip origin	Daily Trips
Employees (12 employees)	12		24
Organic Feedstock Deliver Trucks (from west)	30	580 – West	60
Organic Feedstock Delivery Trucks (from east)	10	580 – East	20
Compost Product Delivery Trucks (to west)	10	580 – West	20
Compost Product Delivery Trucks (to east)	30	580 – East	60
Water Trucks	5	Grant Line – North	10
Visitors (from west)	4	580 – West	8
Visitor (from east)	1	580 - East	2
Total	102		204

Employee Schedule:

1st Shift (7:00 AM to 3:30 PM) – 8 employees
 2nd Shift (9:30 AM to 6:00 PM) – 2 employees
 3rd Shift (3:30 PM to 12:00 AM) – 1 employee
 Watchman (12:00 AM to 6:30 AM) – 1 employee

Truck Schedule:

No Trucks Allowed 7:00 AM to 9:00 AM
 No Trucks Allowed 4:00 PM to 6:00 PM
 Source: Biosolids Recycling, Inc.

Table 3.14-8. Project Peak Hour Trip Generation

Trip Type	Daily Trips /a/	AM Peak Hour Trips			PM Peak Hour Trips		
Trucks /b/	170	0	0	0	0	0	0
Employees /c/	24	10	1	11	1	10	11
Visitors /d/	10	2	2	4	3	3	6
Total	204	12	3	15	4	13	17

Notes:

/a/ includes total daily trips from site, inbound and outbound

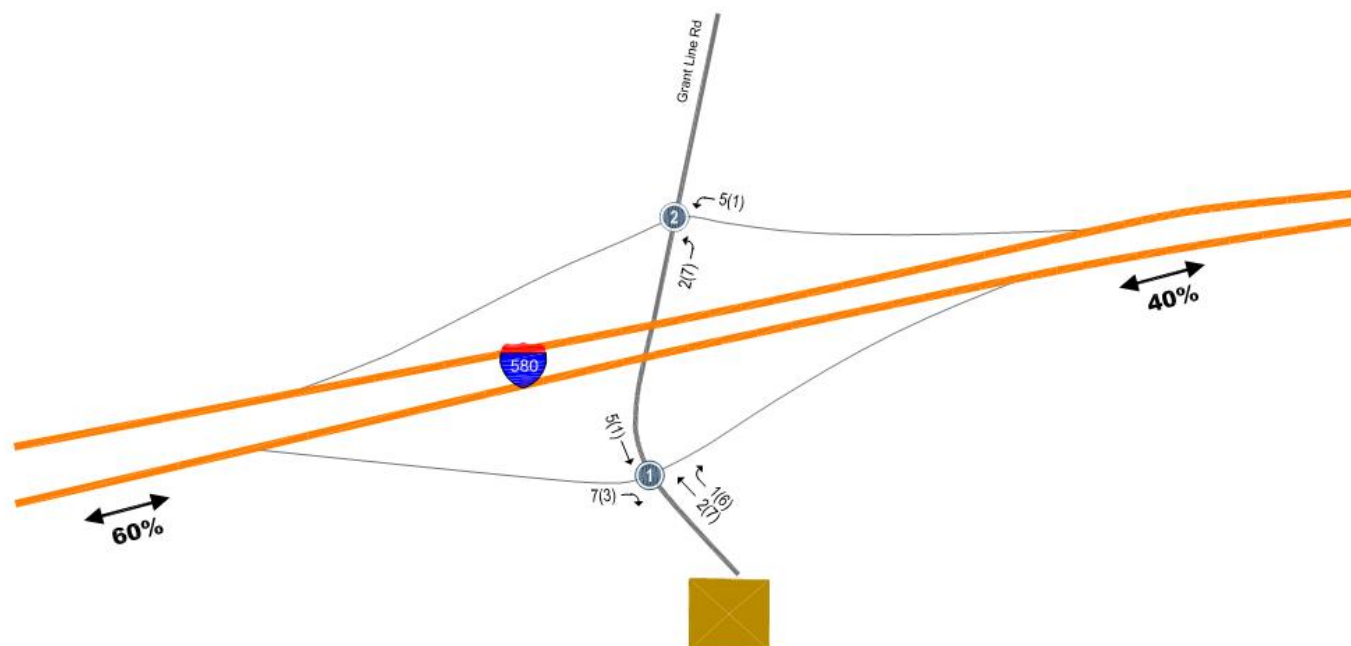
/b/ consists of feedstock delivery trucks, compost product delivery trucks, and water trucks

/c/ includes traffic from 12 employee on site. Trip Generation based on employee shift timing information provided by Biosolids Recycling, Inc.



/d/ A total of 5 visitors expected on a typical weekday. It was assumed that all visitors would arrive and depart during peak commute periods.

Figure 3.14-3. Project Trip Distribution and Assignment

Jess Ranch



LEGEND

-  = Project Site Location
-  = Study Intersection
- XX(X) = AM(PM) Peak-Hour Trips

Impacts and Mitigation Measures

This section evaluates impacts related to transportation and circulation as a result of implementation of the Proposed Project.

Impact TRANS-1: Vehicle Miles Traveled - The Proposed Project would cause a marginal impact on daily VMT as the Project would increase the daily employee VMT by less than 1 percent in TAZ 715. (Less than Significant, No Mitigation Required)

The threshold for determining the level of impact for the Proposed Project follows:

- The Project would increase the daily employee VMT of the TAZ or the County by more than 5 percent.

Table 3.14-9 presents the impact of the Project generated VMT on Alameda County and TAZ 715 daily employee VMT. The Proposed Project is assumed to generate 6,356 daily VMT in both 2020 and 2040 conditions. It is anticipated that the daily employee VMT with the Proposed Project in Alameda County is 19,423,551 in 2020 and 20,478,458 in 2040. The daily employee VMT with the Proposed Project in TAZ 715 would be 746,345 in 2020 and 800,006 in 2040. The daily VMT percent Increase was calculated to determine how much the Proposed Project would increase the daily employee VMT in Alameda County and TAZ 715 by, and to determine the degree of VMT impact generated by the Project.

The Project is expected to increase the Alameda County employee VMT by 0.03 percent in both 2020 and 2040, which is marginal. The Project is expected to increase the TAZ 715 employee VMT by 0.86 percent in 2020 and 0.80 percent in 2040, which are also both marginal.

Table 3.14-9. 2020 and 2040 VMT Analysis of Alameda County and TAZ 715

Zone	Year	Daily VMT without Project*	Project Generated Daily VMT	Daily VMT with Project	Daily VMT % Increase
Alameda County	2020	19,417,195	6,356	19,423,551	0.03
	2040	20,472,102	6,356	20,478,458	0.03
TAZ 715	2020	739,989	6,356	746,345	0.86
	2040	793,650	6,356	800,006	0.80

*Employee VMT from Travel Model One

Mitigation: None Required.

Impact TRANS-2: Automobile LOS- The Proposed Project would not cause intersections operating at LOS E or better to degrade to LOS F or cause intersection delay at the intersections already operating at LOS F to increase by four or more seconds in both 2018 Existing and 2040 Cumulative Conditions. (Less than Significant, No Mitigation Required)

The threshold for determining the level of impact for the Proposed Project is:

- The Project would degrade the LOS at both unsignalized and signalized intersections from LOS E (or better) to LOS F. If the intersection were already LOS F, an impact would be considered significant if the intersection delay would increase by four seconds.

Table 3.14-10 summarizes the 2018 existing AM and PM peak hour LOS for intersections in the Project study area. The Grant Line Road and I-580 Eastbound intersection is an unsignalized intersection with a stop sign on the westbound approach and free northbound and southbound approaches. The Grant Line Road and I-580 Westbound intersection is an unsignalized intersection with stop signs on the eastbound and northbound approaches, and a free southbound approach.

The analysis indicates that both intersections currently operate at LOS D or better except for the Grant Line Road and I-580 Eastbound intersection during the PM peak hour. This intersection operates at LOS F with a 133 second delay during the PM peak hour due to increased volumes that are not stop controlled. The Grant Line Road and I-580 Westbound intersection operates at LOS D during the AM peak hour due to increased westbound traffic from I-580 Westbound off ramp. The field observation indicated that approximately 50 percent of the westbound vehicles use this intersection to by-pass traffic congestion on the I-580 Westbound mainline.

Table 3.14-10. 2018 Existing AM and PM Peak Hour Intersection Level of Service

Intersection		Peak Hour	Average Delay	LOS
1	Grant Line Road and I-580 EB	AM	8.6	A
		PM	133.4	F
2	Grant Line Road and I-580 WB	AM	34.3	D
		PM	0.9	A

Table 3.14-11 presents and compares the 2018 Existing Condition to the 2018 Project Condition. In the 2018 Project Condition, both study intersections are assumed to be unsignalized and use the same lane and stop configurations as defined in the 2018 Existing Condition. The Grant Line Road and I-580 Eastbound intersection would continue to operate at LOS F during the PM peak hour. The Project is anticipated to only add a nominal number of new trips to the intersection in the PM peak hour, with the intersection delay only expected to increase by 0.1 seconds. This results in no impact generated by the Project. The Grant Line Road and I-580 Westbound intersection is expected to degrade from LOS D to LOS E during the AM peak hour. The Project is anticipated to increase the intersection delay by 1.8 seconds. However, the intersection continues to operate at acceptable LOS with the addition of the Project and would have no impact. Both intersections continue to operate at LOS A in other peak hours.

Table 3.14-11. 2018 Existing and 2018 Project Peak Hour Intersection Levels of Service

Intersection		Peak Hour	2018 Existing		2018 Project		Difference
			Average Delay	LOS	Average Delay	LOS	
1	Grant Line Road and I-580 EB	AM	8.6	A	8.4	A	-0.2
		PM	133.4	F	133.5	F	0.1
2	Grant Line Road and I-580 WB	AM	34.3	D	36.1	E	1.8
		PM	0.9	A	0.9	A	0.0

The 2040 Cumulative Conditions were developed by using the cumulative traffic volume data from College Park at Mountain House Specific Plan III EIR. The traffic volume estimates considered the future traffic volume generated by Mountain House Residential Development, Sand Hill Wind Project, and 10 Grant Line Road Service Station, as well as the signalized intersection upgrade at both of the study intersections.

Table 3.14-12 presents and compares the 2040 Cumulative No Project and Project conditions during the AM and PM peak hours. Both intersections are anticipated to operate at LOS D or better in both AM and PM peak hours without the Proposed Project. The intersection operations improve in 2040 Cumulative Conditions compared to the 2018 Existing Conditions due to the signalized intersection upgrade at both study intersections in the 2040 Cumulative Conditions. The delay is highest at the Grant Line Road and I-580 Eastbound intersection and it operates at LOS D during the PM peak hour. The Proposed Project is anticipated to marginally increase intersection delays during AM and PM peak hours at both intersections. The highest delay is expected to occur at the Grant Line Road and I-580 Eastbound intersection during the PM peak hour with delay increasing marginally by 1 second compared to the Cumulative No Project Condition. Both intersections continue to operate at LOS D or better in both AM and PM peak hours with the Proposed Project under the 2040 cumulative condition.

Table 3.14-12. 2040 Cumulative No Project and Project Peak Hour Intersection Levels of Service

Intersection		Peak Hour	2040 No Project		2040 Project		Difference
			Average Delay	LOS	Average Delay	LOS	
1	Grant Line Road and I-580 EB	AM	18.6	B	18.7	B	0.1
		PM	39.0	D	40.0	D	1.0
2	Grant Line Road and I-580 WB	AM	27.1	C	27.2	C	0.1
		PM	19.5	B	20.3	C	0.8

Mitigation: None Required.

Transit, Pedestrian, and Bicycle LOS

Impact TRANS 3.14-1: The Proposed Project would not affect transit, pedestrian, and bicycle activities in the vicinity due to the land use characteristics, location, and existing deficiencies of multimodal facilities. (Less than Significant, No Mitigation Required)

No bicycle, pedestrian, or transit activities are expected in the Project vicinity due to its rural characteristics and limited access to the site. The Proposed Project is not anticipated to generate bicycle, pedestrian, or transit movements and/or activities due to its unique land use as a compost facility. Furthermore, there are no existing bicycle, pedestrian, and transit facilities in the Project vicinity, and the Proposed Project is not anticipated to cause changes to the existing facilities in future conditions. Therefore, the Proposed Project has no impact on bicycle, pedestrian, and transit activities.

Mitigation: None Required.

CMP Segments

Impact 3.14-2: The Proposed Project would not cause congestion of regional significance on a roadway segment on the Congestion Management Program (CMP) and/or the Metropolitan Transportation System (MTS) evaluated in accordance with the requirements of the Land Use Analysis Program of the CMP. The Project does not degrade the operations of segments operating at LOS E or better to LOS F, and does not increase the V/C ratio of segments already operating at LOS F by 0.01 or higher. (Less than Significant, No Mitigation Required)

The threshold for determining the level of impact for the Proposed Project follows:

- The Project would degrade the LOS of the freeway segment from LOS E or better to LOS F. If the segment were already LOS F, an impact would be considered significant if the v/c ratio would increase by 0.01.

The ACTC recommends the use of the most current version of the Alameda Countywide Travel Demand Model to assess the impacts on the regional roadways near the Project site. The Alameda Countywide Travel Demand Model is a regional travel demand model that applies the most current land use and socioeconomic data, and roadway and transit network assumptions, including 1,580 TAZs in Alameda County, 1,256 TAZs outside of Alameda County, and 31 gateway zones. The model was developed using the traditional four-step modelling process of trip generation, trip distribution, modal choice, and trip assignment and is used to replicate existing and forecast future traffic volumes and transit ridership. This version of the model is based on socioeconomic data from the ABAG Projections 2013 land uses for 2020 and 2040.

In this analysis, the 2018 Existing AM and PM peak hour average speeds for the study area freeway segments were obtained from the Alameda County CMP 2018 Monitoring Report. The average speed data was then utilized to determine the freeway segment LOS as summarized in Table 3.14-13. As presented, all freeway segments operate at LOS E or better except for the following segment:

- I-580 Westbound from I-205 to Grant Line Road during the AM peak hour.

Table 3.14-13. 2018 AM and PM Peak Hour Existing Freeway Level of Service

Segment	Peak Hour	Average Speed	LOS	# of Lanes	Volume
I-580 EB - North Flynn Road to Grant Line Road	AM	69.2	A	4	2,875
	PM	33.7	E	4	9,070
I-580 EB – Grant Line Road to I-205	AM	66.8	A	4	2,854
	PM	58.8	B	4	9,345
I-580 WB – I-205 to Grant Line Road	AM	19.2	F	5	9,525
	PM	69.3	A	5	3,631
I-580 WB – Grant Line Road to North Flynn Road	AM	33.8	E	4	9,211
	PM	66.8	A	4	3,676

While the 2018 Existing Condition utilizes the average vehicular speed on the freeway mainline as a measure of the LOS, the 2018 Project Condition instead utilizes the v/c ratio as it is difficult to accurately estimate the average vehicular speed with the Proposed Project. A capacity of 2,000 vehicles per hour per lane was used for the mixed-flow lane segments.

Table 3.14-14 summarizes the comparison of 2018 Existing freeway segment operations to the 2018 Project freeway segment operations. The Project-generated trips do not degrade any of the freeway segments operating at LOS E or better to LOS F. The Proposed Project also does not increase the v/c ratio of I-580 WB – I-205 to Grant Line Road segment (currently operating at LOS F) by 0.01 or more as an addition of five trips does not contribute to any increase in v/c ratio.

Table 3.14-14. 2018 Existing and 2018 Project Freeway Segment Level of Service

Segment	Peak Hour	2018 Existing			2018 Project		Impact
		Average Speed /a/	LOS	Existing Volume /b/	Trips	V/C Increase	
I-580 EB - North Flynn Road to Grant Line Road	AM	69.2	A	2,875	7	0.001	N
	PM	33.7	E	9,070	3	0.000	N
I-580 EB – Grant Line Road to I-205	AM	66.8	A	2,854	1	0.000	N
	PM	58.8	B	9,345	6	0.001	N
I-580 WB – I-205 to Grant Line Road	AM	19.2	F	9,525	5	0.000	N
	PM	69.3	A	3,631	1	0.000	N

Segment	Peak Hour	2018 Existing			2018 Project		Impact
		Average Speed /a/	LOS	Existing Volume /b/	Trips	V/C Increase	
I-580 WB – Grant Line Road to North Flynn Road	AM	33.8	E	9,211	2	0.000	N
	PM	66.8	A	3,676	7	0.001	N

/a/ Average Speed collected from Alameda County CMP 2018 Monitoring Report, Vehicle speeds.

/b/ Existing Volume based on counts conducted on 10/9/2018

In this analysis, the 2040 cumulative AM and PM peak hour volumes for the freeway segments were estimated by combining the 2040 Alameda Countywide Travel Demand Model data with additional peak hour volumes representing the full build-out of the Mountain House development. Similar to the 2018 Project Condition, the analysis was conducted using v/c ratios rather than predicting future vehicular speeds on the segments. Roadway capacities for all segments were consistent throughout the analysis.

Table 3.14-15 presents the summary and comparison of the freeway segment LOS of 2040 Cumulative No Project and Project Conditions. The flowing freeway segments are expected to operate at LOS F for the 2040 Cumulative No Project Condition:

- I-580 Eastbound – North Flynn Road to Grant Line Road during the PM peak hour
- I-580 Eastbound – Grant Line Road to I-205 during the PM peak hour
- I-580 Westbound – I-205 to Grant Line Road during the AM peak hour
- I-580 Westbound – Grant Line Road to North Flynn Road during the AM peak hour.

While these freeway segments operate at LOS F, the Proposed Project contributes seven additional trips onto the freeway segments in the 2040 Cumulative Project Condition. This marginal increase is expected to increase the v/c ratio by 0.001, lower than the threshold of 0.01. Therefore, the Proposed Project is anticipated to have no impact in the 2040 Cumulative Condition.

Mitigation: None Required.

Table 3.14-15. 2040 Cumulative No Project and Project Freeway Segment Levels of Service

Segment	Peak Hour	2040 No Project		2040 Project			Impact
		Volume	LOS	Trips	LOS	v/c increase	
I-580 EB - North Flynn Road to Grant Line Road	AM	5,050	C	7	C	0.001	N
	PM	14,199	F	3	F	0.000	N
I-580 EB – Grant Line Road to I-205	AM	4,880	C	1	C	0.000	N
	PM	12,908	F	6	F	0.001	N
I-580 WB – I-205 to Grant Line Road	AM	13,372	F	5	F	0.000	N
	PM	6,103	C	1	C	0.000	N

Segment	Peak Hour	2040 No Project		2040 Project			Impact
		Volume	LOS	Trips	LOS	v/c increase	
I-580 WB – Grant Line Road to North Flynn Road	AM	14,469	F	2	F	0.000	N
	PM	6,402	D	7	D	0.001	N

Transportation Hazards

Impact TRANS-3: The Proposed Project would not substantially increase transportation hazards in the Project vicinity due to design features or incompatible uses (Less than Significant, No Mitigation Required)

The Proposed Project would be located approximately 500 feet south of the existing windmill farm maintenance building on Jess Ranch Road. In addition, a new 20 feet wide main access road would be constructed to support the Proposed Project. The main access road would have one access connection onto Jess Ranch Road, a road shared with the windmill farm maintenance building and windmill access. The main access road would be built to Alameda County design standards to ensure emergency access and other safety requirements. Furthermore, the Proposed Project would not require any modification to the existing transportation network in the surrounding areas. Therefore, the Proposed Project would not include transportation hazards.

Mitigation: None Required.

Emergency Access

Impact TRANS-4: The Proposed Project would not result in inadequate emergency access. (Less than Significant, No Mitigation Required)

Emergency vehicles would primarily enter the Project site through the main Project entrance located along the northern side on Jess Ranch Road. The main access road would be built to Alameda County design standards to ensure emergency access requirements are met. Although there is only one entrance to the Proposed Project, there are no other developments adjacent to the Project site and access through the unpaved field is possible in case the main access road is blocked. The Project site is under protection of Battalion 3 in Alameda County Fire Department, which is mostly based in Livermore and Dublin and Cal Fire Santa Clara Unit. The nearest Alameda County Fire Department fire station is Station 8 located in Livermore 9 miles away, and the nearest Cal Fire station is Station 26 – Castle Rock located 5 miles east of the Project. Furthermore, the Mountain House Fire Station No.1 is located in the Mountain House community 5 miles northeast of the Project site.

Mitigation: None Required.

Consistency with Adopted Policies, Plans, and Programs Supporting Alternative Transportation

Impact 3.14-5: The Proposed Project would be consistent with adopted policies, plans, and programs supporting alternative transportation. (Less than Significant, No Mitigation Required)

The unique characteristics and remote location of the Proposed Project limits the effective adoption of multimodal transportation plans prevalent in both local and regional jurisdictions. There are no transit, pedestrian, and bicycle facilities available on the Project access route and in the Project vicinity including Grant Line Road, Altamont Pass Road, and I-580. Therefore, the operation and construction activities associated with the Proposed Project is not expected to conflict with both local and regional multimodal plans and programs. The Proposed Project would have a less-than-significant impact with respect to policies, plans, and programs supporting alternative modes of transportation.

Mitigation: None Required.

Project Construction Analysis

Impact TRANS-6: The Proposed Project would generate temporary increases in traffic volumes on area roadways during construction. (Less than Significant, No Mitigation Required)

Proposed construction activities would generate off-site traffic that includes the initial delivery of construction equipment, daily deliveries of construction materials, removal of debris, and daily trips of construction workers during the construction period. Construction traffic would be temporary and would not result in the long-term degradation of the study area intersections. A typical weekday construction work schedule at the Project site would be from 7:00 AM to 4:00 PM. The construction employees' peak arrival would occur between 6:30 AM and 7:00 AM, with the peak departure occurring between 4:00 PM and 4:30 PM. Most of the construction-based trucking activities would be dispersed throughout the day, typically before and after the commute peak hours and periods. Thus, the Project impact on AM and PM peak hour and period traffic during the construction schedule would be minimized.

Mitigation: None Required.

3.15 Tribal Cultural Resources

Similar to Cultural Resources, discussed in Section 3.4, this section discusses impacts on cultural resources directly related to Native American tribal cultures that populated the area where the Proposed Project is located. The distinction for Tribal Cultural Resources is that they are described as a site, feature, place, cultural landscape geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe. Cultural Resources are generally considered as archaeological or paleontological resources which are typically beneath the surface of the ground and are discovered or uncovered through disturbance of the site. The potential tribal cultural resources impacts associated with the Proposed Project are identified and discussed herein.

Information in this section is based on information provided in an archaeological survey report prepared by Peak and Associates (2016) for the Proposed Project and included in Appendix E. Where general information is applicable to both Cultural Resources (Section 3.6) and this section, the reader will be referred to Section 3.6 for additional detail.

3.15.1 Regulatory Framework

Regulations governing cultural and tribal resources within the Project area are implemented and enforced at the federal, State, and local or regional level, and are described in detail in Section 3.4.1. Regulations specific to tribal cultural resources not described above are detailed below.

State

California Public Resources Code Section 21074

- (a) Tribal Cultural Resources are either of the following:
 - 1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:
 - a) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
 - b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
 - 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

- (b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- (c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a nonunique archeological resource as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a).

Assembly Bill 52

In September 2014, legislation was enacted that imposes requirements for consultations regarding projects that may affect a tribal cultural resource and includes a list of recommended mitigation measures. AB 52 states that tribal cultural resources must meet the following:

1. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
2. Included in a local register of historical resources.
3. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in the California Public Resources Code (PRC) Section 5024.1.
4. A cultural landscape that meets one of the above criteria and is geographically defined in terms of the size and scope of the landscape.
5. A historical resource described in PRC 21084.1, a unique archaeological resource described in PRC 21083.2 or a non-unique archaeological resource if it conforms to the above criteria.

Under AB 52, a project that may cause a substantial adverse change in the significance of a tribal cultural resource is defined as a project that may have a significant effect on the environment. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. Lead agencies are to provide notice to tribes traditionally or culturally affiliated with the geographic area of the Proposed Project that may have expertise with regard to their tribal history and practices. Tribes can request consultation which may include discussing the type of environmental review necessary, the significance of the tribal cultural resources, the significance of the project's impacts on the resource, and the alternatives and mitigation measures recommended by the tribe. Mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. AB 52 also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include:

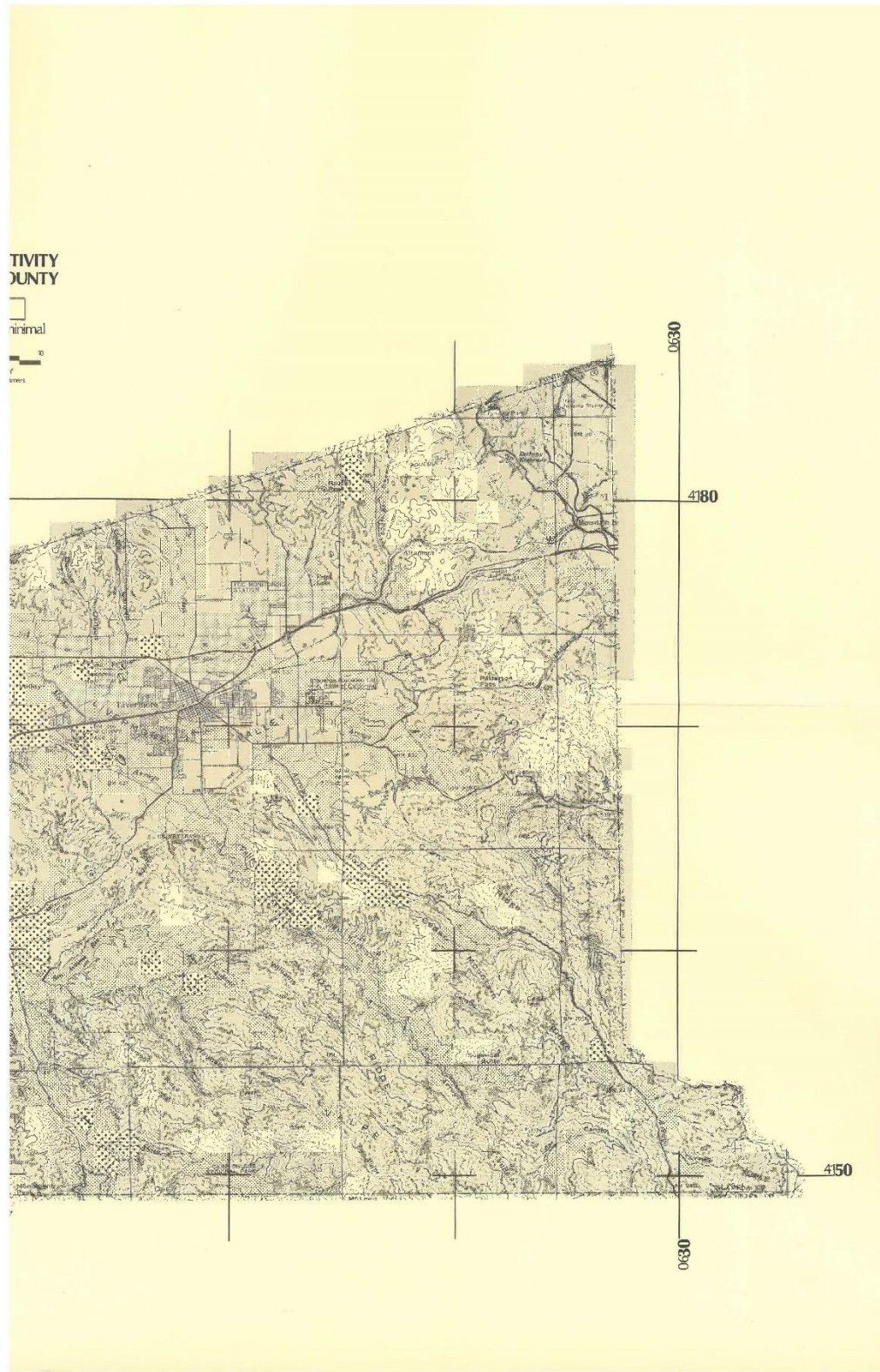
- Preservation in place
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource

- Permanent conservation easements with culturally appropriate management criteria
- Local Regulations/Ordinances

3.15.2 Environmental Setting

The environmental setting applicable to tribal cultural resources is consistent with the discussion provided above in Section 3.4.2 and based on the Determination of Eligibility and Effect prepared for the Proposed Project provided in Appendix E (Peak and Associates 2016). Figures 3.15-1 and 3.15-2 show archaeology in Alameda County.

Figure 3.15.1 Archaeology in Alameda County (northeast view)



Source: 1976 Quaternary Research Group, *Archaeology in Alameda County*

A detailed topographic map of a region in Utah, showing towns like Panguitch, Hatch, and Tropic, along with the Hatch and Panguitch Salt Ponds. The map includes a grid system with coordinates 4150 and 0630 marked on the right edge.

| 3.15-1

3.15.3 Methodology

Native American Consultation

The NAHC was contacted by Peak & Associates seeking information from the Sacred Lands Files, which track Native American cultural resources, and the names of Native American individuals and groups that would be appropriate to contact regarding this Project. The NAHC replied with a letter dated February 4, 2016, in which they indicated that the sacred land file has no information about the presence of Native American cultural resources in the immediate Project area, and provided a list of Native American contacts (groups and individuals) who may have information regarding known and recorded sites. On February 6, 2016, letters were also sent to the following contacts:

- Chairperson Irenne Zwierlein, Amah Mutsun Tribal Band of Mission San Juan Bautista;
- Chairperson Tony Cerda, Coastanoan Rumsen Carmel Tribe;
- Chairperson Ann Marie Sayers, Indian Canyon Mutsun Band of Coastanoan;
- Chairperson Rosemary Cambra, Muwekma Ohlone Indian Tribe of the SF Bay Area; and
- Mr. Andrew Galvan, The Ohlone Indian Tribe.

No responses from any of the contacted tribal representatives have been received to date.

Per the requirements of AB 52, the Alameda County Planning Department initiated AB 52 consultation efforts with a formal notification of determination that a Project application was complete. Letters dated August 19, 2016, were mailed to those tribal representatives who had previously requested notification under the AB 52 legislation (Appendix H). Those representatives include:

- Randy Yonemura and Don Hankins, Ph.D., Ione Band of Miwok Indians Cultural Committee;
- The California Indian Water Commission;
- Cultural Resource Coordinator Michael Mirelez, Torres Martinez Desert Cahuilla Indians;
- The Native American Heritage Commission;
- Chairperson Ann Marie Sayers, Indian Canyon Mutsun Band of Coastanoan;
- Mr. Andrew Galvan, The Ohlone Indian Tribe; and
- Representative Ramona Garibay, Trina Marine Ruano Family.

To date, in response to the AB 52 notifications, Alameda County has not received any responses and no tribal cultural resources (TCRs) have been subsequently identified. However, the evaluation of potential impacts on previously unidentified TCRs is addressed below in Section 3.12.4, Impacts Analysis.

3.15.4 Impacts Analysis

This section describes the tribal cultural resource impacts that would result from construction and operation of the Proposed Project and provides mitigation measures for significant impacts.

Criteria for Determining Significance

Thresholds of significance for evaluation of the Proposed Project's impacts are based on the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines).

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impacts and Mitigation Measures

Impact TCR-1: Implementation of the Proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Sections, 21074, 5020.1(k), or 5024.1. – Less than Significant with Mitigation Incorporated

As previously described above in Section 3.12.1, Regulatory Framework, under subheading Assembly Bill 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register, or included in a local register of historical resources, or if Alameda County, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resources as a TCR.

As discussed in Section 3.4.3 under impact discussions CR-1 and CR-2, impacts from the Proposed Project could impact unknown archaeological resources including Native American artifacts and human remains. These artifacts, sites, and remains may also be, by extension, considered tribal cultural resources. Impacts would be reduced to a *less-than-significant* level with implementation of Mitigation Measures CR-1 and CR-2.

Therefore, compliance with existing federal, State, and local laws and regulations, and the Alameda County ECAP policies (detailed above and in Section 3.4), would protect unrecorded TCR's on the Project site by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their

significance through excavation or preservation. Furthermore, implementation of Mitigation Measures CR-1 and CR-2 would reduce any impacts on a TCR discovered on the Project site as a result implementation of the Proposed Project.

Mitigation Measure TCR-1: Implement Mitigation Measures CR-1 and CR-2

MM CR-1: Prior to construction, construction personnel shall be briefed regarding the proper procedure in the event buried cultural materials are encountered. If previously undocumented archaeological materials are encountered during Project construction, all ground-disturbing activity shall be suspended temporarily within an appropriate distance determined by a qualified professional archaeologist based on the potential for disturbance of additional resource-bearing soils. The qualified professional archaeologist shall identify the materials, determine their possible significance, and formulate appropriate mitigation measures. Appropriate mitigation may include no action, avoidance of the resource, and/or potential data recovery. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

MM CR-2: If human remains are uncovered during Project construction, all ground-disturbing activities shall immediately be suspended within an appropriate distance determined by a qualified professional archaeologist based on the potential for disturbance of additional remains. The Alameda County Coroner, and a qualified professional archaeologist, if one is not already onsite, shall be notified. The coroner shall examine the discovery within 48 hours. If the Coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours. The NAHC shall contact the most likely descendant of the remains. The most likely descendant shall be consulted regarding the removal or preservation and avoidance of the remains, and the parties shall reburial or preserve the remains as appropriate. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

4 Alternatives

This chapter describes the CEQA Guidelines for addressing alternatives to a proposed Project, presents an analysis of alternatives to the Proposed Project, and presents the environmentally superior alternative.

4.1 CEQA Guidelines Regarding Alternatives

The State CEQA Guidelines give extensive direction on identifying and evaluating alternatives to a proposed project [Section 15126.6] in an EIR. The purpose of having alternatives in an EIR is to identify ways to lessen or avoid the significant effects, should be reasonable and feasible, and should reflect a range of possibilities. Although the alternatives do not have to meet every goal and objective set for the proposed project, they should “feasibly attain most of the basic objectives of the project.”

The Guidelines specifically require consideration of a No Project alternative. The purpose in including a No Project alternative is to allow decision-makers to compare the impacts of approving the project with impacts of not approving a project. The Guidelines specifically advise that No Project is “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” The Guidelines emphasize that an EIR should take a practical approach, and not “...create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” [Section 15126.6(e) (3)(B)].

In addition to No Project, the Guidelines advise that the range of alternatives discussed in the EIR should be limited to those that “would avoid or substantially lessen any of the significant effects of the project” [Section 15126.6(f)]. Factors that may be taken into account in considering the feasibility of an alternative include “...site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries...and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site...” [Section 15126.6(f)(1)].

CEQA does not require that all possible alternatives be evaluated, only that “a range of feasible alternatives” be discussed so as to encourage both meaningful public participation and informed decision making. In selecting alternatives to be evaluated, consideration may be given to their potential for reducing significant unavoidable impacts, reducing significant impacts that are mitigated by the project to less-than-significant levels, and further reducing less-than-significant impacts.

4.2 Alternatives Analysis

The County considered alternatives to the Proposed Project evaluated in this EIR, including the use of alternate composting technologies for processing and reuse of organic material. The analysis provided in Chapter 3 of this EIR identifies a variety of impacts associated with the Proposed Project. Many of the impacts are less than

significant and some are considered significant but would be mitigated or avoided by specific aspects of the Proposed Project.

Responses to the NOP circulated by the County identified concerns about possible impacts on air quality and dust, odors, noise, traffic impacts, night lighting, protected species, birds and vectors, effects on groundwater, security concerns on the Contra Costa Water District parcel, and effects on sensitive residential land uses. The comments provided on the NOP informed the development of the alternatives evaluated below.

The alternatives analyzed for the Proposed Project focus on reducing or avoiding identified significant environmental impacts. This chapter identifies two alternatives to the Proposed Project, including the No Action (No Project Alternative), and analyzes the environmental effects associated with these alternatives as compared to those that would occur with development of the Proposed Project. The alternatives discussed and evaluated in this chapter are the No Project Alternative, and an In-Building Composting Alternative.

4.2.1 No Project Alternative

CEQA mandates that an EIR include an evaluation of a no project alternative in order to allow decision makers and the public to compare the impacts of approving a proposed project with the impacts of not doing so. The No Project Alternative in this case assumes that the Jess Ranch Composting Facility Project would not be developed at the Project site. Current land uses at the Project site, as described in Chapter 2 Project Description, would continue. The Project site would likely remain undeveloped due to its Large Parcel Agricultural zoning.

As described in Chapter 2, organic materials that would be received at a composting facility primarily consist of greenwaste, foodwaste, and biosolids, but may also include untreated scrap wood, natural fiber products, non-recyclable paper waste, and inert material, such as sediment, gypsum, wood ash, and clean construction debris. Composting is the only practical and cost-effective processing method available to convert these waste materials into value-added products that can be returned to the community.

Under the No Project Alternative, an additional in-county composting facility would not be developed, but the other elements of the County's waste reduction and diversion programs would continue. However, it is likely that the long-range goal of 75 percent and greater diversion (County General Plan) could not be met in the absence of an additional in-county composting facility. Additionally, targets under SB 1383 to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025 would likely not be met without the establishment of new composting facilities. While a few other in-county composting facilities are available in the Project Area, only one accepts agricultural waste and foodwastes, and none accept biosolids. Many compostable materials would therefore continue to be processed by out-of-county facilities, which would require longer hauling distances and greater traffic impacts, and would export a local waste problem to distant communities. Furthermore, exporting compostable organics out-of-county would preclude the assurance of a long-term, cost-effective, reliable in-county facility.

Under the No Project Alternative, there would be no land use impacts near the Project site. However, transporting organic waste out of the County for processing would likely cause land use impacts in the recipient jurisdictions, which would have the burden of siting and permitting new and/or expanded composting facilities to accommodate organics originating in Alameda County. Further, site-specific impacts identified in Chapter 3, such as visual effects relating to views from nearby roadways; increases in ozone precursor and particulate pollutants; increases in non-volatile organic compounds; exposure of members of the public to objectionable odors; loss of habitat and impacts on special-status species; potential disturbance to cultural resources; exposure of compost facility workers and end users to chemical contaminants and bioaerosols; and minor increases in traffic on local roadways would not occur under the No Project Alternative.

4.2.2 In-Building Composting Alternative

The In-Building Composting Alternative assumes development of a compost facility at the Project site, but rather than composting organic materials in conventional windrows or ASPs outside through the entire composting process, all composting processes would be conducted in an enclosed structure.

Enclosed processes use a forced aeration and/or mechanical agitation to control conditions and promote rapid composting. Aeration may be accomplished through either negative or positive methods, as described in further detail below.

Negatively aerated processes generally use biofilters to remove odorous compounds through biological means. Biofilters are constructed over an air plenum or perforated pipes and consist of finished compost, wood chips, and/or other media that promotes bacterial growth. Air is pulled from beneath the compost pile using large blowers and conveyed to a series of perforated pipes located under the biofilter. The biofilter is located outside the building.

Positive air systems utilize a water-proof breathable fabric cover or biocover that is placed over the compost piles. The fabric cover material contains microscopic pores that prevent odorous molecules and water from passing through, trapping odors beneath the cover. Another air control method for positive aeration involves placing a biocover, consisting of a layer of finished compost, finished compost overs or other material on top of the compost windrow to form a biofilter to reduce odors.

The best example of a large-scale indoor composting facility in California is the Inland Empire Regional Composting Authority facility located in Rancho Cucamonga, California. It was constructed as a joint project between Inland Empire Utilities Agency and County Sanitation Districts of LA County.

The project is located in a former Ikea furniture building and has a three-acre outdoor biofilter to control odors. The facility has a capacity of 210,000 tons per year and is 410,000 square feet in size. According to published reports, the initial cost estimate for the facility was \$30 million and final cost of the facility exceeded \$80 million

The project proponent has received a bid for an enclosed processing facility at the proposed site that would process approximately 150,000 tons per year. The bid was for the first phase of the project and the bid price was approximately \$30 million, not including site improvement costs. The total cost for the first phase of the project would

exceed \$40 million and the total cost for the project at build-out would exceed \$70 million.

While technically feasible, composting in a building has proven to be expensive and does not provide significantly more protection against nuisance issues than other state-of-the-art outdoor ASP system technologies. Indoor composting facilities still have to rely on outdoor biofilters similar to those used in traditional ASP windrows to control emissions and odors, only significantly larger. A biofilter large enough to control emissions and odors from an enclosed facility would require approximately 3 acres. Biofilters also require a significant amount of water, which would require up to 100,000 gallons per day for the enclosed facility.

The odor impacts from a composting facility whether it is in an enclosed building or located outside, is directly related to the efficiencies of the operation, best management practices and odor control technologies in place. The Proposed Project would utilize an ASP system technology with either negative or positive aeration with a biofilter, micro-porous fabric covers, or use a finished compost layer over the active windrows. In addition, the facility will operate in compliance with State Minimum Standards set forth in Title 14 of CCR for composting operations. Based on CalRecycle studies all of these methods, if operating properly, can reduce emissions by over 90 percent. As stated previously, enclosing of the facility would not significantly reduce odors and emissions for the Project.

In order to enclose all of the composting operations at the proposed composting site, a building would need to be over 10 acres in size, or 500,000 square feet. Alameda County's ECAP restricts building sizes and areas where buildings can be located on agricultural parcels. The Project site is designated Large Parcel Agriculture, which restricts the building size to a FAR of 0.01 of parcel square footage and the building(s) must be located in a contiguous two acre development envelope. Based on a FAR of 0.01 and the site parcel consisting of 123.19 acres, the maximum building size allowable on the site would be approximately 54,000 square feet. Therefore, a building large enough to enclose the Proposed Project would not be permissible due to county restrictions. Under the Proposed Project, the buildings at the site would total approximately 20,000 square feet, well below the county restrictions. Proposed buildings at the site would consist of the process/mixing buildings, maintenance building, potential portable modular office and administration buildings (depending on the office and administration building option chosen), and scale house. Under the In-Building Composting Alternative, the receipt and handling of organic feedstock would require similar physical and mechanical handling systems as the Proposed Project, and thus site-specific impacts at and near the Project site would still occur. Such impacts would include: visual effects relating to views from nearby roadways; increases in ozone precursor and particulate pollutants; increases in non-volatile organic compounds; potential exposure of members of the public to objectionable odors; loss of habitat and impacts on special-status species; potential disturbance to cultural resources; exposure of compost facility workers and end users to chemical contaminants and bioaerosols; and increases in traffic on local roadways.

The In-Building Alternative would result in similar impacts on the aesthetic quality of the area and views from local roadways; cultural resources; loss of habitat and special-status species; potential exposure of the public to objectionable odors; the exposure of compost

facility workers and end users to chemical contaminants and bioaerosols; and increases in traffic on local roadways. Given that the construction of the In-Building Alternative would require substantially more space than the Proposed Project, and thus greater land disturbance during construction activities, impacts on geology and soils, cultural resources, and biological resources would likely result in greater and more widespread impacts when compared to the Proposed Project. However, as discussed the In-Building Alternative would substantially reduce emissions during operations. This alternative was eliminated for consideration as the preferred alternative given that the space requirements for operation would be infeasible given county restrictions. Additionally, composting in a building has proven to be expensive and does not provide significantly more protection against odor issues or impacts on other resources, such as biological resources, aesthetics, and cultural resources, than other state-of-the-art outdoor ASP system technologies.

4.3 Environmentally Superior Alternative

The No Project Alternative is considered the environmentally superior alternative because impacts associated with development of the Proposed Project would not occur. Impacts identified for the Proposed Project that would not occur with the No Project Alternative include: visual effects relating to views from nearby roadways; increases in ozone precursor and particulate pollutants; increases in non-volatile organic compounds; potential exposure of members of the public to objectionable odors; loss of habitat and impacts on special-status species; potential disturbance to cultural resources; exposure of compost facility workers and end users to chemical contaminants and bioaerosols; and increases in traffic on local roadways. However, the No Project Alternative does not meet the Project's Purpose and Need, and is not consistent with the State's organic waste reduction goals under SB 1383, or County waste diversion goals which call for the siting of up to two in-county composting facilities to facilitate the minimal goal of 75-percent diversion of waste products. Therefore, the No Project Alternative is not consistent with adopted plans and policies.

5 CEQA Required Assessment Conclusions

As required by CEQA, this chapter includes discussion and analysis of cumulative impacts, growth inducing impacts, and significant and unavoidable impacts.

5.1 Cumulative Impacts

This section summarizes the approach that this EIR takes in analyzing cumulative environmental impacts and identifies and describes the projects that were considered in the cumulative impact analysis.

The CEQA Guidelines (Section 15130) require that a project's cumulative impacts be discussed when "...the *incremental effect is cumulatively considerable....*" According to CEQA Guideline Section 15065(c), the term cumulatively considerable means "...that *the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects....*" Specifically, CEQA Guideline Section 15355 defines cumulative impacts as:

... two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

a) The individual effects may be changes resulting from a single project or a number of separate projects.

b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

5.1.1 Cumulative Projects

According to the CEQA Guidelines, an adequate discussion of significant cumulative impacts will contain an analysis of reasonably foreseeable related future projects or planned development that would affect resources in the Project area similar to those affected by the Proposed Project. According to the Alameda County Planning Department, there are no other projects or planned developments in the Project area.

5.1.2 Cumulative Analysis

Outlined below are the cumulative impacts for each resource area analyzed in the EIR. Cumulative impacts are focused on the East Alameda County area, which is generally rural or agricultural in nature, with limited development in the Project area. However, for some resource areas, cumulative impacts are focused on site-specific conditions, such as hazardous materials or noise sensitive receptors. As discussed, according to Alameda County Planning Department, there are no planned development projects in the Project area.

Aesthetics

Implementation of the Proposed Project, as well as other future development projects in the area, would result in changes to the visual character of the Project area. However, the incremental changes that would occur relative to the baseline conditions would not be cumulatively considerable because of the extent and nature of existing development. In addition, the Project site is relatively remote in relation to other proposed developments in the region. Although some changes in the visual character of the I-580 corridor would be anticipated with cumulative development, the vast majority of the corridor is anticipated to remain undeveloped. Further, development of the Proposed Project as well as other future development projects would be reviewed by the County to ensure consistency with aesthetic standards for development. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts associated with aesthetics.

Air Quality and Greenhouse Gases

Implementation of the Proposed Project, as well as other future development projects in the area, would result in an increase in emissions of criteria pollutants over the identified thresholds. These thresholds represent the maximum emissions a project may generate before contributing to a cumulative impact on regional air quality. Therefore, projects that would result in an increase in criteria pollutants of more than their respective thresholds would also be considered to contribute to a significant cumulative impact. Operation of the Proposed Project would also result in a new source of criteria pollutants, which are projected to exceed emissions thresholds and result in a significant and unavoidable air quality impact. Therefore, cumulative operation impacts would also be significant and unavoidable.

Biological Resources

Implementation of the Proposed Project, as well as other future development projects in the area, could result in the permanent loss of vegetation and wetlands, the temporary disturbance of sensitive plant and wildlife species, and the temporary and permanent loss of land cover types that provide suitable habitat for special-status wildlife species. The loss of these habitats could contribute to impacts of other projects that remove these habitats in the project region. However, consultation with applicable resource agencies regarding the protection of these resources, and the implementation of recommended and/or required avoidance, minimization, and mitigation measures would avoid or reduce the Proposed Project's contribution to cumulative effects on these habitats and species. Other future development in the Project area would be required to implement similar measures. Therefore, the Proposed Project's contribution to cumulative impacts would be less than significant.

Cultural and Tribal Cultural Resources

The analysis of cumulative cultural resources impacts is focused on the Project vicinity, for which no cultural or tribal cultural resources were identified within the Proposed Project's APE. Implementation of the Proposed Project, as well as other future development projects in the area, could potentially result in significant impacts on cultural and tribal cultural resources, should they be present within a Project's APE. However,

mitigation is proposed that would reduce the potential for impacts on cultural and tribal cultural resources. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts on cultural and tribal cultural resources.

Energy

The Proposed Project would require limited amounts of energy during construction and operation. The Project would not use energy in a wasteful, inefficient, or unnecessary manner. Rather, energy used during construction and operation of the Proposed Project would be necessary, conserved when not in use, and would independently stress energy resources provided by PG&E. Energy usage under the Proposed Project would be consistent with that of other compost facilities in the region. The Proposed Project, as well as other future development projects, would implement energy conservation and efficiency measures to the extent feasible. Equipment requiring energy would also be turned off when not in use. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts associated with energy.

Geology and Seismicity

There are no known geologic hazards within the Project area, such as active faults, liquefaction zones, steep slopes, etc. Implementation of the Proposed Project, as well as other future development projects in the area, would be required to comply with building code standards to ensure that structures are adequately supported to withstand seismic events and to account for any unstable soil conditions. In addition, the Proposed Project and future development would be required to implement standard erosion control measures to ensure that ground-disturbing activities do not create offsite hazards. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts associated with geology and seismicity.

Hazards and Hazardous Materials

The analysis of cumulative hazards and hazardous materials impacts is focused on the Project vicinity, which is generally rural or agricultural and is not known to include hazardous waste generators or sites. As future development in the Project area occurs, there is the potential for development activities to use, store, and transport hazardous materials. Implementation of future projects would require development sites to be evaluated for hazardous materials as well as compatibility with any adjacent hazardous materials users. The Proposed Project, as well as future development projects, would be required to comply with all applicable hazardous materials handling and storage requirements to ensure that public health and safety are not at risk. Therefore, the Proposed Project in conjunction with other future development projects, would not have cumulatively considerable impacts associated with hazards and hazardous materials.

Hydrology and Water Quality

Development activities associated with the Proposed Project could impact water quality. However, mitigation is proposed that would require the implementation of a SWPPP and BMPs to minimize water quality impacts resulting from implementation of the Project. Other future development in the Project area would be required to implement similar mitigation. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts associated with hydrology and water quality.

Land Use and Agriculture

The Project area contains a mix of rural development and undeveloped land. Much of the land is designated as large parcel agricultural, and includes lands under Williamson Act Contract. With the exception of the potential for cancellation of the existing Williamson Act contract, the proposed land uses were found to be consistent with the County's General Plan and Zoning Ordinance. Future development projects would be required to demonstrate consistency with the General Plan policies and Zoning Ordinance and ensure that they do not create land use conflicts with adjacent properties. Therefore, the Proposed Project, in conjunction with other future development projects, could have a cumulatively considerable land use impact, only with respect to a Project conflict with an existing Williamson Act Contract.

Noise

The analysis of cumulative noise impacts encompasses the ambient noise environment around the Project site, which includes noise sensitive receptors, as well as roadways that would experience increases in traffic volumes from Project-generated trips. The cumulative noise impact analysis is guided by evaluating increases in ambient noise levels in the Project vicinity relative to existing conditions. Construction noise would result in temporary increases, and operation noise would result in permanent increases in ambient noise levels. However, construction and operation noise would not result in increases that would exceed County noise standards. Further, construction noise would be temporary. Vehicular trips generated by the Proposed Project would not cause ambient noise levels along any affected roadway segment to exceed acceptable noise standards. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable noise impacts.

Public Services Utilities

Implementation of the Proposed Project, as well as other future development projects in the area would increase demands for police and fire protection. However, adequate services exist in the area to accommodate the proposed employees and facilities, and the Proposed Project is not anticipated to reduce service ratios and performance standards for these resources. The Proposed Project would not increase demands for schools, libraries, parks, trails, and other recreational facilities. Implementation of the Proposed Project would increase demands for water; however, the Project area is not served by a municipal water system, and therefore, would not increase demands on an existing system. Water to serve the Project site is available from an existing onsite well and BBID water that would be brought to the Project site by truck. The Proposed Project

would include onsite stormwater catchment basins, and would not require wastewater treatment, and therefore, would not increase demands on an existing wastewater treatment system. The Proposed Project would generate small amounts of solid waste residuals that would need to be disposed of in regional landfills. Landfill capacity in the region is available to serve the Proposed Project, as well as other planned projects. Therefore, the Proposed Project, in conjunction with other future development projects, would not have cumulatively considerable impacts on public services and utilities.

Transportation and Circulation

Implementation of the Proposed Project, as well as other future development projects in the area, would increase traffic volumes at intersections, roadways, and freeways within east Alameda County. However, with the addition of trips generated by the Proposed Project, Project area intersections, roadways, and freeway facilities are not anticipated to operate at unacceptable levels of service, and impacts would be not be cumulatively considerable. The Proposed Project, in conjunction with other future development projects would be required to provide appropriate alternative transportation, and, therefore, would not have cumulatively considerable impacts on transportation and circulation.

Wildfire

The Proposed Project is located in a Moderate Fire Hazard Severity Zone of an SRA (Cal Fire 2007). The Project Area is not located in the direct vicinity of very high fire hazard severity zones. The nearest very high fire hazard severity zone is located west of Pleasanton, California in the Kikare Woods, approximately 19 miles west of the Project Area (Cal Fire 2007). As such, future development projects within the Project area would also be outside of the very high fire severity zone and would not contribute to cumulative wildfire impacts. Therefore, the Project would result in no cumulative impacts on wildfire.

5.2 Growth Inducing Impacts

California Public Resources Code Section 21100 (b) (5) requires that the growth-inducing impacts of a project be addressed in an EIR. A project may be growth-inducing if it directly or indirectly fosters economic or population growth or the construction of additional housing, taxes community services facilities, or encourages or facilitates other activities that cause significant environmental effects.

The analysis of potential growth-inducing impacts includes a determination of whether a project would remove physical obstacles to population growth. This often occurs with the extension of infrastructure facilities that can provide services to new development, (a major expansion of a wastewater treatment plant, for example, might allow for more development in the wastewater service provider's area.) Indirect growth-inducing impacts result from projects that serve as catalysts for future unrelated development in an area. Development of public institutions, such as colleges, and the introduction of employment opportunities within an area are examples of projects that may result in direct growth-inducing impacts. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The Proposed Project would process and compost organic waste in an effort to divert organic materials from landfills. The Proposed Project would not remove physical obstacles to population growth in that it would not result in the extension of infrastructure facilities that would enable new land use development. Implementation of the Proposed Project would require the installation of onsite infrastructure and utilities such as stormwater infrastructure and a septic tank system to accommodate the employee facility wastewater needs. Installation of onsite infrastructure would be sized to meet the needs of the Proposed Project alone, and would not accommodate the needs of any other planned or unplanned development. Water for the Proposed Project would be provided primarily from the catchment basins and water transported to the site by truck. The power lines that would serve the facility are already in place, and therefore no power infrastructure would be required. In addition, this area of Alameda County is designated as Large Parcel Agriculture. This designation places extensive restrictions on development, and minimum requirements on parcel size. Therefore, the protective measures in the ECAP minimize the potential for extensive future development in the region. Furthermore, properties to the south and east are established as conservation areas. The Proposed Project would not result in a substantial increase in employment, and correspondingly, would not result in an increase in population and associated demand for housing in the area. The facility is expected to employ approximately 12 workers, which could easily be absorbed into the region and would not generate demand for new residential development. For the reasons discussed above, implementation of the Proposed Project is not anticipated to result in significant growth-inducing impacts.

5.3 Significant and Unavoidable Impacts

Sections 15126 of the State CEQA Guidelines require that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less than significant level. Detailed mitigation measures have been identified, as necessary, for all resource sections in Chapter 3 of this EIR; these measures are intended to mitigate, to the extent feasible, significant impacts resulting from implementation of the Proposed Project. These mitigation measures are also identified in the Summary of Impacts and Mitigation Measures table provided in the Executive Summary of this document.

The following significant and unavoidable impacts would occur with Project implementation:

Impact AQ-1: Conflict with or obstruct implementation of the BAAQMD 2017 Clean Air Plan.

The Proposed Project would conflict with or obstruct the 2017 CAP if construction of the Proposed Project generates criteria pollutant that exceed numerical thresholds defined by BAAQMD to attain the goals and objectives of the 2017 CAP (see Tables 3.4-2, 3.4-3, and 3.4-5). As indicated under Impact AIR-2 and AIR-3 (Section 3.2, Air Quality), the Proposed Project would exceed the BAAQMD's significance criteria for criteria air pollutant emissions during operation. Therefore, the Project would conflict with or obstruct implementation of the applicable air quality plan, impacts are anticipated to be significant and unavoidable with Project implementation.

Impact AQ-3: Cumulatively significant net increase of any nonattainment pollutant.

According to the 2017 BAAQMD CEQA Guidelines, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions (BAAQMD, 2017). As indicated under Impact AIR-2 (Section 3.2 Air Quality), the project's operational emissions would exceed the BAAQMD's thresholds of significance. As such, combining project emissions with emissions from other projects would result in cumulatively significant air quality operational impacts.

After implementation of mitigation measures, all other significant impacts associated with the Proposed Project would be reduced to a less than significant level.

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Appendix A. Notice of Preparation and Comments, and Initial Study

Appendix B. Composting Processes

Appendix C. Air Quality

Appendix D. Biological Resources Assessment

Appendix E. Determination of Eligibility and Effect

Appendix F. Environmental Noise Assessment

Appendix G. Traffic Impact Assessment

Appendix H. Notification of Consultation Opportunity